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Early Construction of a Maya Sacred Landscape: The Sector Y “E-Group” of Nixtun-Ch’ich’ (Petén, Guatemala)

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ABSTRACT

The southern lowland Maya city of Nixtun-Ch’ich’ exhibits an atypical gridded layout imposed in the Middle Preclassic period (800–400 B.C.). Sector Y, in the monumental core, consists of a two-part sub-structural platform with an “E-Group” quasi-astronomical architectural complex (Platform Y1) and a deep natural depression or *fosa*, Fosa Y (Platform Y2). Earliest construction began with bedrock leveling, probably around 1100–1000 B.C., followed by late Terminal Early Preclassic and transitional Terminal Early to early Middle Preclassic building, subsequent massive Middle Preclassic rebuilding, and Late Preclassic enlargement. Excavations in Sector Y provide evidence of the early phases of construction of a sacred landscape proposed to have been based on a mythical creation-crocodile’s back. More broadly, this work contributes to studies of early societal complexity and urbanization in the Maya lowlands, in Mesoamerica, and beyond.

KEYWORDS

lowland Maya; Middle Preclassic; urban grid; E-Group; crocodile

Nixtun-Ch’ich’—a long-lived southern lowland Maya city in the Department of El Petén, northern Guatemala—has an unusual gridded landscape plan that we propose was modeled on a mythical crocodile’s back (Pugh and Rice 2017; Rice 2018). Its dense array of structural platforms is atypical of Classic lowland Maya cities, which more commonly exhibit dispersed but nonetheless urban settlement, with roots in the Middle Preclassic period (ca. 800–400 B.C.). Thus, a primary goal of early fieldwork by Proyecto Arqueológico Itza (PAI), directed by Timothy W. Pugh, was to date the imposition of the grid. Radiocarbon assays (TABLE 1) and comparative ceramic chronologies (TABLE 2) indicate that it was put in place during the Middle Preclassic. Because the so-called “Hallstatt Plateau” in the radiocarbon calibration curve—a “Mamom Plateau” for Mayanists—undermines the precision of dates between 750–400 CAL B.C. (Jacobsson et al. 2018), we rely heavily upon stratigraphic dating. Here we discuss excavations in one grid block in the monumental core of the site, Sector Y, which includes an E-Group. E-Groups, the earliest standard architectural complex in the Maya lowlands, represent “the coalescence of formal Maya communities that shared a unified belief system” (Chase and Chase 2017, 32). The construction history of Sector Y was investigated to explore the early implementation of the city’s grid plan, establishment of the landscape of Nixtun-Ch’ich’, and the early stages of developing societal complexity in the Maya lowlands.

Background

Maya E-Groups

E-Groups are named after an architectural assemblage at the Petén site of Uaxactun, 23 km northwest of Tikal and approximately 60 km northeast of Nixtun-Ch’ich’ (Ricketson and Ricketson 1937). They are characterized by two key structures: a low, elongated, north–south platform with

three structures on the east and, across an open plaza, a pyramidal structure in the west with a square footprint in its later iterations.

These complexes did not originate in the Maya lowlands, however, but more likely in a broader “Isthmian interaction sphere” of peoples in the Gulf coast, central Chiapas, and the southern Pacific coast (Inomata 2017). There, E-Groups were part of a widespread Middle Formative Chiapas (MFC) architectural pattern (Clark and Hansen 2001; Inomata and Henderson 2016, fig. 3), characterized by a distinctive north–south layout. In the Maya lowlands, the MFC pattern and the E-Group format in particular were established as early as 950 B.C. at Ceibal in southwestern Petén (Inomata 2017; Inomata, Triadan, and Aoyama 2017; Inomata et al. 2013). Subsequently, E-Groups evolved and spread more widely in proclaiming strong east–west axial site orientations.

E-Groups are not only the earliest civic-ceremonial architectural complexes in the southern Maya lowlands, but they are also associated with early site foundations (Chase and Chase 2017, 63). The buildings and plazas are thought to have become key places for integrative rituals (Dowd 2017; Doyle 2012, 370; Saturno, Beltrán, and Rossi 2017, 339), crucial for building place-based identities in the newly sedentary communities. Moreover, the three eastern superstructures may commemorate some sites’ mythical founders or deep histories and this, plus their east–west solar orientations, transformed them into anchors of social and cosmic order.

E-Groups have long been thought to have functioned in early horizon-based, observational solar astronomy (Aimers and Rice 2006; Aveni and Hartung 1989; Chase and Chase 2017; Freidel et al. 2017; Rice 2017). They are particularly common in Petén, perhaps reflecting an early emphasis on calendar development and day-counting. Around 17° N latitude, the year can be “perfectly segmented into multiples of 20 days” (a Maya “month”), with each segment ending on a

Table 1. Radiocarbon ages and dates (B.C.) of the Nixtun-Ch'ich' grid corridors (Pugh and Rice 2017, table 1). Dates calibrated with Oxcal 4.2. The long date ranges result from a plateau in the calibration curve affecting Middle Preclassic dates. All dates from charcoal.

Location	Context	Age (Years)	Cal. 2σ range	Sample ID
3rd Street	N3885/E4523, Level 9	2457 ± 24	755–416	AA106865
4th Street	N4064/E4391, Level 11	2492 ± 24	771–540	AA107441
4th Street	N4074/E4391, Level 12	2472 ± 24	768–486	AA107442
4th Street	N4064/E4391, Level 14	2532 ± 31	798–543	AA107440
6th Street	N4279/E4074, Level 12	2515 ± 37	796–522	AA107489

solar-cycle pivot point, such as a zenith, solstice, or equinox (Aveni 2002, 211). But the large corpus of Maya E-Groups displays varied east–west azimuths (Chase and Chase 1995) which, along with later elaborated architecture of the eastern superstructures, resulted in a loss of any direct solar observational alignments that may originally have existed. Such loss is commonly interpreted as signaling that the assemblage had become largely ritually commemorative rather than astronomically functional (Fialko 1988; Laporte 1996). Some of the earliest-dated Early Classic stelae in the southern lowlands, celebrating completion of ca. 20-year Maya calendrical intervals called *k'atuns* (or *winikhaabs*), were erected in front (west) of the eastern structure as, for example, at Uaxactun, and 400-year *bak'tuns* were celebrated at Caracol (Chase and Chase 2017, 60; Dowd 2017, 538; Reese-Taylor 2017, 491–495).

In many E-Groups including those at Uaxactun and Nixtun-Ch'ich', smaller and presumably later platforms on the northern and southern edges of the plaza closed off the plaza from public view, but their functions are unknown. (These structures are distinct from the large platforms north and south of the E-Group in the early MFC layout.)

Nixtun-Ch'ich' and Sector Y

The site of Nixtun-Ch'ich' (FIGURE 1) lies on the western edge of Lake Petén Itzá, the largest in an east–west line of eight lakes traversing central Petén at about 17° N latitude (Brenner 2018). This lake, with a surface area of ca. 100 km², is the largest and deepest freshwater body in the heart of the Maya lowlands. Its abundant terrestrial and aquatic resources—

game (deer, peccary, paca, turkey, and other fowl), fish, reptiles, turtles, snails—would have been attractive to the earliest settlers in the area, who likely had a mixed hunting-gathering-foraging-fishing-horticulture subsistence economy and perhaps initially only semi-sedentary encampments. No signs of Archaic or Preceramic period occupation have been identified in the region, but studies of lake sediments have revealed indicators of forest disturbance and soil erosion as much as 4000–3000 years ago (summaries in Brenner and colleagues [2002] and Castellanos and Foias [2017, 2]). The earliest pottery at the site is found on an elevated spine of mainland and farther east on the tip of the Candelaria Peninsula (Rice 2009, 2019b; South and Rice in press). Elsewhere at the site, sparse traces of terminal Early Preclassic occupation are often found in mottled soils just above bedrock or in deep fill layers. As in parts of Ceibal (Inomata et al. 2013, 467), the ground surface was stripped prior to the construction of the city (Obrist-Farner and Rice 2019).

The city's unusual gridded layout is defined by multiple intersecting corridors: six east–west “streets” and eight north–south “avenues” (Pugh 2019). These define 52 trapezoidal blocks or sectors of elevated platform construction designated alphabetically from the northwest mainland (Sector A) to the point of the peninsula in the southeast (Sector ZZ) (Pugh and Rice 2017). The gridded area occupies 1.1 km²; the entire site is approximately 2.5 km² in area.

The civic-ceremonial core of Nixtun-Ch'ich' is defined by monumental constructions in four central sectors of this grid—Y, Z, AA, and BB (from west to east)—which are bisected by the city's *axis urbis* at an azimuth of 94.5°. Sector BB is occupied by Structure BB1, a large “triadic” platform that is an early, but generally Late Preclassic, architectural form. Sector AA comprises the eastern structure of an E-Group, its western edifice overbuilt in Sector Z by Structure Z1/2 or taller Structure Z1/1. Sector Y, west of Sector Z, includes a complete E-Group. This four-part, aligned, civic-ceremonial arrangement constitutes the core of an early sacred landscape (Rice and Pugh 2017).

Sector Y is bounded on the north by 4th Street, on the south by 3rd Street, and by Avenues E and F on the west and east, respectively (FIGURE 2). It consists of two contiguous sub-structural platforms, Y1 to the west and Y2 to the east. Platform Y1 supports the E-Group, its two main structures (eastern Y1/1 and western Y1/2) situated on the site's central axis. Platform Y2, an eastern annex atypical of E-Groups, appears to have been built around a deep oval depression that we call Fosa Y. Perhaps originally a small sinkhole or cenote, Fosa Y also lies on the central axis as does a low platform, Structure Y2/1, to its east. Tall Structure Y2/2, north of the depression, has a broad southern apron sloping toward Fosa Y.

Taking these two sub-structural platform components (Y1 and Y2) together, the Sector Y construction block has a rectangular footprint measuring 162 m east–west and 128 m north–south from its street edges. Construction of the Y1 platform, which occupies the western two-thirds or so of this block, rises a little more than 7 m above the unusually low bedrock in this location, but only about 2 m above the current corridor surfaces.

PAI's excavations in Sector Y (FIGURE 2), as elsewhere at the site, were carried out through two main strategies. One consisted of horizontal surface clearing operations: removing humus and disturbance layers and structural collapse over a broad area to expose the latest intact construction and/or

Table 2. Preclassic ceramic complexes (and preliminary chronology) at Nixtun-Ch'ich'. Ceramic spheres identified at Uaxactun and Tikal.

Period	Ceramic Sphere	Ceramic Complex	Proposed Dates
Colonial			A.D. 1697–1840
Contact			A.D. 1525–1697
Late Postclassic			A.D. 1200–1525
Early Postclassic			A.D. 950/1000–1200
Terminal Classic			A.D. 820–950/1000
Late Classic			A.D. 600–820
Early Classic			A.D. 200–600
Terminal Late Preclassic			A.D. 1–200
Late Preclassic	Chicanel	Chito	300/200 B.C.–A.D. 1
Late Middle Preclassic	Mamom	Late Nix	500/400–300/200 B.C.
Middle Preclassic	Mamom	Nix	700–500/400 B.C.
Early Middle Preclassic	Mamom	Early Nix	800–700 B.C.
“Transitional”	Mamom	Yum (mixed)	900–800 B.C.
Terminal Early Preclassic	“Pre-Mamom”	Late Chich	~1000–900 B.C.
Terminal Early Preclassic		Early Chich	~1100–1000 B.C.
Late Early Preclassic		K'as	~1300–~1100 B.C.

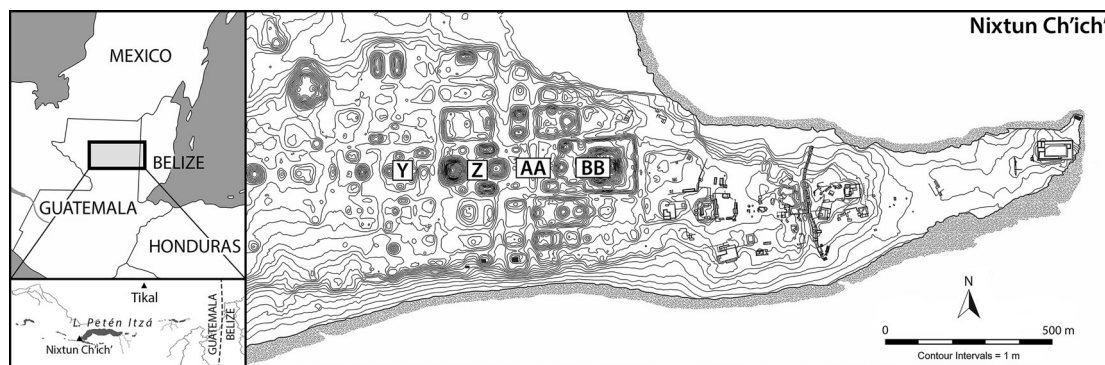


Figure 1. Map of Nixtun-Ch'ich' indicating monumental central sectors (Y, Z, AA, BB), and locator inserts.

occupational surfaces. The second strategy consisted of vertical excavations: deep test soundings (*sondeos*) excavated to bedrock through cultural and artificial levels. Because of the depth of these units and the potential danger to excavators posed by wall collapse, these test pits were typically stepped down from an initial 3×3 m or larger surface opening area to 2×3 m, to 1×2 m, and eventually, if necessary, to 1×1 m at their deepest.

Northern Sector Y Excavations

The northern edge and corners of Sector Y were investigated as part of broader efforts to understand the construction of 4th Street and Avenues E and F, and these corridors' chronological and architectural relations to Platforms Q1, Y1 and Y2, and Z1 (Pugh 2018).

Northwest corner of Platform Y1

The northwest corner of Platform Y1 was explored as part of an L-shaped clearing excavation interrupted by test

soundings. This operation extended 23 m south from Sector Q (Platform Q1), crossing 4th Street into the northern part of Avenue E which abuts Sector Q, with a 9 m turn to the east to Y1.

A test unit excavated into the northwest corner of Platform Y1 revealed approximately 2.5 m of Middle Preclassic construction above bedrock, including seven surfacings (FIGURE 3). Constructional activity began with a fill deposit to level the bedrock, which sloped from east to west. This fill was capped with two surfaces or floors (6 and 7) 25 cm above bedrock (about 3.25 m below surface). Above these floors was a ca. 50 cm-thick stratum of Yum Transitional (mixed Chich-Nix) fill (Level 11) that included a shattered but reconstructible red-orange slipped Tono Incised incurving-rim bowl with a mouth diameter of 22 cm (FIGURE 4A). Inside this bowl was a black-slipped Ensenada Incised dish with flaring sides (FIGURE 4B). Its exterior decoration featured two encircling lines bounding a broad panel with a knot motif flanked by Xs. The rather crude incising combined pre- and post-slip modes: the upper line was pre-slip-incised accentuated by post-slip

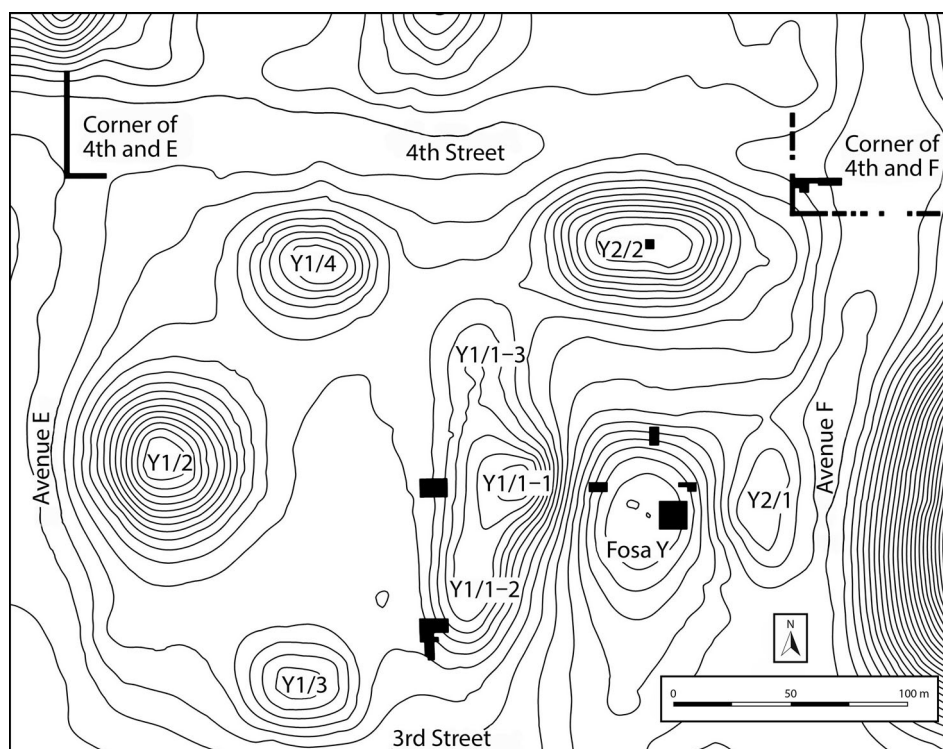


Figure 2. Map of Sector Y identifying structures, streets and avenues, and excavation locations (black rectangles). Sector Q lies north of 4th Street; Sector Z (and Mound Z1/1) lies to the east. Contour intervals 0.5 m.

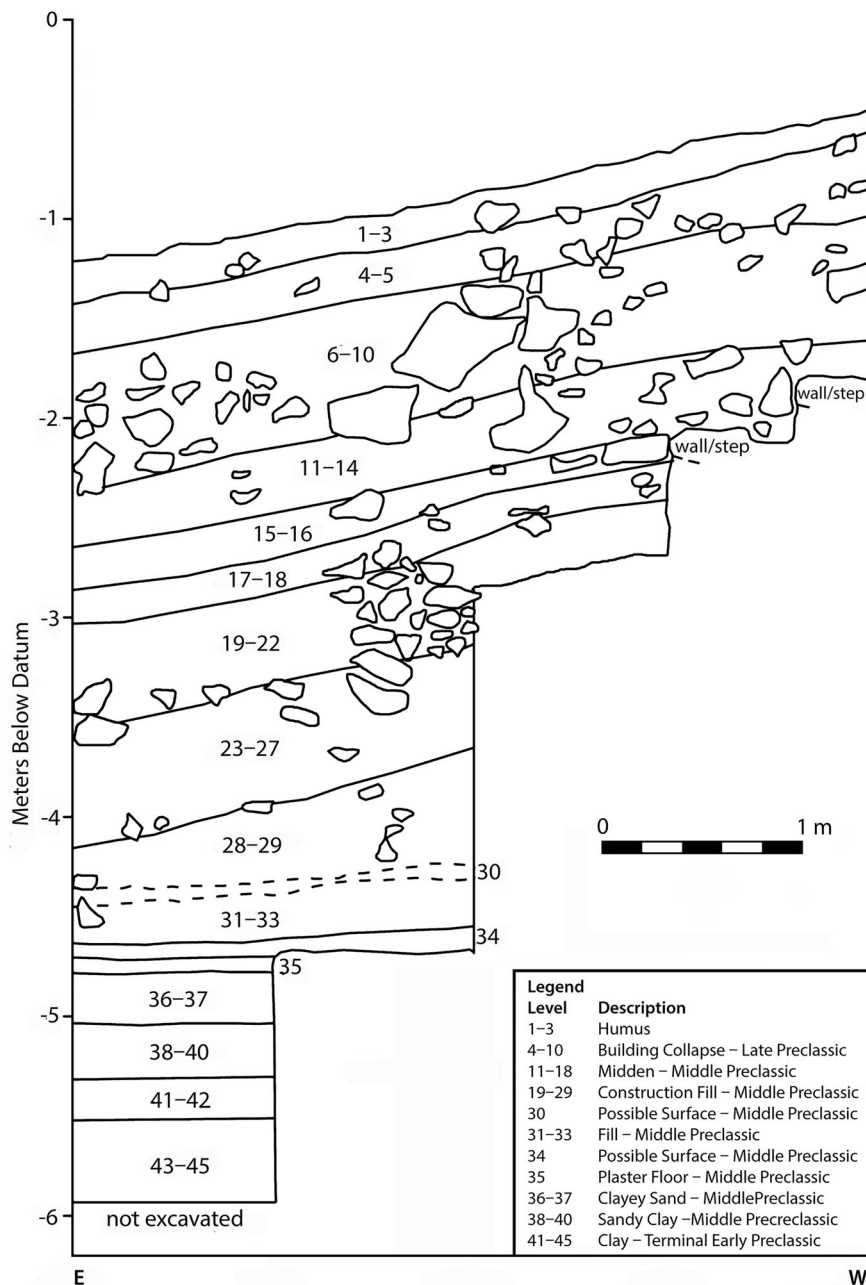


Figure 3. Profile of the south wall of the excavation unit at the northwest corner of Platform Y1.

incising; the rest of the incising was post-slip. These two vessels might have been placed as dedicatory offerings.

These early fills and floors were topped by two Middle Preclassic floors or surfaces (Floors 4 and 5), over which was a ca. 25 cm-thick layer of *piedrín*. This gravel was covered with three Late Preclassic floors that corresponded to surfaces found elsewhere in the excavations across 4th Street (below). Above these floors was 1.2 m of Late Preclassic construction fill (Levels 2–6), which established the westward extension of the Y1 platform in this area and covered part of the earlier Avenue E surfacing. Clearing over an area 3.5 m east of the test unit revealed that the Late Preclassic northwest corner of Platform Y1 was stepped (FIGURE 5). Three stone steps, probably originally covered with stucco, allowed residents of the city to access the structure from both 4th Street and Avenue E.

All levels identified in the deeper part of the unit extended over a large area (seen in adjacent excavations [Pugh 2019]), which may represent initial construction of the streets or

possibly a more open plaza-like area in the early Middle Preclassic.

Northeast corner of Platform Y2

The northeast corner of Platform Y2 was investigated in the same way, and for the same reasons, as the northwest corner of Y1: to determine the constructional relations among streets and blocks, in this case among Platforms Q1, Y2, and Z1, and 4th Street and Avenue F (Chan 2017; Pugh, Chan, and Reyes 2018). A deep test unit was excavated through 22 levels to bedrock lying a little less than 4 m below surface.

Bedrock was covered with approximately 1.7 m of clayey earth, light to dark gray in color, excavated in six levels (Levels 22–17). The construction appears to date to the Late Chich phase with generally low quantities of tiny sherds (ca. 1.5 mm or less). This first construction episode was capped with a 3 cm-thick surfacing of sticky, black, clayey soil (Level 16). This and similar sticky, organic clayey material ranging in color from black to dark gray to brown

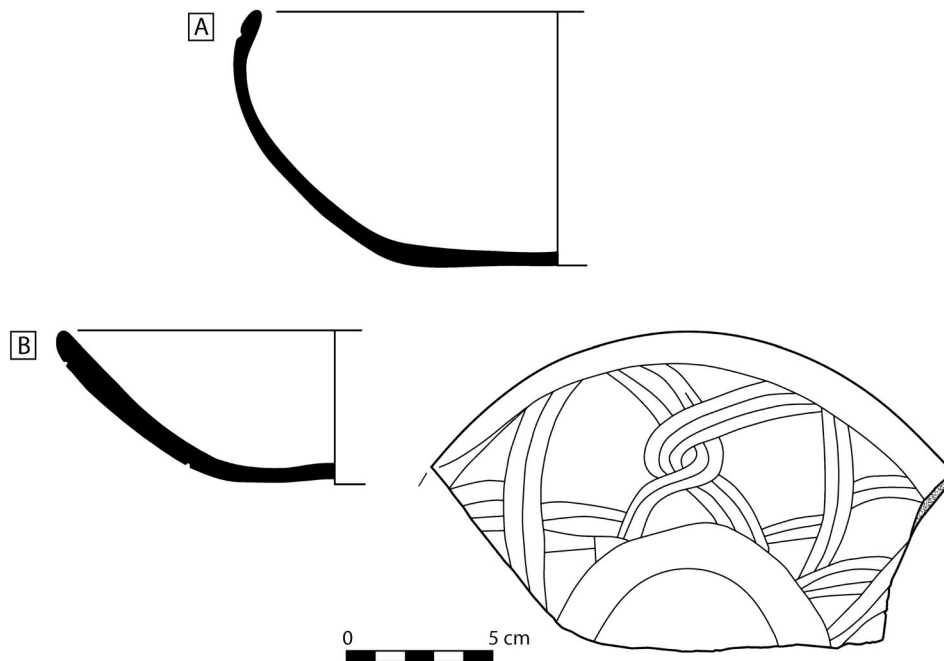


Figure 4. Pottery in Level 11 in the northwest corner of Platform Y1: A) Tono Incised bowl; B) profile and exterior design of an Ensenada Incised bowl placed inside the Tono Incised vessel.

is a common surfacing of early (primarily Yum Transitional and Early Nix Middle Preclassic) constructions throughout Nixtun-Ch'ich' and appears to antedate the development of lime plasters and stuccos (Rice et al. 2018, 760–761). It is also found in early constructions elsewhere including nearby Buenavista-Nuevo San José (Castellanos and Foias 2017, 9), Ceibal (Inomata et al. 2013, 467–468), El Palmar (Doyle 2017, 260, 263), and El Mirador (Hansen 2016, 346, 360). The clay is thought to have been water-deposited and brought to the site from nearby wetlands, perhaps the site's lakeside perimeter. This black clay was covered with another thin surfacing or floor of gray clay mixed with crushed limestone (Level 15), creating a platform rising approximately 1.75 m above bedrock.

Above, two levels (14–13b) of clayey gray fill and a stucco floor (Level 13a; Floor 4), dated to the Yum Transitional period, and raised the platform another ca. 50 cm. This was covered with about 30 cm of five thin fills and two floors, then buried by reddish fill capped with Floor 2 (Level 8a),

all of which elevated Platform Y2 to a height of 2.5 m above bedrock (ca. 1.5 m below surface). Another 50 cm of Early Middle Preclassic (Early Nix Mamom) fills (Levels 6 and 7) was topped with a thin surfacing, Floor 1 (Level 6a), above which was Late Preclassic construction and collapse material. The northeast corner of Y2 had steps, as did the northwest corner.

Part of the excavations at the northeast corner of Platform Y2 cut across its eastern edge into Avenue F and four sequential constructions of the platform edge (Platforms Y2-I, Y2-II, Y2-III, and Y2-IV, in order of excavation). Platform Y2-I (uppermost) was composed of large, roughly coursed, and apparently reused cut limestone blocks. Platform Y2-II below was built with smaller, brick-like limestone blocks (*lajas*) laid in neat courses. Platforms Y2-III and Y-IV (earliest) were composed of coursed limestone blocks.

Two Late Preclassic ceramic vessels were recovered in the fill of Platform Y2-I, perhaps dedicatory caches paralleling those at the northwest corner. One was 95 percent of a broken but reconstructible deep Sierra Red “bucket” form with eroded surfaces and use-wear on the everted lip. It held about a third of a broken Yum Transitional red-slipped cuspidor, perhaps from an earlier cache, and was surrounded by small flat, rectangular stones (*lajas*). The second vessel, also surrounded by *lajas*, was found nearly 4 m to the east and closer to Avenue F. It was about 45% of a broken and partially reconstructible censer with face or mask modeled on one side (FIGURE 6A). Most of the face was unfortunately missing, so it is impossible to identify the deity represented.

4th Street, Avenue F, and Platform Y2: excavations and clearing

Surface clearing northeast of Platform Y2 was undertaken in a large area of about 88 m² (Chan 2017). The goal was to better understand construction at the intersection of 4th Street and Avenue F, which bordered the northern and eastern edges of Sector Y, respectively, and the chronological relations of the



Figure 5. The stepped northwest corner of Platform Y1, looking south.

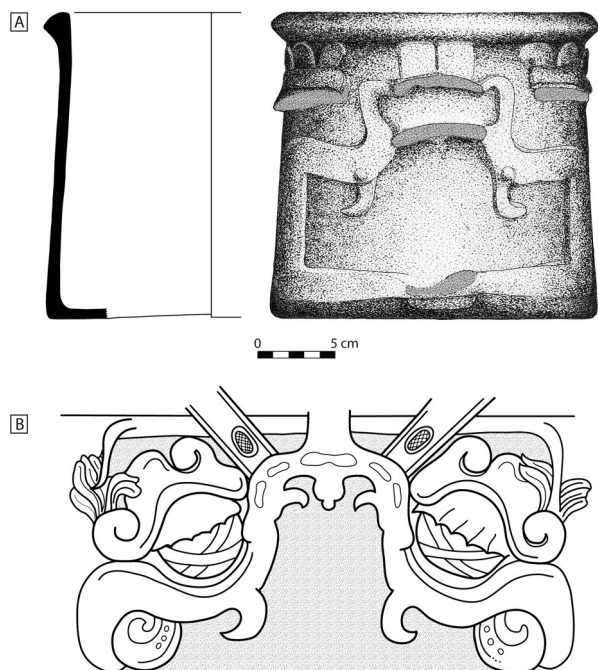


Figure 6. A) Partially reconstructed Late Preclassic modeled censer cached at the northeast corner of Platform Y2; compare with B) the mouth of a Late Classic “cosmic crocodile” from the roof of the Temple of the Cross, Palenque (after Taube 2010, 207).

three. Broad Avenue F may have been a major point of entry, perhaps ceremonial, to the civic ceremonial nucleus of Nixtun-Ch’ich’ from the north and also to the Sector Y E-Group. Both corridors were built up through multiple surfacings.

Avenue F had three floor constructions (only the latest of which, Floor 1f, is visible in [FIGURE 7](#)). Earlier constructions were noted below at least three of the Platform Y2 edges and may also pass under Platform Y2-IV. Nearly identical gray clay lenses topping pulverized limestone were noted under Floor 4a and Platforms Z and Q at the intersection of 4th Street and Avenue F, and likely comprise surviving portions of a pre-grid construction (Pugh 2019).

Excavations into 4th Street revealed that it had six episodes of construction or refurbishing. The lowest fill, a thick layer of light gray crushed limestone and clay to level bedrock, yielded Terminal Early Preclassic (Chich; Pre-Mamom) ceramics and preceded corridor construction per se. Above was a floor of

dark, sticky clay surmounted by a lens of gray clay. These strata, plus two fills above, incorporated Nix Middle Preclassic pottery; the uppermost three included Late Preclassic diagnostics.

Y1 Platform and Structure Y1/1 Excavations

The two defining E-Group edifices constructed atop Platform Y1 are the eastern range Structure Y1/1 and western pyramidal Structure Y1/2 ([FIGURE 2](#)). The two other structures, Y1/3 and Y1/4, close off the southern and northern sides of the plaza of Platform Y1, respectively. Structure Y1/2, thus far untested, rises approximately 6 m. Structure Y1/1, standing 2 m high above plaza level and extending approximately 83 m north–south (oriented 3° east of north), exemplifies the “Uaxactun configuration” (see Chase and Chase [1995, 2017]), supporting three superstructures, designated Y1/1-1 (center), Y1/1-2 (north), and Y1/1-3 (south). As is sometimes seen in early versions of these complexes (e.g., Cival [Estrada-Belli 2016, 264]; see also Clark [2016, 147]), the central superstructure (Y1/1-1; 1.5 m high) is slightly offset behind (east of) the north–south axis of Structure Y1/1. In addition, the northern superstructure, Y1/1-2, is lower than the others, suggesting that either construction was never completed or it had collapsed or was dismantled.

Two excavation units were placed at Structure Y1/1 in the 2017 field season. One, referred to as Unit 1 below, was situated on the lower front (west) centerline to investigate the structure’s construction history and in hopes of encountering the dedicatory centerline greenstone or pottery caches typically seen in front of these structures. Unit 2 was placed at the southwest corner of Structure Y1/1 to try to identify corner architecture and thereby aid in determining the structure’s actual north–south dimension.

Unit 1: Platform Y1 and Structure Y1/1 western face

Unit 1 ([FIGURE 8](#)) was opened as a 4 × 6 m area on the western face of Structure Y1/1 on the central axis of the site, the complex, and the structure. Excavations were taken to bedrock, 7.25 m below the Y1 plaza’s modern surface, and gradually stepped down such that the last level above bedrock (Level 27) was exposed in a reduced area of 1 × 2 m.

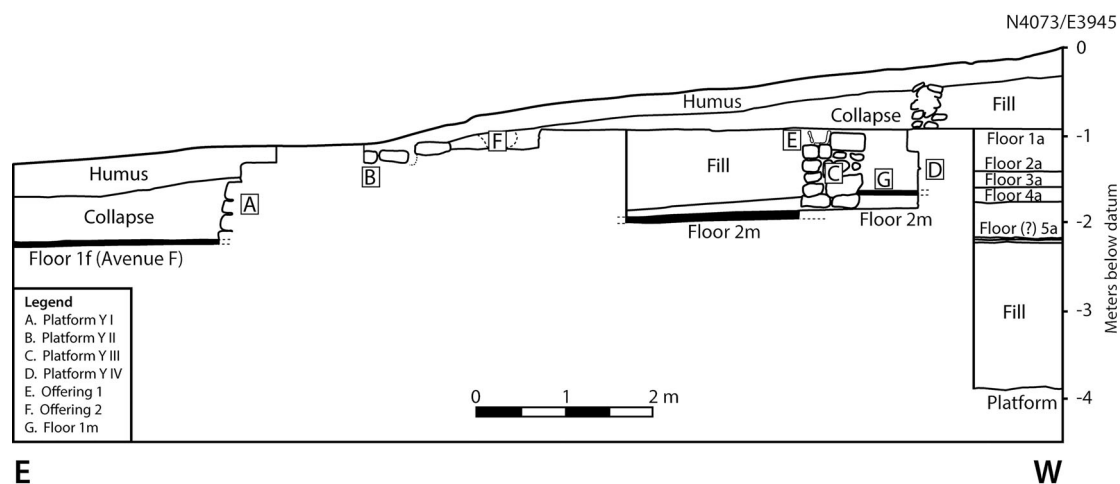


Figure 7. South profile of excavation at Avenue F and the eastern edge of Platform Y2. Floors 1f, 2 m, and 4a are likely the same surfacing episode. See text.

Construction of Platform Y1 appears, from this small exposure, to have begun with about 50 cm of gray clay and crushed limestone placed over bedrock, probably as part of leveling the characteristically uneven substrate prior to major building efforts. It appears to be the same fill noted above bedrock in the excavations of 4th Street and Avenue F, discussed above. Pottery in this clay consisted of 29 very small sherds (11 red-slipped, four Belisario Black, three Caprese Gray: Plateado variety, and 11 unidentified unslipped) of the Late Chich ceramic complex. In addition, a cut *Conus spurius* shell (a venomous Atlantic marine gastropod) and a black-slipped clay whistle in the form of a toucan (Rice 2019a, fig. 12.1d) were recovered. The gray clay was topped with a thin, crude surfacing of clay and lime (Level 26b).

Two (or more) platform constructions, Y1-subA and Y1-subB, were raised upon this base.

PLATFORM Y1-SUBA: YUM TRANSITIONAL (CHICH/EARLY NIX)

About 1.5 m of largely undifferentiated sandy clay and limestone fill overlay the Level 26b surfacing. Excavated by artificial levels (23 to 26) in a 2 × 3 m area, this fill incorporated Yum Transitional complex pottery. Five strata (Levels 22b, 22, 21b, 21, and 20) of dark clayey soil with limestone, totaling about 70 cm thickness, overlay this Transitional fill; these seemed to be crude surfacings with Level 20 a floor (Floor 6). The pottery in these levels was also Yum Transitional.

In addition to the pottery, two anthropomorphic terracotta figurines were recovered from these fills. One, in Level 25, was the right thigh of a seated figure made of the distinctive white clay that characterizes many Middle Preclassic

figurines at Nixtun-Ch'ich' (Rice 2019). The other, from Level 22, was a broad, red-painted torso of a seated female missing its head, arms, and legs. Two round worked sherds were probable artifacts. One, of ashy cream-colored paste from Level 21, may have been a fishing-net weight. Although this disk lacked the typical notches characterizing later-dating weights, previous examination of these artifacts suggested that the relatively rare Preclassic weights were usually large and round (Rice, Rice, and Pugh 2017, 24–25). This example varied around 4.4–4.8 cm in diameter. The second worked sherd might have been a spindle whorl. This artifact, from Level 23, represented about 1/8 of a disk about 8.5 cm in diameter; it was of ashy paste with a red slip and had a central perforation.

As for stone tools, Levels 21–25 included 30 pieces of obsidian: 25 blade fragments, a possible scraper, 3 flakes, and a chunk. A tentative effort at visual sourcing suggested that all of this obsidian was likely from the San Martín Jilotepeque (SMJ; Guatemala) quarries. Level 25 yielded a small, gold, oval, semi-translucent pebble. In Level 23, a chisel-like tool of chipped yellow-gray chert was recovered, along with a pale pinkish limestone ball about 2.1 cm in diameter. A large, irregular chunk of fine, red-orange, sandstone-like material in Level 22 may have been a source of red-orange pigment.

Level 20, above these early fill strata, was a light-colored clayey-soil floor/surfacing (Floor 6). Few artifacts were recovered from this surfacing: 11 sherds; a worked base of a possible censer, measuring 8 cm in diameter; and a small, egg-shaped, orange stone (or fired clay?) with a perforation.

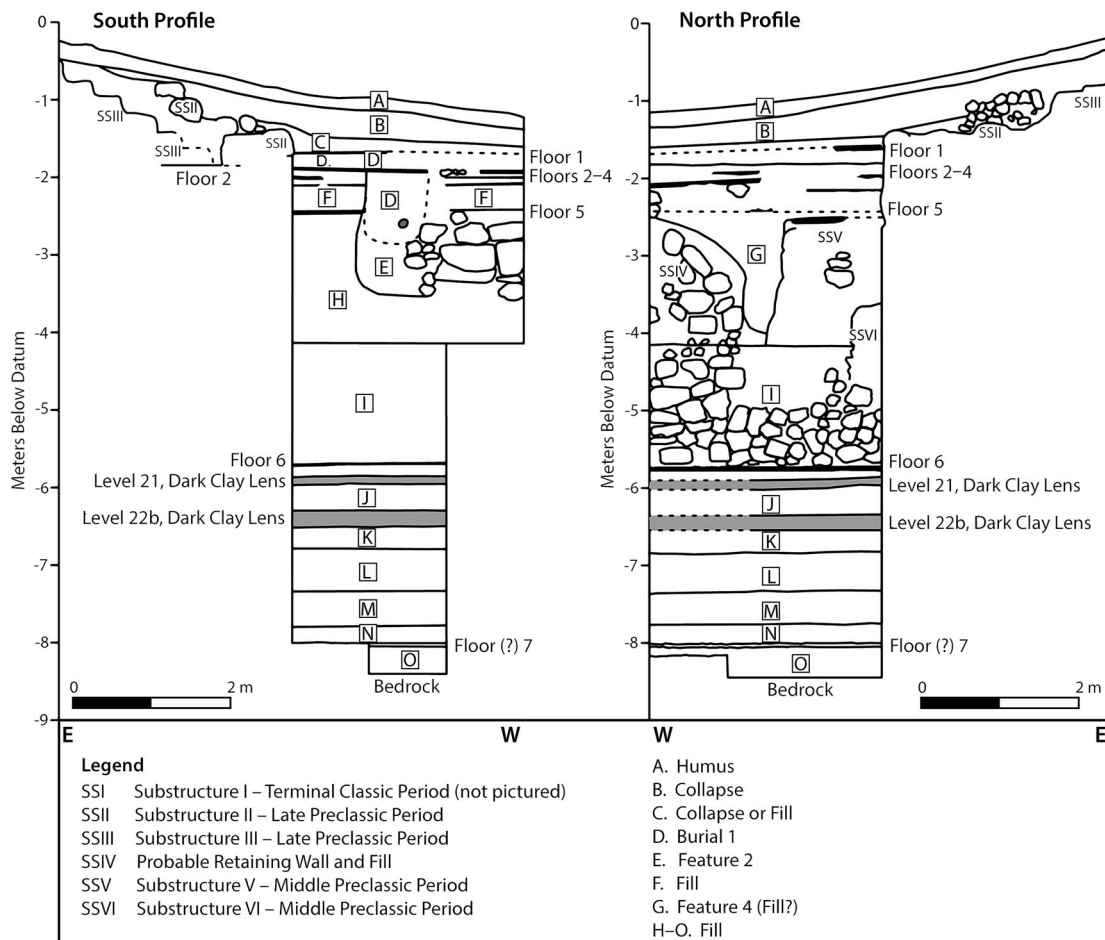


Figure 8. South and north profiles of excavation unit in front (west) of Structure Y1/1.

Floor 6 capped the initial Y1-subA construction of clayey soil and crushed limestone, raising Platform Y1-subA to about 2.3 m high over bedrock leveling (2.8 above bedrock itself) in the Early Middle Preclassic, about 900–800/700 B.C.

PLATFORM Y1-SUBB: NIX MAMOM

Platform Y1-subB consists, as exposed in this excavation unit, of more than 3 m of fills of medium-to-large rough stones in light gray-brown soil above the Level 20/Floor 6 platform surfacing. A large, approximately square (40 × 42 cm), dressed limestone block, evidently a piece of architectural molding, sat directly upon Floor 6. The construction fills were excavated in nine levels, 11 (Floor 5) through 19. All appear to represent Middle Preclassic Mamom (Nix ceramic complex) construction.

Excavation of Levels 11 through 16 revealed buried walls (described below) and Features 2 through 4, which intruded through the Floor 5 surfacing of Platform Y1-subB and disturbed the construction. These walls were built upon Levels 16 and 17, which were likely unrecognized and possibly deteriorated floors. (In the south side of the unit, Level 16 initiated the reduced excavation area to 2 × 3 m.) They suggest temporal differentiation within the Middle Preclassic, but the quantities of pottery were too small to derive such distinctions.

The Platform Y1-subB fills incorporated more artifacts of different kinds than were recovered in the Y1-subA fills. These included: a round, notched net sinker or *pesa* made from an Estero Unslipped sherd and three figurine fragments (a narrow female torso with traces of red paint; a large heavy male? torso; and a foot). Obsidian was represented by 19 blades and three flakes, one possibly a scraper. Except for one blade in Level 16, which tentative visual sourcing suggested might be from El Chayal, all the obsidian appeared to be from the SMJ source.

Other artifacts included a possible limestone architectural adornment shaped like a four-petaled flower or a *k'in* ("day") sign with a biconically drilled hole in the center (FIGURE 9). This ornament, from Level 13, was damaged on its petals, but measured ca. 11.5–12 cm square and up to 4.2 cm thick. A large crystalline limestone mano fragment, 10.2 cm long and oval in cross-section, came from Level 16, plus a dark gray limestone hammerstone or pounder. A gray chert axe was recovered in Level 13, along with a red-brown possible tektite. Level 12 yielded a large, thick artifact of nearly black chert, almost round in plan and bifacially flaked; it might have been a core? Three small, red, possible pigment stones came from Level 19.

Floor 5 (Level 11) lies approximately 3.25 m above Floor 6, thus raising Middle Preclassic Platform Y1-subB to a height of 5.5–5.6 m above bedrock. Floor 5 also lies about 1.25 m below the present soil surface in the Platform Y1 plaza.

EARLIEST STRUCTURE Y1/1-SUBB: MIDDLE PRECLASSIC

Three partial constructions were noted in the northern part of the unit, below Level 11 (Floor 5). One was a low (1 m high), partially dismantled, north–south wall built on the Level 17 fill and incorporating Nix Middle Preclassic pottery; it is considered to represent the earliest version of the E-Group eastern Structure Y1/1. A second Middle Preclassic construction, 1.6 m high and well-built with a stuccoed upper surface, had its base on Level 16 fill about a meter west of the former. It is another (part of) Structure Y1/1 construction. Third, a crude

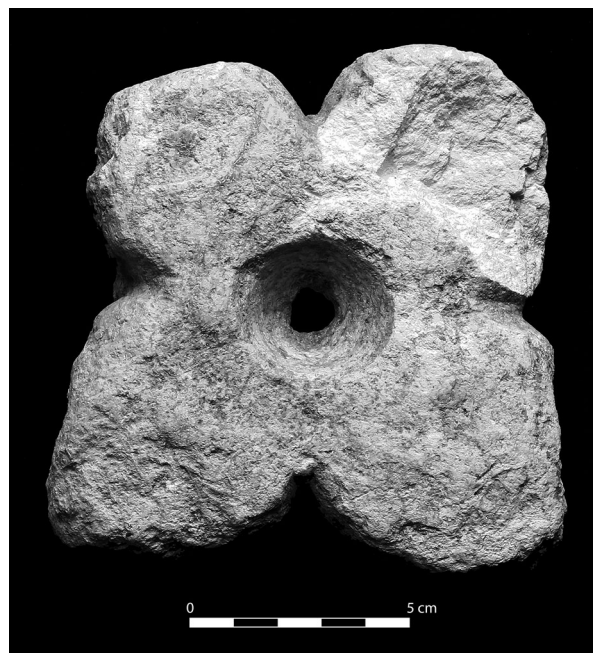


Figure 9. Biconically drilled, four-petaled *k'in* ("day") architectural ornament recovered in the fill of Platform Y1-subB. Maximum dimension 12 cm.

wall, perhaps a construction cell, yielded more Middle Preclassic fill. Its top and base appear to coincide with those of the second structure, but they are not contiguous, separated by an intrusion of the fill and ballast underlying Floor 5 (Level 11).

It appears that this earliest version or versions of Structure Y1/1-sub was terminated and demolished, probably late in the Middle Preclassic period. Because these constructions lie west—in front—of extant Structure Y1/1, they suggest that in its earliest incarnation the Sector Y E-Group plaza may have been smaller (in east–west extent) than its latest version. A similar situation is seen with the early Ceibal E-Group (Inomata and Henderson 2016, fig. 3).

PLATFORM Y1-SUBC: LATE PRECLASSIC

Above the Platform Y1-subB surfacing (Level 11; Floor 5) lay about 60–75 cm of fills and partial floors of the penultimate construction of Platform Y1, yielding mixed pottery of the Late Middle Preclassic (Late Nix) and Late Preclassic (Chito Chicanel) periods. Few artifacts were recovered in these levels: only two small obsidian blades (of SMJ?). Level 10 included a round, dark gray, limestone pounder (5.6–6.4 cm diameter), a thin piece of slate, and a dark gray oval polishing stone (6.15 × 3.46 × 1.77 cm).

Two intrusive features were noted. Feature 2, an oval pit 1.9 m wide and 1.38 m deep, contained Early Classic pottery. Its function is unknown, but its position on the front (west) centerline of Structure Y1/1 suggests that it might indicate the placement of a stela, later removed. Feature 3, which is undated, penetrated upper floors and occupied the upper part of Feature 2, and contained only a partial cranium (parietal and frontal bones) and assorted bone fragments. One wonders if the burial was part of a termination event accompanying removal of the stela. On the other hand, Early Classic skull burials were common in the eastern structures of the E-Groups at Uaxactun and Cenote (Chase and Chase 2017, 42–49).

Feature 3, the burial/cranium, might have been sealed by Floor 2, which topped the Y1 plaza floor about 1 m below

the current ground surface. This represents the Platform Y1-subC surfacing upon which Structure Y1/1-first and -second were erected. Feature 2 was intrusive upon Floors 1–5 as well as upon Feature 3.

STRUCTURE Y1/1-FIRST AND -SECOND

In the eastern area exposed by Unit 1, the construction of Structure Y1/1-first atop the Floor 2 surfacing consisted of four stairs, each composed of alignments of rectangular blocks of limestone and covered with stucco. A small pit (Feature 1) penetrating construction in the center of Unit 1 included fragments of Early Classic pottery, as well as human teeth, likely indicating removal of a burial or skull cache. The Y1/1-first construction itself was not removed by our excavations because of the government requirement for consolidation and reconstruction; thus we cannot date it.

This early structure was overbuilt with the stairs of the latest construction, Structure Y1/1-second. Floor 1 (Level 7) was the plaza surface to its west. These steps were not removed in our excavation for the same reason. Instead, Levels 1 through 6 above Floor 1 (primarily Levels 1–4) comprised a ca. 50 cm-thick series of “humus and collapse” deposits. Numerous artifacts were recovered in these levels: a broken net sinker (probably Preclassic); a round bead of blue-green jade; a fragment of a worked sherd disk, probably a lid, measuring ca. 10 cm in diameter; four figurine fragments (two Preclassic) and three fragments of whistles/ocarinas (one a bird); a flat polishing stone; a small stone ball; a mortar? fragment; 11 broken chert bifaces; and some possibly unfired sherds.

Unit 2: Structure Y1/1, Southwest Corner

Unit 2 (N3985/E3871) was placed in the area where we expected to find the southwestern corner of Structure Y1/1. Excavations consisted of 30.5 m² of surface clearing in an irregular array of adjacent units. Four levels lay above a surfacing identified as Floor 1. Floor 1 here is not stratigraphically equivalent to Floor 1 in Unit 1, because it is 80 cm lower. Moreover, Structure Y1/1-first was built upon this floor, making it the equivalent of Floor 2 in Unit 1. Above, Structure Y1/1-second might have been partially dismantled and its façade stones refashioned into what are interpreted as two low tiers of a Terminal Classic domestic structure. This structure’s southwest corner was crudely rounded (although it is unclear to what extent this construction was damaged by a modern water pipe passing diagonally through it). Presumably associated with this residence was a poorly preserved adult burial on the west side. The deceased was placed in a fetal position facing west in the upper tier of the construction. No grave goods were associated with the interment. The pottery in humus-and-collapse Levels 1–3 was a mix of Late Preclassic and Terminal Classic fragments.

Y2 Platform and Structure Excavations

Sub-structural Platform Y2 occupies the eastern third of the Sector Y construction, adjacent to Platform Y1. The northeastern corner of the platform was discussed above; discussion of the excavations into Fosa Y has been published elsewhere (Pugh and Rice 2017) and is reviewed only briefly here.

The Late Preclassic enlargement of Platform Y, which overbuilt the latest floor of the 4th Street corridor, was

constructed with “small, brick-like, cut-limestone blocks set in courses (ranging from stacked to offset bond)” covered with plaster (Pugh 2019). The north wall of Platform Y2 had been constructed 7 m to the north of the test unit, over the surfacing of 4th Street at about the level of the gray clay-and-limestone surface 1.75 m above bedrock. Excavations following the final corridor surface of Avenue F at the northeast corner of Platform Y2 (above) revealed four buried construction walls (or walls of construction cells) overlying that surface on the east side. The earliest and interior-most wall lay 8 m from the present edge of the platform. The latest east wall of Platform Y2 was a well-preserved construction comprising five courses of dressed limestone blocks. Thus Platform Y2 was renovated and greatly expanded northward and eastward, narrowing the widths of the bordering Avenue F and 4th Street in the process.

Structure Y2/2 and Apron

Pyramidal Structure Y2/2 in the northern part of Platform Y2 rises about 3.5 m above the platform surface, with a broad “apron” to the south sloping toward Fosa Y.

STRUCTURE Y2/2

A 2 × 2 m unit placed on the upper surface of the structure was excavated through 17 levels to a depth of nearly 4 m below surface, but did not reach bedrock (Georges and Chan 2017). The lowest level, Level 17, terminated the excavations at a construction composed of large, dressed stones with a destroyed floor. Above was a ca. 30 cm-thick deposit of dark gray clay containing carbon and ash (Levels 16–14), topped by about 1.25 m of Middle Preclassic (Nix complex) fills, excavated in three levels (Levels 11–13) (FIGURE 10). Two lines of dressed limestones covered with red stucco lay upon the uppermost Level 11 in the southern part of the unit, but because of the small exposure of this excavation it was not possible to determine how they related to any specific construction (wall, bench, etc.). Portions of a destroyed plaster floor (Floor 5) were preserved in the northern part of the excavation.

Also in the northern part of the unit, Level 11 was surmounted by the first of three “floors” or relatively flat surfaces, each ca. 10 cm thick and all dating to the Middle Preclassic period. Floor 4 was red plaster mixed with ash. Floor 3 was a burned plaster floor, red and yellow in color, in the extreme north. Above, another floor or surfacing layer (Floor 2) showed evidence of burning and may have been a hearth—perhaps ritual—of some sort. It was capped with a layer of ash (Level 6), which was particularly hard and may have been another burned floor. Floors 4, 3, and 2 and Level 6 lay below fill supporting a wall with fill to its east, which in turn lay below humus.

Levels 1–3 here, as in other units, were humus and collapse. Pottery dated to the Late Preclassic period.

THE SOUTHERN SLOPE

An excavation unit measuring 2 m east–west and 5 m north–south was placed on the southern edge of the sloping apron south of Structure Y2/2 in hopes of identifying access—a ramp or stairway—between it and the Fosa Y depression. Few artifacts were recovered in the humus and collapse levels in this unit, although very small sherds were noted along with a few flakes of chert and some prismatic blades of obsidian; a

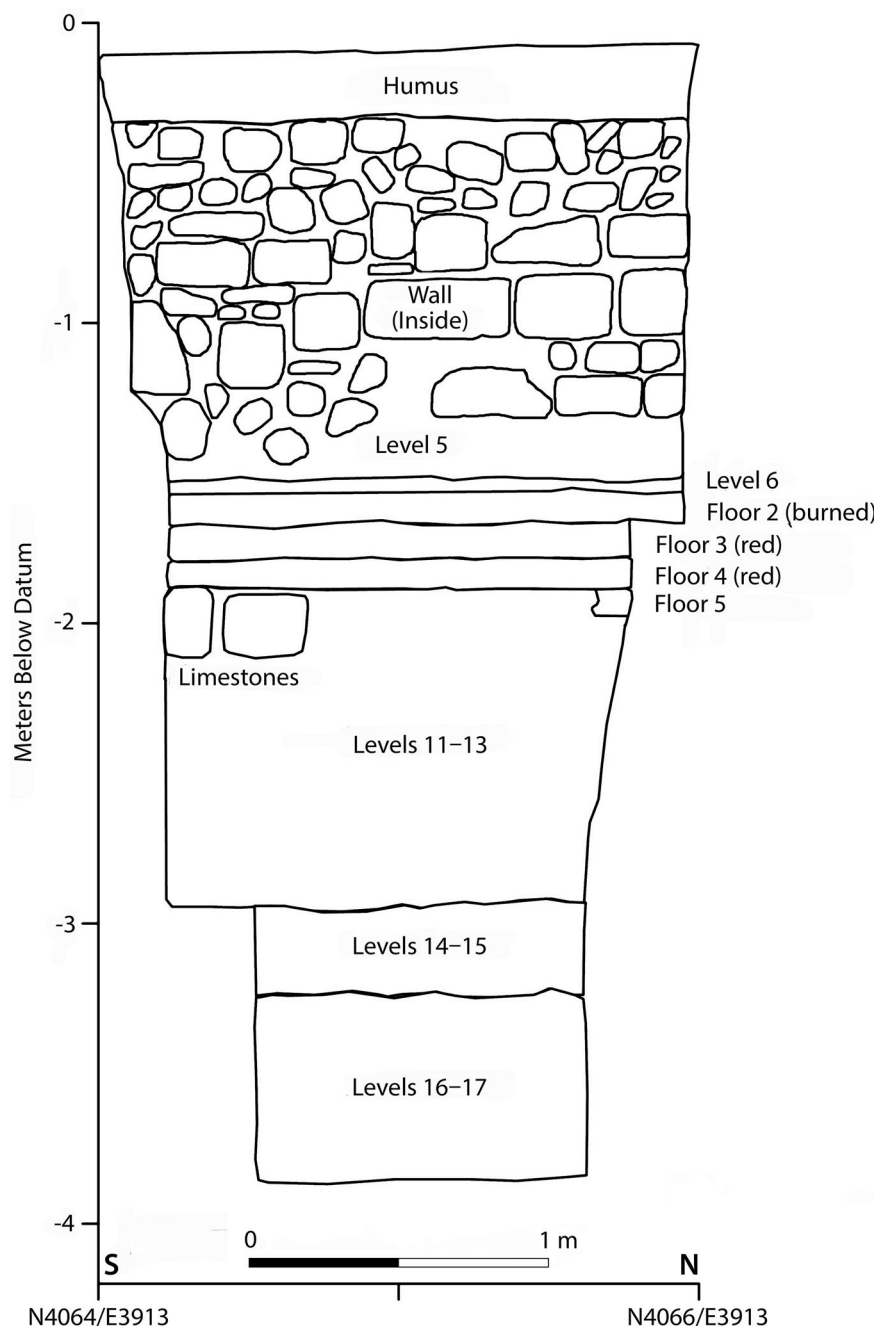


Figure 10. West profile of test unit into Structure Y2/2.

side-notched chert projectile point, 6 cm long, was found in Level 1. Other material included shells of jute (*Pachychilus*) and apple (*Pomacea*) snails.

Exposure of the Level 2 collapse suggested three possible east–west stone alignments, but we cannot confidently describe them as a stairway. An inclined alignment or *talud* (construction tier facing) of large, irregular stones approximately 70 cm high, some visible on the surface, appears to represent the southern edge of the apron’s construction (Aldana 2017, figs. 43, 44). A second possible *talud* lay 1.4 m south of the first, and a third line of two tiers of large dressed stones—45 cm long and 30 cm wide, some covered with stucco—was identified a short distance to the south. This last, approximately 30 cm high, may have been part of steps, along with the stones of the second tier.

The excavation was deepened south of the third stone alignment, and encountered a poorly preserved surfacing (Floor 1) of crushed limestone with 15–20 cm of ballast.

The quantity, size, and diversity of artifacts increased in this Level 4 (Aldana 2017, 46). A second floor, sloping to the south, was found below the first, along with quantities of artifacts. This floor did not extend under the third stone wall/steps, but rather stopped at it. Artificial Levels 5 and 6, below, a total of 50 cm in thickness, sloped only slightly (compared to the inclination of the present surface of the apron and Levels 1–3). The excavation was terminated without reaching bedrock. It is possible that Floors 1 and 2 here corresponded to the highest two floors (also Floors 1 and 2) noted in the excavations of the northeast corner of Platform Y2.

Fosa Y

Fosa Y is a large oval depression measuring approximately 46 m north–south, 31 m east–west, and 2.5 m deep. It was explored via three excavation units in the 2014, 2015, and

2016 field seasons (FIGURE 2): two centerline trenches, east (Unit 1) and west (Unit 2), and a large block (Unit 3) slightly southwest of and lower than Unit 1 (Pugh, Hernández Constanza, and Burgos 2015; Rice and Pugh 2017). Excavations penetrated as much as 6.7 m of natural and cultural levels in a large, deep cavity in the limestone that was probably a natural sinkhole. Bedrock was never reached.

Pottery in the lowest levels of Unit 1, Levels 36 to 45, was part of the Chich Pre-Mamom ceramic complex, as was the pottery in the lowest Level 23 of Unit 3. In Unit 1 this pottery was recovered in four fills, apparently water-deposited, 1.25 m thick.

There appear to have been some constructions deep in the fosa. In Unit 1, 30 cm of multiple plaster surfaces were excavated as Levels 30–35; Level 30 lay 4.3 m below datum (b.d.), 3.26 m below surface (b.s.). Excavations in Unit 2 encountered what appeared to be retention walls, with a plaster surfacing at 3.91 m b.d./2.9 m b.s.; in Unit 3 the plaster was encountered at 3.96 m b.d. These comparable measurements suggest some effort to create a water-holding facility or reservoir. The nearly 2 m of largely undifferentiated gray-brown clayey sediments above incorporated both Late Chich and Nix pottery, indicating a long Yum Transitional complex.

In Unit 3, about 75 percent of a large broken Chapito Red-orange plate with a “hook” rim (a Late Chich form) (FIGURE 11A), was found in Level 21. This plate, evidently an emplaced offering, showed evidence of burning on the base and held two fragments of human left temporal bone. Turtle bone lay around the plate.

All three excavations uncovered a Late Nix (Late Middle Preclassic) feasting midden, about 20 m wide and 30–50 cm thick, encircled by an amphitheater-like arrangement of tiers of large boulders (Rice and Pugh 2017, 7–8). The midden yielded numerous fired clay anthropomorphic and zoomorphic figurines and whistles, and quantities of beautifully slipped large pottery vessels, deliberately smashed and partially reconstructible, in varied forms including spouted *chocolateras* (FIGURE 11B–E).

The midden pottery in Unit 3 exhibited some differences from that in Units 1 and 2. Red slips are redder as opposed to orange-red, and forms are primarily large platters with everted rims. Common forms in Units 1 and 2, such as cuspidors, ridged cylinders, and chocolateras, are rare or absent. A scummy coating adhered to the sherds, particularly red-slipped fragments. Very little black-slipped material but more unslipped pottery was noted. In general, fewer types

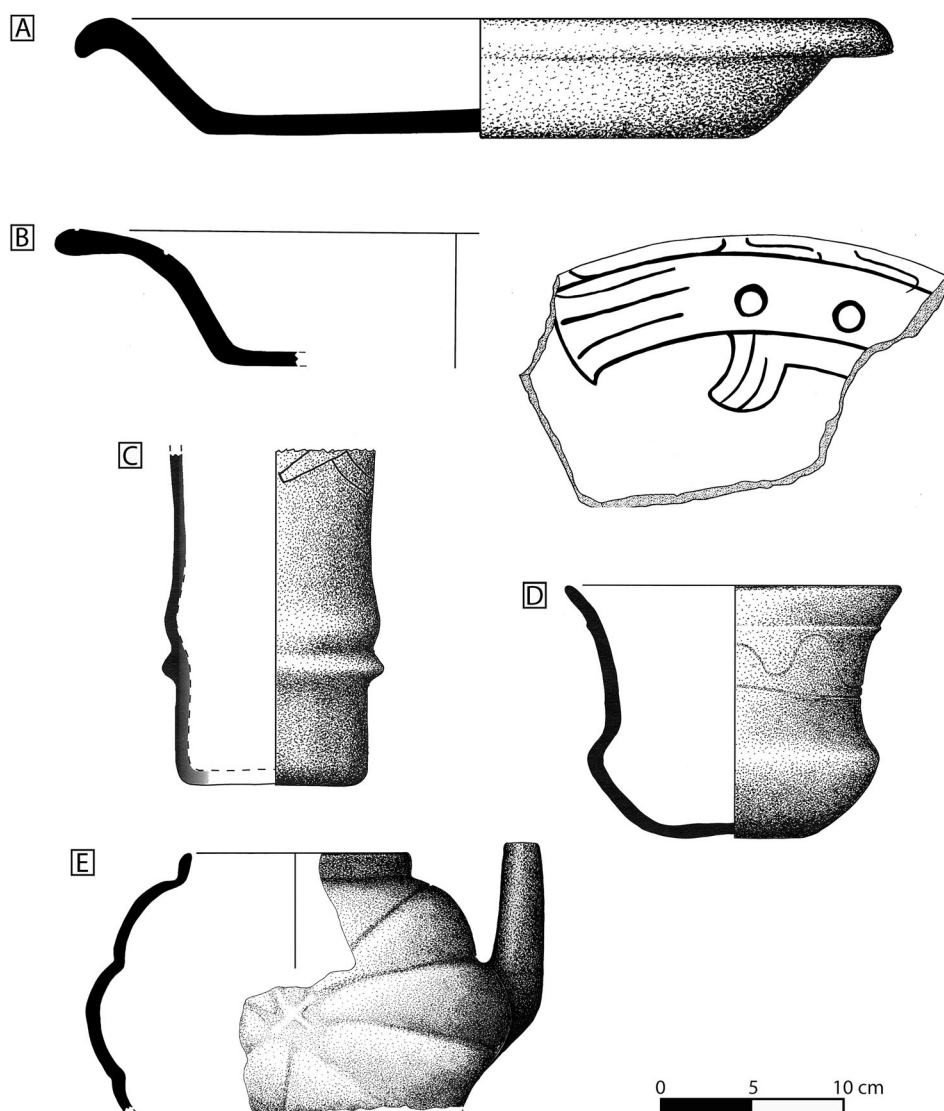


Figure 11. Partially reconstructible pottery from Fosa Y: A) Chapito Red-orange plate cached in Fosa Y Unit 3; B–E) pottery from the Late Nix feasting midden: B) Chapo Red-Orange design-incised everted rim plate with fish-like motif; C) Juventud Red ridged cylinder; D) Tormenta Groove-Incised (Juventud group) cuspidor; E) Golondrina Modeled (Chunhinta group), spouted vessel in form of a cacao pod.

and varieties were present in Unit 3. It is unclear at present how these differences are to be interpreted, whether a result of the area's function during the feast, or the rank/status of the feast participants in this area of the fosa, or, perhaps less likely, a difference in event date (later?).

Pottery above the Fosa Y midden is Late Preclassic, representing collapse of structures Y1/1 and Y2/1 immediately west and east, respectively, of the fosa. During this period a pit was excavated into the midden to deposit a cache. The cache contained two highly polished cylinders of hard limestone that appear to have been *manos* (handstones), most likely for votive rather than food production uses. The deposit also included a roughly sculpted piece of limestone with a rounded edge and two limestone disks: one 12.4 cm diameter and 5.9 cm thick; the other 11.6 cm diameter and 6.05 cm thick. One wonders if the two disks were *panuchos*, stoppers at the ends of a hollow log beehive placed in the cache, and often found in situ in pairs in Yucatán (Bianco, Alexander, and Rayson 2017, 95). They appear nearly identical to “thick disk” beehive covers identified at Postclassic Mayapán (Paris et al. 2018, 8–10). Although another possible ceramic beehive stopper was found on a Late Preclassic plaster surface at the edge of Platform Q just north of Platform Y, such covers—whether stone or ceramic—are not common at Nixtun-Ch'ich' and are presently known only from Sectors Q and Y. A complete ceramic beehive or representation of one was found in a cache at Nakum dated to the end of the Late Preclassic period (Žralka et al. 2014), thus indicating that beehive offerings are not unique to Nixtun-Ch'ich'. Nonetheless, the cache indicates that Fosa Y was a place for offerings later than the Middle Preclassic period and maintained a food/feasting theme.

Discussion and Conclusions

Sector Y of the Nixtun-Ch'ich' urban grid comprises the westernmost of four blocks of the center's civic-ceremonial core. It has a two-part sub-structural platform, distinguished as Y1 (west) and Y2 (east), with Y1 supporting an E-Group and Y2 defined by a large depression or fosa. Analysis of pottery recovered in PAI excavations revealed occupation and construction beginning in the Terminal Early Preclassic or “Pre-Mamom” period (Late Chich ceramic complex). Unlike Sectors AA and BB to the east in the site core, Sector Y appears to lack evidence of earlier activity suggested by Late Early Preclassic (K'as complex) and sparse fragments of early Terminal Early Preclassic (Early Chich complex) pottery (Rice 2019b). At another E-Group in the Petén lakes region, Plaza F at Ixtinto, a small site south of Lake Yaxha, Pre-Mamom pottery was mixed with Mamom in a small, looted structure (not the main western pyramid) on the west side (Acevedo, Hermes, and Calderón 1996, 211, 214).

Excavations by PAI near the center of the Y1 platform revealed four phases of construction dated by ceramics: late Terminal Early Preclassic (Late Chich Pre-Mamom) bedrock leveling; a Yum Transitional Early Middle Preclassic (mixed Chich and Nix) Platform Y1-subA, 2.3 m high; a Middle Preclassic (Nix) Platform Y1-subB rising another 3.25 m; and a Late Preclassic Y1-subC refurbishment, which elevated the platform another 60–75 cm. What may be remnants of the earliest construction(s) of Structure Y1/1, the elongated eastern structure of the Sector Y E-Group, consisted of three walls; one, partially demolished, incorporated Middle

Preclassic pottery and all were surrounded by Nix Late Middle Preclassic fills. The structure(s) appear to have been razed at the time of fill deposition creating the Y1-subB platform construction. Ancient excavations through the steps on the centerline of Structure Y1/1 may indicate removal of a stela and a skull cache.

PAI excavations at the northwest and northeast corners of Platforms Y1 and Y2, respectively, revealed that Late Preclassic modifications also expanded these platforms horizontally. Late Preclassic construction exposed along the northern edge of Platform Y1 was composed of large, soft, limestone ashlar set in rough courses. This masonry style corresponds to the final two constructions exposed in excavations in front (west) of Structure Y1/1, the eastern range structure of the E-Group. This, plus evidence from the northwest and northeast corners of Sector Y including cached vessels, indicates a major Late Preclassic renovation of the entire complex.

A particularly interesting component of Sector Y is the large depression in the southeast identified as Fosa Y. Three deep (ca. 7 m b.s.) excavations there never encountered bedrock, supporting the likelihood that it was originally a small natural sinkhole, considered a portal to the watery Underworld. The multiple plaster surfaces encountered in the fosa about 3 m below present ground surface suggest that sometime at the end of the Early Preclassic or beginning of the Middle Preclassic, perhaps around 900–800 B.C. or so, the residents tried to close this cavity in the limestone. The functions of the resultant reservoir are unknown, but the juxtaposition of a mountain with a pond is a variant of Mesoamerican sacred mountain/cave landscape ideology (Rice and Pugh 2017, 12–14). In the Mirador Basin, for example, seven E-Groups have associated reservoirs (Reese-Taylor 2017, table 15.2). Farther afield, perhaps analogies can be drawn to the Olmec area, such as the hill and springs at El Manatí (Ortiz and Rodríguez 2000) and the *lagunas* or ponds at San Lorenzo (Veracruz), which seem to indicate water-focused ritual (Cyphers and Zurita-Noguera 2006).

In terms of ceramics and architecture, early Nixtun-Ch'ich' shows similarities to Tikal to the northeast and Ceibal to the south, both of which have E-Group complexes, but there are some notable differences. Neither Tikal nor Ceibal has a gridded layout, nor do they have a fosa or water-holding feature next to the E-Group. No four-part greenstone and/or pottery caches were recovered in excavations in the front-centerline of Structure Y1/1, the E-Group's eastern building at Nixtun-Ch'ich'. Such caches have been found in front of the eastern structures in E-Groups at Ceibal and Cival, but not at Tikal or Uaxactun (Dowd 2017, 538; Inomata 2017, 217, 223). These quadripartite “cosmic caches” can be read as symbolizing cosmic order and creation of a symbolic maize field (Bauer 2005), but it is unclear what their presence or absence might signify. No early carved stone monuments have been located at Nixtun-Ch'ich' to date, meaning that we have few clues about the beliefs or the individuals responsible for establishing the site and its grid.

Our work in Group Y was intended not only to understand E-Group construction, but also to discern how it intersected with the gridded plan of Nixtun-Ch'ich', implemented in the Middle Preclassic period, 800–500 B.C. We have previously (Rice 2018) suggested that the layout of Nixtun-Ch'ich' was conceived as the dorsal surface of a crocodile, the platforms and corridors of the grid reproducing the regular array of scutes on a crocodile's back. This Middle

Preclassic layout suggests a foundational belief in a long-lived Maya creation myth better known from later accounts, for example in Classic texts at Palenque. In this myth, a “hole-backed starry-deer crocodile” was sacrificed by decapitation or having its throat slit, after which it became Earth’s terrestrial surface emerging from a primordial sea (Stuart 2005, 68–75, 2007, 215).

As the myth can be applied to Nixtun-Ch’ich’, the primordial sea is Lake Petén Itzá and the “hole” in the mythical beast’s back is Fosa Y. Because the east–west axis urbis of the site passes through the fosa, this natural feature may have been the origin point or “fulcrum” of the axis. On the one hand, given this crucial role, it is surprising that fragments of the earliest pottery at the site (K’as and Early Chich complexes) have not been identified in excavations in Fosa Y, as they have occurred in small amounts elsewhere in the monumental core, including the northeast corner of Platform Y2. On the other hand, their absence may be construed as supporting the likelihood that deposits in Fosa Y extend well below—and earlier than—the levels sampled by PAI excavations to date. In any case, the construction of Platform Y2 around Fosa Y appears to date to the Late Chich phase. To judge from the earliest constructions identified in excavations at the northwest corner of substructural Platform Y1 and northeast corner of Y2, these two platforms were not built together or simultaneously, but rather Y2 appears to have preceded Y1.

The excavations in Nixtun-Ch’ich’ Sector Y contribute to our understanding of early occupation in the Maya lowlands by providing additional evidence of the existence of pottery-making settlement and construction in Petén in the centuries before 1000 B.C. They also tell us something of developing socio-political complexity and city planning associated with some of the earliest urbanization in the lowland Maya area. Nixtun-Ch’ich’ and its Middle Preclassic grid were atypical of early Maya urbanization, incorporating a greater amount of centralized planning than other cities. Group Y was a pivotal element of that planning, the E-Group and fosa establishing the axis urbis underlying the bilateral symmetry of the east-to-west streets. Nixtun-Ch’ich’ reveals that centralized planning does not necessarily evolve gradually as elites solidify their power and governing bureaucracies become more complex. It can happen with the earliest of cities. Nixtun-Ch’ich’ was probably the heart of an “incipient” or early-developing state in the southern lowlands, its Middle Preclassic materialization of the crocodilian creation myth establishing it as a sacred site and landscape. That physical form remained little changed over three subsequent millennia of occupation.

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