

CHARACTERISTICS AND SIGNIFICANCE OF TAPIA WALLS AND THE MOCHICA PRESENCE AT SANTA ROSA DE PUCALÁ IN THE MID-LAMBAYEQUE VALLEY

Edgar Bracamonte

Museo Tumbas Reales de Sipán

INTRODUCTION

From the start of research on the Mochica culture, archaeologists have identified various substances used to make large buildings and simple dwellings. It is well-known that adobe was the principal construction material. Nevertheless, stones set in mud, as well as wattle and daub (*quincha*) were used in building the houses of the non-elite (Uceda 2004:152). Studies have identified the morphological characteristics and the physical-chemical compositions of Mochica adobes (Campana 2000; Franco *et al.* 1994; McClelland 1986), establishing, in most cases, a seriation based on morphological changes, dimensions, and manufacturing techniques. The oldest adobes are in the form of parallelepipeds and were manufactured using cane molds which have left impressions on their sides. Parallelepiped adobes without cane mold impressions are from the Middle and Late Phases of Mochica society and are different from the adobes of the Middle Horizon, the Lambayeque culture, and the Chimú (Campana 2000; Donnan 1990; Shimada 1990, 1995:27; Tsai 2012). Studies of Mochica architecture have determined that *tapia*¹ was a material sometimes used in elite

buildings. Its presence is due to the influence of southern societies such as Wari and the Middle Horizon states of the central coast (Campana 2000; Chapdelaine and Pimentel 2002).

In this article I present data from a ceremonial architectural complex made of *tapia* walls, discovered at Santa Rosa de Pucalá in the Lambayeque Valley, which displays singular spaces, and which was carefully sealed with prepared clay. The presence of this type of architecture does not indicate the absence of adobe as a Mochica construction material at Santa Rosa. On the contrary, as is logical, the large quantity of construction material known to have been used in the building of platforms indicates that both materials coexisted and were used under different circumstances, possibly by different elites who controlled Santa Rosa de Pucalá. Its presence suggests questions about the existence of non-Mochica elite groups that may have developed in a form parallel to the Mochica of Sipán. We are also forced to reexamine the presence of foreign groups in the Lambayeque Valley during the Late Mochica Phase. The *tapia* walls of Santa Rosa de Pucalá and their singular construction characteristics shed light on an interesting research problem, directed at the study of ethnicity, territoriality, cultural syncretism, and, above all, cause us to re-evaluate the role that Sipán played, and that of its

¹ *Tapia* constructions are “individual portions of wall which at one time were made with earth tamped into a form” (Cada uno de los trozos de pared que de una vez se hacen con tierra apisonada dentro de una horma; Campana 2000:143). Both the mold with which the walls are made, and the walls themselves may be called “*tapiales*” in Spanish. The *Diccionario de la Real Academia de la Lengua Española* considers a “*tapial*” to be not only

the mold, but also the wall made with this technique; that is to say, “*tapial*” is considered to be a synonym of “*tapia*”.

splendid elite based only three kilometers from Santa Rosa de Pucalá.

MOCHICA ARCHITECTURE IN THE LAMBAYEQUE AND LA LECHE VALLEYS

Pampa Grande

To understand the role of the *tapia* architectural complexes discovered at Santa Rosa de Pucalá and their relation to the Mochica construction traditions of Lambayeque, it is necessary to review the principal studies of Mochica architectural techniques, materials, and construction styles in that valley. The first systematic work that tackled building materials, including their manufacturing and construction techniques, pertains to Pampa Grande (Shimada 1976:525-526, 1978). Izumi and Melody Shimada (1981) produced a complete description of this complex, making a clear distinction between Mochica popular architecture and that of the elite, as well as among the different construction materials employed. For her part, Martha Anders (1981) studied and characterized deposits found in the lower sectors of the archaeological complex. Jonathan Haas (1985) completed a detailed description of the construction techniques and architectural components of the Huaca Grande or Huaca Fortaleza of Pampa Grande, finding large enclosures of fill with parallelepiped adobes placed as runners and headers. Huaca Grande was constructed in only two phases, on a foundation of large terraces or platforms either superimposed or complementary, on top of which are small platforms and room compounds decorated with polychrome mural paintings, and with access via ramps.

The descriptions and architectural classifications made by the research team of the Royal Ontario Museum Lambayeque Project in Pampa Grande allows us to propose a preliminary distinction between Mochica V construction

materials (as they define them), for both popular and elite constructions. The most important sector is called the civic-ceremonial sector and consists of the two principal huacas, the residential complexes of the elite, and production areas. Quebradas separate this sector from the South Piedmont where it is believed that the common people lived (Figures 1 and 2; Shimada 1994).

The archaeological compounds in the lower part of the complex are made principally of ordinary masonry. In some cases we can identify adobe walls. Their rooms maintain the same level while following the topography of the ground, and their spaces show many traces of use and wear which indicate their functions as residences and storerooms.

The sector called the South Piedmont was also excavated by researchers from the Pontificia Universidad Católica del Perú (Pontifical Catholic University of Peru, PUCP) and the Brüning Museum who identified domestic areas and residential compounds. Concerning the former, the PUCP/Brüning researchers indicate that:

The architecture of the South Piedmont consists principally of small agglutinated rooms made of small-to-medium field-stones. The domestic compound excavated during this season was made by first constructing long exterior walls of medium-to-large stones and a few long dividing walls consisting of stones of similar size. The small internal rooms were built later by adding walls made of small field stones set in a sandy clay mortar (Wester *et al.* 2006:73).²

² “La arquitectura del Piedemonte Sur consiste principalmente de pequeños cuartos aglutinados contruidos de piedras del campo de pequeñas a medianas. El compuesto doméstico excavado en esta temporada fue construido levantando primero largas paredes exteriores hechas de piedras medianas a grandes y unas pocas paredes divisoras

In relation to the residential compounds they state:

They include areas with benches, small storage areas, a hearth, grinding stones, etc. which leads us to deduce their domestic character. These areas show an orthogonal structure and their arrangement evinces an architectural management or planning of urban character. Articulating elements such as large avenues and corridors which open into large open spaces are present in the plan (at least in the case of CR31). These were functioning as organizing elements. This plan is quite similar to that of the Urban Nucleus of the Huacas de Moche, with notable differences indicated by the topography, as well as in its building elements, and differences in the character of the site (*ibid.*: 76).³

Sipán

Since 1987, in Sipán, archaeological research has been oriented towards an understanding of the funerary pattern, characterization of the elites, their complex organizational systems, and metallurgical production technolo-

gies. This allows us to understand the differences between sacred architecture and domestic constructions with more clarity, considering not only the types of construction materials used, but also location and architectural details (Alva 1994, 2004, 2008; Meneses and Chero 2004).

Research undertaken since 2007 in Sipán (Chero 2008, 2009, 2010, 2012) allows us to characterize Mochica architecture to an even greater degree. Up to the present only parallelepiped adobes have been identified as construction material at Sipán. Structures that are religious or political in character and which were under the control of the elites are, as is typical of the Mochica tradition of the north coast, large truncated pyramids of great volume, formed by the superposition of platforms which, at their apogee, displayed smooth façades without staircases, as at Huaca de la Luna or El Brujo. An important aspect of the great truncated pyramids of Sipán is that, in their declining phase, buttresses were constructed in various spaces of the two principal constructions at the site (Figure 3) with the intention of refurbishing them and controlling collapses caused by the major pluvial events documented at Sipán around 550 A.D.

Luis Chero recorded important remains of corridors decorated with mural paintings on the Funeral Platform at Sipán (2010, 2012, 2013). One can discern geometric figures. He also found staircases that communicate with the corridors and lead to small altar-like platforms (Figure 4). It is necessary to emphasize the discovery of architectural compounds in Patio 1, between the Funerary Platform and the ceremonial Pyramid, that are made of parallelepiped adobes. Here one can discern rooms connected by corridors, benches, small, altar-like platforms, and passageways that separate the various architectural complexes (Figure 5).

largas con piedras de tamaño similar, los pequeño cuartos internos fueron luego construidos añadiendo paredes de pequeñas piedras del campo unidas con argamasa de arcilla arenosa.”

³ “Cuentan con ambientes que presentan banquetas, pequeñas depósitos, un fogón, batanes, etc. lo que nos lleva a deducir su carácter doméstico. Dichos ambientes presentan estructura ortogonal y su disposición evidencia un manejo o planeamiento arquitectónico de carácter urbano. En su trazo están presentes elementos articuladores como grandes callejones y corredores, los cuales desembocan en amplios espacios libres (al menos para el caso del CR31) que estarían funcionando como elemento organizador. Este planeamiento es bastante similar al del Núcleo Urbano de las Huacas de Moche, con notables diferencias marcadas por la topografía así como diferencias en sus elementos constructivos y diferencias en el carácter del sitio.”

El Triunfo and El Chorro

Other evidence of Mochica buildings in the Lambayeque Valley has been found at El Triunfo (Tumán District). Here elaborate platforms with adobes that show clear impressions of cane molds have been observed. These belong to the Early Phase (Bracamonte *et al.* 2006). Evidence of this Mochica phase has also been noted at the El Chorro archaeological complex in the Pomalca District. Here there are rooms made of parallelepiped adobes which show the impressions of cane molds (Figure 6; Alva and Bracamonte 2010).

As far as one can tell up to now, Mochica architecture in the Lambayeque Valley exhibits typical characteristics in which parallelepiped adobes are the only construction element employed by the elite for their ritual buildings, with the exception of a compound of Late Mochica Phase stone platforms in the political-administrative pyramid at Sipán which apparently had a functional character.⁴ Stone was used in the latest Mochica times for the construction of domestic areas and residential compounds like those at Pampa Grande and in Sipán's Sector II (Figure 7; Bracamonte 2008).

La Leche Valley

The La Leche Valley also has Mochica architecture and possibly non-Mochica architecture of the Early Intermediate Period with singular characteristics, in addition to important settlements of the Middle Horizon that are outstanding because of their mural art. Izumi Shimada and Adriana Maguiña (1994) have reported important architectural evidence from

the middle La Leche Valley, especially at Pardones–Huaca Letrada where the principal mound is flanked on both the east and the west by platform mounds that are smaller, but, nevertheless, of large volume. These mounds were made with tapia which enclose loose fill, as well as with relatively small, rectangular tabular adobes with cane mold marks, and with worked stone masonry. It is interesting to note that Huaca Letrada is the only Mochica settlement known at present to exhibit tapia used as a construction material. It appears to correspond to the earliest phases of this culture and as Shimada and Maguiña point out, it may be related to the Early Gallinazo tradition as reported from the Virú Valley (Strong and Evans 1952).

In the La Leche Valley, settlements with adobe architecture have also been identified. Their construction characteristics bring Mochica patterns to mind, most significantly pictorial decorations with clear Mochica icons, but with stylistic characteristics that appear to correspond to the Middle Horizon, particularly with marked Wari influence, as suggested by Duccio Bonavia (1985:100-101). Huaca Pintada de Íllimo (Schaedel 1978), Huaca Mayanga (Donnan 1972), and Huaca Bandera de Pacora (Curo 2014; Narváez 2011) are examples of this type of settlement (Figure 8).

HUACA SANTA ROSA DE PUCALÁ AND PLAIN 2 (PLANICIE 2)*The archaeological monument*

Huaca Santa Rosa de Pucalá is in the extreme lower Lambayeque Valley (Figure 9). It has a north-south axis and stands on isolated rocky promontories and foothills that mark the beginning of the northern spurs of the Andes. The archaeological monument is 3.45 kilometers to the northeast of Huaca Rajada-Sipán and 4.08 kilometers southwest of Cerro Pátapo. It is

⁴ At Sipán, the stone platform was constructed to level the surface of adobes that had been highly eroded by pluvial events that made the surface of the political-administrative pyramid unsuitable for use. This construction corresponds to the beginning of the Late Phases, between approximately A.D. 500 and 650.

in the District of Pucalá in Chiclayo Province, Lambayeque Region. This architectural complex was built between A.D. 300 and 650.

Archaeological excavations made in this important prehispanic site were part of a research program in the Lambayeque Valley that sought to contextualize ceramic material of several Middle Horizon styles which had been identified in surface survey between 2006 and 2008 (Bracamonte *et al.* 2006; Pasapera 2008).

We have defined a preliminary occupational sequence for Huaca Santa Rosa based on ceramics and on stratigraphy and fill contents. Occupation was continuous from the Early Horizon until the Late Horizon (Figure 10; Bracamonte 2011, 2012a). The importance of the monument was indicated by the intensive and extensive use of the area, producing a perfectly stratified sequence in which the early occupations were only evident in *huaquero* pits more than eight meters deep. The continued use of space throughout the occupational history of the site is an indicator of its importance and the role it must have fulfilled in the socio-cultural development of the valley. In addition, our excavations uncovered significant components of Mochica, Lambayeque, Chimú, and Inca occupations with ritual elements, and the occupation by Santa Rosa of a governing class as determined by the presence of temples, altars, rooms decorated with mural paintings, and tombs with interesting grave goods, including polychrome textiles, camelid offerings, and wooden objects.

Plain 2 (La Planicie 2)

Huaca Santa Rosa de Pucalá is an archaeological complex consisting of three sectors differentiated by the concentration of pyramidal mounds, platforms, and mounds without architecture (Figure 11). Sector I, called the Monumental Area, is at the extreme east of this complex and is composed of three principal

huacas, two platforms, and four flat areas or “plains” (Figure 12). Sector II is on the north side of the complex and includes the concentration of three mounds composed of small adobe platforms abutting artificial elevations without architecture. Sector III, at the southwest of the complex, consists of four artificial mounds configured in the same way as those recorded in Sector II.

Plain 2 is found in Sector I, to the east of the central pyramid, and north of Platform E1. Today it is occupied by some corrals and houses abandoned by the population of the present Santa Rosa community (Centro Poblado de Santa Rosa). It has a length of seventy meters along its east-west axis and eighty-five meters along its north-south axis (Figure 13).

Excavation of Unit 11

The archaeological excavation in Plain 2 had the goal of understanding the occupational sequence of this area and its relationship with Plain 1. There we discovered a large number of Chimú and Lambayeque tombs surmounted by enclosures, apparently domestic in character, and early in the temporal sequence of the site. These enclosures were used for rituals, probably related to ancestors.

In Unit 11 six layers were excavated within an area of eighty-eight square meters. Excavation began after the removal of the surface layer. The first layer showed evidence of disturbance, especially in the western side, because of the presence of the remains of a modern pigpen. In spite of this, some traces of architecture pertaining to the Middle and Late Lambayeque occupations were identified.

Below this first identified occupation was Layer 2, which also showed evidence of disturbance by modern human activities. Here six walls were identified, two in the northern part of

the unit and three on the east side. This layer corresponds to a Middle Horizon 2 occupation and evidence recovered in excavations tells us that it was an area of temporary use with rooms for rituals like secondary human burials (Tombs 21 and 22) and camelid offerings.

By totally removing Layer 2 the walls were completely exposed, and Layer 3 appeared across the entire unit. In this layer new rooms were identified where eleven camelid burials were placed. In addition, Layer 3 was disturbed by the contents of the two tombs placed in Layer 2 (Figure 14). This third layer represents a new occupation related to the end of Middle Horizon 1, in terms of the associated ceramic material. It is important to emphasize that all the architecture found shows strong signs of pluvial erosion and layers of sediment.

Upon the removal of Layer 3 it was possible to discern small layers of sediment associated with a new phase of occupation characterized by adobe walls that formed parts of rooms of different forms and dimensions, associated with floors of yellowish clay of considerable thickness, that served to stabilize layers of loose fill. In Layer 4 a hearth with traces of burning was identified, indicating important ritual events with incineration of products. Associated ceramics indicate that this pertains to a Middle Horizon 1 occupation where Middle Cajamarca pottery, Late Mochica domestic wares, and Late Mochica fineline ceramics (San José de Moro style and possible local styles) stood out.

Removal of Layer 4 permitted the exposure of Layers 5 and 6. Layer 5 occupied the central part of the unit, extending from the northeast side, having been formed by the concentrated and intense burning of some type of material, to judge from its composition, the concentration of ground carbon, and the presence of ashes. Layer 6 is complex. It contains deposits of Late Mochica ceramics mixed with Middle Mochica,

Gallinazo, and Cupisnique pottery (Figures 15 and 16). This layer covered tapia constructions and, in some cases, was mixed with the fill that sealed these architectural compounds (Layer 7).

Finally, the excavation terminated with the discovery of the tapia architectural compounds whose fill (Layer 7) on a base of lumpy clay revealed fifteen post impressions associated with six hearths (Figure 17).

THE TAPIA STRUCTURES OF SANTA ROSA DE PUCALÁ

At Huaca Santa Rosa de Pucalá we discovered two areas with architecture made of tapia. The first was found on Plain 2 and was uncovered during excavations of Unit 11, while the second was located in a *huaquero* pit in the lower platform of the South Huaca, where large tapia walls that retained fill were identified (Figure 18). Associated with this wall, in another *huaquero* pit, three sets of Late Mochica miniature ceramic cántaros, commonly called *crisoles* (crucibles), were found (Figure 19).

In this article I emphasize the results of preliminary analysis of stratigraphy, architecture, spacial distribution, and associations of the tapia ceremonial architectural compound found in Plain 2 of the Santa Rosa de Pucalá archaeological complex.

The tapia ceremonial architectural compound

The tapia ceremonial architecture compound has singular characteristics and was discovered stratigraphically three levels below Tomb 21 (Figure 20), a funerary context with Middle Horizon 2 ceramics (Bracamonte 2012b). It is a group of rooms and platforms connected by sunken corridors with staircases. These elements, in their totality, form spaces with restricted access, that clearly indicate the special functions the compound fulfilled (Figure

21). At present we maintain the preliminary hypothesis that this represents a temple or ceremonial compound of great importance within the occupational sequence of Santa Rosa de Pucalá, as we will see below.

The architectural structure required a great commitment and labor force to build, using *tapia* (Figure 22). The walls that delimit each of the spaces were made with fine-textured to lumpy, light beige clay. Their dimensions vary according to their function, measuring between 0.23 and 0.50 meters in width. The faces had been plastered with a fine layer of clay (twenty to thirty millimeters), with a few exceptions. This suggests that these elements were added as part of a second phase or stage of remodeling or construction. The walls are associated with a floor which covers, in an irregular manner, the whole structure. The floor was made with a fine clay which is stained brown in places, as if it has been oxidized. It is necessary to stress that the platforms also exhibit floors, but in this case they do not remain well preserved, because of intrusions and post impressions in the structures, as well as pluvial erosion. The fill that seals the whole architectural compound is composed of pure clay material with a lumpy texture. The color varies from dark beige to light beige, or yellow, in some cases. All the fill together constitutes Layer 7. Up to the present only twelve architectural units have been discovered in this enigmatic space.⁵ We recognized five architectural units belonging to the last phase (Phase 1; Figures 23 and 24).

⁵ We consider an architectural unit to be the set of construction elements that form a unit or built space. This criterion is simply descriptive and allows the detailed recording of the components of an architectural compound which has not been completely excavated and understood. It avoids *a priori* functional designations of the architectural spaces and helps to set down very particular associations and descriptions in order to perform analysis later and establish functional classifications with greater precision.

Construction sequence and architectural configuration

At present we have defined three phases of construction of the *tapia* architectural compound and one remodeling during Phase 3, the oldest phase discovered to date (Figure 25). For Phase 3 we have identified large open spaces delineated by long walls and articulated by corridors oriented from east to west. A large room has been identified in the central part (Recinto 2A and 2B), accessible from Corridor 1 via a staircase, or from Corridor 4 to the south. The southern section of Room 2 (2B) served as an anteroom. From there one could access both a room to the south, not yet completely delineated, as well as a possible large patio to the east. To the west of Room 2 we have identified three suites of constructions of great height, possibly platforms made with lumpy fill, with a floor on the surface, and plastered exterior walls, where the corridors, stairs, and Room 2B are located. We have plotted the height of these possible platforms as three sections of different heights, where the staircases indicate the presence of sunken spaces. During this phase, the architecture must have been altered slightly in relation to access to Room 2A because to the north we have found evidence of an access point that was closed, indicating, possibly, a circulation system towards Room 2A that was more complete and that, to judge from its characteristics and location, must have had special functions. Without doubt, the origins of this complexity in the circulation towards Room 2 must be related to an even older phase for which we have otherwise not located any evidence.

Phase 2 (Figure 26) shows a reduction of the ample spaces of the previous phase as well as the construction of elements of apparent ritual character in Room 2A. Corridors 1 and 4 are extended toward the east by the construction of a new room (Room 1) which, at the same time,

reduces the space of the staircases, sealing some steps and giving Corridor 1 an L-shaped form (Figures 27 and 28). The second significant change occurred in Room 2A. In the northeast corner a wall running from north to south was built, forming a small space which was filled, leaving a niche which was reached through a reduced indirect access. The niche was constructed against the fill and its walls. The sides of the niche were plastered with a fine layer of clay and show post impressions. It is 0.60 meters wide, 0.25 meters deep, and 0.20 meters high. It also has a circular cavity in the middle of the horizontal surface that has not yet been excavated to determine if it is a posthole or an offering (Figure 29).

During Phase 1 (Figure 30), the last phase, the architectural configuration was further modified. Walls forming corridors were used to further restrict access to the open spaces. Room 2 was made smaller towards the south by the construction of walls forming corridors, causing Room 2A to disappear. The new corridors, C2 and C3 communicated directly with Corridor 1, via the stairs, with Corridor 4, with the southern room, and with the north section of Room 2. During this phase use of the possible platforms on the west side continued, as well as the niche next to Room 2. On the other side, the possible large east side patio of the previous phases was sealed and filled to form a new space like a room, with a finely plastered floor. To form this architectural unit a large L-shaped wall was constructed that widened Wall 14 (M.T. 14) which formed Room 2. Towards the north, Wall 16 (M.T. 16) was widened considerably, and Wall 17 (M.T. 17) was also constructed. These are the perimeter walls of a new large room with a depth of 1.60 meters. Because of these characteristics we consider it to be a large, rectangular, sunken patio. On the floor of this large room or patio, a large number of post impressions were observed, indicating the presence of a temporary covering over this space.

Even if the excavated area is minimal, the construction characteristics and arrangement of space suggests that these are elite constructions, of three phases, and with a significant change in a central space including staircases and sunken rooms. Although it is premature to define the functionality of the tapia architectural compound, it is necessary to indicate that the characteristics described above, the cleanliness of the rooms, and the special care taken with the clay seal prepared for this purpose, have only been identified in areas related to religious or court activities. In this particular case we think that this compound must have been part of the ceremonial architecture of the settlement. It is important to emphasize the differences between Phases 1 and 3 in respect to the dimensions of the spaces and their access systems (Figures 25 and 27). The reduction in size of the rooms and the restriction of access has been identified at the recent excavations at Pampa Grande for Late Mochica architecture, in contrast to the larger spaces of the Early Mochica Phase.

THE MOCHICAS AND THE TAPIA WALLS OF SANTA ROSA DE PUCALÁ

The Mochica occupation of Santa Rosa de Pucalá

At Santa Rosa, adobe architecture and ceramic sherds, known from the Jequetepeque Valley to be Early Mochica, Middle Mochica, and Late Mochica (Castillo and Donnan 1994; Castillo *et al.* 2008) were found. On Platform 1 of the South Huaca several *huaquero* pits have partially destroyed buildings made of parallelepiped adobes with and without impressions of cane molds. These buildings appear to be platforms and floors with post holes (Figure 31) associated with Early Mochica and Middle Mochica ceramics.

Within Level 9 of Plain 1, two tombs with Mochica ceramics were discovered. The individuals were placed in pit graves, in supine posi-

tion, facing south (Figure 32). Perhaps the most important Mochica occupation is found between Plain 2 and the East Platform, where there is a vast construction made with parallelepiped adobes without mold impressions, that apparently had a domestic function, considering the association of hearths and sooted utilitarian vessels (Figure 33). At the North Huaca, even though no Mochica contexts were found, the presence of Late Mochica style sherds (similar to those of the Jequetepeque Valley) and Mochica V sherds (similar to those of the Chicama and Moche Valleys in the back-dirt left by *huaqueros* is evidence for the final Mochica phase at Santa Rosa de Pucallá. These are closely related to Middle Horizon contexts recorded for Unit 11 of Plain 2. On Mound B in Sector II of Santa Rosa de Pucallá there is a suite of buildings made of parallelepiped adobes that are associated with a C-shaped structure where more than thirty graffiti have been discovered. Their designs maintain the artistic canons or the forms of representation of Mochica society (Figure 34).

At Santa Rosa, three phases of Mochica culture have been identified with the Late Phase covering the preponderance of the site, according to the data recovered up to date. All the evidence is for Mochica buildings made of parallelepiped adobes (Figure 35) similar to those discovered at other settlements of this time in the Lambayeque Valley, such as Sipán (Alva 2004) and Huaca Bola de Oro–El Triunfo (Bracamonte 2008).

Chronology and function of the tapia architectural compound

The analysis of the tapia architectural compound presents two major issues which I will analyze and discuss. The first relates to chronology and the second to functionality.

The chronological issue was tackled through stratigraphic analysis, the correlation of ceramic

styles, architectural characteristics, and two radiocarbon dates. Stratigraphically, the tapia walls are found below a cap of construction fill and debris flows caused by pluvial events (Layers 5 and 6). In some cases these layers are not only superimposed, but form part of the fill (Layer 7) which definitively seals the tapia walls. The ceramics associated with Layers 5 and 6 belong to the Cupisnique, Gallinazo, Middle Mochica, Late Mochica, Middle Cajamarca, and Nievería cultures. Without doubt, the layer superimposed at the moment of the final sealing of the tapia architectural compound belongs to the Late Mochica Phase, with the presence of foreign elements from the north coast and central coast belonging to Middle Horizon 1. Stratigraphically we identified a layer on the upper part (Layer 3) with adobe rooms that were highly eroded by intense pluvial events. Here we noted burials of juvenile camelids (*Lama* sp.) and the appearance of Wari, local Wari, Mochica Polychrome, Late Mochica, and Cajamarca ceramics. Above this layer we discerned a new occupation with some adobe rooms, camelid burials, spondylus offerings, and tombs. In one of these, Tomb 21, Middle Horizon 2 ceramics were found along with Wari Monochrome, Post-Mochica, and Early Lambayeque styles (Figure 36).

In addition to stratigraphic studies and the identification of ceramics styles, we obtained two radiocarbon dates from the Beta Analytic laboratory. The first sample (Beta 348702; Figure 37) comes from Hearth 12, located in the fill sealing the last construction phase of the tapia walls (Layer 7). The second sample (Beta 348703; Figure 38) comes from Hearth 2, recovered between Layers 3 and 4 (the layer of the camelids), superimposed on the sediment layers. The date of Hearth 12, calibrated to 2 sigmas, is A.D. 270 to 350 (Figure 37). For Hearth 2 the date, calibrated to two sigmas is A.D. 540 to 650 (Figure 38). The radiocarbon samples were, in both cases, wood charcoal that seems to have

been burned slowly, with a ritual significance, as much for the event of sealing the tapia walls as for the placement of offerings of camelids at the time of intense rains. Without doubt the radiocarbon dates obtained are quite early in comparison with the stratigraphic sequence and the ceramic correlations. This, perhaps, is due to the fact that the date obtained does not necessarily correspond to that of the event in which the charcoal was used, but, rather, to the date at which the tree was cut or the years of growth of those parts of the tree that were burnt. This same problem occurred with the dates from the tomb of the Lord of Sipán. At first wood yielded a date of A.D. 350, but on the basis of recent radiocarbon dates on the bones of those who accompanied the Lord of Sipán, and thermoluminescence dates on the ceramics, it is said that the dates average around A.D. 600 (Walter Alva, personal communication 2014).

Reference to the dates mentioned allows us to propose that the maximum temporal limit for the tapia architectural compound is A.D. 650, which sets it between A.D. 300 and A.D. 650. These dates permit us to relate the tapia compound at Santa Rosa with the kingdoms of the Old Lord and the Lord of Sipán, discovered at Huaca Rajado, near the modern village of Sipán, three kilometers south of Santa Rosa de Pucalá (Figure 39).

Functionality is the other issue that is difficult to tackle, especially because archaeological material that reflects the activities performed in each of the areas has not been recovered. Only the presence of hearths, the architectural arrangements, the construction sequence, and the construction characteristics allow us to outline functionality. The care of the rooms during their period of use, the moment of abandonment, and the process of final sealing, as well as the presence of plaster on the walls, restricted access, a niche, sunken areas, and the location of the Santa Rosa de Pucalá compound itself allow us

to suggest that it represents elite architecture and activities that are ritual in character.

Identity and divergent Mochica developments

The chronological position and location in space of this enigmatic tapia architectural compound suggest questions about the presence of an elite group contemporary with the Mochicas of Sipán, based at Santa Rosa de Pucalá and exerting some autonomy. Perhaps they did not control a territory, but they may have exercised authority or exercised important participation in social, economic, and, above all, in ideological aspects of this part of the valley. It remains clear that the type of construction material, the distribution of architecture, and other characteristics already described indicate that the buildings had their own identity and were distinct from those that define the Mochica canons (adobe architecture), including at the Santa Rosa de Pucalá complex itself.

Krzysztof Makowski has analyzed the Virú-Gallinazo and Mochica relationships in upper Piura, and has determined that an elite of Gallinazo origin existed there and that:

Nevertheless, the creation and consolidation of powerful territorial states, and consecutive and indispensable negotiation with conquered populations, as well as access to new “foreign” technologies, and an experienced workforce, soon caused the rapid and profound transformation of the Virú-Gallinazo culture. This was gradually replaced by the Mochica culture between the second and sixth centuries A.D. Elites of different origins coexisted peacefully on the boundaries of the Mochica states and maintained access to ceremonial vessels, textiles, metal adornments, and arma-

ments produced in specialized workshops” (Makowski 2010: 99).⁶

It is necessary to analyze the Virú-Gallinazo and Mochica identities of Lambayeque, not only on the basis of ceramics, but also in terms of construction materials, distribution of architecture, and the location of their possible occupation areas within the settlements considered at present to be Mochica. To understand the full dimensions of this issue in the Lambayeque Valley it is even necessary to develop research into the origins of the Mochica, their organizational systems, the characteristics of their populations, and, above all, understand the fate of the elites producing copper objects, antecedents of the Mochicas, based at the El Chorro archaeology complex, fifteen kilometers from Santa Rosa de Pucalá (Alva and Bracamonte 2010).

At present, we know of the existence of *tapia* architecture contemporaneous with adobe buildings in the Mochica tradition at other sites on the north coast. We see the oldest evidence at Huaca Letrada in the La Leche Valley (Shimada and Maguiña 1994) and at the Cañoncillo archaeological complex in the Jequetepeque Valley. Here Swenson *et al.* (2009, 2010) described an important *tapia* architectural compound in the zone of Jatanca, that they associated with the Gallinazo tradition. *Tapia* architecture was also described associated with the end of the Mochica culture and the Middle Horizon, especially in the Santa Valley (Chap-

delaine and Pimentel 2002) and at Castillo de Huarmey. At this latter archaeological complex Zavaleta (2014) mentions the existence of a *tapia* architectural compound in Area 4, located on the northern portion of the El Castillo sector.⁷ These buildings are of low height, were built on one level, and consisted of open spaces connected by corridors. They had been assigned residential and funerary uses, and were associated in some cases with adobe walls.

There are no other reported finds of *tapia* architecture in Mochica times on the North Coast, but one must note that recently, in the highlands to the south, José Ochatoma (personal communication 2013) has discovered *tapia* walls associated with the Late Huarpa Phase and with Nasca 8 ceramics at the Vega-chayuy Moqo compound in the city of Huari (Figure 40).

Unfortunately, no ceramic sherds were found within the Santa Rosa de Pucalá *tapia* rooms that would permit the identification of their builders and users. Chronological analysis suggests that the structure was built during the development of Mochica society, between A.D. 300 and 650. It is possible that the oldest construction phase (Phase 3) of the *tapia* building is related to the Gallinazo tradition, distantly related to the Mochicas. Large open spaces and loosely controlled access indicates a construction layout in the north coastal tradition. The large quantity of Middle Mochica and Gallinazo ceramics in the back-dirt and fill that covers the seal of the *tapia* walls is noteworthy. From Phase 2 and, in particular, during the last construction phase (Phase 1) of the *tapia* building, the architectural layout was extensively modified. Spaces

⁶ “No obstante, la creación y consolidación de poderosos estados territoriales, y la consecutiva e indispensable negociación con las poblaciones conquistadas, así como el acceso a nuevas tecnología ‘foráneas’ y a la mano de obra experimentada, pronto han causado la rápida y profunda transformación de la cultura Virú-Gallinazo. Esta quedó gradualmente sustituida por la cultura Moche entre el siglo II y VI d.C. Las élites de distinto origen convivieron pacíficamente en las fronteras de los estados moche y mantuvieron accesos a vasijas ceremoniales, textiles, adornos metálico y armas producidas en los talleres especializados.”

⁷ Recently, in this sector of Castillo de Huarmey, archaeologists from the University of Warsaw and the Pontificia Universidad Católica del Perú discovered a Middle Horizon tomb with abundant ceramics and other objects made by the Wari (Giersz 2014:68-99; Pringle 2014).

were made smaller and access points were quite restricted. In addition, sunken spaces such as corridors, patios, and rooms were constructed. This final phase appears to correspond to the end of the Middle Mochica phase and to the beginning of the Late Mochica phase, between A.D. 500 and 650, a time when social, political, and ideological changes were stressed, generating territorial divisions, at least in the middle Lambayeque Valley.

We hold the working hypothesis that after approximately A.D. 500, when a major pluvial event occurred throughout the North Coast (Kaulicke 1993; Shimada *et al.* 1991; Uceda and Canziani 1993), organizational and construction systems at Sipán and Pampa Grande changed, indicating a long process of separation of the middle part of the Lambayeque Valley. Thus, on the north bank of the valley, Santa Rosa de Pucalá and Pátapo were the centers of political and ideological power, while on the south bank the elites of Sipán, Pampa Grande and, previously, Saltur, controlled that territory (Figure 9). We call this process the Mochica “divergent developments” (Figure 40).

Because of this, our hypothetical scenario allows for the presence of different unidentified elites coexisting at Santa Rosa de Pucalá during the Middle Mochica phase, taking into consideration that traditional Mochica architecture uses parallelepiped adobes and not tapia. In addition, from A.D. 500 to 550, when there was a transformation of theocratic and secular organizational systems at Sipán, the existence of tapia architecture appears to have influenced the architectural planning and design of the neighboring Cajamarca sierra. The presence of long corridors, sunken spaces, staircases, and niches has also been recorded at El Palacio, in the Cajamarca Valley, during the Middle Horizon, by Shinya Watanabe (2010).

CONCLUSIONS

Santa Rosa de Pucalá is an archaeological complex that was continuously occupied from the Formative Period to the Inca epoch. All the evidence recovered in our excavations allows me to propose that this place was constantly occupied as a ceremonial center with stages of great growth, when it appears that it acquired prestige in the Lambayeque Valley (Bracamonte 2011). One of these stages of intense development was at the end of the Early Intermediate Period and during the Middle Horizon. At this time a tapia architectural compound dating between A.D. 300 and 650 was constructed on Plain 2, according to the distribution of the architecture, the stratigraphic sequence, ceramic styles, and radiocarbon dates.

We think that the tapia construction functioned before A.D. 500, during the Middle Mochica Phase, and ceased to function before A.D. 650. For the first phase of construction of the tapia walls, the distribution of Middle Mochica and Gallinazo sherds found in the fill that covered the final sealing of the temple allows us to suggest that it belonged to a non-Mochica elite that developed in parallel with the Mochica elite and did not maintain authority, but rather, an identity. After A.D. 500 a catastrophic El Niño event determined the fate of the Mochica elites at Sipán and Pampa Grande, marking a significant change in the political, social, and ideological system, the abandonment of the theocratic model to begin a process of secularization in the Lambayeque Valley (Walter Alva, personal communication 2013). This transformation created a territorial division, with the Chancay-Lambayeque Valley as its natural limit, and Santa Rosa de Pucalá as the center of ideological power on the north bank of the Lambayeque Valley. In this context, the elites of Santa Rosa de Pucalá, who included the builders and users of the tapia structure, must have established tight connections with

*chaupiyunga*⁸ people and with the upper Chancay Valley (for example, with Chota, La Granja, Suro, and Santa Cruz). The material manifestations of this are seen in the planning and layout of the tapia structure with its reduced spaces, sunken rooms, restricted access points, and the extent and volume of its ritual areas.

The long occupational sequence of Santa Rosa de Pucalá and the quality of its buildings and occupations suggest that it is a settlement with a ceremonial nature. This makes it tempting to think that its characteristics were shaped by the transformational processes of the Mochica elites of the Lambayeque Valley. There Sipán and Pampa Grande formed an indissoluble dyad controlling the south bank of the valley. Their power was based on castes, and upon ideological and political forces fundamental to the identity and homogeneity of its population. This contrasts with the groups on the north bank, where Santa Rosa de Pucalá is situated, which became permeable to foreign influences during the Middle Horizon, generating not only stylistic heterogeneity, but also ethnic diversity.

It remains necessary to study the direct construction associations of the tapia architecture to determine if it is a compound isolated from the rest of the buildings present by means of perimeter walls. Above all, it is important to know the processes by which the cultural groups were transformed at a site that was never abandoned. If we consider a parallel development, that of the Gallinazo and Mochica groups, we must ask ourselves what happened to them after the catastrophic El Niño (which took place between A.D. 500 and A.D. 550), when Sipán and Pampa Grande suffered great transforma-

tions. Finally, we must ask what happened to these groups when contacts with Cajamarca and other foreign groups opened.

ACKNOWLEDGMENTS

The work reported upon here was accomplished in 2011 as part of the research program of the Sipán Royal Tombs Museum (Museo Tumbas Reales de Sipán) and Executive Unit 005, Naylamp-Lambayeque. I would like to express my gratitude to Walter Alva, the director of the museum and the official advisor to this research. I would also like to thank archaeologists Hoover Rojas, Mayra Medina, Carlos Zepata, and Rosa Zaveleta who participated in the field and laboratory work. I also thank archaeologists Luis Chero, Ceyra Pasapera, architect César Piscoya, and Shinya Watanabe for their advice and help during the research.

Translation from the Spanish by Monica Barnes

REFERENCES CITED

- Alva, Walter
1994 *Sipán*. Colección Cultura y Artes del Perú. Lima: Cervecería Backus & Johnston S. A.
- 2004 *Sipán: Descubrimiento e investigación*. Divulgación series. Lima: published by the author with the support of the Union de Cervecerías Peruanas Backus & Johnson.
- 2008 La excavación de las Tumbas Reales de Sipán (1987-2000). In *Sipán: El tesoro de las tumbas reales*, edited by Antonio Aimi, Walter Alva, and Emilia Perassi, pp. 60-87. Florence, Italy: Guinti.
- Alva, Walter and Edgar Bracamonte
2010 *Intervención de emergencia en el Complejo Arqueológico El Chorro*. Final Report presented to the Instituto Nacional de Cultura, Lima.
- Anders, Martha B.
1981 Investigation of State Storage Facilities in Pampa Grande, Peru. *Journal of Field Archaeology* 8:391-404.
- Bonavia, Duccio
1985 *Mural Painting in Ancient Peru*. Bloomington, Indiana: Indiana University Press.
- Boswell, Alicia, Evan Surridge, and Brian Billman
2011 The *Chaupiyunga* in the Prehistory of the North Coast of Peru: A Case Study from the Moche Valley. Paper presented at the 51st Annual Institute of Andean Studies Meeting, Berkeley, California, January 8.

⁸ *Chaupiyunga* refers to the ecological niche on the western slope of the Peruvian Andes between the highlands and the coast. It "bridges the gap between coastal irrigation networks and the more dispersed agricultural and demographic patterns of the sierra" (Boswell *et al.* 2011:2).

Bracamonte, Edgar

- 2008 *Secuencia cultural de los Sectores II y III del Complejo Arqueológico Sipán: Caracterización e importancia*. Licenciatura thesis, Escuela de Arqueología de la Universidad Nacional de Trujillo, Trujillo, Perú.
- 2011 Huaca Santa Rosa de Pucalá: Un centro ceremonial y de intercambio cultural en el valle de Lambayeque. *Lundero* (cultural publication of the newspaper *La Industria*), 5 June, year 33, number 390, pp. 8-9. Chiclayo and Trujillo, Peru.
- 2012a *Programa de mantenimiento, protección y excavaciones exploratorias en Huaca Santa Rosa de Pucalá, Cerro Pátapo y Cerro El Combo, Lambayeque*. Final report presented to the Ministry of Culture, Lambayeque, Peru.
- 2012b La Tumba 21: Un contexto funerario del Horizonte Medio en Huaca Santa Rosa de Pucalá, Valle de Lambayeque. In: *Actas del XVII Congreso Peruano del Hombre y La Cultura Andina y Amazónica Alfredo Torero Fernández de Córdova*, edited by Filomeno Zubieta Núñez. Huacho, Peru: Universidad José Faustino Sánchez Carrión. Distributed on a CD-Rom.

Bracamonte, Edgar, Juan Bracamonte, Ceyra Pasapera, and Denis Echeverría

- 2006 *Estudio de la secuencia ocupacional y la presencia Lambayeque en los sitios arqueológicos del distrito de Tuman, valle bajo de Lambayeque*. Final report on pre-professional practicum. Escuela de Arqueología de la Universidad Nacional de Trujillo, Trujillo, Peru.

Campana, Cristóbal

- 2000 *Tecnologías constructivas de tierra en la costa norte prehispánica*. Trujillo, Peru: A&B Editores S.A. for the Instituto Nacional de Cultura.

Castillo B., Luis Jaime and Christopher B. Donnan

- 1994 Los Mochicas del norte y los Mochicas del sur: Una perspectiva desde el Valle de Jequetepeque. In *Vicús*, edited by Cristóbal Makowski, pp. 143-181. Lima: Banco de Crédito del Perú.

Castillo B., Luis Jaime, Julio Rucabado Y., Martín del Carpio P., Katiusha Bernuy Q., Karim Ruiz R., Carlos Rengifo Ch., Gabriel Prieto B., and Carole Fraresso

- 2008 Ideología y poder en la consolidación, colapso y reconstitución del estado mochica del Jequetepeque: El Proyecto Arqueológico San José de Moro (1991-2006). *Nawpa Paccha* 29:1-86.

Chapdelaine, Claude and Víctor Pimentel

- 2002 *La presencia moche en el valle del Santa, Costa Norte del Perú: Report of the PSUM Archaeological Project (Proyecto Santa de la Universidad de Montreal), 2001 field season*. Presented to the Instituto Nacional de Cultura, Lima.

Chero, Luis

- 2008 El reinicio de los trabajos arqueológicos en Sipán: Temporada 2007. In *Sipán: El tesoro de las tumbas reales*, edited by Antonio Aimi, Walter Alva, and Emilia Perassi, pp. 88-113. Florence, Italy: Giunti.
- 2009 Sipán: Reconstruyendo la historia y forjando identidad; Resultados preliminares de las excavaciones 2007. *TZHOECOEN* (scientific journal of the Universidad Señor de Sipán, Chiclayo, Perú) 1(2):182-189.
- 2010 *Excavaciones arqueológicas en Sipán: Informe final de la temporada 2009*. Presented to the Ministerio de Cultura, Lambayeque, Peru.
- 2012 *Excavaciones arqueológicas en Sipán: Informe final de la temporada 2011*. Presented to the Ministerio de Cultura, Lambayeque, Peru.
- 2013 *Huaca Rajada/Sipán: Esplendor y complejidad*. Sipán, Lambayeque, Perú: Museo del Sitio Huaca Rajada.

Curo Chambergo, Manuel

- 2014 La etapa transicional en Huaca Bandera, Pacora-Lambayeque. In *Sumillas de ponencias del I Congreso Nacional de Arqueología Peruana*, 20, 21 y 22 de agosto de 2014, pp. 2-3. Lima: Ministerio de Cultura.

Donnan, Christopher B.

- 1972 Moche: Huari Murals from Northern Peru. *Archaeology* 25(2):85-95.
- 1990 An Assessment of the Validity of the Naymlap Dynasty. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by Michael Edward Moseley and Alana Cordy-Collins, pp. 243-276. Washington, D.C.: Dumbarton Oaks Research Library and Collection.

Franco, Régulo, César Gálvez, and Segundo Vásquez

- 1994 Arquitectura y decoración mochica en la Huaca Cao Viejo, Complejo El Brujo; Resultados preliminares. In *Moche: Propuestas y perspectivas; actas del Primer Coloquio sobre la Cultura Moche, Trujillo, 12 al 16 de abril de 1993*, edited by Santiago Uceda and Elías Mujica, pp. 147-180. *Travaux de l'Institut Français d'Études Andines* 79, Trujillo, Perú: Universidad de La Libertad, and Lima: Asociación Peruana para el Fomento de las Ciencias Sociales.

Giersz, Milosz

- 2014 El hallazgo del mausoleo imperial. In *Castillo de Huarmey: El mausoleo imperial Wari*, edited by Milosz Giersz and Cecilia Pardo, pp. 68-99. Lima: Museo de Arte de Lima (MALI), Asociación Museo de Arte de Lima.

- Haas, Jonathan
1985 Excavations on Huaca Grande: An Initial View of the Elite at Pampa Grande, Peru. *Journal of Field Archaeology* 12(4):391-409.
- Kaulicke, Peter
1993 Evidencias paleoclimáticas en asentamientos del Alto Piura durante el período Intermedio Temprano. *Bulletin de l'Institut Français d'Études Andines* 22(1):283-311.
- McClelland, Donna
1986 Brick Seriation at Pacatnamu. In *The Pacatnamu Papers*, Volume 1, edited by Christopher B. Donnan and Guillermo A. Cock, pp. 26-46. Los Angeles: Museum of Cultural History, University of California, Los Angeles.
- Makowski, Krzysztof
2010 Las relaciones entre Virú y Moche desde la perspectiva del alto Piura. In *Arqueología en el Perú: Nuevos aportes para el estudio de las sociedades andinas prehispánicas*, edited by Rubén Romero Velarde and Trine Pavel Svendsen, pp. 1-104. Lima: Universidad Nacional Federico Villarreal.
- Meneses, Susana and Luis Chero
2004 La Arquitectura de Sipán. In *Sipán: Descubrimiento e investigación* by Walter Alva, pp. 201-209. Lima: Published by the author with the support of the Unión de Cervecerías Peruanas Backus & Johnson.
- Narváez, Alfredo
2011 Arte mural moche en Túcume y Pacora. In *Huaca Las Balsas de Túcume: Arte Mural Lambayeque*, edited by Alfredo Narváez and Bernarda Delgado, pp. 25-54. Túcume, Peru: Museo del Sitio Túcume.
- Pasapera, Ceyra
2008 *Secuencia cultural de Huaca Santa Rosa y su importancia en el valle de Lambayeque*. Licenciatura Tesis, Universidad Nacional de Trujillo, Peru.
- Pringle, Heather
2014 Treasures of a Long-Lost Peru Tomb. With photographs by Robert Clark. *National Geographic* June: 54-77.
- Schaedel, Richard
1978 The Huaca Pintada of Illimo. *Archaeology* (31)1:27-37.
- Shimada, Izumi
1976 *Socioeconomic Organization at Moche V Pampa Grande, Peru: Prelude to a Major Transformation to Come*. Ph.D. dissertation, University of Arizona, Tucson.
- 1978 Economy of a Prehistoric Urban Context: Commodity and Labor Flow at Moche V Pampa Grande, Peru. *American Antiquity* 43(4):569-592.
- 1990 Cultural Continuities and Discontinuities on the North Coast of Peru, Middle-Late Horizons. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by Michael Edward Moseley and Alana Cordy-Collins, pp. 297-392. Washington, D.C.: Dumbarton Oaks Research Library and Collection.
- 1994 *Pampa Grande and the Mochica Culture*. Austin: University of Texas Press.
- 1995 *Cultura Sicán: Dios, Riqueza y Poder en la Costa Norte del Perú*. Lima: Fundación del Banco Continental para el Fomento de la Educación y la Cultura, Edubanco.
- Shimada, Izumi and Melody Shimada
1981 Explotación y manejo de los recursos naturales en Pampa Grande, sitio Moche V: Significado del análisis orgánico. *Revista del Museo Nacional* 45:19-73.
- Shimada, Izumi and Adriana Maguiña
1994 Nueva visión sobre la cultura Gallinazo y su relación con la Cultura Moche. In *Moche: Propuestas y perspectivas; actas del Primer Coloquio sobre la Cultura Moche, Trujillo, 12 al 16 de abril de 1993*, edited by Santiago Uceda and Elías Mujica, pp. 31-58. *Travaux de l'Institut Français d'Études Andines* 79, Universidad de La Libertad, Trujillo, Perú, and Asociación Peruana para el Fomento de las Ciencias Sociales.
- Shimada, Izumi, Crystal Barker Schaaf, Lonnie G. Thompson, and Ellen Moseley-Thompson
1991 Cultural Impacts of Severe Droughts in the Prehistoric Andes: Application of a 1500-year Ice Core Precipitation Record. *World Archaeology* 22(3):247-270.
- Strong, William Duncan and Clifford Evans
1952 *Cultural Stratigraphy in the Virú Valley, Northern Perú: The Formative and Florescent Epoch*. Columbian Studies in Archaeology and Ethnology. New York: Columbia University Press.
- Swenson, Edward, Jorge Chiguala, and John Warner
2009 *Informe sobre la Investigación Arqueológica del Proyecto Jatanca en el Valle de Jequetepeque, Campaña de 2008*. Technical report presented to the Instituto Nacional de Cultura, Lima, Peru.
- 2010 *Informe sobre la investigación arqueológica del Proyecto Jatanca en el Valle de Jequetepeque, campaña de 2009*. Technical report presented to the Instituto Nacional de Cultura, Lima, Peru.
- Tsai, Howard
2012 Adobe Bricks and Labor Organization on the North Coast of Peru. *Andean Past* 10:133-169.
- Uceda, Santiago
2004 La Cultura Moche: A manera de introducción. In *Desarrollo Arqueológico: Costa Norte del Perú*,

- edited by Luis Valle Álvarez, pp. 147-158. Trujillo, Peru: Ediciones SIAN.
- Uceda Castillo, Santiago and José Canziani Amico
 1993 Evidencias de grandes precipitaciones en diversas etapas constructivas de la Huaca de la Luna, costa norte del Perú. In *Registros del fenómeno El Niño y de eventos ENSO en América del Sur/ Records of El Niño Phenomena and ENSO Events in South America/Enregistrements du phénomène El Niño et d'événements ENSO en Amérique du Sud: International Symposium on Former ENSO Phenomena in Western South America; Records on El Niño Events, Lima, 4-7 de marzo de 1992*, edited by José Macharé and Luc Ortilieb. *Bulletin del Instituto Francés de Estudios Andinos* 22(1):313-343.
- Watanabe, Shinya
 2010 Continuidad cultural y elementos foráneos en Cajamarca, sierra norte del Perú: El caso del Horizonte Medio. *Boletín de Arqueología PUCP* 14:221-238.
- Wester, Carlos, Luis Jaime Castillo, and Santiago Uceda
 2006 *Proyecto Arqueológico Pampa Grande: Informe Final Temporada 2005*. Report presented to the Instituto Nacional de Cultura, Lima, Peru.
- Zaveleta, Rosa
 2014 *Características arquitectónicas y estilos de cerámica en el Castillo de Harmey, costa central*. Report for the professional competency exam, theoretical analysis, practicum, licenciante in archaeology, Universidad Nacional de Trujillo, Trujillo, Peru.

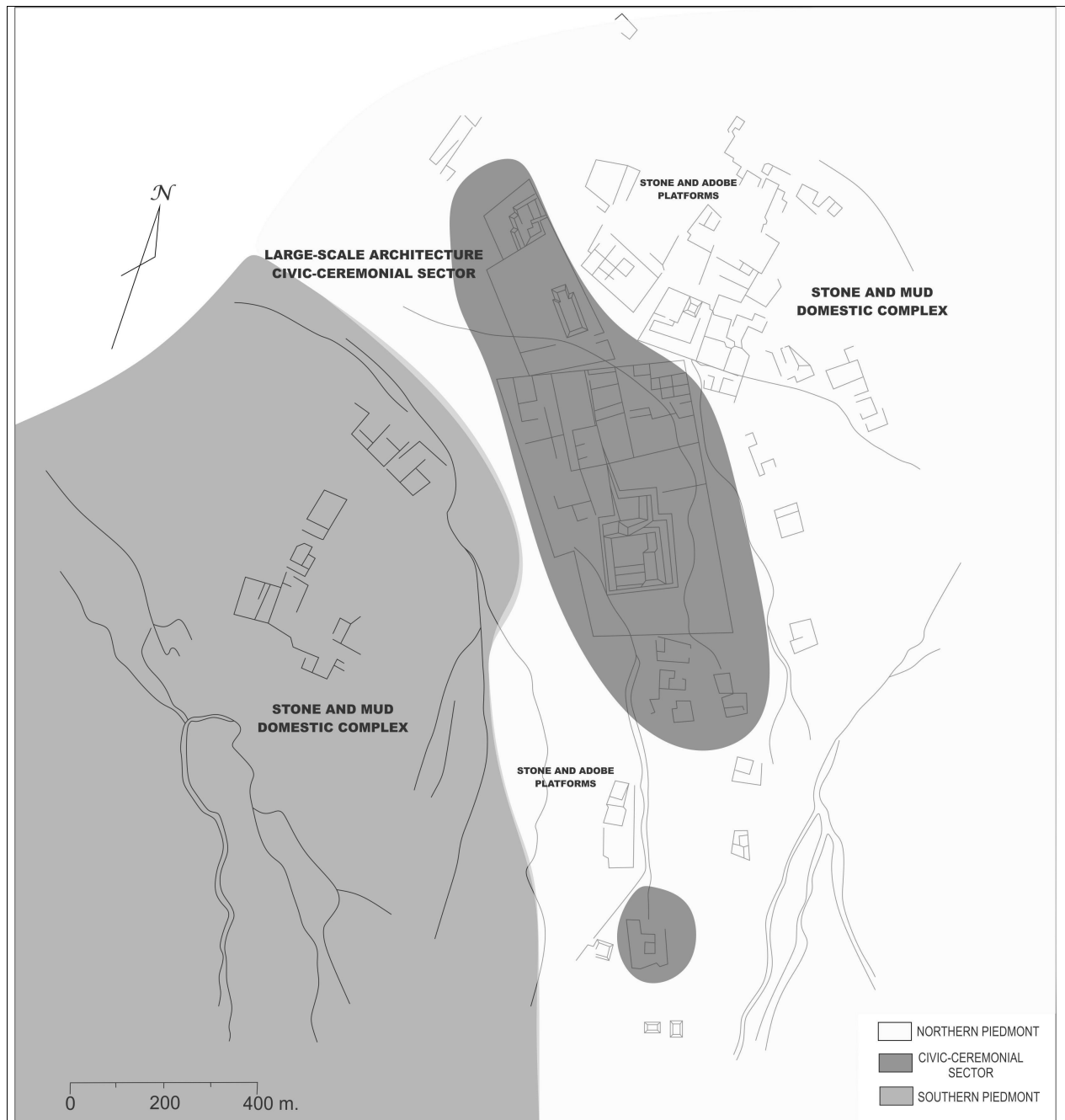


Figure 1: General plan of Pampa Grande showing sectors and buildings
(after Shimada 1994:139, figure 7.3).



Figure 2: (top) Adobe architecture in the civic-ceremonial sector of Pampa Grande; (bottom) stone architecture in the habitation compounds of the South Piedmont section of the site. Photographs by Ceyra Pasapera for the Proyecto Arqueológico Pampa Grande directed by Luis Chero Zurita, 2013. Photo courtesy of the Pampa Grande Project.



Figure 3: Late Moche buttresses built above a rubble cap on the inclined facade of the Middle Phase administrative pyramid at Sipán. Photograph courtesy of the Sipán Project.



*Figure 4: Painted corridors, altars, and staircase found on the Funerary Platform of Sipán.
Photograph courtesy of the Sipán Project.*

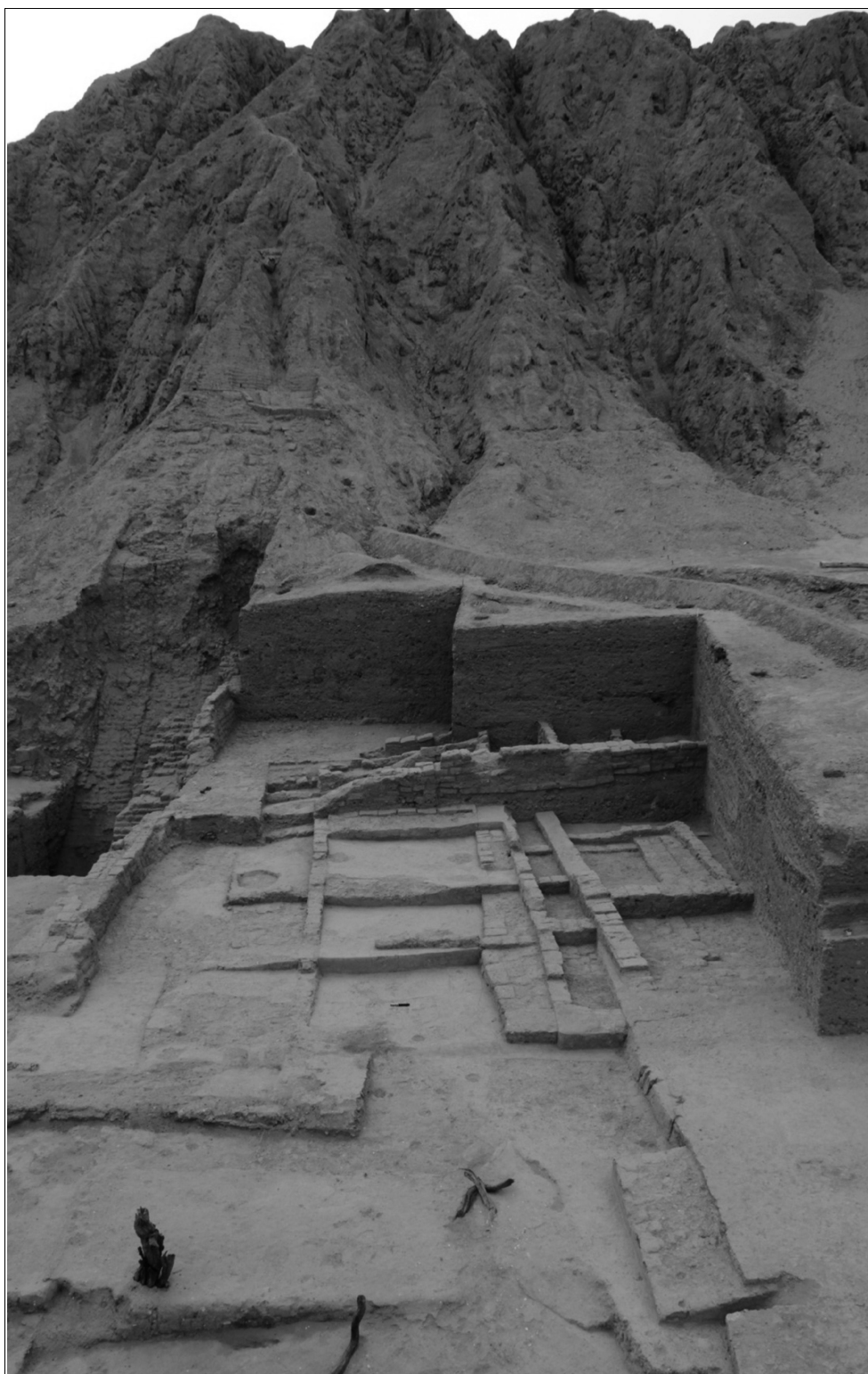


Figure 5: Residential adobe compounds, Patio 1, Sipán. Photograph courtesy of the Sipán Project.



Figure 6: Blocks of parallelepiped adobes with cane mold impressions discovered at El Chorro.



Figure 7: Architectural compound made of dressed stone in the domestic area of Sector II of Sipán (from Bracamonte 2008: plate 9.1a).



Figure 8: Wall of the niches at Huaca Bandera (from Narváez 2011: figure 11).

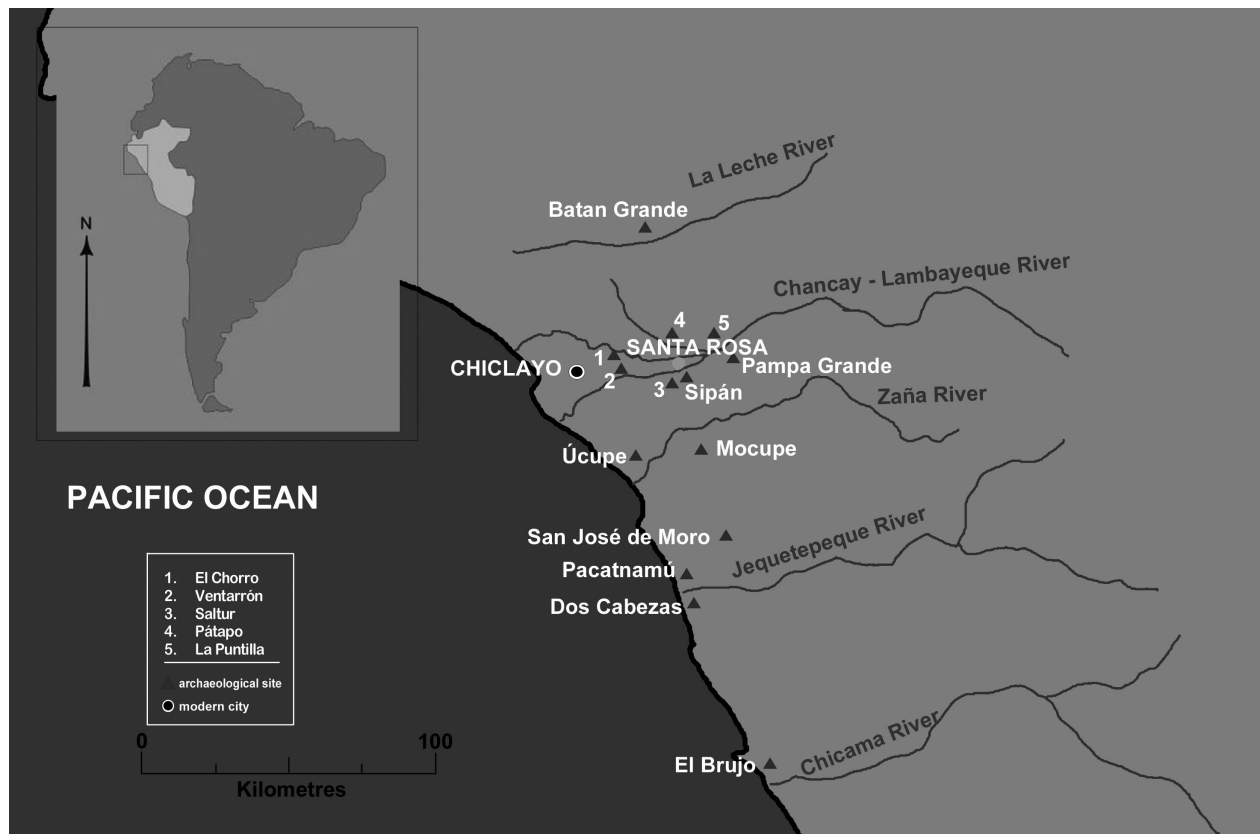


Figure 9: Location of the Santa Rosa de Pucalá complex in the Lambayeque Valley.

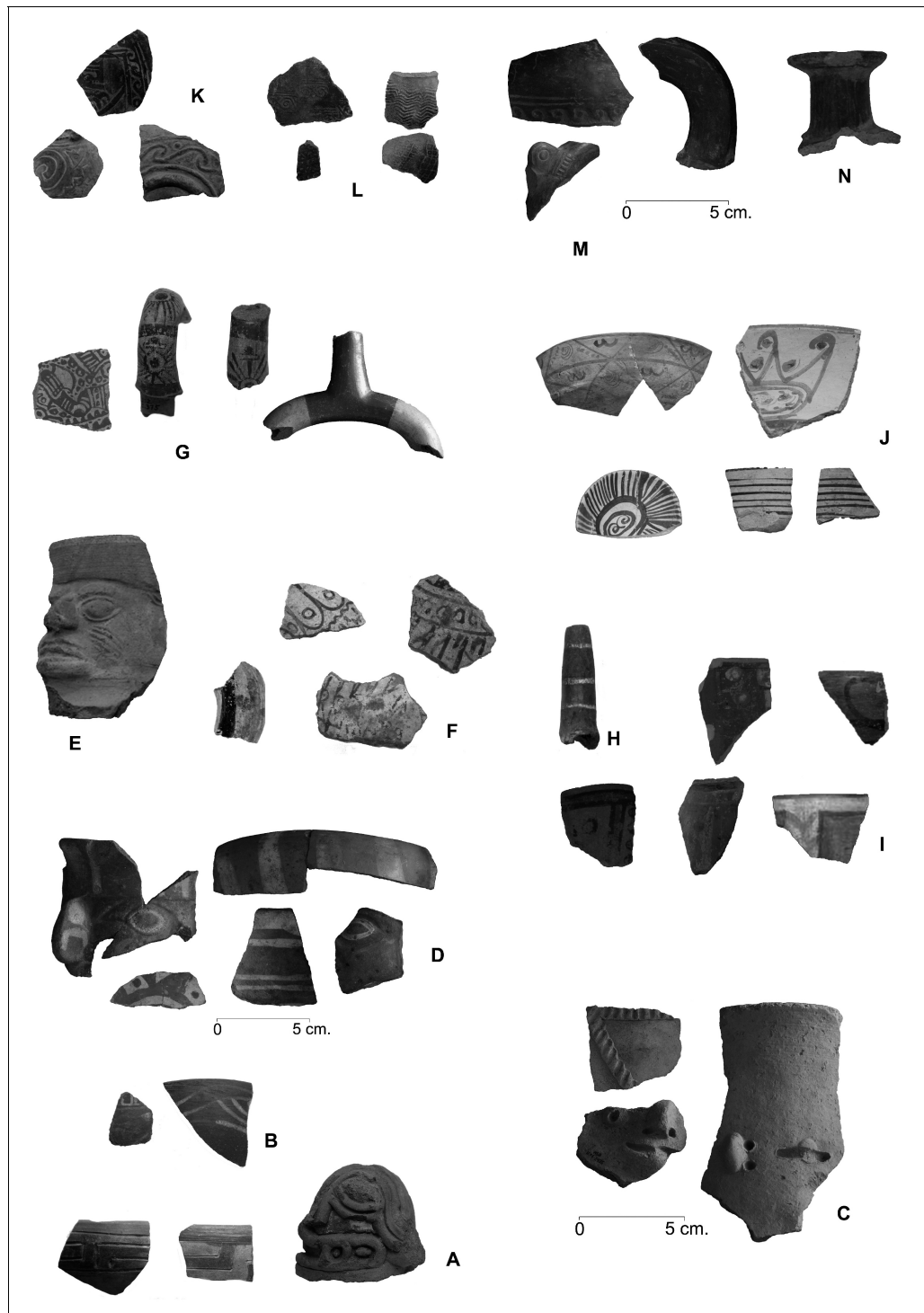


Figure 10: Ceramic styles of Santa Rosa de Pucalá: (A) Formative; (B) Salinar; (C) Gallinazo; (D) Middle Mochica; (E) Mochica; (F) Mochica V; (G) Late Mochica; (H) Nievería; (I) Wari and Wari-derivative styles; (J) Middle Cajamarca; (K) Impressed style; (L) Lambayeque; (M) Chimú; (N) sherd from an Inca aryballos. Photographs courtesy of the Santa Rosa de Pucalá Project.

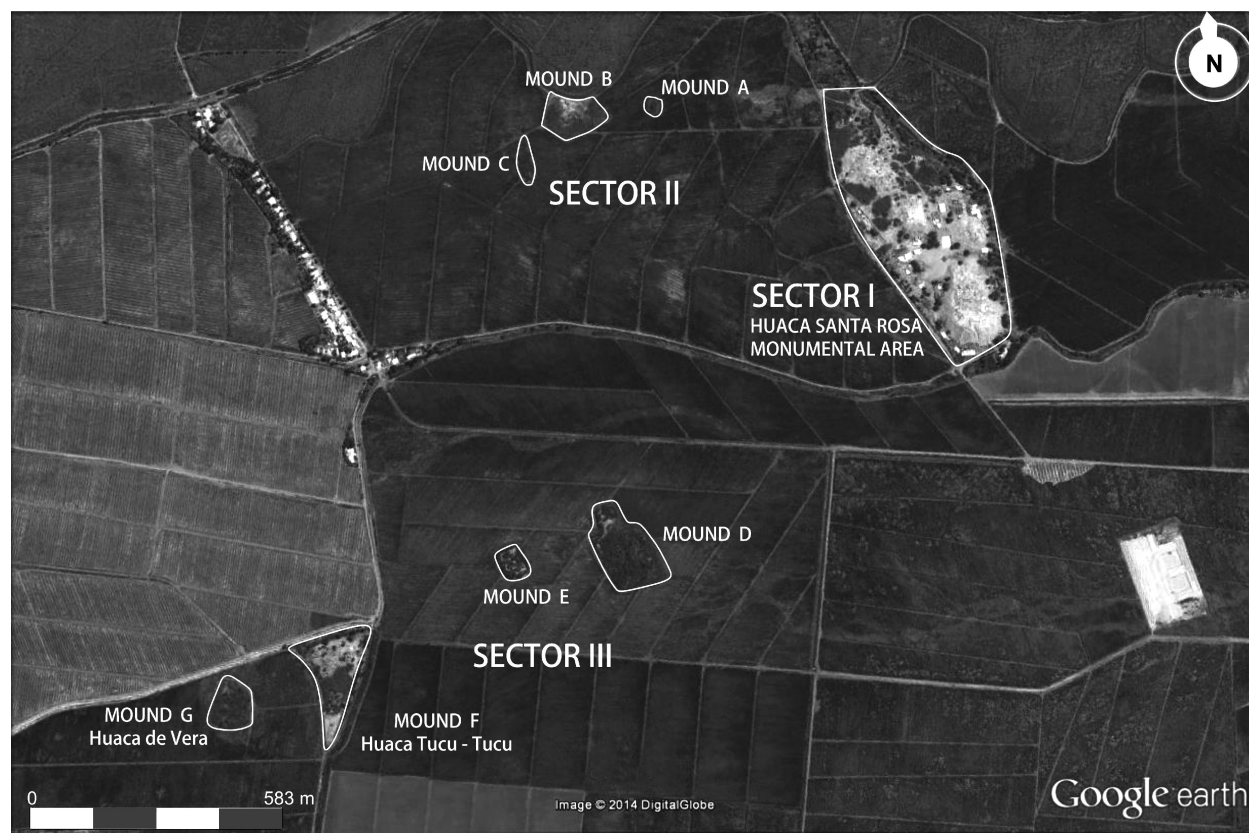


Figure 11: Sectors of the Santa Rosa de Pucalá complex (after a Google earth screenshot taken in 2013).

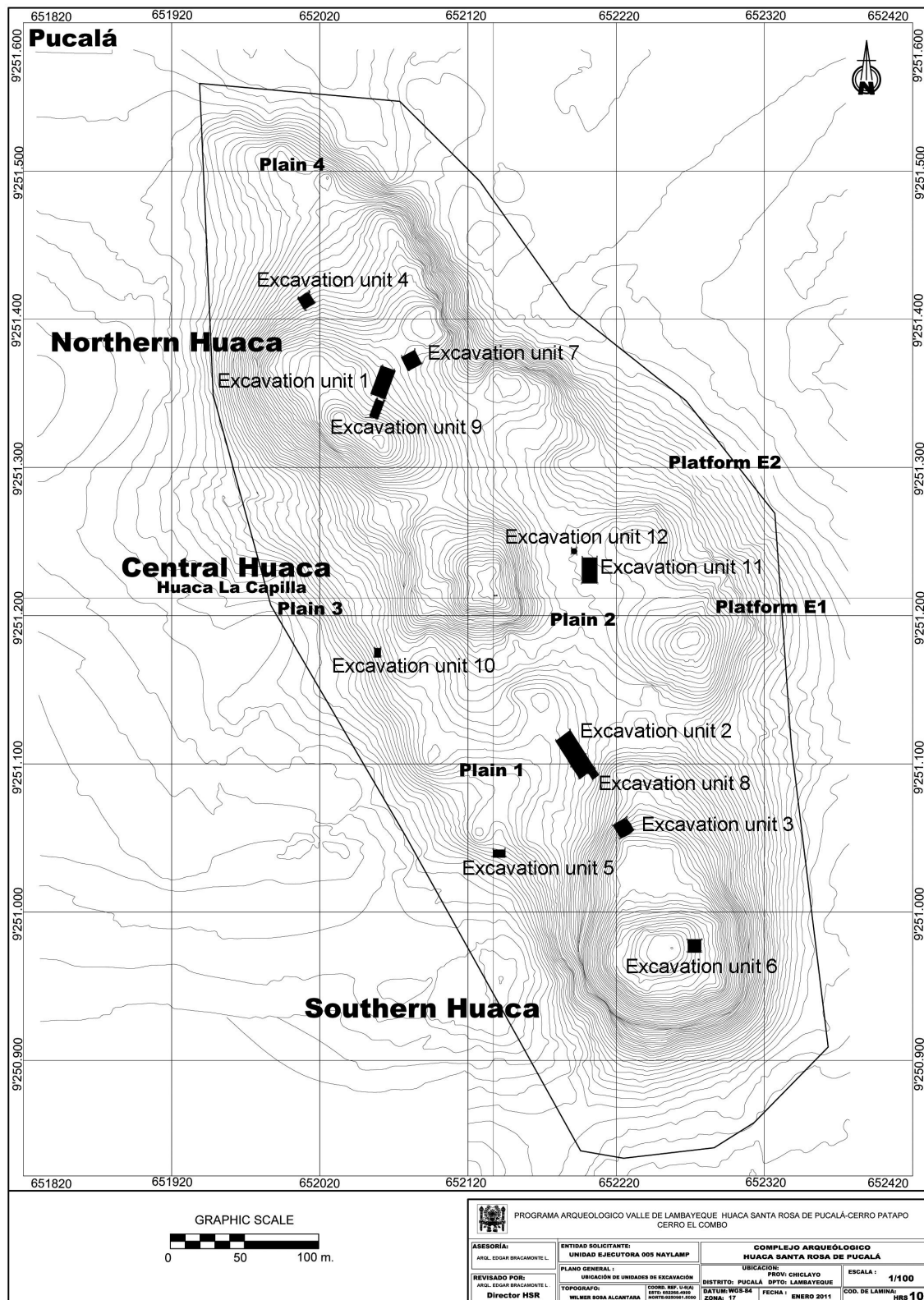


Figure 12: Components of Sector I of the Santa Rosa de Pucallá complex.
Plan courtesy of the Santa Rosa Project.



Figure 13: Plain 2 to the east of the Huaca Central or Huaca La Capilla, Santa Rosa de Pucalá.
The *tapia* architectural compound was found here (in Excavation Unit 11).
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.

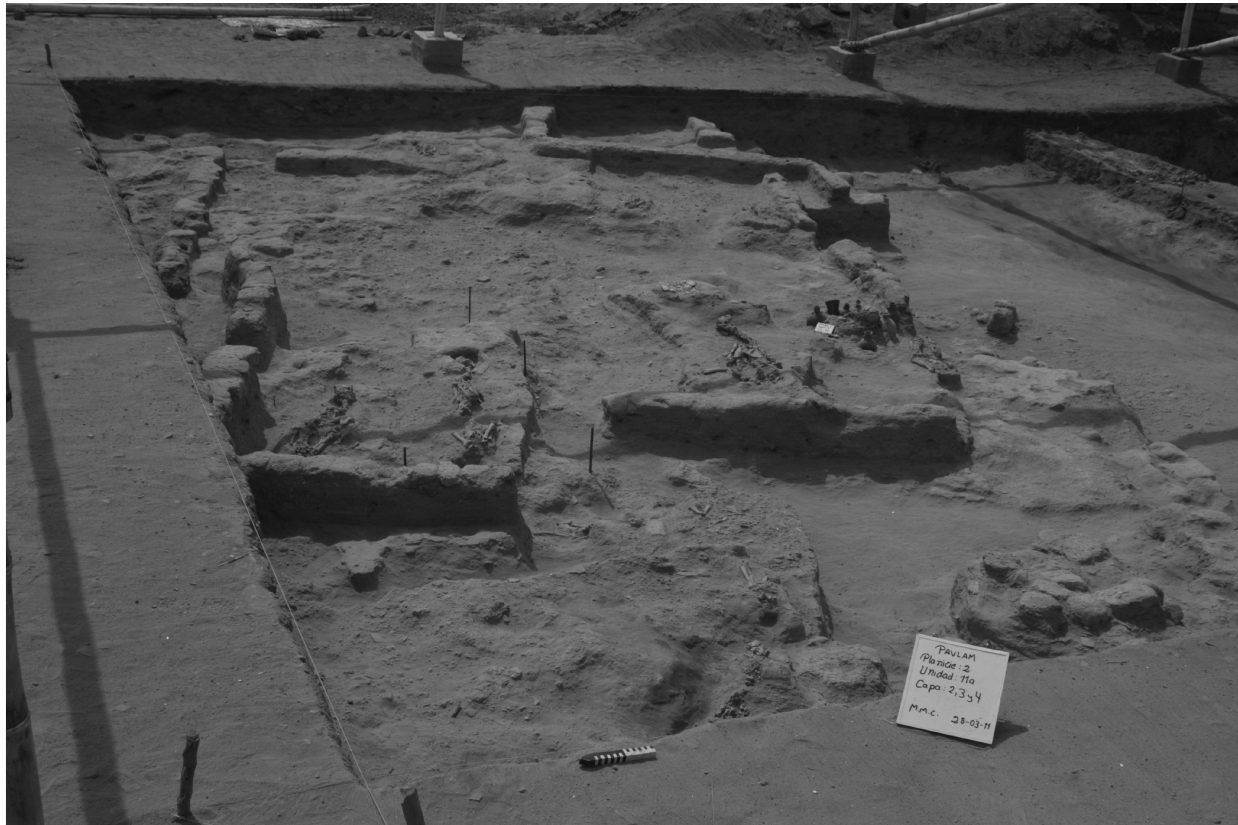


Figure 14: Layer 3 in Unit 11, the “layer of offerings” in which burials of camelids and Middle Horizon tombs were found. Photograph by Edgar Bracamonte for the Santa Rosa de Pucará Project.

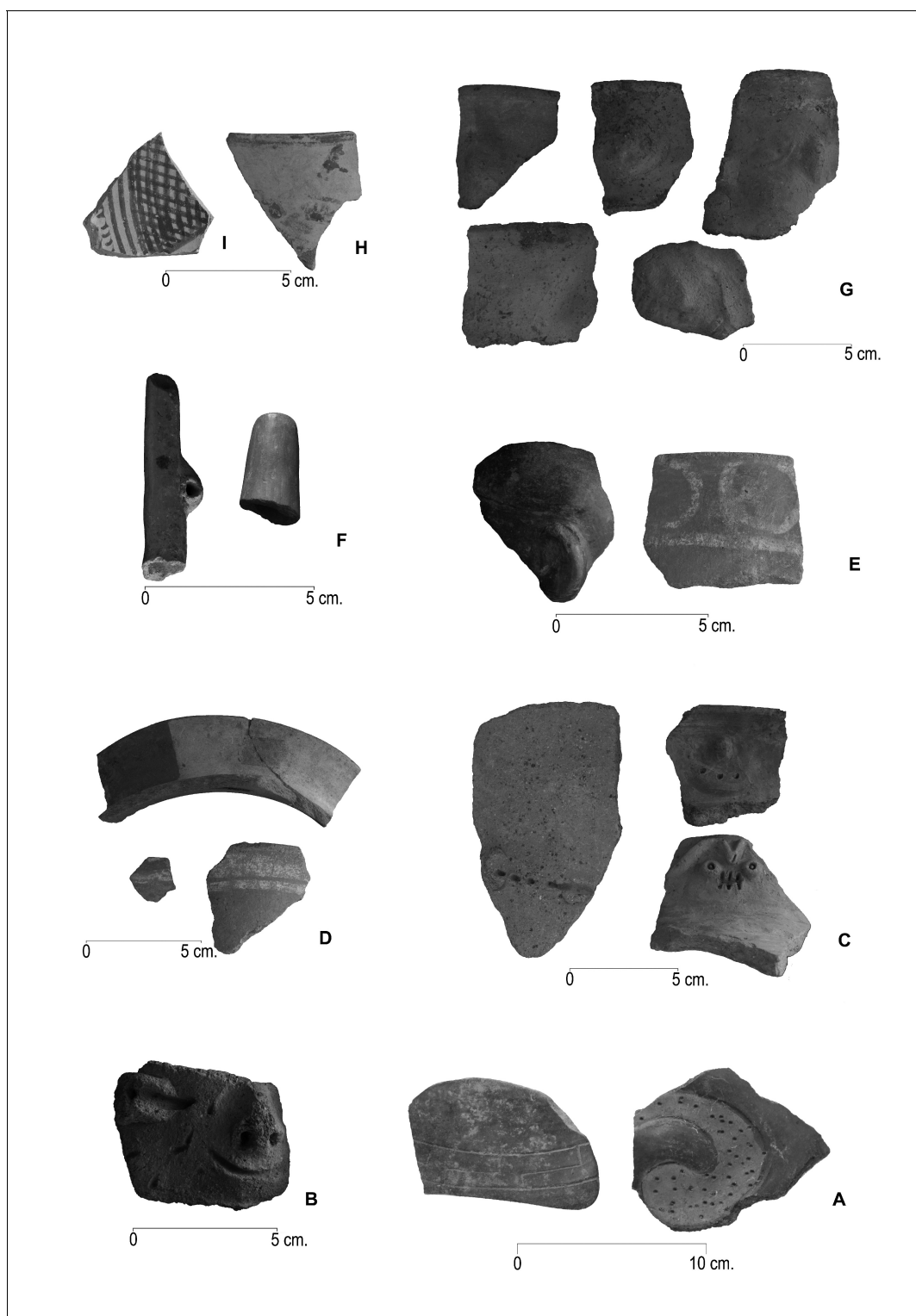


Figure 15: Ceramic styles from Layers 5 and 6, Unit 11, Plain 2, Santa Rosa de Pucalá: (A) Cupisnique; (B) and (C) Gallinazo; (D) and (E) Middle Mochica; (F) Nievería; (G) Mochica tardío; (H) Horizonte Medio; (I) Cajamarca. Photographs courtesy of the Santa Rosa de Pucalá Project.

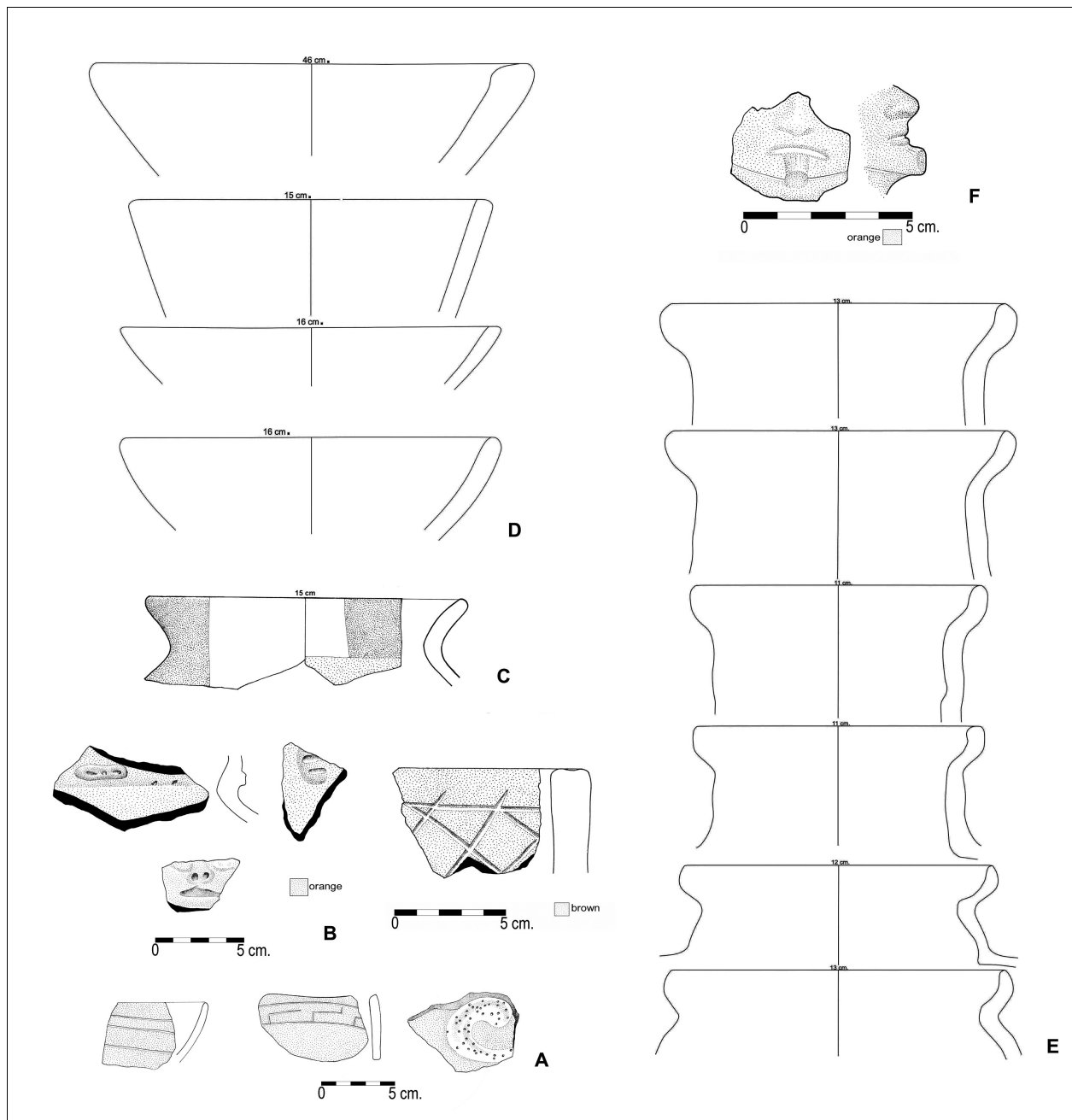


Figure 16: Ceramics from Layer 6, Unit 11, Plain 2, Santa Rosa de Pucará: (A) Cupisnique; (B) Gallinazo; (C) Middle Moche olla; (D) Middle Mochica open vessels; (E) Late Mochica domestic vessel rims; (F) Late Mochica figure wearing a labret. Drawings courtesy of the Santa Rosa de Pucará Project.



Figure 17: Layer 6, Unit 11. The *tapia* architectural compound was discovered in the upper part of this layer, along with post impressions and hearths.
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.



Figure 18: Remains of tapia walls identified in a huaquero pit in the South Huaca of the Santa Rosa de Pucalá complex.

Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.



Figure 19: Miniature cántaros found in the back-dirt from a huaquero pit dug into the South Huaca above the tapia walls. Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.



*Figure 20: Tomb 21 discovered in Unit 11. This is a Middle Horizon 2 secondary burial.
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.*



*Figure 21: Enclosures with niches and restricted access that are part of the *tapia* architectural compound at Huaca Santa Rosa de Pucalá.*

Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.



*Figure 22: View of the tapia architectural compound found on Plain 2 at Huaca Santa Rosa de Pucará.
Photograph by Edgar Bracamonte for the Santa Rosa de Pucará Project.*

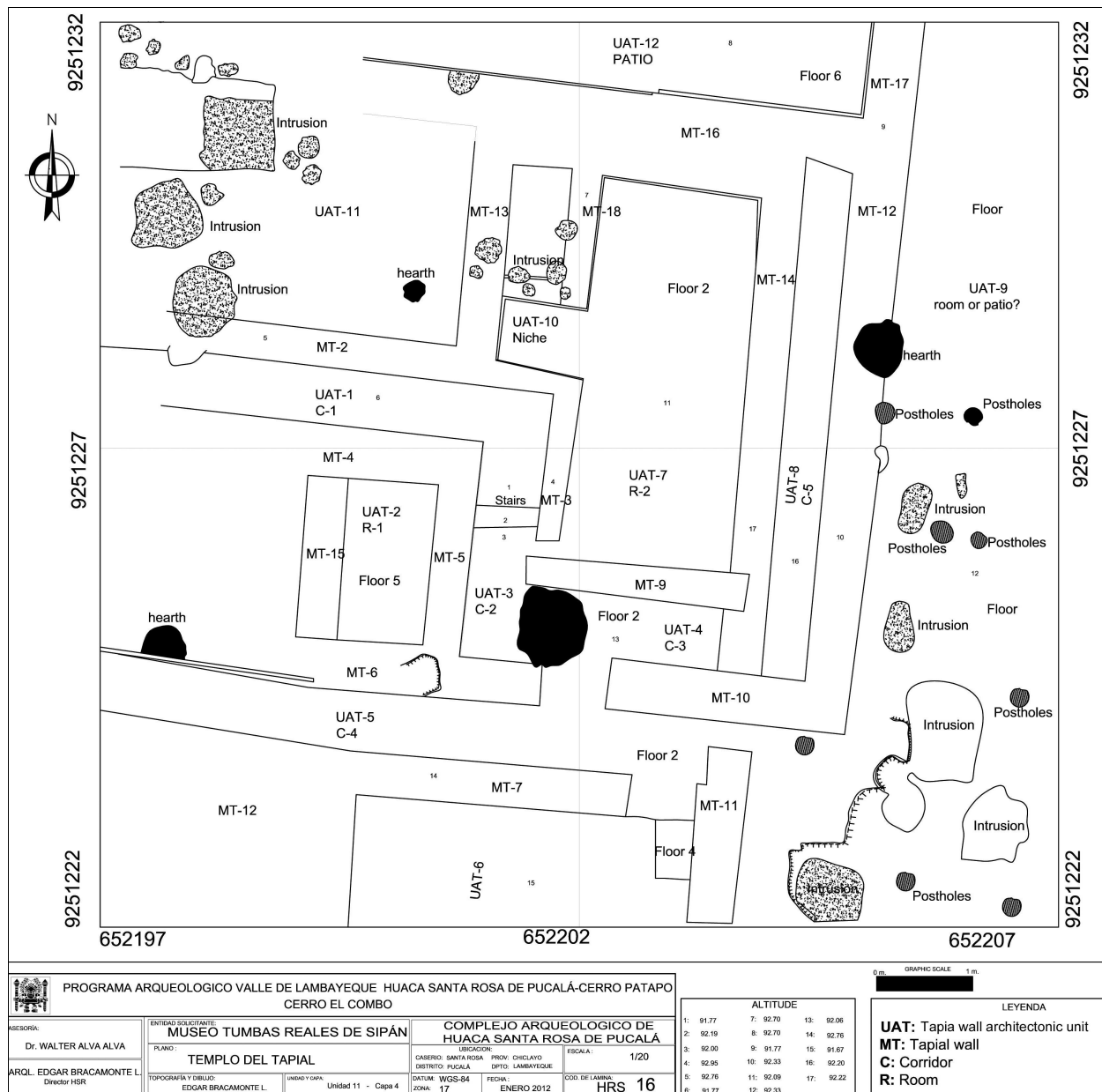


Figure 23: Plan of the tapia architectural compound, Plain 2, at Huaca Santa Rosa de Pucalá.



Figure 24: View from above of the tapia archaeological compound, Plain 2, Santa Rosa de Pucalá.

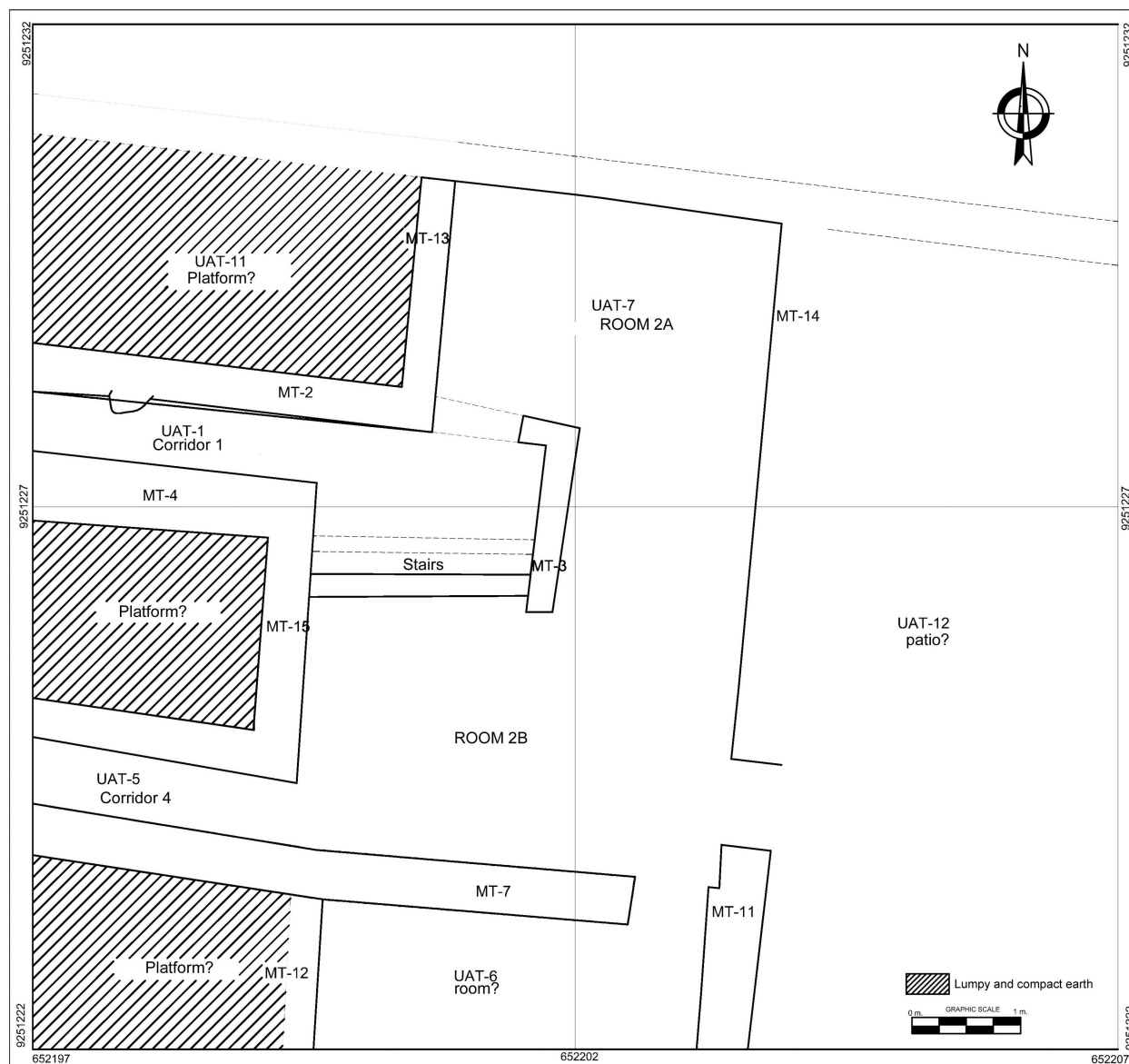


Figure 25: Construction phase 1, last construction phase of the tapia architectural complex at Santa Rosa de Pucalá.

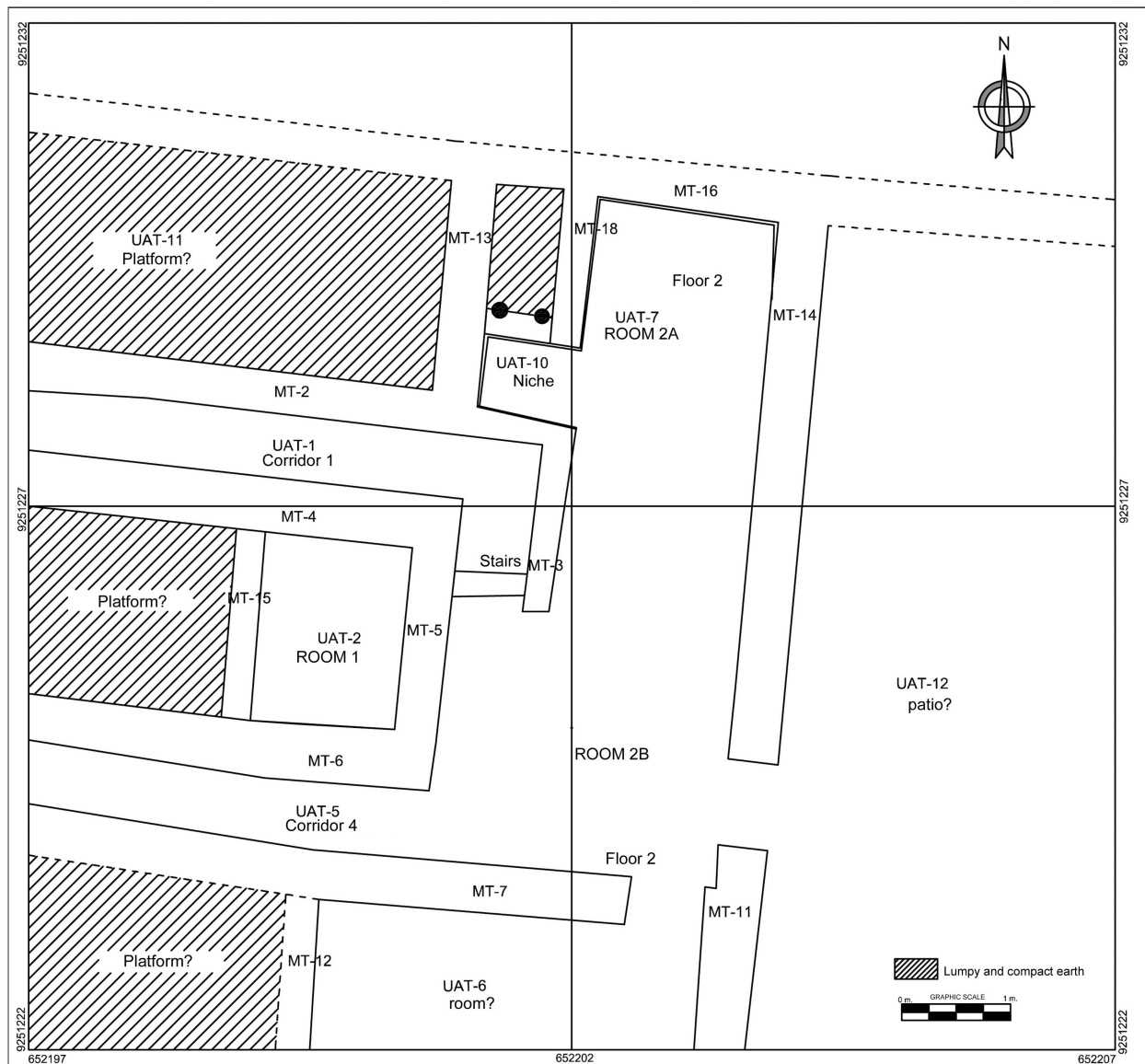


Figure 26: Construction phase 2, penultimate construction phase of the tapia architectural complex at Santa Rosa de Pucallá.

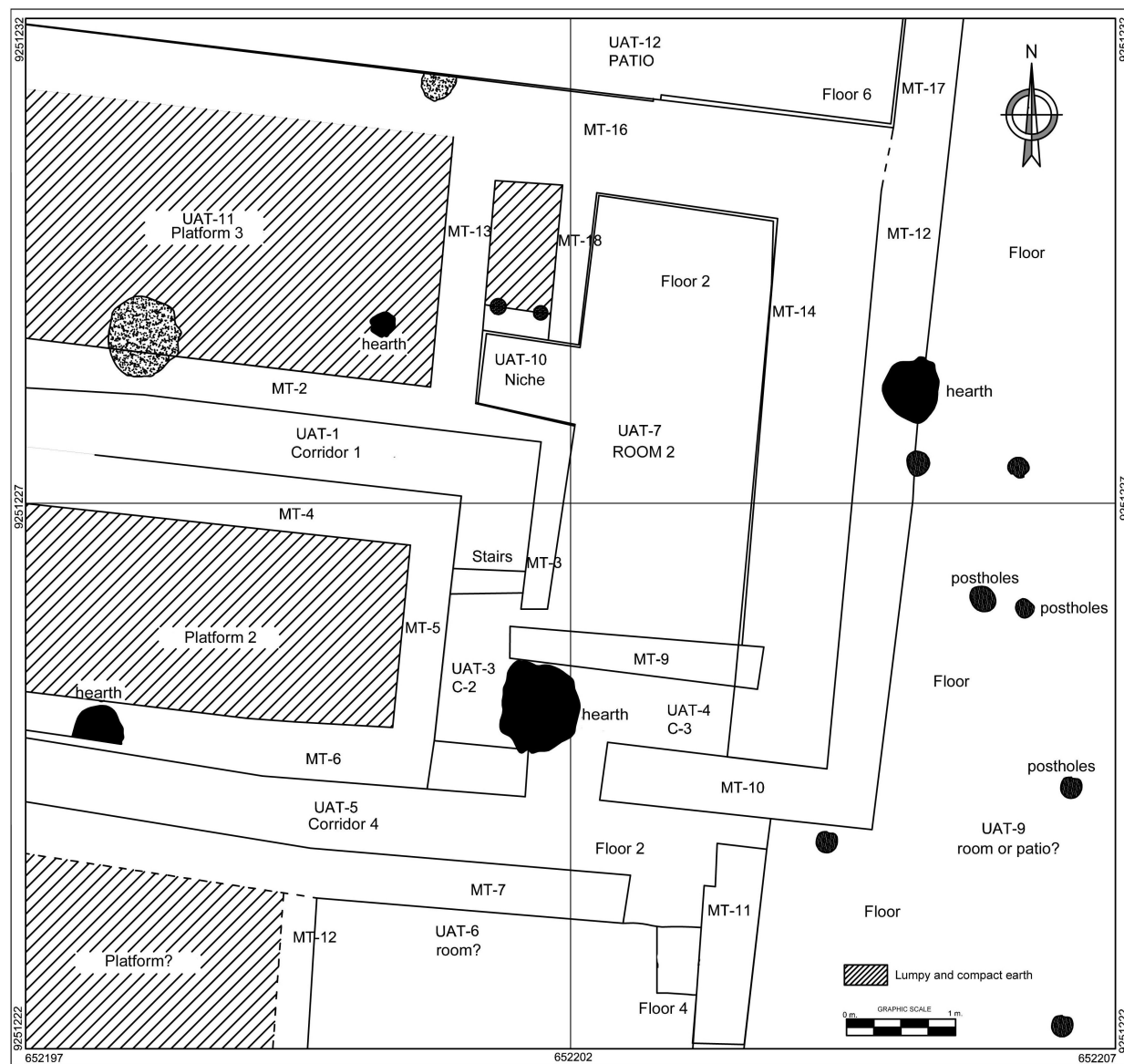


Figure 27: Construction phase 3: antepenultimate construction phase of the tapia architectural complex at Santa Rosa de Pucalá.



*Figure 28: Access staircase of Corridor 1, second construction phase.
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.*



*Figure 29: Detail of the interior niche of Room 2, Phase 2.
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.*

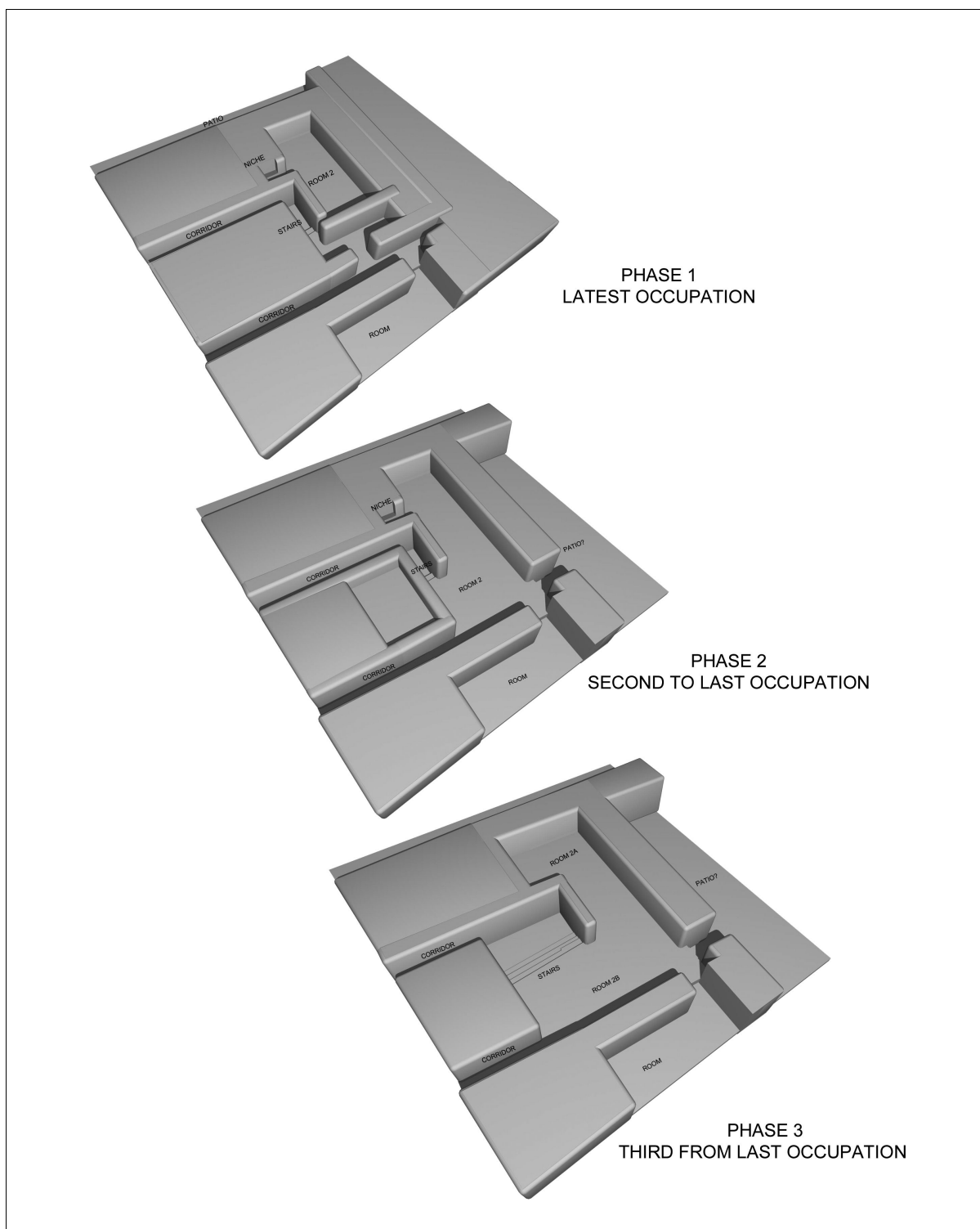


Figure 30: Reconstruction of the three building phases of the *tapia* compound at Santa Rosa de Pucallá that have been discovered up to the present.

Drawing by César Piscoya, Santa Rosa de Pucallá Project.



Figure 31: *Early Mochica architecture at the South Huaca.*



*Figure 32: Moche tomb discovered on Plain 1 of Santa Rosa de Pucalá that has the Sipán funerary pattern (body in extended position, lying on its back, and with the head towards the south).
Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.*



Figure 33: Mochica domestic compound made of adobes. Here, sooted vessels, hearths, and impressions of poles were found. Photograph by Edgar Bracamonte for the Santa Rosa de Pucalá Project.

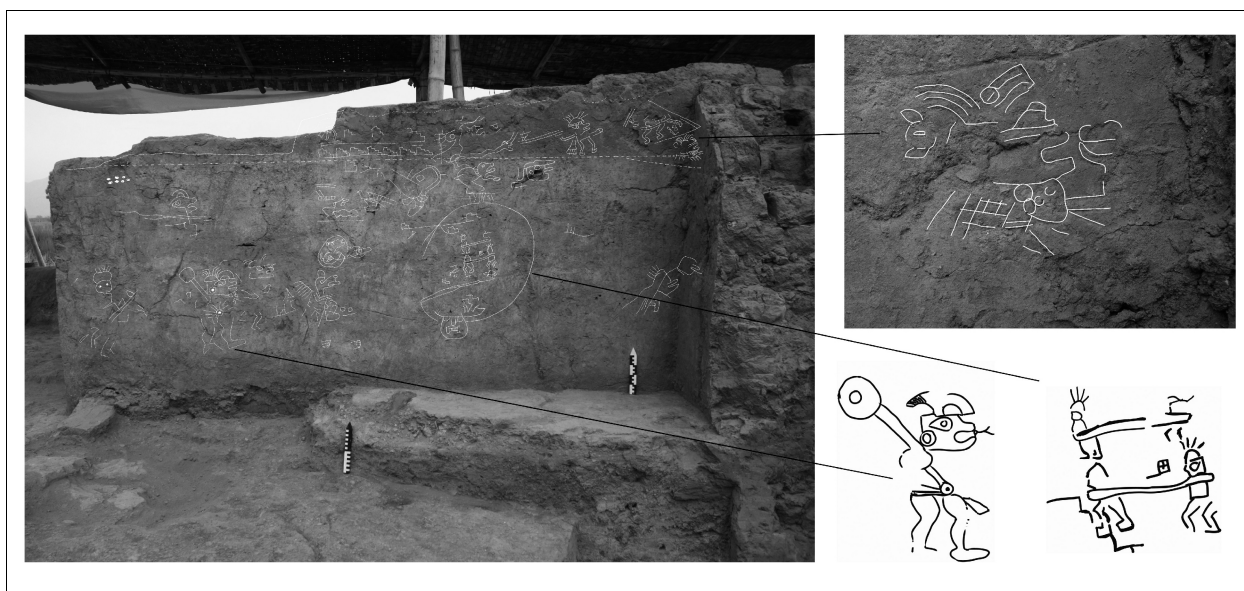


Figure 34: Red and yellow, Middle Horizon painted mural, decorated with graffiti. Photograph and drawing by Edgar Bracamonte for the Santa Rosa de Pucalá Project.

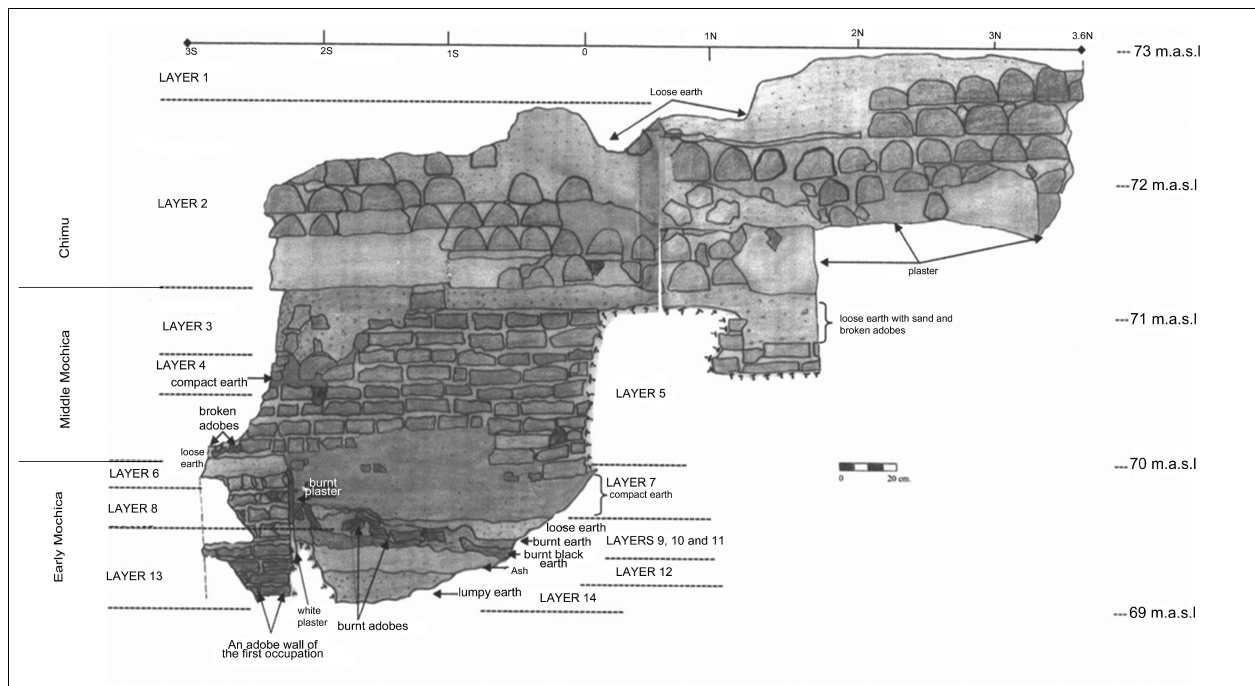


Figure 35: Profile of a huaquero pit at the Huaca Bola de Oro–El Triunfo site where Early and Middle Mochica adobes have been identified. From Bracamonte et al. 2006: figure 3.

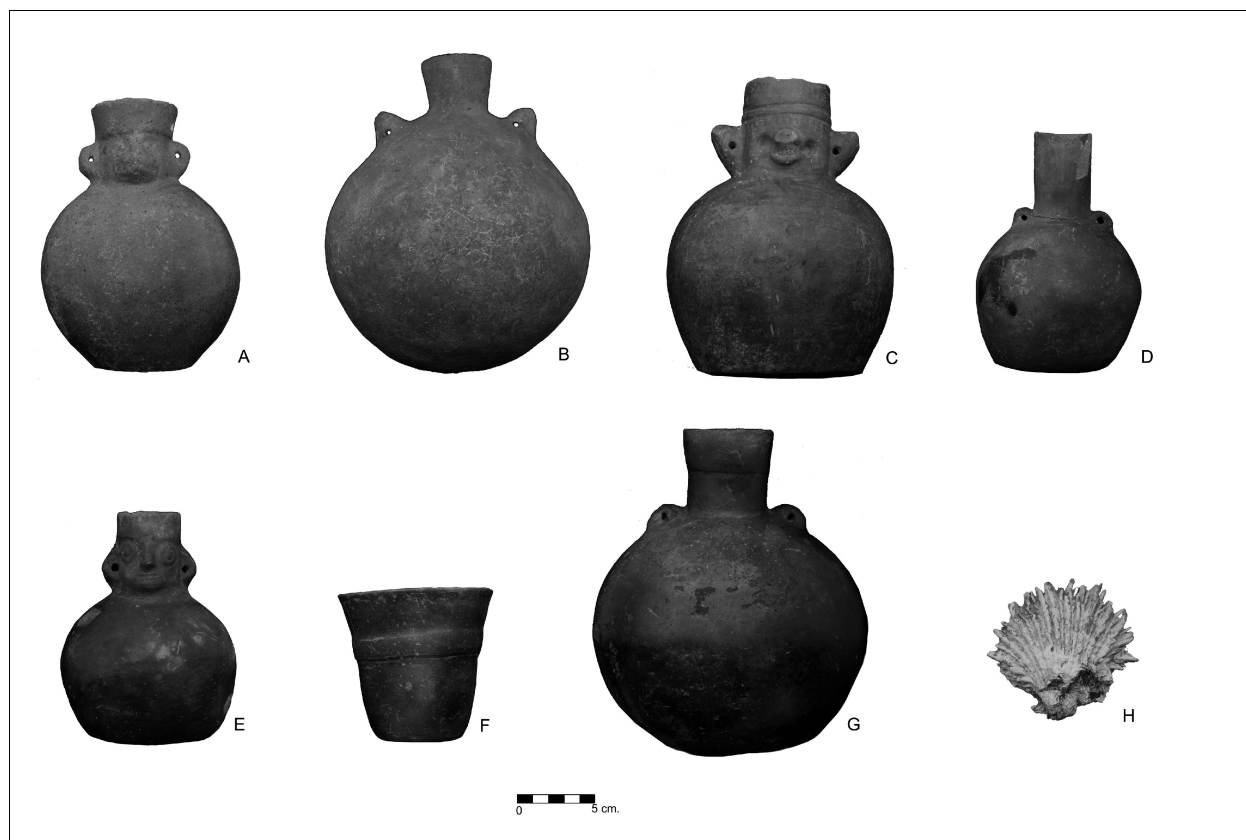


Figure 36: Offerings discovered in Tomb 21, Santa Rosa de Pucalá. (A) and (C) Post-Mochica; (B), (D), (E), and (G) Early Lambayeque; and (F) Wari. Photograph courtesy of the Santa Rosa de Pucalá Project.

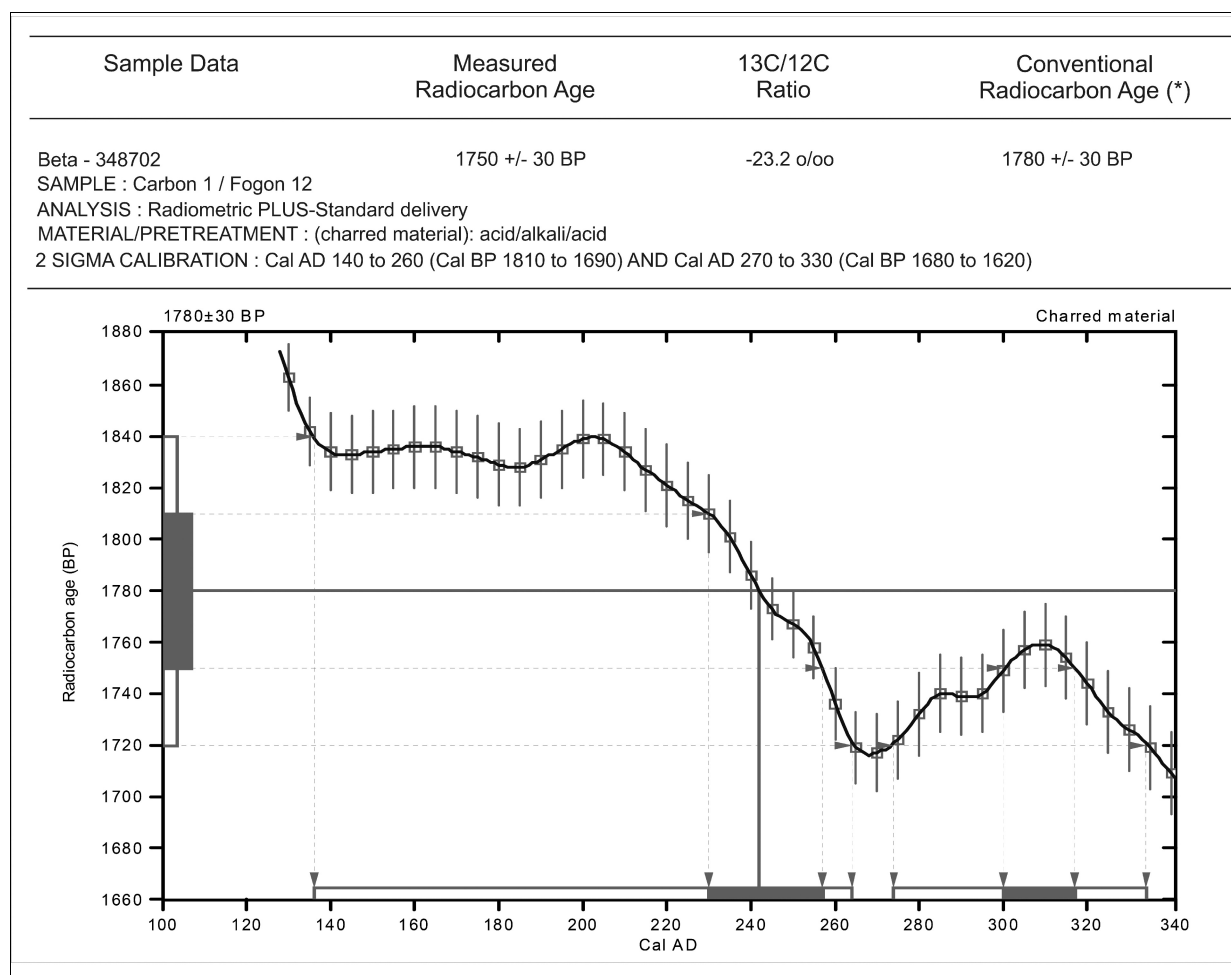


Figure 37: Radiocarbon date on material from Hearth 12, Santa Rosa de Pucalá.

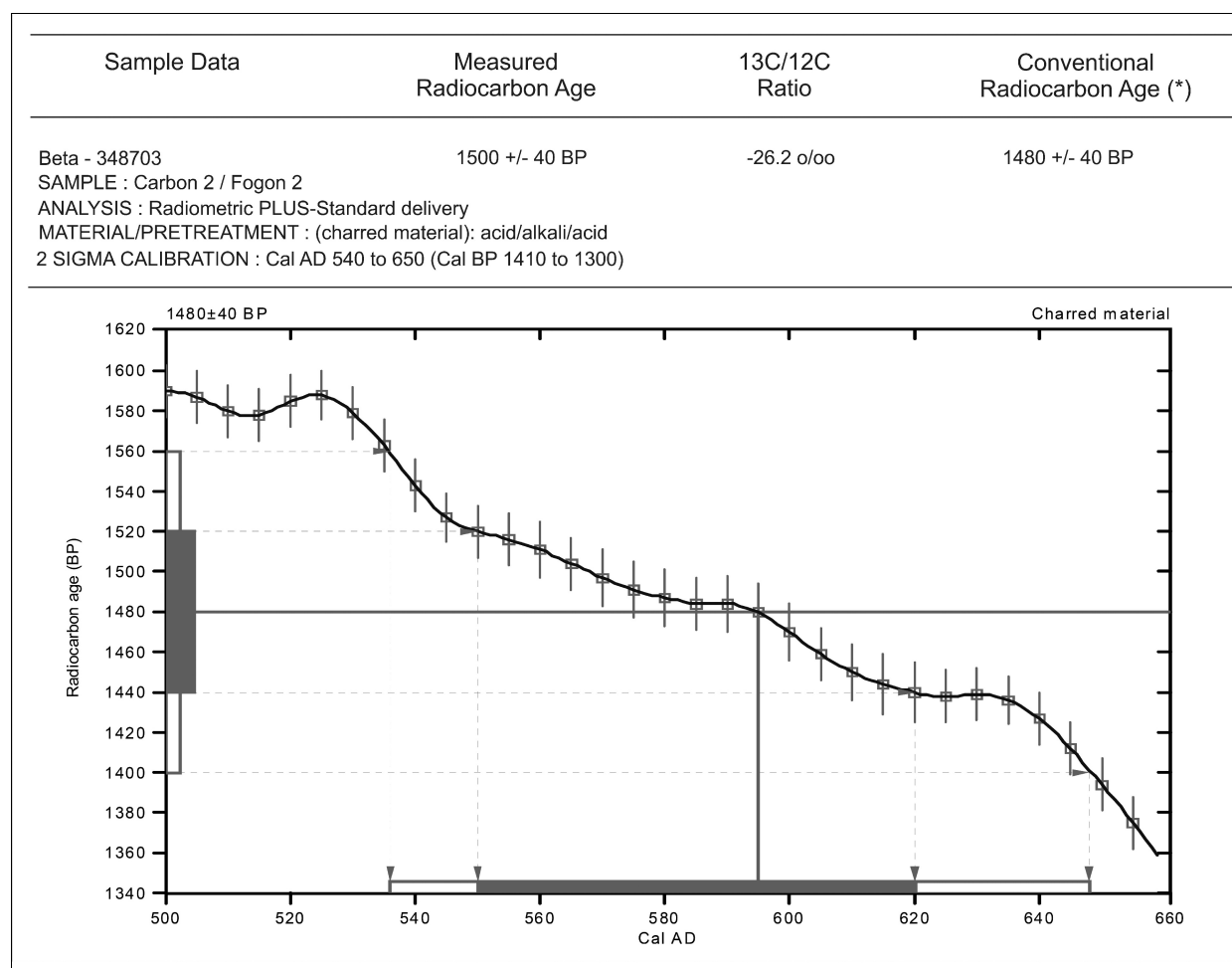


Figure 38: Radiocarbon date on material from Hearth 2, Santa Rosa de Pucalá.

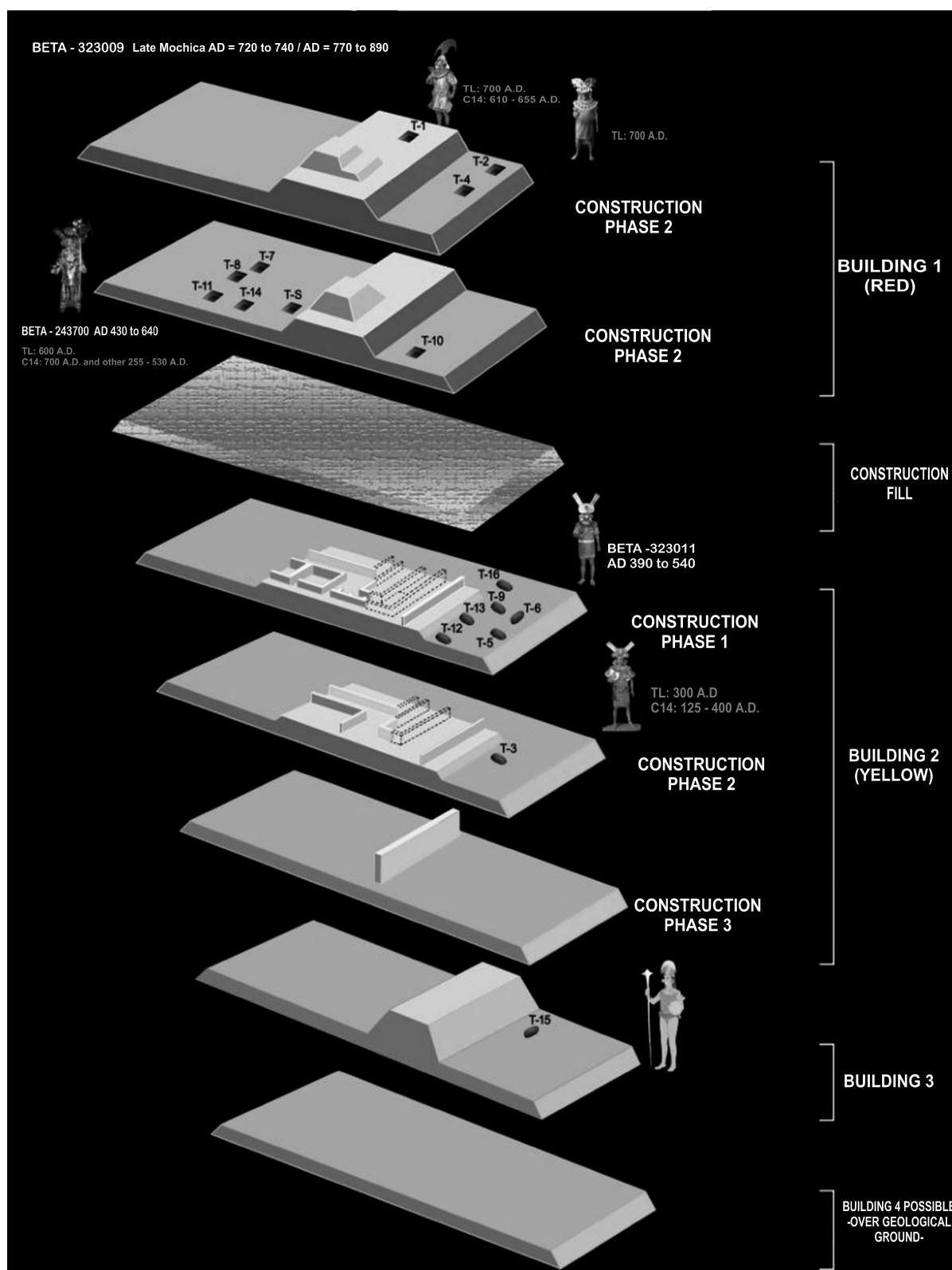


Figure 39: Proposed construction sequence of the Funerary Platform at Sipán.
Drawing courtesy of the Sipán Project, 2013.



*Figure 40: Tapia walls discovered at the architectural compound of Vegachayuq Moqo at Huari.
Photograph courtesy of José Ochatoma.*

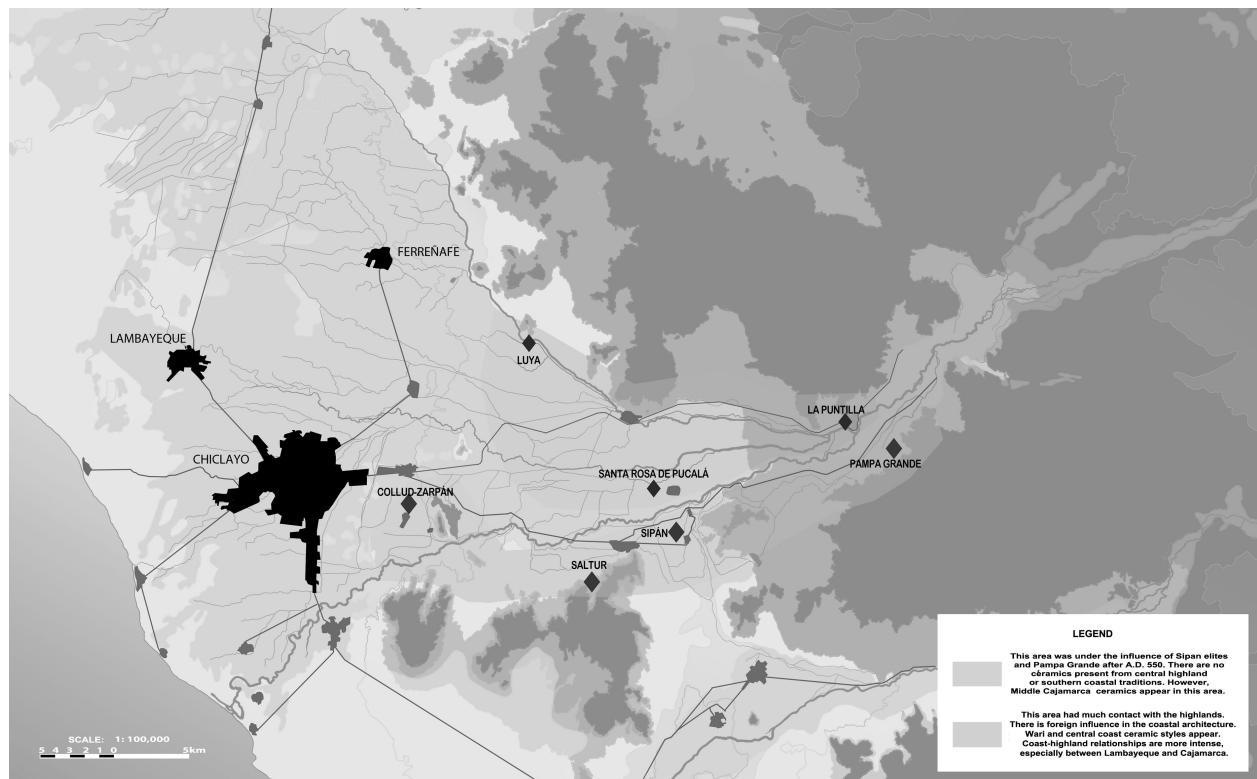


Figure 41: Model of Mochica Divergent Developments in the middle Lambayeque Valley.
Drawing by Bruno Alva after a concept by Edgar Bracamonte.