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Late Formative Community Organization and Social Complexity on the Oaxaca Coast

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Excavations at Cerro de la Cruz on the western coast of Oaxaca exposed the remains of two residential terraces from the Late Formative Period (400–100 B.C.). Portions of 11 Late Formative structures were cleared, including probable residences, storehouses, and a public building. Burials yielded the remains of 84 individuals dated to the same period. Intrasite patterning of selected artifacts, architecture, and features as well as comparative data on residential patterning are used to examine social complexity at Cerro de la Cruz. The data suggest that the site was part of a coastal chiefdom, though inequalities in social status appear to have been less pronounced than in other Late Formative chiefdoms from the Oaxacan interior.

Introduction

The Late Formative Period (400–100 B.C.) was a time of population growth and increasing social complexity throughout most of Mesoamerica (Adams 1977; Flannery and Marcus 1983a; Kowalewski et al. 1989: 85–152; Sanders, Parsons, and Santley 1979: 98–102; Winter 1989: 32–70). From region to region, however, there appears to have been great variability in population size as well as in social organization and complexity. Data from interior regions of Oaxaca (FIG. 1) exemplify the societal variability of this dynamic period. In the Valley of Oaxaca a powerful paramount chiefdom arose at Monte Albán with settlement size at the site reaching 442 ha (Blanton 1978: 44; Kowalewski et al. 1989: 151). The Mixteca Alta also appears to have been the location of a large-scale chiefdom, with the site of Yucuita reaching 150 ha (Spores 1983a; Winter 1982). In other areas of Oaxaca, such as the Cuicatlán Cañada and the Ejutla Valley, small-scale chiefdoms are indicated, with the largest sites covering only about 20 ha (Feinman and Nicholas 1988, 1990; Redmond 1983). This article discusses Late Formative social organization and complexity inferred from recent excavations in the lower Río Verde Valley on the Pacific coast of Oaxaca. The data from the lower Río Verde region are compared to evidence from the Oaxacan interior to further an understanding of societal variability at this time.

The 1988 Río Verde Formative Project (RVFP) was designed to examine Formative Period social change in the lower Río Verde Valley through a program of archaeological excavation and geomorphological testing (Joyce

1991a, 1991b; Joyce and Mueller 1992; Joyce and Winter 1989). A major goal of the RVFP was the horizontal exposure of structures and activity areas at a Late Formative site to better understand social organization and complexity at this time. This research strategy provides data on the formal and functional variability of structures, features, and activity areas within sites that would not normally be available from surface survey or subsurface tests (see Ashmore and Wilk 1988; Bogucki and Grygiel 1981; Smith et al. 1988; Webster and Gonlin 1988; Whalen 1981; Winter 1974).

The RVFP was successful in carrying out the first large-scale horizontal excavations of a site on the Oaxaca coast. These excavations, at the site of Cerro de la Cruz, exposed approximately 300 sq m, including architecture and associated features dating primarily to the Late Formative. Excellent comparative evidence is available from Late Formative sites in the Valley of Oaxaca, Mixteca Alta, and Cuicatlán Cañada, since archaeological research in these regions (FIG. 1) pioneered the areal exposure of Formative Period sites in Mexico (Drennan 1976; Flannery 1976a; Gaxiola 1984; Robles 1981; Spencer 1982; Whalen 1981; Winter 1972, 1974, 1986). This article considers the architectural remains from the horizontal exposures at Cerro de la Cruz, as well as comparative data from the Oaxacan interior, to infer aspects of Late Formative community organization and social complexity on the coast. Rather than relying solely on analogy with ethnographic studies, however, this study incorporates the concept of social identity (Braun 1985: 132–133; Joyce 1991a: 604–616; McGuire 1983; Rapoport 1976: 19; Schortman 1989) to

analyze the data from Cerro de la Cruz and more clearly delineate social complexity at the site.

Archaeological and Environmental Background

The RVFP research as well as the results of an earlier pilot study (David Grove, personal communication, 1988; Joyce and Winter 1989) indicate that the Late Formative was a time of increasing population size in the lower Río Verde region. Preliminary settlement data suggest that before the Late Formative the region was sparsely and perhaps only sporadically inhabited (Joyce 1991a: 424). The number of sites recorded in the region increased from five during the late Middle Formative Charco Phase (500–400 B.C.) to 20 by the Late Formative Minizundo Phase (400–100 B.C.). The Late Formative is also the earliest period with evidence for the existence of a regional settlement hierarchy. Most Late Formative sites appear to have been relatively small, ranging from 2 to 6 ha. The sites of Charco Redondo and Río Viejo, however, appear to have been considerably larger, with the former possibly reaching 100 ha and the latter about 25 ha (Susan Gillespie, personal communication, 1987; Joyce 1991a: 426–427). The number and size of sites continued to increase until the end of the Classic Period (A.C. 250–900), and the

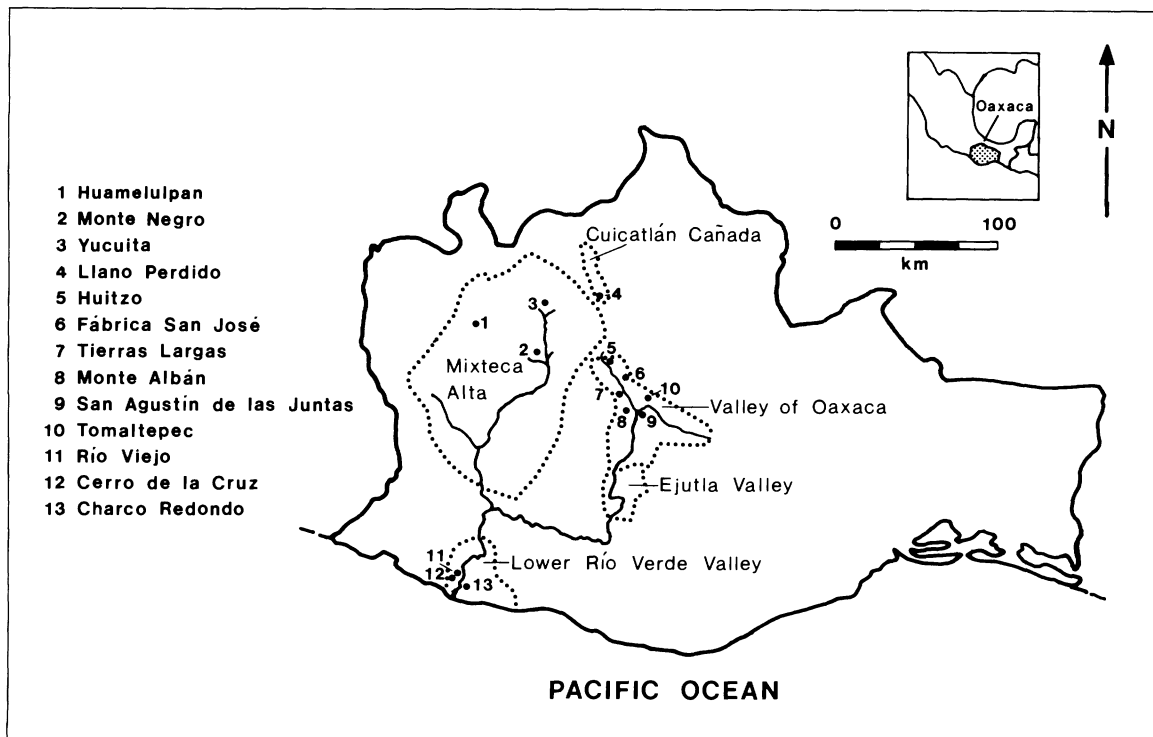
region was probably the most populous on the Oaxaca coast until the Spanish conquest.

The importance of the lower Río Verde Valley in terms of prehispanic settlement was undoubtedly related to its ecological characteristics. The Río Verde is one of the largest rivers on the Pacific coast of Mesoamerica in terms of both drainage area and discharge (Tamayo 1964). It emerges from a narrow valley in the Sierra Madre onto a broad coastal floodplain about 20 km north of the river mouth. The ecology of the approximately 1000-sq km lower Río Verde region is complex and diverse, including riverine, floodplain, lacustrine, estuarine, marine, piedmont, and mountain habitats that provide abundant resources for human populations (Joyce 1991a: 42–64). Today the Verde's floodplain is one of the most productive agricultural areas in Oaxaca (Rodrigo 1983: 192). While agriculture is the predominant subsistence activity in the region, people also exploit fish and shellfish from the rivers, ponds, estuaries, and open ocean as well as wild plants and animals from terrestrial habitats (Rodríguez et al. 1989).

Excavations at Cerro de la Cruz

Cerro de la Cruz is located approximately 4 km west of the Río Verde and 14 km north of the Pacific coast. The site occupies about 1.5 ha of a low, flat spur extending

Figure 1. Map of Oaxaca showing regions and sites mentioned in the text.



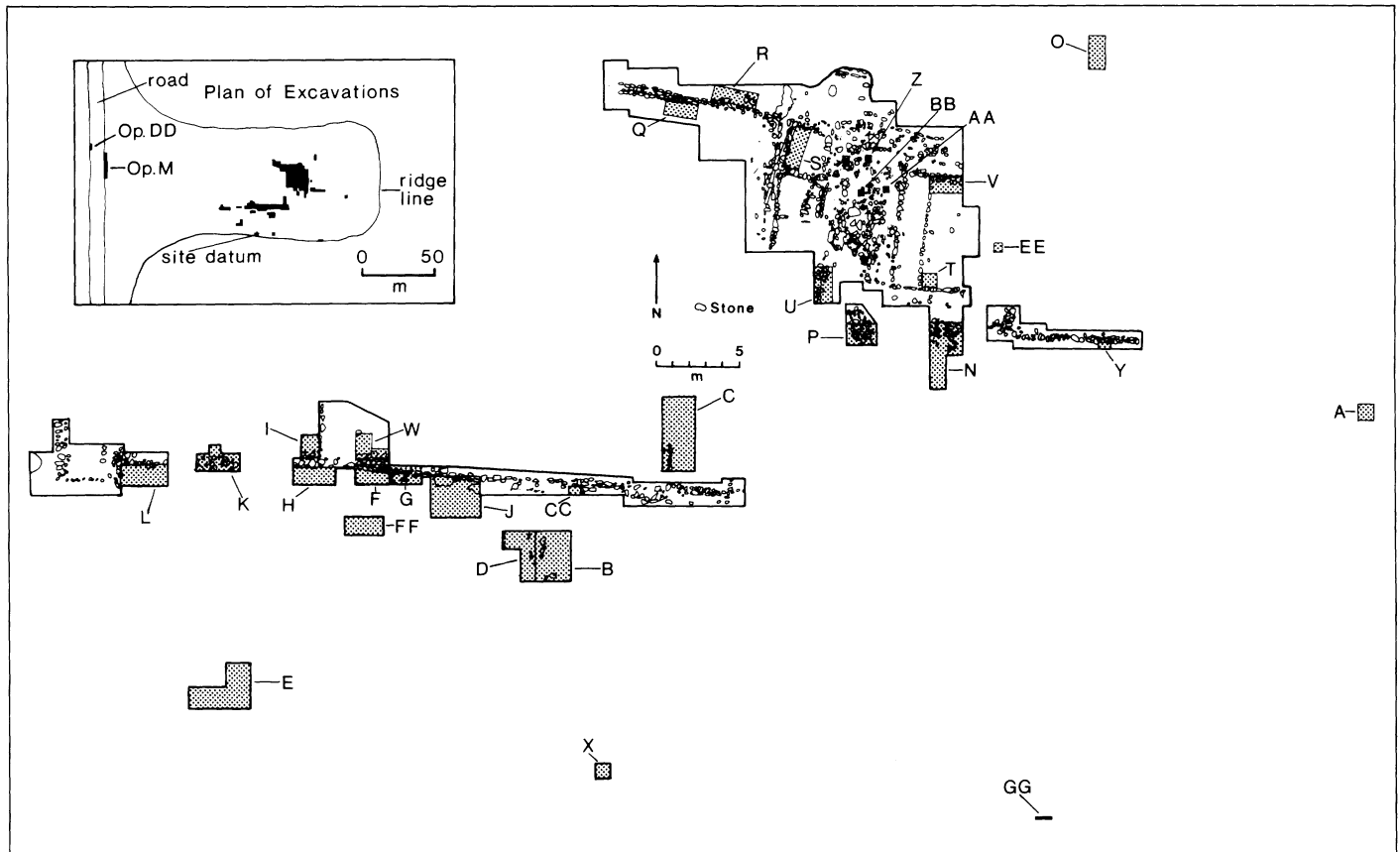


Figure 2. Site plan showing archaeological operations at Cerro de la Cruz (shaded areas show the location of deep soundings and opportunistic clearings in relation to the horizontal exposures of Grid East and Grid West; operation letters are included).

from a hill in the Verde's floodplain. The short axis of the site extends 70 m along the hill and projects eastward onto the surrounding floodplain for about 180 m. The site reaches an elevation of about 24 m asl or approximately 12 m above the floodplain.

Cerro de la Cruz was first investigated by the Río Verde Archaeological Project, a two-month pilot study carried out during the summer of 1986 (David Grove, personal communication, 1988; Joyce and Winter 1989).¹ The site had been partially bulldozed shortly before our arrival by a large-scale government irrigation project. While the upper 1–2 m of sediment had been removed over much of the site's surface, undisturbed deposits remained beneath the level of the bulldozing in most areas. Members of the project conducted a short rescue operation including surface survey, recovery of two burials found eroding from

the surface, and excavation of a stratigraphic sounding.

Cerro de la Cruz was chosen for further work in 1988 because the 1986 sampling suggested that it preserved substantial Late Formative deposits and that these were sufficiently close to the surface to allow broad areal excavations. The shallowness of overburden above the remaining archaeological deposits underscored the urgent need to conduct an archaeological investigation before the remains were lost completely to erosion. Three types of archaeological operations were carried out at Cerro de la Cruz by the RVFP: 1) deep soundings to explore the remaining vertical buildup of the site and to sample deep midden deposits; 2) opportunistic clearing of features eroding from the bulldozed site surface, including wall lines and burials; and 3) broad horizontal excavations to reveal the assemblage of roughly contemporaneous Late Formative remains that quickly became evident just below the bulldozer cut. Figure 2 is an overall site plan, including architectural features and the location of deep soundings

1. The 1986 research was conducted by the Río Verde Archaeological Project directed by Raul Arana, Susan Gillespie, David Grove, and Marcus Winter.

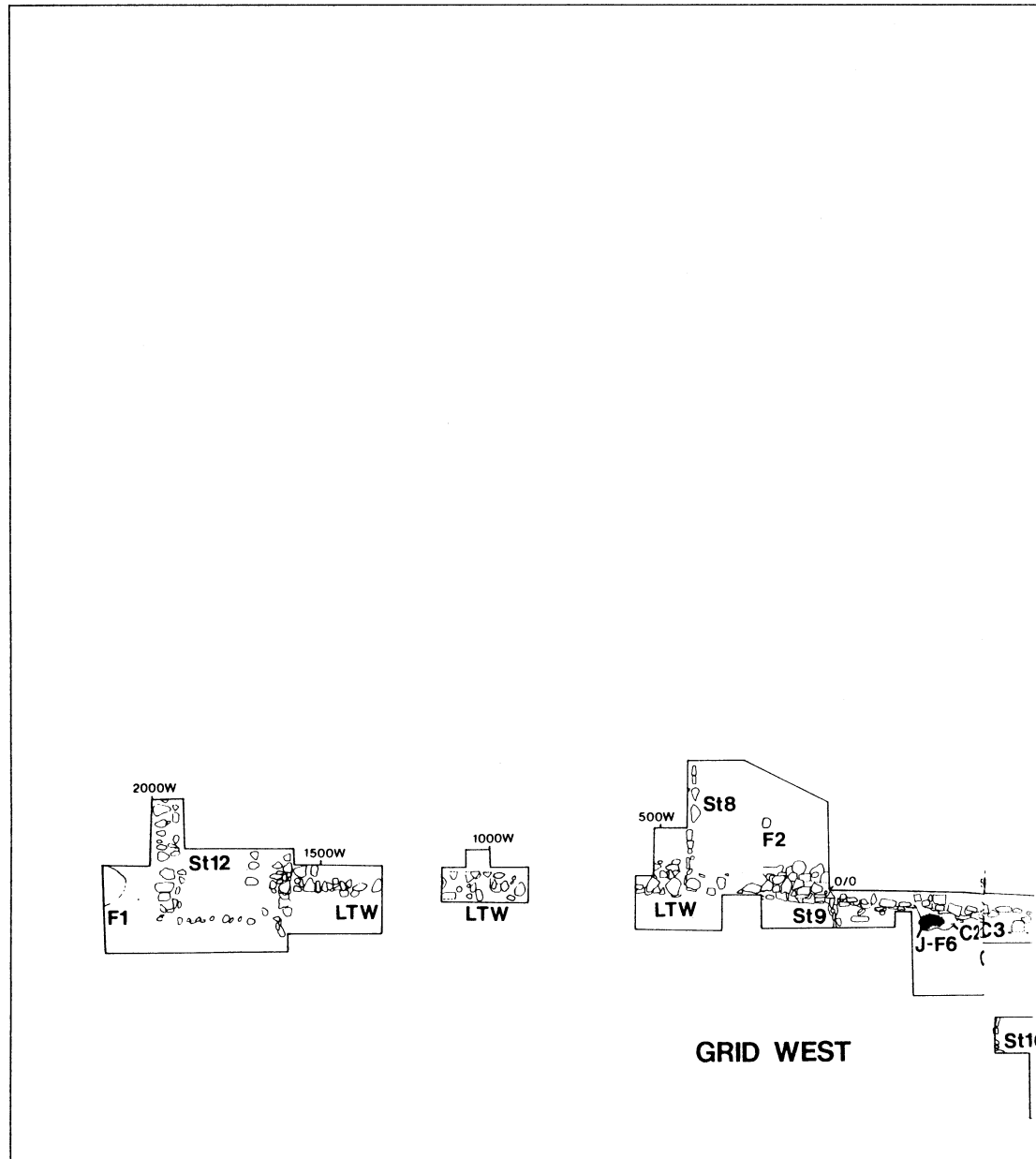
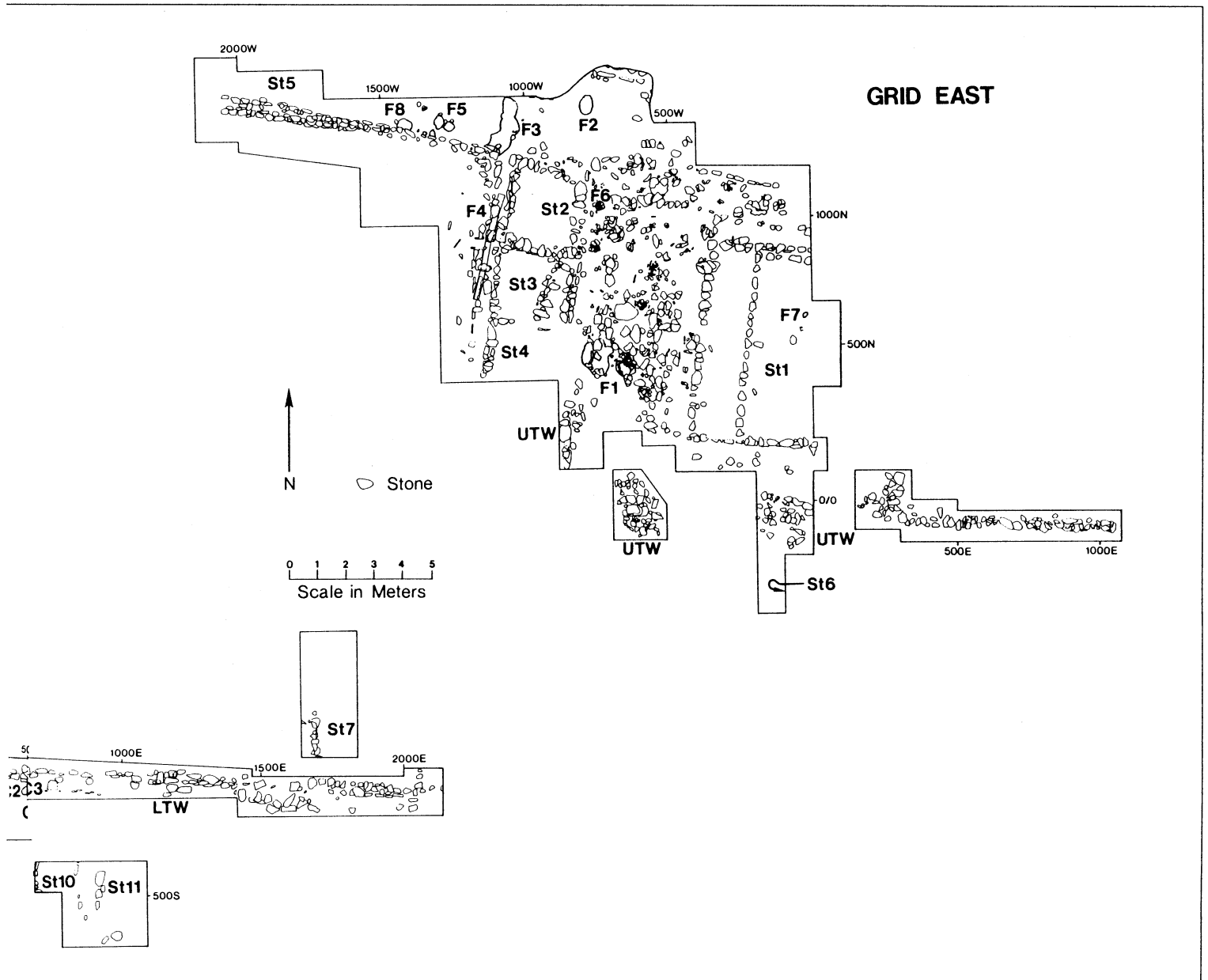


Figure 3. Plan of architecture and associated features at Cerro de la Cruz; inking by Anthony Urgo. (St = structure; F = feature; C = cache; UTW = upper terrace wall; LTW = lower terrace wall.)

and clearing operations in relation to the broad horizontal excavations.²

2. Each deep sounding, opportunistic clearing, and horizontal exposure was considered a separate archaeological operation (Shook and Coe 1961). Proveniences for the operations were designated by site (CC for Cerro de la Cruz) and year (88) abbreviations and a letter designating the particular operation. Deep soundings and opportunistic clearings were assigned operation letters alphabetically, while the two horizontal exposures were designated Operation Grid East (Op. GE) and Operation Grid West (Op. GW) according to their relative locations at the site

(FIG. 3). To simplify the description, natural strata (N) and features (F) within archaeological operations were noted by their operation designation followed by a hyphen and a number referring to the stratum. For example, Op. CC88 A-F1, refers to feature number 1 of operation A at Cerro de la Cruz. Natural strata and features were numbered sequentially within operations. Structures (St), caches (C), burials (B), and buried individuals (I) were numbered sequentially for the site as a whole. The only two identified terrace retaining walls, were designated Upper Terrace Wall (UTW) and Lower Terrace Wall (LTW), respectively, according to their relative topographic position at the site (see Joyce 1991a: 83-94 for a comprehensive discussion of the archaeological terminology used by the RVFP).



The deepest excavations demonstrated that Cerro de la Cruz had been settled by the Charco Phase (500–400 B.C.). Most of the work at the site, however, involved horizontal exposures of residential terraces dating to the Late Formative Minizundo Phase (400–100 B.C.). Portions of 11 Minizundo Phase structures were excavated, as were retaining walls of two distinct terraces from this period (FIG. 3). Both of the terrace retaining walls were constructed using local granite slabs, blocks, and chunks that included trimmed and unmodified examples, along with mud mortar. The walls varied from 0.5 m to 1.4 m

in height and from about 0.3 m to 1.3 m in width. The lower terrace wall (LTW in FIGS. 2, 3) had a preserved length of more than 37 m, while the upper terrace wall (UTW in FIGS. 2, 3) was more than 24 m long. It was impossible to determine the full original extent of either wall, however, as the eastern ends of both had been destroyed by bulldozing; the lower wall had been truncated on its western end as well, by a Terminal Formative structure (St12). The terrace retaining walls delimited and supported two flat areas for habitation. A third habitation area was located below and south of the lower terrace

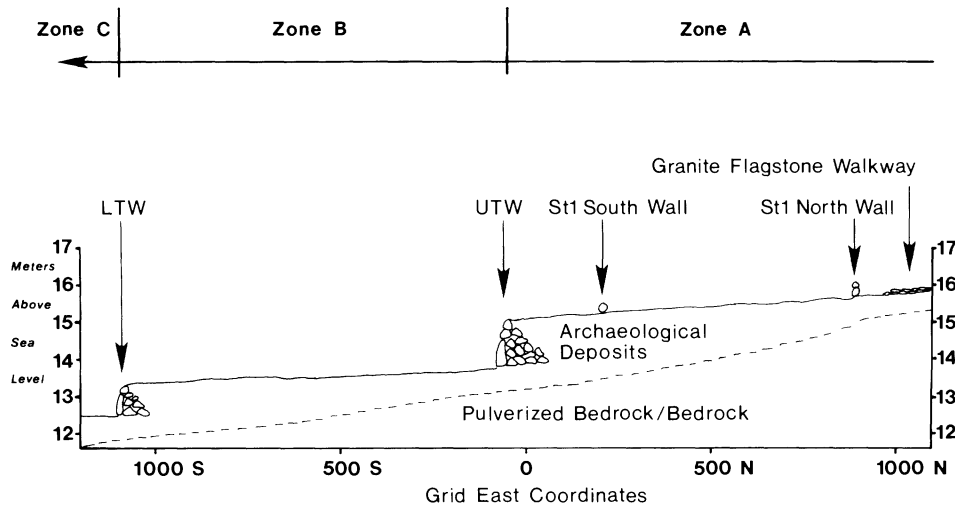


Figure 4. Idealized cross-section of residential terraces at Cerro de la Cruz. (St = structure; UTW = upper terrace wall; LTW = lower terrace wall.)

wall; this area was probably the ancient ground surface. Therefore, three distinct occupational areas are distinguished in relation to the terracing; they are labelled Zones A, B, and C from uppermost to lowermost and are described below (FIG. 4).

Zone A

Zone A was defined by the construction of the upper terrace. Features of Zone A were exposed during horizontal clearings of Op. GE, the most intensively studied area of the site. Zone A contained a Minizundo Phase building group consisting of a granite flagstone patio surrounded by stone foundations of five structures (FIG. 3). The elevation of the surface of the patio and floor remnants of associated structures varied from 17 to 15.5 m above sea level. Based on the absence of fallen stone, and analogy with structures having similar preserved construction elements from other regions of prehispanic Oaxaca (Flannery 1976b; Lind 1979; Spencer 1982: 89–129; Whalen 1981; Winter 1986), the stone foundations apparently supported adobe, wattle-and-daub, and/or simple pole walls. One burned adobe block was found lying on the southern wall of St1 and small quantities of burned daub were occasionally found along the walls of the structures. Only small, eroded, and occasionally burned remnants of the floors of these buildings were present.

The granite flagstone patio measured roughly 10 m × 4.3 m (FIG. 3). The southern end of the patio was truncated by the bulldozer and its long axis may have extended a few meters farther to the south, where it would have met the terrace retaining wall. The patio consisted of

granite flagstones which were stacked both vertically and horizontally to a depth of about 40 cm. Intruded into the surface of the patio were two hearths (GE-F1 and GE-F6), each containing deposits of burned wood, ash, and fire-altered rock. Time permitted the investigation of only GE-F1, which measured approximately 3 sq m in area and was 30–40 cm deep. Charcoal samples from GE-F1 yielded an uncorrected radiocarbon date of 2070 ± 80 b.p., or 120 b.c. (Beta-30490).

St1, east of the patio, consisted of two rooms, although the eastern one had been truncated by the bulldozing (FIG. 3). Room 1, on the western side, measured 7.3 m × 2 m, providing an area of 14.6 sq m. The surviving three foundation walls of Room 2 measured 7.3 m N-S and 2.7–1.7 m E-W. If the structure was originally square, the area estimate for Room 2 would be 19.7 sq m, and 34.3 sq m would be a minimum estimate of the interior floor space of the entire building. The preserved foundation walls of St1 consisted of a single level of relatively large, uncut stones. A total of 48 individuals was discovered interred within St1 and along the exterior of the foundation walls of the building (see below).

St2, St3, and St4 comprised a series of small buildings sharing contiguous walls that formed the western boundary of the patio (FIG. 3). The foundation walls of St2, St3, and St4 varied in height from 45 to 80 cm and consisted of two to three layers of either uncut stone or a combination of uncut stone and mud mortar. St2 was the best preserved of the three and measured 3 m × 3 m. St3 and St4 had been disturbed prior to the bulldozing so that portions of their walls were missing, although based on

the remaining walls both of these structures appeared to be very similar in area to St2. St2, St3, and St4 were built so that they stepped down the slope of the hill, with the floor elevation of St2 being 78–89 cm higher than that of St4. The floors of St2, St3, and St4 also appear deliberately sunken 28–33 cm lower than the patio surface.

St5 was defined by a single stone wall running E-W from the NW corner of St2 (FIG. 3). An erosion gully destroyed the western end of the wall and structure. The construction style of St5 differed from the other structures of the Zone A building group in that the foundation walls were made up of two courses of stone that often approximated ashlar masonry. The area north of the wall line appears to have been the interior of the structure, as suggested by the presence of a series of floors and floor remnants as well as a hearth (GE-F3) and three open burning features (GE-F2, GE-F5, GE-F8) that were similar to features found in the interior of St1 and St8.³ It proved impossible to delineate clearly the northern and eastern limits of St5, although a short section of wall at the northern end of Op. GE (coordinates 1500 N/675 W) may have been its NE corner. Assuming this to be true, the minimum area of St5 can be estimated as 50.75 sq m.

An unusual discovery associated with St2, St3, and St5 was a ceramic pipe partially encased in stone (GE-F4). The pipe had an exterior diameter of 18 cm and consisted of at least five longitudinal sections, each between 80 and 100 cm in length, and shaped to fit together (FIG. 5). The pipe descended steeply from the floor of St5. The pipe and stone encasement were buried in the fill beneath the western end of St2 (inside the structure) and extended just south of that structure outside the western wall of St3 (FIG. 3). The function of the pipe appears to have been to drain St5, probably during intense rainy-season storms, and carry the water over the side of the terrace onto Zone B. The presence of the drainage pipe suggests that all or part of the structure may have been an unroofed patio with an earthen rather than a granite flagstone pavement. The architectural similarity of St5 to other struc-

3. Hearths and open burning features were considered categories of controlled burning features, associated with activities such as cooking or pottery-making in a circumscribed area (Joyce 1991a: 92). There are three types of controlled burning features: open burning features, hearths, and ovens. An open burning feature is the remains of a controlled fire (e.g., charcoal, ash, burned soil) that was lit on an unmodified surface. A hearth is a feature open to the air on its upper surface that was constructed to contain a fire as well as any remains of fires lit within the feature. Various types of hearths include simple pits, sherd- or stone-lined pits, and stone circles. An oven is a feature open to the air on one or more sides that was constructed to contain a fire as well as any remains of fires lit within the feature. Various types of ovens include simple pits dug into a sloping surface and ovens built from stone or adobe.

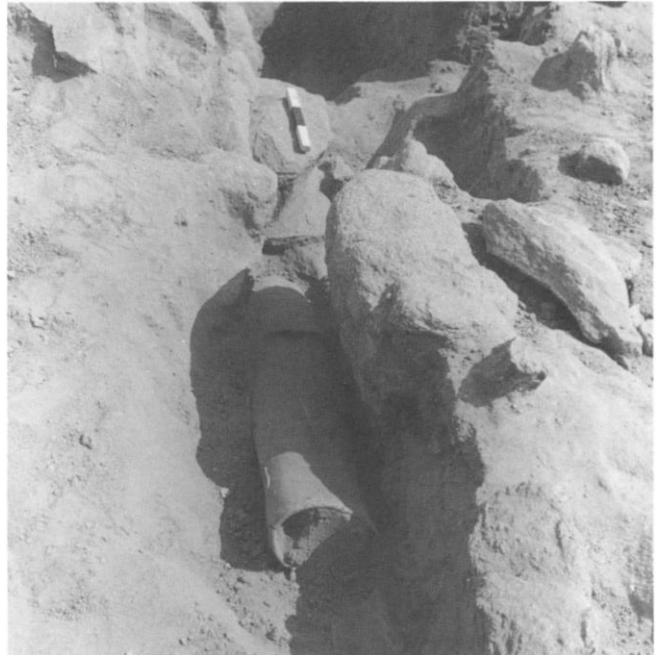


Figure 5. Photograph of drainage feature excavated in Zone A at Cerro de la Cruz.

tures at the site and the presence of a hearth and three open burning features argue, however, for a shared function with them, which was most likely residential (see below).

Zone B

Zone B at Cerro de la Cruz consisted of the terrace defined by the lower retaining wall (FIGS. 3, 4). The elevation of Zone B in excavated areas ranged from 13.33 to 14 m asl, placing it at a level varying from about 1.5 m to 3.7 m below Zone A. Three structures were exposed by the excavations in Zone B (St6, St7, St8). St6 was exposed in the eastern excavation limits of Op. N and consisted of a single course of granite stones, often squared off (N-F5), and running south from the base of the upper terrace wall (FIG. 6). The area adjacent to St6 that was excavated in Op. N appears to have been the area outside the structure, as no indications of a floor were found. The NE corner of St7 was exposed and consisted of a wall line up to 70 cm in height, including two to three courses of uncut stone. While the interior of St7 was not excavated, the base of the foundation wall, and presumably the floor of St7, was purposely sunk beneath the terrace surface of Zone B in a manner similar to St2, St3, and St4. St8 was built so that the upper course of stones of the lower terrace wall formed its southern foundation wall. The wall consisted of a single course of stone,

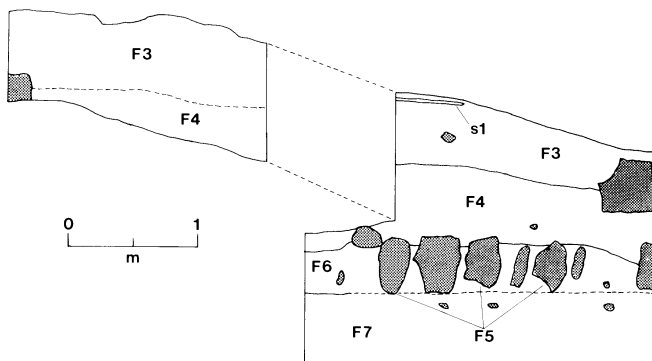


Figure 6. East excavation section of Op. N at Cerro de la Cruz; inking by Anthony Urgo (F = feature; s = substratum within a feature). F5 is the foundation wall of St6 (stones are shaded).

most of which seems to have been lightly trimmed. A complex vertical series of burned floor remnants and burials was excavated in the interior of the structure. These floors were located on the lower terrace surface rather than sunk into it, as was St7. Dug into the earliest floor was a small hearth (GW-F2) measuring 30 cm × 25 cm × 10 cm and containing charcoal, burned soil, burned sherds, and fire altered rock.

Zone C

The elevation of Zone C varied from about 12.4 to 12.8 m asl, or 0.53 to 1.6 m lower than Zone B (FIG. 4). Portions of three structures associated with Zone C were exposed (St9, St10, and St11). St9 was represented by a single wall line that ran south from the base of the lower terrace wall (FIG. 3). The wall was rebuilt once but no floors could be clearly distinguished in association with either building phase.⁴ Nevertheless, the presence of a hearth (J-F6) and three burials (B10, B14, and B15) exposed in excavations east of St9 suggest that the eastern side of the wall was the interior of the structure (hearths and burials were noted in the interiors of several other structures at the site). St10 was represented by two parallel wall lines running N-S and separated by a distance of 1.4 m. Each wall consisted of a single course of stones, mostly unworked. An eroded remnant of a burned floor was found between the two wall lines. The narrow, 1.4 m width of the structure was unusual, though it may have been a room associated with a larger building. St11 was located 60 cm east of St10 and was exposed just beneath the bulldozed surface; it was represented by a single wall oriented N-S and aligned more or less parallel to the walls

4. In general, unburned earthen floors and burial pits were difficult to discern in the archaeological deposits at Cerro de la Cruz.

of St10. The wall consisted of a single course of stones; several may have been trimmed. To the east of the wall line were several patches of burned floor. A primary, multiple burial (B3) was excavated beneath the floor.

While it was not possible to precisely relate all of the structures and occupational zones at Cerro de la Cruz, excavation data suggest that the structures in the three zones described above were roughly contemporaneous within the Minizundo Phase. In addition, several walls observed in erosion cuts in other parts of the site seemed to be terrace retaining walls. The deep soundings provided information on the developmental history of the Minizundo Phase buildings as well as later events at the site (Joyce 1991a). These data as well as surface collections indicate that the site reached its maximum extent during the Late/Terminal Formative (400 B.C.–A.C. 250).

Functional Analysis of Buildings at Cerro de la Cruz

In the foregoing discussion of architecture at Cerro de la Cruz, several distinct architectural forms were noted, and this formal variability suggests parallel diversity of function (see Becker 1971; Smith et al. 1988). In this section, comparative archaeological data are cited as a basis for inference of functions of the Minizundo Phase buildings at Cerro de la Cruz. Comparative architectural data for the Late Formative are available from Monte Albán (Winter 1974), Tomaltepec (Whalen 1981, 1988a, 1988b), Huitzo (Winter 1986: 342), San Agustín de las Juntas (Winter 1986: 342), and Tierras Largas (Winter 1972) in the Valley of Oaxaca; Huamelulpan (Gaxiola 1984), Monte Negro (Caso 1942; Flannery 1983a), and Yucuita in the Mixteca Alta (Robles 1981, 1986; Winter 1986); and Llano Perdido in the Cuicatlán Cañada (Spencer 1982). The comparative study focuses on architectural forms and patterns, as well as associated features. Analysis of artifacts was generally not very useful since few could be clearly associated with the floors of structures, due both to poor floor preservation and the paucity of artifacts.

As in most prehispanic Mesoamerican sites (Ashmore and Willey 1981: 6; Haviland 1966; Manzanilla 1986; Thompson 1892; Wilk and Ashmore 1988), houses were the most common buildings in settlements of the Oaxacan Formative (see Blanton 1978: 41–52; Whalen 1981; Winter 1972, 1986). Late Formative residences in the Valley of Oaxaca and the Mixteca Alta usually consisted of household “clusters” (Winter 1972, 1974, 1976, 1986: 329–331) or “units” (Flannery 1983b; Whalen 1988a) including several houses surrounding a patio and a series of associated features such as burials, refuse/storage pits, hearths, and ovens (FIG. 7). Lower status residences usually were of the open-to-semiclosed variety (Winter 1974:

983), where one or two houses surrounded a patio that was open on at least one, and often two, sides. High-status households had from two to five houses, usually built on low platforms, and often completely enclosing the patio (Whalen 1988a; Winter 1986: 342–345). Floor space in each house was generally between 15 and 30 sq m, although in elite houses it was occasionally larger; for example, the *Estructura Norte* off the *Patio Central* in area M, Yucuita, had individual rooms measuring up to 70 sq m (Winter 1986: 349). The grouping of structures and features was usually a roughly circular area with a diameter of about 20 m. Structures and permanent features usually made up no more than 10% of the total area, and the remaining space seems to have been used for temporary activities. These clusters were usually separated from one another by 15–40 m (Winter 1972: 982; Whalen 1988a).

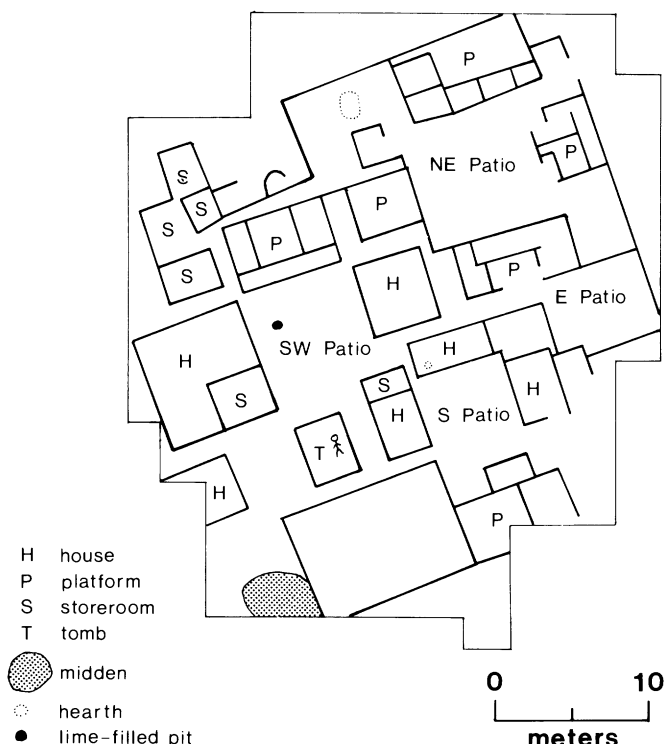
Households at Llano Perdido in the Cuicatlán Cañada appear to have been organized somewhat differently from those of the Valley of Oaxaca and the Mixteca Alta (FIG. 8). At Llano Perdido, several households were grouped into densely packed compounds measuring 30–40 m on a side and separated from one another by at least 25–35 m of unoccupied space (Spencer 1982: 129; see also

López and Molina 1986; Morelos 1986). Each household consisted of an enclosed patio surrounded by several houses as well as one or two platforms that probably had a ceremonial function. Floor space of individual houses ranged from 13 sq m to 56 sq m, with a mean of 24.7 sq m. Storage facilities at Llano Perdido consisted of small storehouses as well as storerooms built within houses, rather than bell-shaped pits as in the Valley of Oaxaca and the Mixteca Alta.

The pattern of structures excavated at Cerro de la Cruz does not suggest the type of discrete households separated by large, open activity areas found at Late Formative sites in the Valley of Oaxaca and the Mixteca Alta. Settlement on the terraces at Cerro de la Cruz was dense, with structures usually within 5 m of one another. This dense packing of structures more closely resembles architectural patterns at Llano Perdido in the Cuicatlán Cañada. At Cerro de la Cruz, the spatial distribution of structures seems to be a product of social organization rather than physical factors such as topographic constraints. Several similar piedmont spurs are found nearby and exhibited few or no archaeological remains. Furthermore, evidence from the nearby site of Río Viejo (FIG. 1) suggests that the same type of focused construction activities occurred there during the Minizundo Phase (Joyce 1991a: 427, 1991b: 133).

Among the Minizundo Phase structures at Cerro de la Cruz, St5, St6, St8, St9, St10, and St11 share a similar architectural style marked by foundation walls, consisting of one or two courses of stones, often trimmed, and earthen floors. Since houses outnumber other structures at most Late Formative sites, it is not unlikely that these buildings were residential. It should be kept in mind, however, that the structures cleared in 1988 may not be representative of the entire site, since only 2% of the area of the site was excavated and some portions of the Minizundo Phase settlement had been destroyed by bulldozing. A residential function for St5, St6, St8, St9, St10, and St11 is also supported by positive evidence beyond that of abundance. These structures tended to be associated with small rather than large numbers of burials (Joyce 1991a: Appendix 1) and small hearths or open burning features (presumably from cooking activities); both characteristics are most consistent with residential function (Manzanilla 1986; Wilk and Ashmore 1988; Winter 1974, 1976). St8 diverged from this mortuary pattern in that 18 individuals were interred in and around the structure. This number is high for a household or familial unit, except possibly in the case of a large extended family. Only the floor space of St5 could be estimated (50.75 sq m) and it was relatively large compared to Late Formative residences in other parts of Oaxaca. The estimated area of

Figure 7. Formative Period residential patterning in the Valley of Oaxaca and the Mixteca Alta (after Winter 1986).



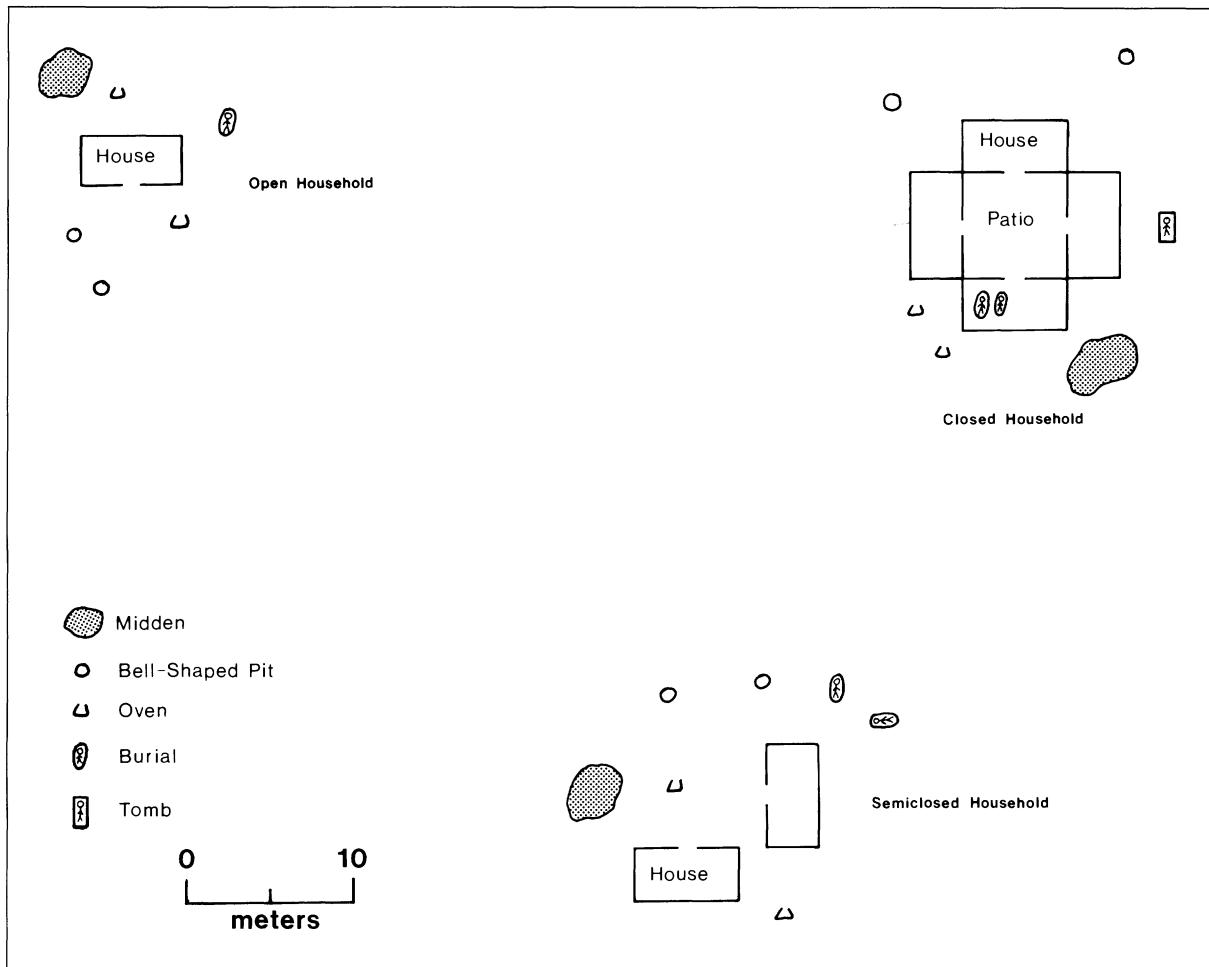


Figure 8. Middle/Late Formative residential patterning at Llano Perdido in the Cuicatlán Cañada region (after Spencer 1982).

St5, however, was within the range of some of the larger high-status residences (e.g., Gaxiola 1984; Spencer 1982: 110; Winter 1986: 341–352).

Given their small size and “sunken floor” trait, St2, St3, St4, and St7 probably could not have functioned as residences, and instead may have been storage facilities. These structures seem to have measured about 9 sq m each, which is similar to the mean area of 10.7 sq m for three storehouses excavated by Spencer (1982: 114–118) at Llano Perdido in the Cuicatlán Cañada. St2, St3, St4, and St7 also differed architecturally from other structures at Cerro de la Cruz. St2, St3, St4, and St7 had foundation walls consisting of 2 to 3 courses of uncut stones, and floors that were purposefully sunken beneath the terrace surface. The sunken floors may have helped to preserve and protect stored materials, as well as increase the storage volume. In highland Oaxaca, bell-shaped pits were used for subsurface storage (Winter 1976, 1986: 329) and may have served to preserve and protect materials in much the

same way as the sunken floors of the storehouses at Cerro de la Cruz. Storage pits in highland Oaxaca as well as the storehouses at Llano Perdido sometimes contained concentrations of items that had probably been stored, such as imported pottery or food refuse (Spencer 1982; Winter 1976: 27–29). While no concentrations of artifacts or ecofacts were noted in the Cerro de la Cruz structures, the absence of such material may be the result of abandonment or post-abandonment processes (Cameron 1991; Lange and Rydberg 1972; Schiffer 1987: 89–98) rather than functional differences during use.

St1 was unique relative to the other structures exposed at Cerro de la Cruz, both architecturally and, especially, in terms of associated mortuary patterns. St1 had two rooms, outlined by foundation walls consisting of a single course of uncut stone. The most remarkable characteristic of St1 was the 48 individuals, including 41 adults, interred both in the interior and along the exterior of the foundation walls (FIG. 9). This number is atypically high in

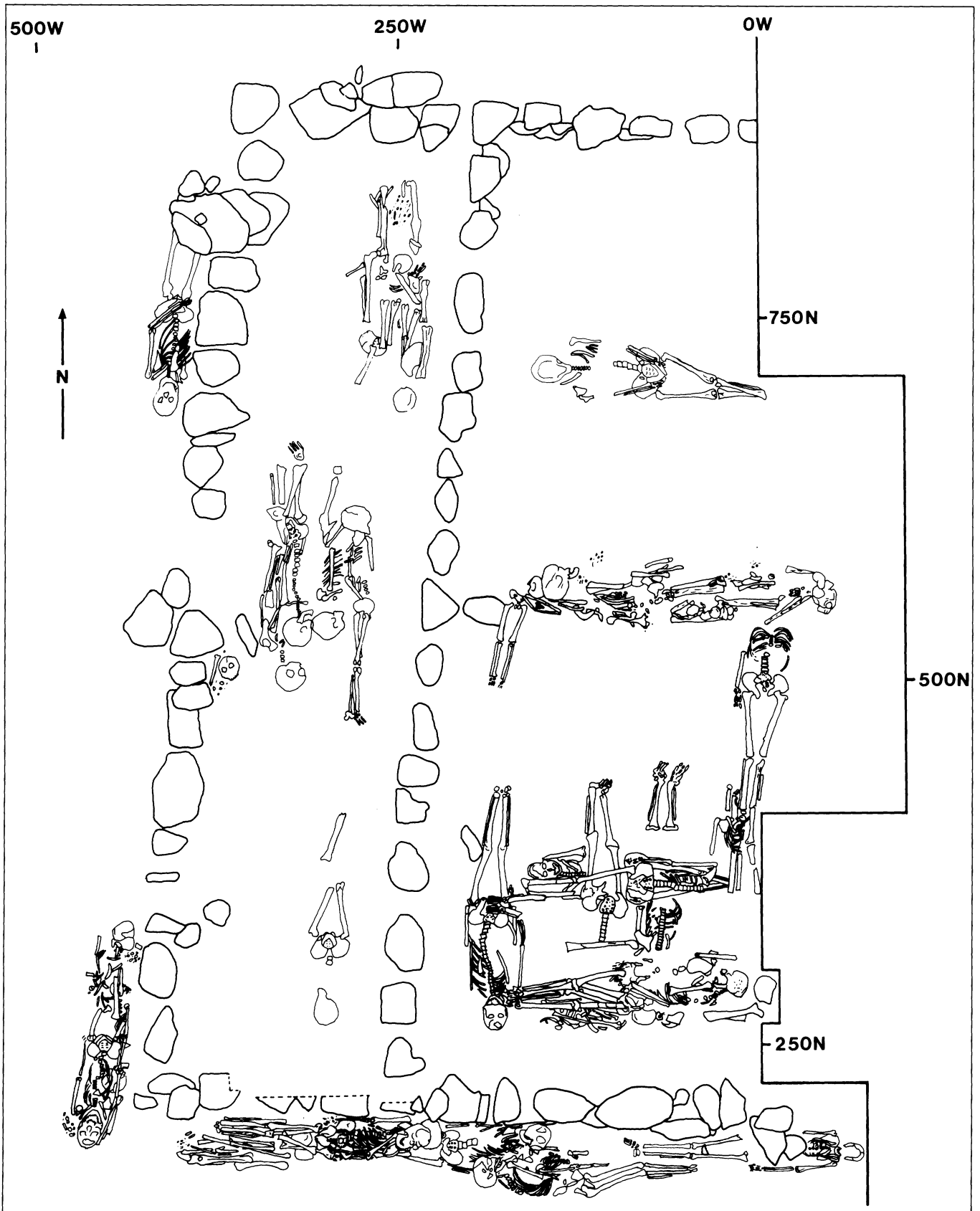


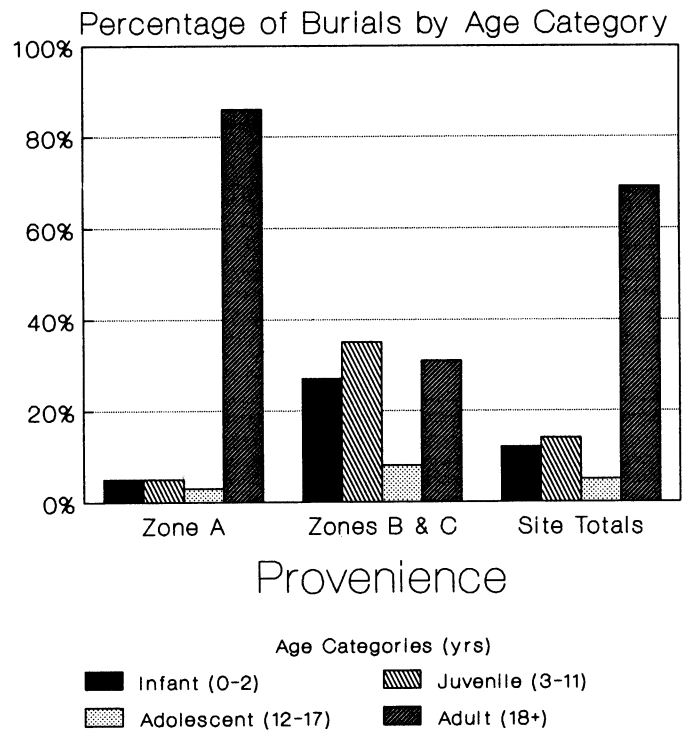
Figure 9. Plan of burials associated with St1 at Cerro de la Cruz (grid in centimeters).

comparison with household burial patterns documented elsewhere during the Formative. Data from the Middle and Late Formative in the Valley of Oaxaca demonstrate that one to five individuals are usually found in household burial grounds there (Drennan 1976: 247–249, 273–277; Drennan and Flannery 1983; Whalen 1981: 88–103; Winter 1972, 1986), although Drennan (1976: 129) reports as many as 10 individuals from a possible household-associated burial area at Fábrica San José.

Data from Ops. V and T can be used to conservatively estimate the rate of interment at St1. These excavations demonstrate that St1 went through five construction phases during the Late Formative (Joyce 1991a: 210–215). If the construction phases occurred at equal intervals and the structure was occupied for the entire period, then a new version of St1 would have been built about every 75 years. There were 41 adults buried underneath or alongside St1, and all of these were interred during the last two building phases. This yields a rate of one adult death every 3.7 years. Since a typical Late Formative household probably numbered no more than 10 people (e.g., Blanton 1978: 30), including adults and children, it is highly unlikely that a single household could have survived an adult mortality rate of this magnitude for very long.

A second concentration of burials in Zone A that was not directly associated with St1 was recovered from Op. U where six burials, including nine individuals, were found stacked one on top of another along a 2 m stretch just on the interior of the upper terrace wall (FIG. 2). The combined burials from Zone A yielded a total of 58 individuals and, surprisingly, none of the burials were accompanied by offerings. Burial activities in both St1 and Op. U apparently occurred over a period of several generations, as shown by frequent instances of later burials having disturbed earlier ones.

Figure 10 shows the distribution of age classes for Minizundo Phase burials at Cerro de la Cruz. Eighty-six percent of the burials in the Zone A building group were adults (50 individuals). The proportion of adult burials varies considerably from what would be expected from the general human mortality curve, where high infant mortality decreases through childhood and adolescence and then rises again through the adult years (Weiss 1973). The relatively high percentage of adult burials in the building group is borne out by comparison with the percentage of adults in several well-studied burial populations from nonurban prehistoric populations in North America, in which they range from 29% to 59% (see Storey 1985). Since the condition of skeletal material at Cerro de la Cruz was generally very good, it is unlikely that the adult bias



Number of Burials by Age Category

	Infant (0-2)	Juvenile (3-11)	Adolescent (12-17)	Adult (18+)
Zone A Burials	3	3	2	50
Other Burials	7	9	2	8
Site Totals	10	12	4	58

Figure 10. Age distribution of Late Formative burials at Cerro de la Cruz.

resulted from differential preservation. Burials from other areas of the site exhibited an age profile consistent with the general human mortality curve and the comparative data from other prehistoric societies (FIG. 10). The unusual age distribution, coupled with the high density of burials from the patio complex, and especially from St1, seems therefore to reflect specialized communal mortuary practices rather than household burial activities.

The age bias from Zone A at Cerro de la Cruz resembles the age distribution from the Early Formative cemetery at Tomaltepec in the Valley of Oaxaca (Whalen 1981: 50) and the grave-context (versus midden-context) burials from the Classic Period Tlajinga 33 Apartment compound at Teotihuacan in the Basin of Mexico (Storey 1985). The latter two samples apparently resulted from preferential

burial of higher-status individuals. In these examples, status-level could be inferred independently from burial location by the quality of associated grave goods relative to burials elsewhere at these sites; since status correlated with age, the samples were also age biased. In contrast, the apparent absence of offerings from burials in Zone A at Cerro de la Cruz suggests that status was not the factor responsible for the adult age bias. It is possible that status was reflected in burial location rather than the quality of offerings, although this would be an unusual pattern in prehispanic Mesoamerica (see Autry 1973; Rathje 1970; Storey 1985; Sugiyama 1989; Whalen 1981; Wilkinson and Norelli 1981).

Functionally, then, three types of structures appear to be represented in the Minizundo Phase architecture exposed at Cerro de la Cruz. St5, St6, St8, St9, St10, and St11 are interpreted to have been residences; St2, St3, St4, and St7 seem to have been storehouses; and St1 was most likely a public building involving communal ritual practices. The building group of Zone A exhibited all three of these building types, with St1 a public building; St5 a possible residence; and St2, St3, and St4 storehouses. The complex described for Zone A—relatively large structures (St1 and St5), communal adult burial ground, possible storehouses, drainage system, large hearth, and elaborate flagstone patio—was not replicated elsewhere within the excavated area at Cerro de la Cruz, although other areas of the site were not as extensively studied. While the possibility cannot be excluded that the Zone A building group was simply an elite residence, the mortuary data would seem to argue against this conclusion. Instead, the evidence suggests that at least part of the building group was a public area, probably for communal activities including the burial of certain non-elite adults, and rarely, children. St1 was the focus of burial activities, while the storehouses and large hearth in the patio may have been involved in other ceremonial activities such as feasting.

Intrasite Patterning and Social Complexity at Cerro de la Cruz

This section considers mortuary data, as well as spatial analyses of selected artifacts, architecture, and features, to examine social complexity at Cerro de la Cruz. Social complexity is addressed through an analysis of social identities (Braun 1985: 132–133; Joyce 1991a: 604–616; Rapoport 1976: 19; Schortman 1989). The concept of social identity has been used by archaeologists as a descriptive tool to infer some of the behavioral variability that is often lost when social organization and complexity are recon-

structed solely through ethnographic analogy. In this article, social identities are reconstructed along the lines suggested by previous theorists (Braun 1985: 132–133; McGuire 1983; Schortman 1989) except that the concept is anchored in a more general, actor-based approach to social change (Brumfiel 1992; McCay 1978; Orlove 1980; Vayda and McCay 1975). This approach assumes that social organization and complexity as well as other population-level phenomena (e.g., subsistence and settlement patterns) are the outcome of the behavioral strategies of individuals developed in the context of their natural and social environment. People pursue particular strategies to acquire resources, including information, for themselves and their close kin in competition with other people (for a detailed discussion see Joyce 1991a: 603–616). It is possible to reconstruct behavioral strategies because their effects are archaeologically visible, especially the effects of strategies adopted by many people (e.g., low-status farmers) or used by a few people who had a great impact on society (e.g., rulers). The concept of social identity defines both behavioral strategies and their relative success in terms of resource control.

Social identities consist of two types of parameters (Blau 1977; McGuire 1983): social roles which describe individual-level behavioral strategies and social statuses that describe the relative success of those strategies (Joyce 1991a: 269–281, 602–707). Social roles are nominal parameters that specify strategies used by people to control, acquire, store, and utilize both material resources and information. Social roles include behaviors defined by factors such as gender, occupation, kinship, ethnicity, and religion. For example, economic occupations define strategies for obtaining material resources in the empirical world (farming, craft production, etc.), while religious beliefs and practices can be considered strategies for acquiring resources with the aid of the supernatural world (e.g., petitioning deities for agricultural or human fertility, prevention of disease, life after death, etc.). Social status is a graduated parameter that provides a measure of an individual's ability to control material resources and information relative to other members of society. Social roles and statuses can covary, as when an occupation or lineage defines status, or they can be independent of one another (McGuire 1983). While archaeological data do not allow the delineation of all social identities of the past, they do permit access to the more visible, institutionalized, and widely shared ones such as occupations, ethnic affiliations, and wealth (Schortman 1989).

Variation in social identities provides a means for defining social complexity through estimates of heterogeneity and inequality (Blau 1977; Joyce 1991a: 270–271;

McGuire 1983). Heterogeneity is a measure of the relative frequencies of distinct social identities in a society. Generally, heterogeneity increases with the number and degree of independence of social roles and statuses. The development of craft and other types of economic specializations as well as the differentiation of administrative roles among political elites are examples of increases in heterogeneity. Inequality is a measure of status differentiation within society.

The analysis of social complexity at Cerro de la Cruz focuses on status and inequality, rather than social roles and heterogeneity. This emphasis is necessary because of the paucity of evidence for distinct social roles such as craft or ritual specialists, indicating a relatively low level of heterogeneity. That is, there appears to have been a high degree of overlap in the social roles of individuals living at Cerro de la Cruz during the Minizundo Phase. To the degree that evidence for heterogeneity exists, it seems to have correlated with status inequalities (see below). Inequality is further assessed by comparing residential patterns at Cerro de la Cruz to patterns from Late Formative sites in the Valley of Oaxaca, Mixteca Alta, and Cuicatlán Cañada.

Inequality in social status at Cerro de la Cruz is assessed using mortuary data as well as the spatial distribution of high-status markers. Mortuary data are used to infer inequality through the analysis of variation in the quantity and quality of burial offerings (Autry 1973; Chapman, Kinnes, and Randsborg 1981; Peebles and Kus 1977; Rathje 1970). The excavations at Cerro de la Cruz also provided data on spatial patterning of probable high-status markers such as prestige goods (e.g., imported ceramics, obsidian), high-status burials, caches, and relatively elaborate architecture. Concentrations of high-status markers in circumscribed areas are used to infer inequalities among site occupants.

The large burial sample from Cerro de la Cruz provided an excellent source of data to infer status inequalities through analysis of mortuary practices. Of the 84 skeletons dating to the Minizundo Phase, only 4 (5%) were accompanied by grave goods. Offerings from two of the burials were relatively modest. An adult female was buried with a coarse brownware bowl over her head, while another adult woman was buried with two black basalt axes. A more elaborate offering was the set of 45 carved marine shells (*Pleuroploca* spp. and *Olivella* spp.) found with an adult male. The apparent scarcity, and the workmanship, of these shells suggests that they were prestige items (Joyce 1991a: 259). Another elaborate offering consisted of a coarse brownware bowl left over the head of a juvenile

(gender indeterminate) along with 22 perforated dog canine teeth around the face and neck of the individual. The head of this individual was lying on the legs of another juvenile (gender indeterminate). This second individual was the only prone interment recovered for the Minizundo Phase. The arms of that person appeared to have been pulled behind his or her back and may have been bound. It is possible that the latter child was a sacrificial victim or attendant buried as an offering for the former.

It is somewhat difficult, however, to assess the quantity and quality of grave offerings at Cerro de la Cruz relative to Late Formative burials in other parts of Oaxaca. In other regions, status level usually seems to have been reflected by the number and quality of ceramic vessels accompanying burials (Autry 1973; Whalen 1981; Spencer 1982: 106–110). Late Formative burials in highland Oaxaca were accompanied by as many as 72 vessels (along with a more elaborate housing for the skeleton), as in the case of Tomb 43 from Monte Albán (Flannery and Marcus 1983b: 90). Imported shell also seems to have been a status marker, but usually co-occurred with pottery vessels; it is rare to find shell ornaments unaccompanied by ceramic offerings (Autry 1973). The 15 shell objects from Burial 2 at Llano Perdido (Spencer 1982: 106–110) seem to represent the maximum number recovered from a Late Formative burial in the interior of Oaxaca, and the same burial also contained 30 ceramic vessels as well as red and yellow pigments. Dog teeth and bone have not been reported as categories of burial offering for other regions of Oaxaca during the Late Formative. The low proportion of burials with offerings at Cerro de la Cruz is also unusual relative to patterns in other regions (Joyce 1991a: 274). Overall, the variation in quantity and quality of grave goods at Cerro de la Cruz suggests some inequalities in status, but on a more modest scale than in other nearby regions such as the Valley of Oaxaca, the Mixteca Alta, and the Cuicatlán Cañada.

The analysis of spatial patterning of probable high-status markers at Cerro de la Cruz also suggested some inequalities. Two areas of the site had unusual concentrations of high-status markers that might reflect social inequality of site occupants. The two areas were: 1) the area in and around St8 in Zones B and C; and 2) two midden deposits (N-F4, N-F7) separated by a thin fill layer (N-F6) west of St6 (FIG. 6). The analysis focused on the distribution of imported items (ceramics and obsidian), locally-made imitations of imported pottery, high-status burials, caches, and relatively elaborate architectural features.

One concentration of high-status markers was recog-

Table 1. Frequency of imported pottery and local imitations of imported pottery (pottery figures represent the number of rim sherds from probable imports/imitation imports as a percentage of the total rim sherd count). LTW = lower terrace wall.

Pottery	Fill covering LTW south of St8	Strata N-F4, N-F6, and N-F7	All other Minizundo Phase deposits
Imported	5.8	3.4	0.4
Imitations of imported	1.0	0.8	0.05

nized in and around St8. Based on its architectural style and the presence of domestic features (i.e., a hearth), St8 was interpreted as a residence. Interred beneath St8 were the site's only four known examples of Minizundo Phase burials containing grave goods, suggesting that these individuals had higher status than those from other parts of the site (see above). In addition, the LTW south of St8 was the tallest, thickest, and best constructed section of this wall exposed by the excavations. It is possible that the relative architectural elaboration of this part of the lower terrace wall was related to status display. A layer of fill that partially covered the exterior of this section of the lower terrace wall contained two dedicatory offerings (C1, C2), suggesting that construction activities in this area had some ritual significance (FIG. 3). C1 was a group of six basalt axes and a basalt adze. C2 consisted of a broken, coarse brownware jar that contained either ash or lime (analysis pending) as well as two manos, one hammerstone, and approximately 12 unworked stones.⁵ Fill layers that sequentially covered the lower terrace wall south of St8 contained relatively high concentrations of fancy imported pottery and local imitations of imported pottery (TABLE 1). Since the ceramics in the fill layer were in good condition and exhibited little evidence of erosion, the fill material probably originated from primary deposits nearby, perhaps associated with St8. These strata also yielded 16 obsidian artifacts which accounted for a density of 1.5 artifacts/cu m, as compared with 0.7 artifacts/cu m from all other non-midden contexts at the site. The concentrations of high-status markers in and around St8, coupled with the architectural evidence and presence of domestic features, suggest that St8 was a high-status residence.

The size and architectural sophistication of the building group in Zone A also suggest status inequality. The previously-described complex of relatively large structures (St1, St5), communal adult burial ground, storehouses (St2, St3, St4), drainage system (GE-F4), large hearth

(GE-F1), and elaborate flagstone patio was not replicated in the excavated area at Cerro de la Cruz. The spatial analysis of imported artifacts and imitation Valley of Oaxaca pottery also suggests a concentration of high-status markers associated with the Zone A building group. Since most of the floors of the structures in Zone A were eroded, few artifacts could be tied directly to the occupation in this area. There were, however, two Minizundo Phase middens discovered in Zone B in the area just below the upper terrace wall in Op. N. The midden deposits were probably formed by disposal of refuse from Zone A. The two midden deposits (N-F4, N-F7), as well as the thin fill layer that separated them (N-F6), contained concentrations of imported pottery and imitations of imported ceramics (TABLE 1).⁶ Unlike the finds near St8, Op. N yielded only a single obsidian flake.

Comparative data on residential patterning can also be used to infer the relative level of inequality at Cerro de la Cruz. Residential patterning in other parts of Oaxaca suggests that as inequality increased, elite residences, and presumably their occupants, were increasingly segregated from lower-status residences (Spencer 1982; Whalen 1981, 1988a; Winter 1974, 1986). The size and architectural sophistication of residences has also been shown elsewhere to correlate with status inequalities. This relationship allows for inequality at Cerro de la Cruz to be assessed relative to that in other regions of Late Formative Oaxaca. In addition, associations of residences with special-purpose structures or features (e.g., public buildings, kilns) might suggest types of distinctive social roles such as religious specialists or potters, providing data on heterogeneity.

Residential patterning has been studied at only a few sites in Late Formative Oaxaca; these include Monte Al-

5. Only one other possible dedicatory offering (a coarse brownware jar) was recovered at the site (C3), and it was found in a similar fill context 2 m east of C2 (FIG. 3).

6. A total of 62 rim sherds from probable imports was recovered from Minizundo Phase deposits at Cerro de la Cruz (out of a total rim sherd count of 4654 from Minizundo Phase deposits). The two contexts with concentrations of high-status markers (the area in and around St8 and the area west of St6) contained 47 (76%) of these sherds. A total of 11 rim sherds from fine brownware imitations of Valley of Oaxaca graywares were recovered at the site and 9 of these were from the two contexts with concentrations of high-status markers.

bán (Winter 1974), Tomaltepec (Whalen 1981, 1988a, 1988b), and Tierras Largas (Winter 1972) in the Valley of Oaxaca; Huamelulpan (Gaxiola 1984), Monte Negro (Flannery 1983a; Winter 1986), and Yucuita (Robles 1981; Winter 1986) in the Mixteca Alta; and Llano Perdido in the Cuicatlán Cañada (Spencer 1982). Residential patterns in these regions can be grouped into one of two types that seem to be related to community integration and social complexity.

In the Valley of Oaxaca and the Mixteca Alta, elite residences were often set off from low-status households and located closer to public buildings than were other households. In some instances elite residences were directly connected to public buildings by private passageways separate from the main, public entrance (Flannery 1983a: 101; Winter 1986: 342–345). This suggests that elites had a specialized role in the ritual or other civic activities of the community. The power and wealth of the elite appear to have resulted at least in part from their role as religious practitioners (Flannery and Marcus 1976: 382, 1983a; Spencer 1982: 142; Spores 1983a, 1983b). Mortuary rituals, however, appear to have been family-oriented, as people were usually buried in their residential area, often under house floors (Winter 1974: 985; Whalen 1988a, 1988b). Evidence from Yucuita indicates that the community consisted of a series of corporate groups, each containing an elite residence built adjacent to a public structure and surrounded by numerous lower-status households (Winter 1986: 342–345). It is not clear, however, whether this pattern occurred at other sites in either the Mixteca Alta or the Valley of Oaxaca.

Excavations at Llano Perdido in the Cuicatlán Cañada produced a very different picture of community organization (Spencer 1982). As discussed above, at Llano Perdido residences were organized into densely packed compounds separated from one another by at least 25–35 m of unoccupied space. Spencer (1982: 129) found evidence for at least four of these compounds at the site. The most completely excavated compound was from Area A/B, and included 18 densely packed structures located around three patios (the function of a fourth patio group in Area A/B, the East group, could not be determined; see FIG. 8). Two of the patios (South and Southwest) were surrounded by several houses as well as one or two platforms. The platforms seem to have pertained to ritual activities of groups occupying the patio complexes. Associated artifacts and a tomb with elaborate offerings suggested that the Southwest patio complex was occupied by a higher-status individual, possibly a lineage or village chief. The third patio (Northeast) was surrounded entirely by platforms and that, along with artifactual evidence, suggested

that it may have been the focus of ceremonial activities for the whole community (Spencer 1982: 141–143).

Spencer (1982: 142) suggests that high-status individuals may have played a somewhat greater role in communal rituals since the Southwest patio group was the only one directly connected to the Northeast group, the focus of communal ritual. Area A/B, however, contained low-status and high-status households as well as the ceremonial patio group. There was no segregation of high-status residences or ceremonial areas from low-status houses. Only two Late Formative burials were found in residential areas at Llano Perdido, and both of these appear to have been high-status, suggesting some differences in mortuary treatment according to status (Spencer 1982: 131). Spencer (1982: 131) suggests that the rest of the community may have been buried in a cemetery outside the residential compounds (see Whalen 1981).

The excavations at Cerro de la Cruz have provided a picture of residential patterning through the identification of four probable low-status residences (St6, St9, St10, St11), two possible high-status residences (St5, St8), and one area that appears to have functioned as a public ceremonial locus (Zone A building group). Within the available sample of Late Formative analogs, residential patterning at Cerro de la Cruz most closely resembled the pattern at Llano Perdido in the Cuicatlán Cañada (Spencer 1982). The probable high-status residences and public ceremonial areas at both sites were apparently well integrated into the community as a whole; there was no segregation of higher-status houses from lower-status ones (see Cliff 1988). If Spencer (1982: 131) is correct in his hypothesis concerning mortuary practices at Llano Perdido, then both regions likely contained communal burial grounds, though relative locations would have been different. Communal burial grounds, as opposed to the more atomized, household pattern in the Valley of Oaxaca and the Mixteca Alta, may suggest stronger intracommunity solidarity (see Whalen 1981). It is likely, however, that the excavations at Cerro de la Cruz have not sampled the whole social range at the site.

Inequalities in status at Cerro de la Cruz also seem to have largely determined heterogeneity in social roles. The only evidence for distinct social roles seems to be linked largely to status differences. The association of imported lithics as well as imported ceramics, or imitations of them, with other status markers suggests that elites may have had a specialized role in importing and redistributing prestige goods. If St5 was a high-status residence, then its close association with the patio and St1 would suggest that elites may have had more involvement and control over ritual practices than non-elites. This involvement

would resemble that inferred by Spencer (1982) for elites at Llano Perdido.

The following section examines the data from Cerro de la Cruz with respect to a set of archaeological expectations that have been proposed for the chiefdom (Peebles and Kus 1977; Spencer 1982), which appears to have been the dominant form of sociopolitical organization in Late Formative Oaxaca.

Late Formative Chiefdoms on the Oaxaca Coast

The evidence for status inequalities and heterogeneity of social roles can be used to infer the type of social organization at Cerro de la Cruz in more traditional anthropological terms. Throughout Oaxaca, Late Formative social organization seems to have been within the range of variation observed for modern societies usually classified as chiefdoms (Flannery and Marcus 1983a; Joyce 1991a; Spencer 1982; Zeitlin 1979). Chiefdoms are regionally organized polities where high status is linked to a generalized leadership role usually involving social, political, and religious functions (Earle 1978, 1987; Fried 1967; Goldman 1970; Helms 1979; Sahlins 1958; Service 1971). Heterogeneity is relatively low in chiefdoms and most markedly associated with status inequality, which is often considerable. The social role of elites is institutionalized and ascribed along kinship (lineage) lines. In chiefdoms, lineages are ranked with the chief's being the senior line. Chiefs may exert power over a single community or several communities within a region depending on their position in the status hierarchy. Chiefly power is intimately tied to the ritual belief system, especially involving ritual redistribution. Redistribution in chiefdoms generally involves the transfer and concentration of subsistence goods from lower-status producers upward through the status hierarchy. Prestige goods are exchanged primarily among elites, with higher-ranking chiefs having preferential access to these items. Each level in a status hierarchy serves as a node for the concentration and redistribution of goods so that elites accumulate the greatest wealth and the most elaborate prestige items, although some exotics usually filter down to non-elites.

Peebles and Kus (1977: 431–432) and Spencer (1982: 58–60) have outlined a series of archaeological expectations for chiefdoms which can be examined against the full range of data from Cerro de la Cruz. At the level of individual sites these expectations are as follows. 1) There should be evidence for considerable inequalities in social status, corresponding to the ascribed differences between the lineages of chiefs and commoners. 2) There should be evidence for organized productive activities above the level of the household group. In examples discussed by Peebles

and Kus (1977: 432), these activities often involved construction of monuments and part-time craft specialization. Evidence should not be present for complete community-wide productive specialization, however. Instead, there should be evidence of considerable overlap in the craft and productive activities pursued by individuals and households; that is, heterogeneity was relatively low. 3) Sites should be located in areas that provided a high degree of local subsistence efficiency, because individual communities were generally self-sufficient. 4) Since high-status individuals should have had greater control over prestige goods, independent evidence for high-status should be associated with prestige goods. 5) There should be evidence that the highest-ranking members of a community were more closely associated with ritual structures and paraphernalia. 6) Since ritual in chiefdoms involves redistribution of both productive and prestige items, there should be evidence that chiefs had access to storage facilities with relatively large capacities to house goods prior to their redistribution. The data from Cerro de la Cruz are consistent with expectations for a chiefdom type of social organization and will be reviewed below in that regard.

The mortuary data and spatial analysis of status markers indicate that inequalities in social status were present at Cerro de la Cruz during the Late Formative (expectation 1). The degree of inequality, however, does not appear to have been very pronounced and may not have been sufficient to classify social organization at the site as that of a chiefdom. The data on social inequality should be considered within a regional context, however. During the Late Formative Cerro de la Cruz was a small, second-order site within the two-tiered settlement hierarchy of the region (Joyce 1991a, 1991b). Elites from a lower-order site like Cerro de la Cruz probably would have had only local authority, while chiefs at first-order sites would have exerted authority over a number of communities (Goldman 1970; Sahlins 1958). Therefore, it should not be surprising to find evidence for a relatively low level of inequality at a small site like Cerro de la Cruz. It should also be noted that the presence of a settlement hierarchy is a regional-scale characteristic of chiefdoms (Peebles and Kus 1977: 432). Preliminary settlement data suggest that one of the first-order sites, Charco Redondo, may have reached 100 ha (see above), which would have made it one of the largest sites in Oaxaca at this time. In 1988, excavations were also carried out at the site of Río Viejo which appears to have been another first-order site (Joyce 1991a, 1991b). Data from Río Viejo suggest that site occupants may have had access to greater quantities of prestige goods than the inhabitants of Cerro de la Cruz,

which would be consistent with the former having been a chiefly center (Joyce 1991: 401).

While evidence from Cerro de la Cruz suggests that social inequality was not great, the mortuary data meet the criteria for ascribed social ranking proposed by Peebles and Kus (1977: 431). That is, the burials at Cerro de la Cruz can be ordered according to the quality of offerings and energy expenditure independent of age and gender. This is presumably a reflection of the ascriptive qualities of an individual's genealogy related to rank. Social ranking appears to have been ascribed to particular lineages as reflected in variable mortuary rituals. At Cerro de la Cruz, membership in a low-status lineage seems to be reflected in the absence of offerings regardless of age and gender. High status was represented by interment in a probable residential burial ground, as well as by the occasional presence of burial offerings.

Within status categories, however, variables of mortuary ritual should be correlated with gender and age, reflecting gender differences in mortuary treatment as well as achievements through life that affected social rank (Peebles and Kus 1977: 431). Among low-status burials at Cerro de la Cruz, achievement may be reflected in interment in the communal burial ground in Zone A, since it consisted overwhelmingly of adults. Some younger adults and children seem to have been excluded from communal burial and instead were interred in and around residences. Gender was not correlated with variables of mortuary ritual among low-status individuals. While the data for high-status burials are somewhat unclear, the most elaborate offering was the set of 45 carved shells found with an adult male burial. A conch shell offering was also found with a Late Formative adult male burial at the site of Río Viejo (Joyce 1991a: 780). Offerings accompanying two adult females at Cerro de la Cruz consisted of an undecorated bowl and two basalt axes, respectively. The association of shell offerings with males and more utilitarian objects with females may reflect differences in mortuary treatment as well as gender roles during life. In addition, of the 18 individuals interred in and around St8, grave goods accompanied three of the five adults but only one of 13 nonadults. These data suggest that life achievement, as well as lineage affiliation, had a significant effect on social status.

The data from Cerro de la Cruz suggest that heterogeneity in social roles was low and include no evidence for community-wide craft or productive specialization (expectation 2). The only possible evidence for organized productive activities above the household level was the construction of the residential terraces and the granite flagstone patio, which would have required considerable

inputs of labor, as well as the evidence for communal rituals.

Cerro de la Cruz was located in an area that would have provided a high degree of local subsistence efficiency (expectation 3). The site was located on a ridge immediately adjacent to the agriculturally productive floodplain. In addition, the site was located within a few meters of an abandoned channel/oxbow pond that was probably active during the Late Formative (Joyce 1991a: 493–494). If either the river or a pond were located next to the site, people would have had easy access to the fish and bird populations found in these habitats.

There is also evidence that elites at Cerro de la Cruz had preferential access to prestige goods, ritual items, and storage facilities (expectations 4–6). The concentration of imported lithics plus real and imitation imported pottery near St8, a probable high-status residence, suggests that elites had preferential access and control over prestige goods. If St5 was an elite residence, then its proximity to the patio and to St1 would suggest a close association with ritual structures. The three storehouses in the building group (St2, St3, St4) also suggest that the occupants of St5 had access to relatively large-volume storage facilities.

It is possible that the Zone A building group represents the ritual locus of a lineage, clan, or the community as a whole. St5 then may have been the residence of the lineage, clan, or community headman, who would have directed ceremonies in the building group, including mortuary rituals and “redistributive” feasts. A similar association of high-status residences with a communal ceremonial area has been inferred at Llano Perdido in the Cuicatlán Cañada (Spencer 1982: 141–143). The prestige goods found in the midden deposits in Op. N may have been controlled by the elite residents of St5, stored in St2, St3, and St4 and redistributed during ceremonies in the building group. It is important, however, to point out that the data from Cerro de la Cruz probably do not represent the entire original social hierarchy. Other areas of the site may contain residences and ceremonial areas from levels of the hierarchy different from the one represented in Zone A.

Conclusions

Excavations at Cerro de la Cruz have provided a picture of Late Formative residential patterning and social complexity on the Oaxaca coast. The data from Cerro de la Cruz suggest that social organization was of a chiefdom type. The comparative mortuary and residential data suggest, however, that inequality, heterogeneity, and therefore social complexity were relatively low compared to other

contemporaneous chiefdoms in Oaxaca. If the settlement hierarchy corresponded to levels on the chiefly status hierarchy, than the lower Río Verde would have been the locus of one or more small-scale, ranked chiefdoms. Given the similarities in residential patterning and mortuary practices discussed above, social complexity in the lower Río Verde may have been more similar to that of the Cuicatlán Cañada than of other regions cited. Additional research is needed at first-order sites, however, to examine the upper end of the status hierarchy before a chiefdom form of social organization can be definitively established for the region at this time.

Because the Late Formative is the earliest period for which there is evidence at present of complex society in the lower Río Verde Valley, a relatively low level of complexity is understandable (Joyce 1991a, 1991b). The comparison of social complexity at Cerro de la Cruz to that at sites in the Valley of Oaxaca, Mixteca Alta, and Cuicatlán Cañada suggests that all of these areas supported chiefdoms during the Late Formative, although they varied considerably in the degree of status inequality. These data further indicate that the Late Formative was a dynamic period, with societies in some regions approaching statehood, while areas such as the lower Río Verde Valley experienced only the initial development of complex society with the emergence of small-scale chiefdoms.

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