Excavations at Scabe I, Xunantunich, Belize

By: Anna Tolley

Department of Anthropology

Abstract:

How did the ancient Maya create, maintain, and re-create sacred places across centuries of occupation, abandonment, and revival? In summer 2024, excavations were conducted at the terminus of Sacbe I at Group D, Xunantunich, Belize, as part of the Mopan Valley Preclassic Project. Group D was a hilltop ritual locale during the Preclassic and Late Classic periods, connected to the Classic period site core by a sacbe(causeway). Because why structures are built reflects social conditions and perceived needs for socially constructed spaces, the terminus of Sacbe I is an ideal place to examine how movement, architecture, and social memory shaped Xunantunich's ritual landscape. This paper therefore asks when Sacbe I was built at Group D and how the causeway connected the group to a broader ritual landscape. This work aims to inform wider discussions of ritual processions, resource procurement, and labor energetics at ancient Maya sites.

Introduction

Xunantunich, Belize (Figure 1), has a dynamic social history, including a long history of ritual practices from the Preclassic to the Postclassic periods in the Maya lowlands. The broader site of Xunantunich has two ceremonial centers, one dating to the Classic Period (AD 250 – 800) and one dating to the Preclassic Period (1000 BC – AD 250), referred to as Early Xunantunich (Brown et al., 2016). In the summer of 2024, I focused my research on a hilltop group, Group D, that was an important ritual locale during both the Preclassic and Late Classic periods. This group was accessed by a *sacbe,* an ancient Maya road or causeway (Figure 1).

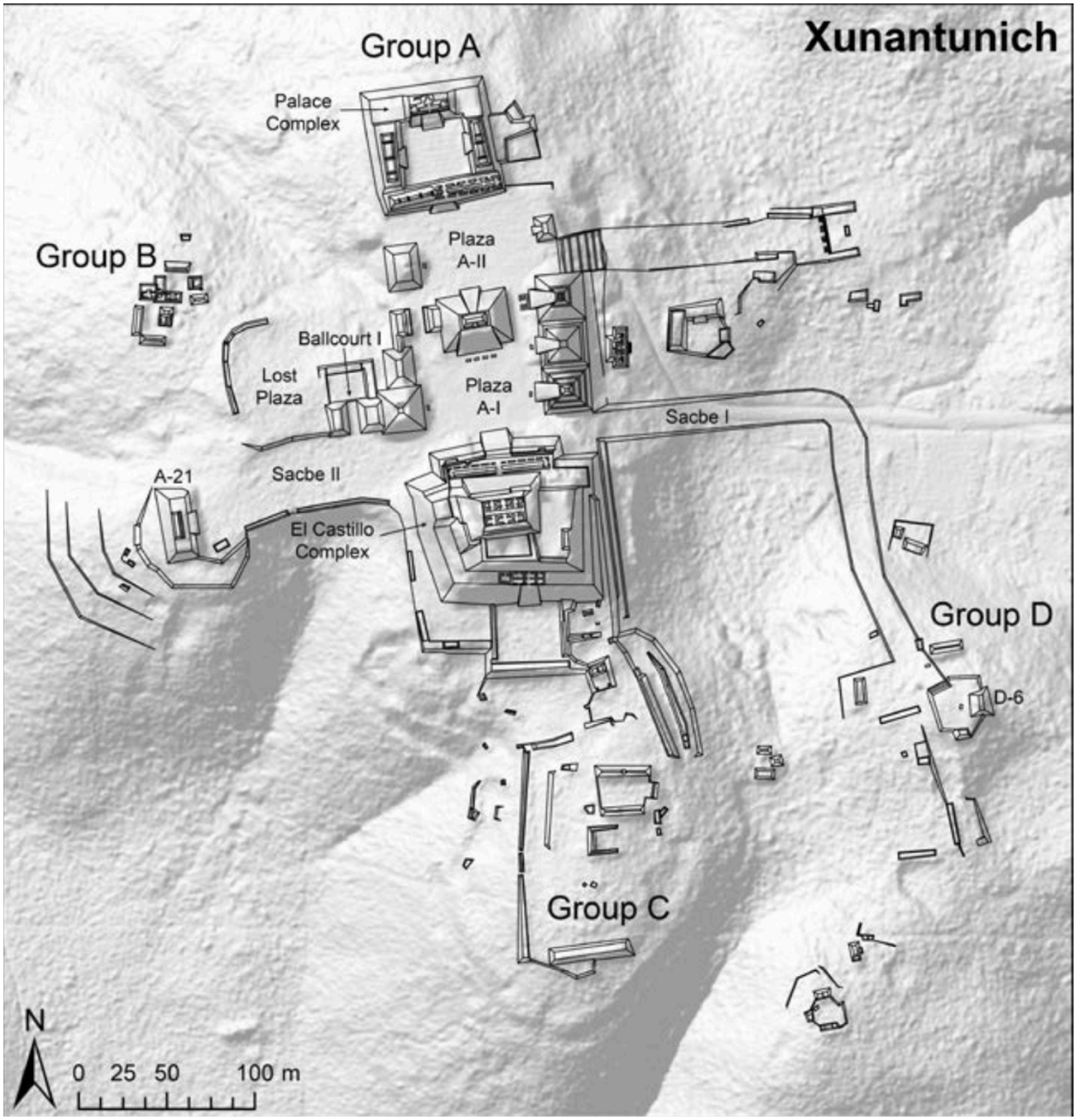


Figure 1. "Site core of Classic period Xunantunich (created by the Mopan Valley Preclassic Project)" in Cap et al. (2023, p. 54).

Research Questions

Question 1: What is the construction history of Sacbe I?

I address this question through excavations on Sacbe I and comparing my data with previous excavation data combined with previous excavations on Sacbe I.

Question 2: What evidence demonstrates a connection between Group D and Sacbe I that indicates that this group was part of a broader ritual landscape?

I addressed this question by examining my excavation data in addition to previous excavation data from Group D and Sacbe I, primarily from research conducted by Whitney Lytle (2020), Angela Keller (2006), and Jennifer Braswell (1998). I also compare my data with other interpretations of ritual landscapes of Xunantunich and of other sites in the Maya lowlands.

Sacbe I terminus at Group D

Group D (Figure 2) served as an eastern shrine group in the Late Classic (Braswell 1998; Lytle 2020) and is attached to the Plaza A (Late Classic site core) by Sacbe I. Group D is also axially aligned with Early Xunantunich, a Preclassic ceremonial center located 800 m to the east. Evidence suggests that Group D served as a western hilltop shrine during the Preclassic (Brown and Yaeger 2020; Lytle 2020). Located southeast of the Late Classic site core, Group D became part of the broader ritual landscape of Classic Xunantunich. As the group was utilized as a ritual destination in the Preclassic and the Classic occupations of Xunantunich, understanding the pathways to Group D is an important contribution to the understanding of the Xunantunich and ancient Maya ritual at large. As Sacbe I connects Classic Xunantunich's ritual center (Plaza A-1) to Group D, it is likely it served a ritual procession purpose, as previously theorized by Angela Keller (2006).

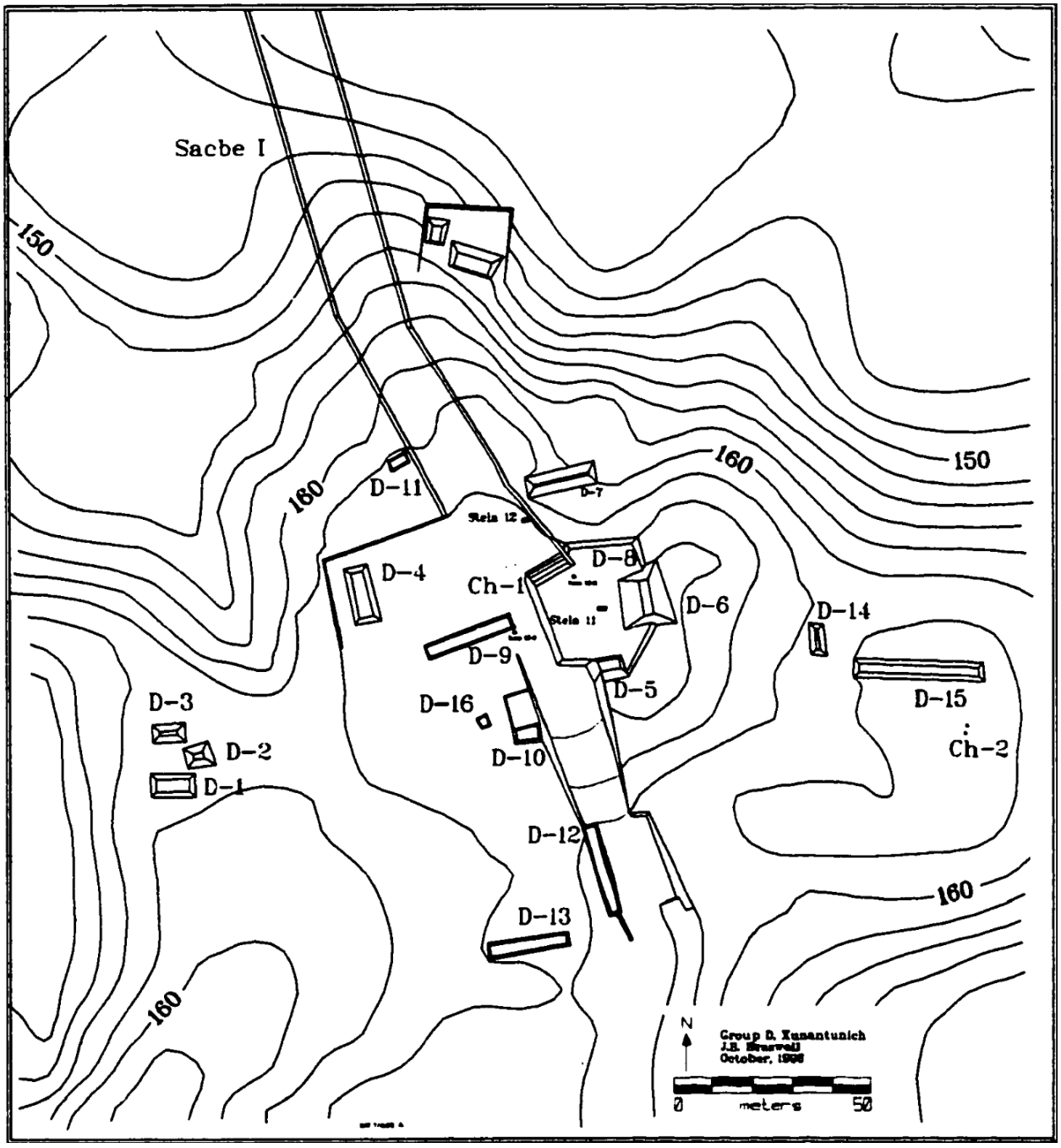


Figure 2. "Map of Group D, Xunantunich, Belize" in Braswell (1998, p. 398)

Background

Archaeological evidence reveals that Group D was likely a communal western hilltop shrine during the Late Preclassic and associated with Early Xunantunich because of the area's west/east axial alignment to the early ceremonial center and E Group complex (Brown and Yaeger 2020; Lytle, 2020, p. 82). Excavations at Group D revealed that the group's Preclassic platform may have served as part of a ritual procession circuit that centered on Early Xunantunich and included different social groups, while its Late Classic iteration may have been explicitly used by the site's elite (Lytle 2020).

Evidence demonstrates that both Preclassic Group D and Early Xunantunich were abandoned towards the end of the Late Preclassic, and while the ceremonial architecture of Early Xunantunich was not reoccupied during the Late Classic period, Group D was revived as a ritual space and expanded into a larger architectural group (Keller 2006; Lytle 2020).

Jennifer Braswell's doctoral research as part of the Xunantunich Archaeological Project (XAP) posited that Group D was an elite residential plaza whose residents specialized in luxury good making, as evidenced by the presence of chert drill-like tools within some of the group's households (1998; 2010). Braswell also suggested that Group D was an elite household group based on the presence of elaborate masonry buildings, ceramic evidence (defined as domestic ceramics: water jars, bowls, plates, dishes, and vases), the group's connection to Plaza A-I via Sacbe I, the group's eastern pyramidal shrine (D-6), and the presence of uncarved stelae in front of D-6 (Stela 11) and at the terminus of Sacbe I (Stela 12) (1998, p. 193).

Braswell argued the group's residents were craft producers based on "substantial" slate production debris and chert carving tools, coupled with the absence of ceramics in the non-residential structures (2010, pp. 166-167). She determined the assemblages were indicative of small-scale workshops that produced stone tools, especially drills-on-blades (2010, p. 171).

She argued these tools were used to manufacture slate objects, as reflected by the presence of small slate fragments. She bolstered this interpretation by comparing the Group D assemblage with chert tools at other Mesoamerican sites and modern metal tools used by modern slate carvers in Succotz, the contemporary town where Xunantunich is located (Braswell 2010, pp. 174-176). More recent work by the Mopan Valley Preclassic Project (MVPP) suggests the drill-like tools were likely not utilized in crafting but rather were used for food processing activities (Chapman 2013; Devio 2016). This updated interpretation is based on two MA theses that included experimental archaeology, use-wear analysis, and starch grain analysis from a subset of tools from Group D and at Early Xunantunich. It is important to note that while Braswell argued that Group D was a residential group, she distinguished Structure D-8 (central, elevated platform of the Late Classic group) as a public ritual space (Braswell, 1998, p. 280).

Xunantunich's causeways connect the site center's plazas (A-I and A-II) to the surrounding architectural groups. Angela Keller's (2006) investigations demonstrate that Classic Xunantunich's causeways (Sacbe I, Sacbe II, Northeast Causeway) were constructed based on cosmological, political, and practical circumstances like topography and existing structures (2006, pp. 187, 190). All three causeways were built during the Late Classic Haats' Chaak phase (AD 670-780) in a single construction phase and were built using the same construction materials (Keller 2010). Her investigations also provide evidence of Sacbe I's ritual significance. Keller excavated areas of Sacbe I at its Plaza A terminus and at the elbow of the path where it changes from an east-west heading to a north-south one that directs the walkway toward Group D (2006, pp. 297-298). Her investigations recovered remnants of musical instruments and possible ritual regalia, demonstrating the ritual procession purpose of Sacbe I (Keller, 2006, pp. 542, 564). Processions were intrasite demonstrations that were "extremely communal and highly

structured, orchestrated events" that required a group to conduct (Keller 2006, p. 160). Intrasite causeways such as those at Xunantunich are the primary spaces where processions were enacted (Keller 2006).

Later research by Whitney Lytle (2020) as part of MVPP indicated that the dominant features of Group D were not residential and that the group was likely not an elite residential group like Braswell had previously argued (1998; 2010). Rather, Lytle suggested that the architectural group served as a ritual locale and a sacred place for specialized ancestor veneration. Lytle targeted her excavations on Structures D-8 and D-6 to better understand the occupation history of the dominant architectural features of the group. Buried within D-8, Lytle found a small Preclassic platform with thousands of large angular Late Preclassic ceramic sherds (2020:115-116). Lytle suggested the platform was a space where offerings were periodically brought or was a location of ritual feasting (2020, p. 179). Her investigations also show that Preclassic Group D was part of Early Xunantunich's larger ritual landscape that centered around an E Group architectural assemblage, a hilltop ritual site east of the Classic site core (Lytle 2020, pp. 76-77).

Late Classic burials and ritual caches are also present at D-6. The multitude of eccentric chert artifacts recovered from these Late Classic deposits is intriguing because these artifacts are often associated with cosmological themes, deities, and ancestors (Lytle 2020, p. 219). Because of the unusual finds in the excavated burials, Lytle proposed that Late Classic Group D was a place of "community ancestor" veneration and specialized ritual ceremonies, likely restricted to elite ritual practitioners (Lytle 2020, pp. 248-249). She argued the individuals laid to rest at Group D were not associated with claims of ancestral rights to resources or to lay claim to land

tenure and were interred “in a space that connects the community to the past through the social memory of a historically significant location” (Lyte 2020, p. 249).

During the Late Classic revival, Group D’s Preclassic platform was covered by a raised platform (Structure D-8) during the Hats’ Chaak phase and served as a courtyard space for Structures D-5 and D-6 (Lytle 2020). Structure D-6 was later constructed on the raised platform (Lytle 2020). D-8 is directly connected to Sacbe I by a four-step staircase on its northern face (Lytle 2020, p. 182). Based on the collected data, Lytle concluded that Group D was not an elite household group like Braswell (1998) proposed but rather served as a sacred place for ancestor veneration. The caches and burials she found in D-6 included goods that were not typical for Late Classic and Terminal Classic elites from a residential context (Lytle 2020).

Group D has a long history of ritual significance at Xunantunich that transcended a period of possible abandonment during the Early Classic (Keller 2010). Based on the Late Classic revitalization and expansion of the space, the ritual significance of Group D in the Preclassic was still recognized some hundred years after the hilltop shrine was abandoned. It is important to note that the Late Classic platform was constructed on top of the Preclassic platform, indicating the Late Classic ritual users understood the pre-established ritual significance of the locale. Late Classic Group D’s connection to Plaza A through Sacbe I suggests that this was an important ritual destination likely due to its long history (Cap et al., 2020).

Investigations

Sacbe I

To understand the relationship between social landscape and movement, I investigated Sacbe I’s terminus at Group D during the 2024 Mopan Valley Preclassic Project field season. Investigations along the terminus of Sacbe I at Group D and the surrounding area were

designated as a continuation of Operation 29. A total of nine suboperations, Operation 29c - 29k, were excavated. The goal of the 2024 continuation of Operation 29 was to establish when Sacbe I was constructed at Group D and to identify any potential ritual materials related to *sacbe* procession. Unit sizes varied based on the needs of the research, including a 1x2 meter unit (Suboperation 29f), 2x2 meter units (Suboperations c, d, e, g, h, i, and 3x1 meter units (Suboperations j, k). My initial goal was to locate ceremonial refuse, such as broken instruments (e.g., flutes and drums), that would have been destroyed at the end of a ceremonial procession. However, no instruments were found during this season's excavations. We uncovered the causeway's eastern parapet and its exterior (eastern) and interior (western) facing walls (Figure 3). The remains of the interior wall indicate it was constructed with cut and shaped limestone blocks. Along the sides of the interior wall, we uncovered two fragments of poorly preserved plaster floor surface that date to the Late Classic. The *sacbe* surface excavations show that the plaster surface was heavily eroded, with only spotty evidence of the ballast layer beneath it. The exterior wall was much better preserved and consisted of crudely shaped stones of varying sizes (Figure 4). The parapet is approximately 1.5 meters wide, the interior wall approximately 5 meters tall, and the exterior wall was approximately 1 meter high from the bedrock surface it was directly placed on at the Group D terminus. This construction data is consistent with Angela Keller's excavations of Sacbe I (2006). The exposed parapet construction fill consisted of dry-laid rubble, and our excavations uncovered numerous eroded ceramic sherds and two medial fragments of obsidian blades. Few lithics were recovered from within the fill of the parapet or on the surface of the *sacbe*.



Figure 3. Sacbe I eastern parapet, inner/western wall (left), outer/eastern wall (right).



Figure 4. Sacbe I eastern parapet, outer/eastern parapet wall.

Most of the ceramics recovered from the *sacbe* investigations were eroded body sherds, although a few diagnostic sherds indicated the presence of Mount Maloney Black bowl fragments and several identifiable sherds of Belize Red types. Both ceramic types were used in the Late Classic Period and were both prominent in Xunantunich's archaeological record (LeCount et al. 2002). Preliminary analysis of the ceramics also identified the presence of several Savana Orange Ware sherds (dating to the Middle Preclassic) within the parapet fill.

Limestone Quarry

Located to the east of the exterior wall of Sacbe I, our investigations revealed a limestone quarry that extends east between Structures D-7 and D-8. Our preliminary investigations suggest that this quarry was abandoned before its resources were exhausted because of the presence of soft limestone patches across the quarry that would have made these areas unusable in construction. There are also multiple unfinished cuts in the bedrock that indicate the quarry was abandoned mid-use. Finished cuts in the quarry suggest that residents were locally sourcing materials likely for Group D's construction, and possibly the construction of Sacbe I. Several quarry cuts are the same size as the masonry stones on the Sacbe I interior wall and the same size blocks as seen in the exposed architecture of Structure D-7. The quarry extends beneath the exterior parapet wall, thus predating the building of the *sacbe* at least in this area. Due to time constraints, we had to terminate excavations on the quarry. Future work at this location is planned for the 2026 field season. Based on Jennifer Braswell's excavations in Group D (1998), I expect the boundaries of the quarry (in part) are under her backfill at Structure D-7 and under backfill from the MVPP 2022 field season. Though Braswell excavated a trench from Structure D-7 to the platform on a north-south heading, she did not remark on the presence of modified

bedrock in this area. She stated there is a quarry along the southwest boundary of D-8, but her discussions on both areas are limited (Braswell 1998).

Most of the ceramics recovered in the quarry area were too eroded to identify. Since the quarry is located on a slope, it is likely that ceramic material had washed into the area from Structures D-7 and/or D-8 over time. Preliminary analysis of the ceramics identified a small number of diagnostic sherds dating to the Late Classic period. Lithic flakes were also recovered in the quarry area, but no formal tools were recovered.

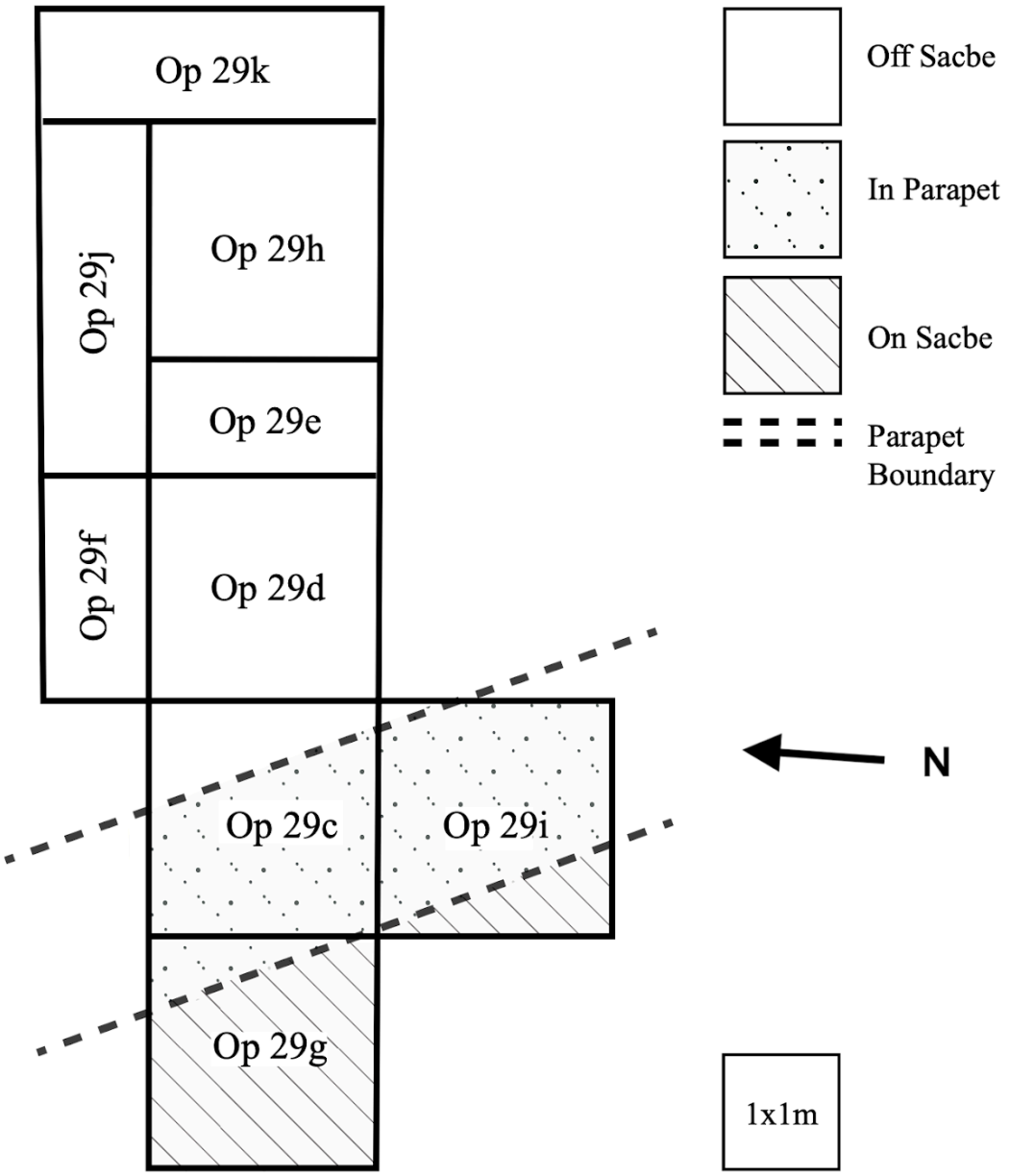


Figure 5. MVPP 2024 field season, Operation 29 excavation map

Suboperations	Dimensions and Sub-Datums	Lot Depths (bottom)	Lot Contexts	Types of Artifacts Recovered
Op 29c	All Lots 2m x 2m Sub-datum 2024-3 (21.5 cm) Sub-datum 2024-8 (44 cm)	*Op 29c-1 (2024 #3)* NW: 66 cm NE: 47 cm SE: 38.5 cm SW: 33 cm Center: 57 cm *Op 29c-2 – Op 29c-3 (2024 #3)* Ending elevations were not recorded on W. Lytle's forms *Op 29c-4 (2024 #8)* NW: 42 cm NE: 41 cm SE: 32 cm SW: 42 cm Center: 48 cm	*Op 29c-1* Humus layer above Sacbe I south of Operation 29b (MVPP 2022), mostly roots, some rubble, and heavily eroded ceramic inclusions *Op29c-2 – Op 20c-3* Construction fill of Sacbe I parapet, mostly cobbles, some heavily eroded ceramics, outer/eastern facing wall of parapet revealed *Op29c-4* Construction fill of Sacbe I parapet, construction fill with high cobble density with ceramics and limited lithic inclusions, outer/eastern facing wall brought down to bedrock, revealing roughly cut stone, modified bedrock located off *sacbe* (eastern edge), modification extended east of unit	*Op 29c-1* Ceramics *Op 29c-2 – Op 20c-3* Ceramics *Op 29c-4* Ceramics, lithics, cobble fill
Op 29d	All Lots 2m x 2m Sub-datum 2024-3 (21.5 cm)	*Op 29d-1* NW: 55 cm NE: 52 cm SE: 31 cm SW: 34 cm Center: 47 cm *Op 29d-2* NW: 72 cm	*Op 29d-1* Humus layer east of Sacbe I/Operation 29c, mostly roots in this layer, some heavily eroded ceramics *Op 29d-2*	*Op 29d-1 – Op 20d-3* Ceramics *Op 29d-2* Ceramics, lithics, obsidian blade fragment

		NE: 66 cm SE: 65 cm SW: 66 cm Center: 66 cm *Op 29d-2* NW: 103 cm NE: 87 cm SE: 75 cm SW: 68 cm Center: 88 cm	Modified bedrock in western portion of unit, not brought down fully to bedrock because of change in matrix color, heavily eroded ceramics, some lithics, and a medial obsidian blade fragment mixed into the sediment *Op 29d-3* Modified bedrock with possible marl features (later determined to be naturally occurring soft limestone inclusions), modified features extend east and north of the unit	*Op 29d-3* Ceramics, lithics
Op 29e	All Lots 1m x 2m Sub-datum 2024-6 (19 cm)	*Op 29e-1* NW: 75 cm NE: 71 cm SE: 44 cm SW: 45 cm Center: 65 cm *Op 29e-2* NW: 88 cm NE: 81 cm SE: 77 cm SW: 58 cm Center: 75 cm	*Op 29e-1* Humus layer east of Operation 29d, mostly roots, some heavily eroded ceramics and lithics *Op 29e-2* Modified bedrock fully exposed, lithics and heavily eroded ceramics at level with the bedrock, modified features extend east and north of the unit	*Op 29e-1* Ceramics, lithics *Op 20e-2* Ceramics, lithics
Op 29f	All Lots 3m x 1m Sub-datum 2024-6 (19 cm)	*Op 29f-1* NW: 81 cm NE: 85 cm SE: 76 cm SW: 94 cm Center: 83 cm *Op 29f-2* NW: 120 cm NE: 134 cm SE: 120 cm	*Op 29f-1* Humus layer north of Operation 29d, some roots, possible marl fragments and an unmodified slate fragment (possibly washed into the area from either Structure D-7 or the raised	*Op 29f-1* Unmodified slate, possible marl fragments *Op 29f-2* Ceramics, lithics

		SW: 116 cm Center: 105 cm	platform, Structure D-8) *Op 20f-2* Modified bedrock fully exposed, heavily eroded ceramics and lithics all the way to bedrock, modifications extend east and north of unit.	
Op 29g	All Lots 2m x 2m Sub-datum 2024-8 (44 cm)	*Op 29g-1* NW: 83 cm NE: 71 cm SE: 55 cm SW: 73 cm Center: 68 cm *Op 29g-2* NW: 104 cm NE: 79 cm SE: 99 cm SW: 79 cm Center: 102 cm	*Op 29g-1* Humus layer of Sacbe I and parapet west of Operation 29c, mostly roots and some rubble or cobble inclusions, possible ghost wall of inner/western facing parapet wall *Op 20g-2* On Sacbe I: cobble inclusions, poorly preserved paved surface of *sacbe* walkway with intact ballast beneath the paved surface, possible ballast in areas where walkway had completely eroded In parapet: ghost wall of inner/western facing parapet wall confirmed	*Op 29g-1* Ceramics, lithics, possible ballast *Op 29g-2* Ceramics, lithics, possible ballast
Op 29h	All Lots 2m x 2m Sub-Datum 2024-6 (19 cm)	*Op 29h-1* NW: 72 cm NE: 69 cm SE: 50 cm SW: 47 cm Center: 56 cm *Op 29h-2* NW: 80 cm NE: 86 cm SE: 76 cm	*Op 29h-1* Humus layer east of Operation 29e, some roots, heavily eroded ceramics and a possible lithic flake *Op 20h-2* Modified bedrock fully exposed, heavily eroded ceramics down	*Op 29h-1* Ceramics, possible lithic flake *Op 29h-2* Ceramics

		SW: 84 cm Center: 80 cm	to bedrock, modifications extend north, east, and south of unit	
Op 29i	*Op 29i-1* 2m x 2m *Op 29i-2* .5m x 2m *Op 29i-3*, *5* .5m x 1.5m *Op 29i-4*, *6* 2m x 1m Sub-datum 2024-10 (21 cm)	*Op 29i-1* NW: 50 cm NE: 53 cm SE: 39 cm SW: 47 cm Center: 39 cm *Op 29i-2 (off sacbe)* NW: 84 cm NE: 84 cm SE: 43 cm SW: 47 cm Center: 47 cm *Op 29i-3 (in parapet)* NW: 61 cm NE: 55 cm SE: 39 cm SW: 38 cm Center 48 cm *Op 29i-4 (on sacbe)* NW: 67 cm NE: none SE: 58 cm SW: 54 cm Center: 65 cm *Op 29i-5 (in parapet)* NW: 72 cm NE: 56 cm SE: 42 cm SW: 41 cm Center: 54 cm *Op 29i-6 (on sacbe)* NW: 73 cm NE: none SE: 64 cm SW: 83 cm Center: 85 cm	*Op 29i-1* Humus layer of Sacbe I and parapet south of Operation 29c, lots of roots and rubble inclusions, some lithics heavily eroded ceramics, a medial obsidian blade fragment mixed into the sediment, parapet boundaries uncovered *Op 29i-2* Lot brought down only to the top of the parapet fill for photogrammetry purposes, and down to bedrock outside the outer/eastern wall of the parapet. Heavily eroded ceramics and a medial obsidian blade fragment mixed with cobbles found in parapet, heavily eroded ceramics found off the parapet. Modified bedrock exposed off parapet extending east and south of the unit's boundaries *Op 29i-3* Lot brought down only to top of parapet fill for photogrammetry purposes, inner/western facing wall of parapet exposed, heavily eroded ceramics mixed in sediment with cobbles	*Op 29i-1* Ceramics, obsidian blade fragments, lithics *Op 29i-2* Ceramics and obsidian blade fragment *Op 29i-3* Ceramics *Op 29i-4* Ceramics, lithics *Op 29i-5* Ceramics, lithics, cobble fill *Op 29i-6* Ceramics, lithics, unmodified slate fragments

			Op 29i-4 Heavily eroded ceramics and lithics mixed with roots, rubble, and possible ballast inclusions, unit not brought down to bedrock/walkway surface yet *Op 29i-5* Leveled parapet fill excavation with exposed fill in Op29c for photogrammetry purposes, lithics and heavily eroded ceramics mixed with cobble fill *Op 29i-6* Ghost wall revealed, poorly preserved paved surface of Sacbe I revealed, plaster is adjacent to the inner/western facing wall of the parapet and does not extend under the wall, modified bedrock beneath the *sacbe* surface uncovered and extends northwest of unit, modification extends under the preserved plaster, cobble and possible ballast inclusions, heavily eroded ceramics, lithics, and three unmodified slate fragments	
Op 29j	All Lots 3m x 1m	*Op 29j-1* NW: 88 cm NE: 91 cm	*Op 29j-1* Humus layer north of Operation 29h and	*Op 29j-1*

	Sub-datum 2024-6 (19 cm)	SE: 79 cm SW: 83 cm Center: 85 cm *Op 29j-2* NW: 120 cm NE: 92 cm SE: 79 cm SW: 91 cm Center: 100 cm	Operation 29e, some roots and high number of lithics, some heavily eroded ceramics and jute shells *Op 29j-2* Limited lithics and two obsidian blade fragments, heavily eroded ceramics mixed in sediment and limestone rubble, modified bedrock that extends north and east of unit.	Ceramics, lithics, jute shells *Op29 j-2* Ceramics, obsidian blade fragments, lithics
Op 29k	All Lots 1m x 3m Sub-datum 2024-6 (19 cm)	*Op 29k-1* NW: 93 cm NE: 97 cm SE:53 cm SW: 57 cm Center: 63 cm *Op 29k-2* NW: 97 cm NE: 97 cm SE: 71 cm SW: 79 cm Center: 78 cm	*Op 29k-1* Humus layer east of Operation 29h and Operation 29j, some roots with heavily eroded ceramics, lithics, and two jute shells mixed with the sediment *Op 29k-2* Heavily eroded ceramics, medial fragment of obsidian blade, no lithics closer to bedrock or at bedrock level, modified bedrock with several extremely deep/incomplete cuts, modifications extend north and east of the unit	*Op 29k-1* Ceramics, lithics, jute shells *Op 29k-2* Ceramics, obsidian blade fragment

Table 1. MVPP Operation 29 2024 lot details

Operation 29c

The goal of Operation 29c was to locate the eastern wall of Sacbe I, to orient the rest of the excavations as being on *sacbe*, in parapet, and off *sacbe*. This suboperation was a 2 meter x 2

meter unit, oriented slightly off a north-south heading to follow the path of Sacbe I. This suboperation totaled four lots. Measurements for Lots 1-3 were taken using Sub-datum 2024-3. Due to unstable field conditions, Sub-datum 2024-3 was replaced by Sub-datum 2024-8 for Lot 4 measurements. Sub-datum 2024-8 was established at a different elevation. Due to sudden illness, excavation of Lots 3 and 4 was supervised by Dr. Lytle. Artifacts found in Operation 29c included ceramics and lithics.

The majority of the suboperation was in Sacbe I's parapet fill, and part of the eastern-facing wall of the parapet was exposed. The portion outside the parapet was brought down to bedrock while the parapet was left intact for photogrammetry purposes. We quickly encountered the remains of Sacbe I's parapet after excavating through the humus layer, exposing the construction fill of mostly cobbles between the parapet walls. Part of the eastern, outer-facing parapet wall was exposed at the same level as the parapet fill.

Operation 29d

The goal of Operation 29d was to expose the area east of the exposed parapet in Operation 29c. Operation 29d was excavated by Dr. Lytle. This suboperation was a 2 meter x 2 meter unit. All measurements for this suboperation were taken using Sub-datum 2024-3. The maximum depth reached was 103 centimeters below Sub-datum 2024-3 and approximately 81.5 centimeters below the surface. The humus of Operation 29d (Lot 29d-1) was light brown (Munsell 7.5 YR 5/2). The second stratigraphic layer was not described in the fill notes, but was a construction fill layer. The final stratigraphic layer was a dark greyish brown (Munsell 10 YR 4/2) in color and terminated at bedrock.

Operation 29d exposed modified bedrock adjacent to the eastern, outward-facing parapet wall and soft eroded limestone on top of the bedrock. Initially, this eroded bedrock was thought to be a white marl layer, a material often used in construction, but excavation revealed that it was

modified bedrock. This modification continued beyond the unit's eastern boundary. Artifacts found in Operation 29d included ceramics, lithics, and a medial fragment of an obsidian blade. Full analysis of artifacts is planned for the future.

Operation 29e

The goal of Operation 29e was to extend Operation 29d eastward and to continue exposing the modified bedrock. This suboperation was a 2 meter x 1 meter unit. The excavation and data recording of Operation 29e were assisted by Dr. Whitney Lytle. All measurements were taken using Sub-datum 2024-6. The maximum depth reached was 88 centimeters below Sub-datum 2024-6 and approximately 69 centimeters below the surface. The humus of Operation 29e was very dark gray-brown (Munsell 10 YR 3/2). The matrix was a consistent very dark gray-brown (Munsell 10 YR 3/2) down to the bedrock and was not the same texture as fill found within the sacbe or parapet features. At level with the bedrock, the matrix color changed to a lighter brown (Munsell 7.5 YR 5/2) due to eroded limestone. Additional bedrock modifications were exposed and appeared to continue north and east of the unit. Artifacts found in Operation 29e included ceramics and lithics. The number of artifacts recovered was less compared to Operation 29c (on *sacbe*) and Operation 20d (directly off *sacbe*).

Operation 29f

The goal of Operation 29f was to extend Operation 29d northward and to continue exposing the modified bedrock. This suboperation was a 1 meter x 2 meter unit. Operation 29f was excavated by Dr. Lytle. All measurements were taken using Sub-datum 2024-6. The maximum depth reached was 134 centimeters below Sub-datum 2024-6 and approximately 115 centimeters below the surface. The humus of Operation 29f was very dark gray-brown (Munsell 10 YR 3/2) and similar in texture to the lots discussed above in Operation 29e. The matrix was a consistent very dark gray-brown (Munsell 10 YR 3/2) down to the bedrock. At level with the

bedrock, the matrix color changed to a lighter brown (Munsell 7.5 YR 5/2) due to the eroded bedrock that had intermixed with the sediment. Additional bedrock modifications were revealed, and combined with the uncovered bedrock of other units, we were able to hypothesize the modified bedrock was a limestone quarry. Additional soft limestone deposits on top of the bedrock were exposed. Artifacts found in Operation 29f include ceramics, lithics, an unmodified slate fragment in the surface layer, and possible marl fragments.

Operation 29g

The goal of Operation 29g was to gather more data related to the chronology of Sacbe I. This suboperation was a 2 meter x 2 meter unit. All measurements were taken using Sub-datum 2024-8. The maximum depth reached was 104 centimeters below Sub-datum 2024-8 and approximately 60 centimeters below the surface. The humus layer was a very dark grayish brown (Munsell 10 YR 3/2). The second stratigraphic layer was brown (Munsell 7.5 YR 4/2) and consisted of (describe the fill here). The final stratigraphic layer was pinkish gray (Munsell 7.5 YR 6/2) in color and terminated at bedrock. Rubble and smaller stones (possible ballast) appeared in all layers.

Operation 29g exposed part of a cut stone of the western, inner wall of the parapet, and poorly preserved plaster floor of the *sacbe* surface. A ballast layer was partially intact beneath the plaster. The construction style of the *sacbe* surface was consistent with other segments of Sacbe I excavated by Angela Keller (2006). Artifacts found in Operation 29g included ceramics and lithics.

Operation 29h

The goal of Operation 29h was to continue exposing modified bedrock/quarry east of Sacbe I and to potentially locate tools for shaping limestone blocks and ceramics that might help us better understand the chronology of the quarry. This suboperation was a 2 meter x 2 meter

unit. All measurements were taken using Sub-datum 2024-6. The maximum depth reached was 86 centimeters below Sub-datum 2024-6 and approximately 67 centimeters below the surface. The humus layer was black/very dark brown (Munsell 7.5 YR 2.5/1) and contained much organic material. The matrix color was consistent down to the bedrock, where the matrix changed to a lighter brown color (Munsell 7.5 YR 5/2).

Operation 29h revealed incomplete cuts in the limestone bedrock and, in conjunction with the soft limestone layer (eroded bedrock), indicates that the quarry was potentially abandoned before it was depleted because the bedrock in this area was likely too soft to serve as building stone. The cuts in the bedrock where blocks had been removed were consistent with the shape of cut stones on the inner wall of Sacbe I's parapet and cut stones in other buildings in Group D. Artifacts found in Operation 29h included ceramics and lithics, including a chert flake.

Operation 29i

The goal of Operation 29i was to expose the western, inner-face wall of the parapet and determine if the inner wall was a later addition to Sacbe I, therefore making the double-walled parapet style a later addition to an already constructed and used Sacbe I. Operation 29i lots were separated based on being in the parapet, on the *sacbe*, or off *sacbe*. The in-parapet portion of the unit was only excavated to the top of the cobbled layer of the construction fill for photogrammetry purposes. On and off *sacbe* lots were excavated to bedrock or plaster (when present).

The suboperation was a 2 meter x 2 meter unit. All measurements were taken using Sub-datum 2024-10. The maximum depth reached in the parapet was 72 centimeters below Sub-datum 2024-10 and approximately 51 centimeters below the surface. The maximum depth reached on *sacbe* was 104 centimeters below Sub-datum 2024-10 and approximately 83 centimeters below the surface. The maximum depth reached off *sacbe* was 84 centimeters below

Sub-datum 2024-10 and approximately 63 centimeters below the surface. The humus layer was a dark brown/black (Munsell 7.5 YR 2.5/1). The second matrix layer was dark brown (Munsell 7.5 YR 3/2). The matrix color was consistent down to bedrock when it changed to a lighter brown (Munsell 7.5 YR 5/2) on the on *sacbe* side, and a dark grayish brown (Munsell 10 YR 4/2) on the off *sacbe* side. The off-*sacbe* matrix color is consistent with matrix color variation in other off-*sacbe* suboperations.

The on-*sacbe* portion of Operation 29i reached 104 centimeters below Sub-datum 2024-10 because there appears to be modified bedrock beneath the *sacbe* surface. The modification extended northwest into an unexcavated space. This modified bedrock also extended beneath a portion of poorly preserved plaster uncovered in the unit. Additional cut stones of the inner wall of the parapet were exposed, and their sizes are consistent with the cut stone uncovered in Operation 29g. Cobble and possible ballast inclusions were present throughout the on-*sacbe* excavations. Artifacts recovered in the parapet included ceramics and lithics. Artifacts recovered on *sacbe* included ceramics, lithics, and three unmodified slate fragments. Artifacts recovered off the *sacbe* included ceramics and one medial obsidian blade fragment.

Based on the construction and dating of other parts of Sacbe I (Keller 2006), the construction type of Sacbe I at Group D indicates this segment was contemporaneous with other segments of Sacbe I in the Late Classic period. Construction does not indicate the inner facing wall was added later because the remaining plaster and ballast layers do not extend into the parapet.

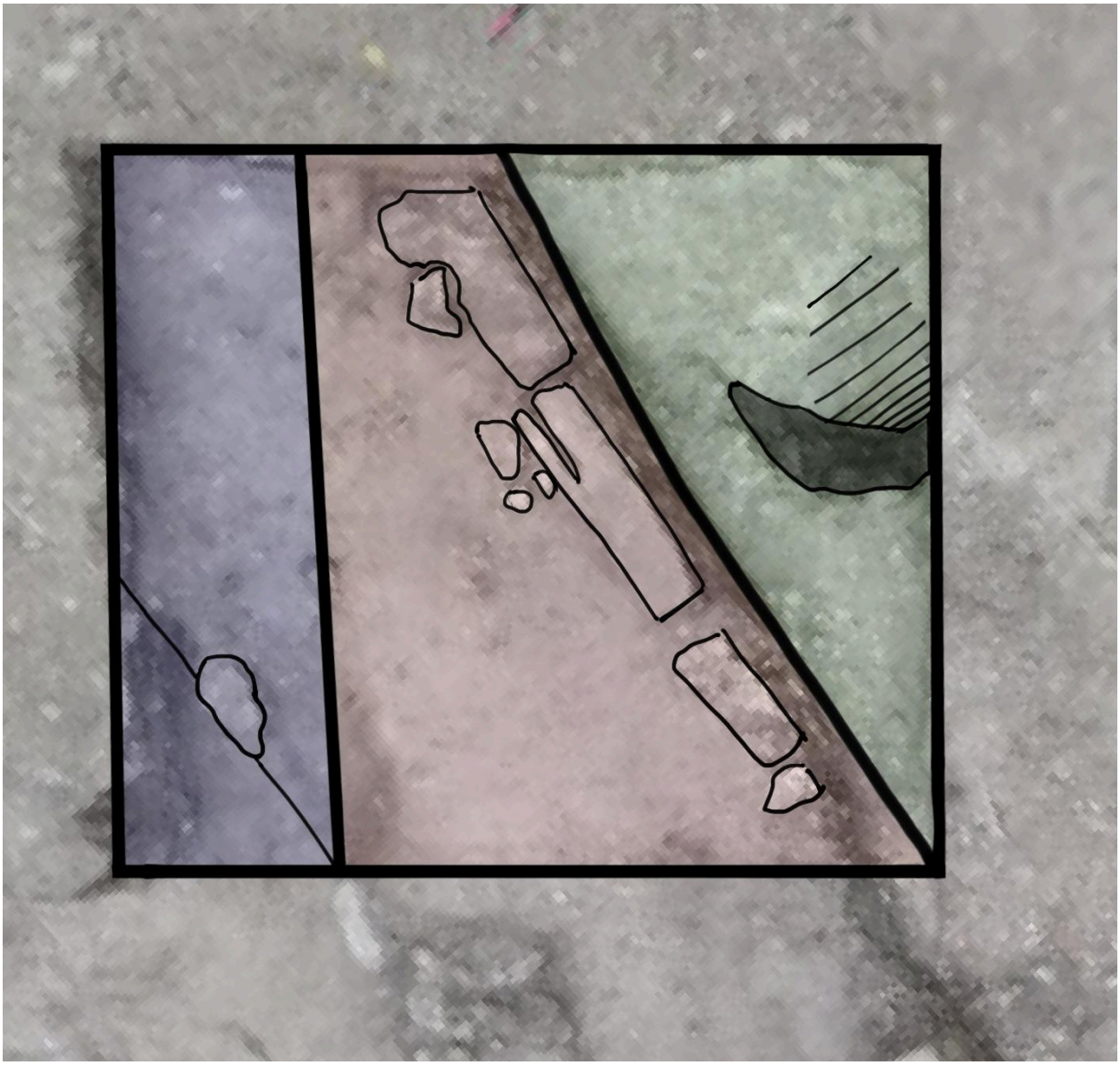


Figure 6. Operation 29i lot breakdown. Blue area: Op 29i-2. Red area: Op 29i-3, Op 29i-5. Green area: Op 29i-4, Op 29i-6.

Operation 29j

The goal of Operation 29j was to look for tools to help date the feature. Our theory was that if tools remained on the quarry, they may be towards the northern end of the feature because

of rainfall washing artifacts downhill to the north. The sub-operation was a 3 meter x 1 meter unit.

All measurements were taken using Sub-datum 2024-6. The maximum depth reached 120 centimeters below Sub-datum 2024-6 and approximately 101 centimeters below the surface. The humus layer was a very dark gray (Munsell 7.5 YR 3/1). The matrix color was a consistent dark brown (Munsell 7.5 YR 3/2) down to the bedrock. At bedrock level, the matrix lightened to a lighter brown color (Munsell 7.5 YR 5/2).

Artifacts recovered include lithics, ceramics, obsidian blade fragments, and four jute shell fragments. Operation 29j revealed many tertiary lithic chert flakes in the humus layer. Lithics continued into the matrix and down to bedrock at a lower frequency. No tools were recovered. The suboperation also revealed additional complete and incomplete cuts in the bedrock, further supporting the theory that the quarry was abandoned before it was fully depleted.

Operation 29k

The goal of Operation 29k was to look for tools to help date the quarry feature. Like with Operation 29j, our theory was that if tools remained in the quarry, they may be towards the northern end of the feature because of rainfall washing artifacts downhill to the north. This sub-operation was a 3 meter x 1 meter unit. We were unable to extend the season's excavations further north because most of Operation 29's backfill was blocking the area.

All measurements were taken using Sub-datum 2024-6. The maximum depth reached 97 centimeters below Sub-datum 2024-6 and approximately 78 centimeters below the surface. The humus layer was a dark brown (Munsell 7.5 YR 3/2). The matrix color was a consistent pinkish gray (Munsell 7.5 YR 6/2) down to the bedrock. At bedrock level, the matrix changed to a brown color (Munsell 7.5 YR 5/2). Artifacts recovered include ceramics, lithics, jute shells, and one medial obsidian blade fragment.

Operation 29k recovered fewer lithics than Operation 29j, even though the two suboperations are adjacent in the east-west heading and their northern boundaries are aligned. No tools were recovered. The suboperation also revealed additional incomplete cuts in the bedrock, further supporting the theory that the quarry was abandoned before it was fully depleted.

Operation 29b Partial Reopening

The eastern boundary of Operation 29b, initially excavated in 2022 by UT San Antonio graduate Marcos Reynoso, was exposed at the beginning of the excavation season to help align the 2024 Operation 29 suboperations. No artifact recovery was done because the excavated material was backfill. The exposed boundary revealed part of the eastern parapet wall and potentially modified bedrock that continues under the parapet. This feature indicates that the quarry is potentially older than Sacbe I. Operation 29b was not reopened to investigate the exposed modified bedrock.

Summary of Excavations

Excavations of Sacbe I reveal that the Group D terminus is contemporaneous with other segments of the causeway: Late Classic period, Samal and Hats' Chaak phases. The double wall parapet is consistent with excavations on Sacbe I conducted by Angela Keller (2006) along the east-west segment and on the elbow of the causeway's path. Keller also recovered a number of ceramics from excavations in the east, west, and southern areas of Xunantunich, including Sacbe I. Her ceramic finds also support the dating of Sacbe I to the Late Classic period. Identified ceramics that Keller recovered in Late Classic contexts are consistent with the identifiable ceramic types of Mount Maloney Black and Belize Red from my excavations (Keller, 2006, pp. 424, 442-443). While the ceramic data from my excavations is limited due to the overall poor preservation of the assemblage, the consistency between the 2024 excavations and Keller's excavations supports the dating of Sacbe I's terminus at Group D. Ceramic analysis conducted

by Lisa LeCount, Jason Yaeger, Richard Leventhal, and Wendy Ashmore (2002) also supports this dating. They also recovered the previously mentioned ceramic types from LeCount's ceramic analysis of the finds from the 1991-1997 Xunantunich Archaeological Project (XAP) excavations (LeCount et al., 2002, p. 47). The authors' analysis showed that the previously mentioned ceramic types were present throughout Xunantunich's Late Classic occupation.

Based on the modified bedrock shown in Operations 29d – 29f, 29h, 29j – 29k, we have identified this area as a limestone quarry based on the shapes of the modified bedrock and the bedrock type. There are multiple features in the bedrock that demonstrate finished and unfinished cuts. In addition to the incomplete cuts, soft limestone deposits on the bedrock indicate the quarry was abandoned. Complete cuts match limestone blocks used in the construction of Sacbe I (Figure 7) and Structure D-7 (Figure 8).

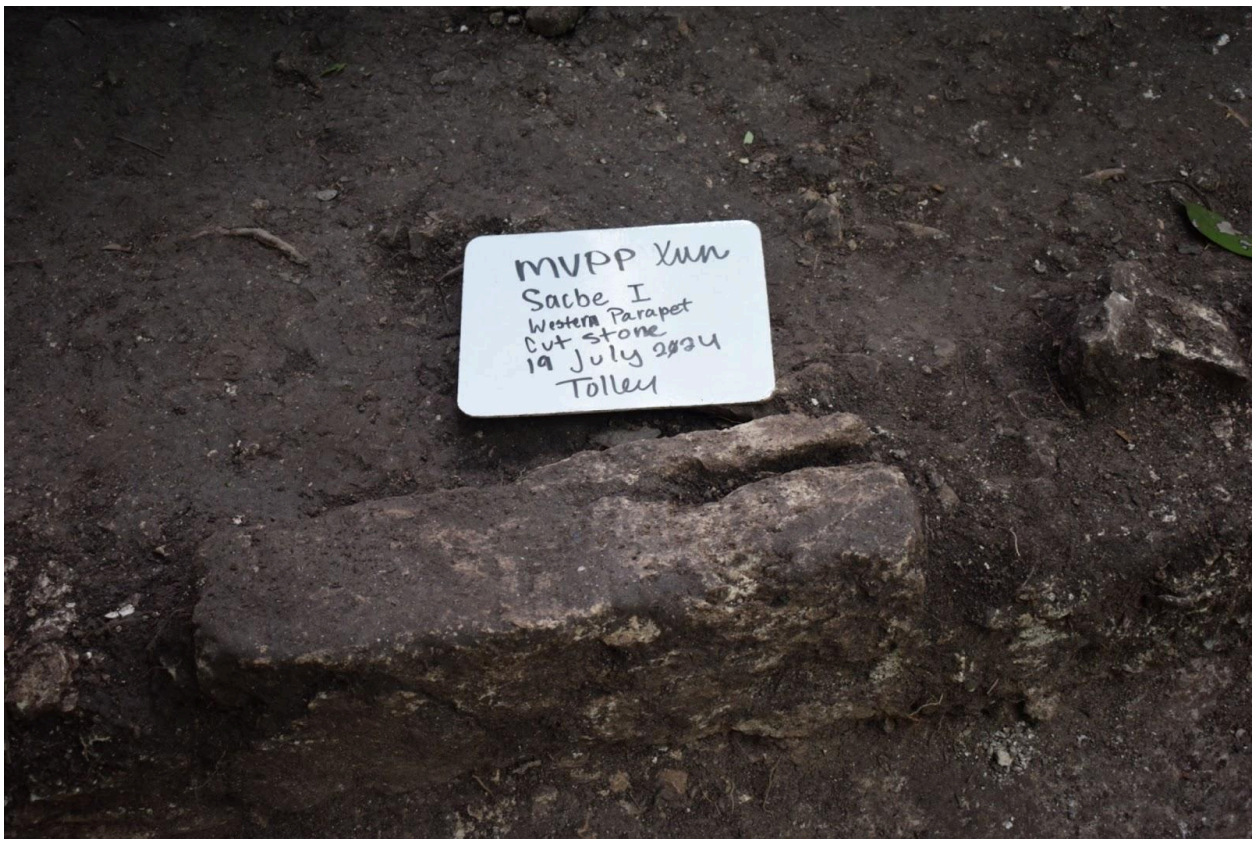


Figure 7. Cut limestone, part of the western parapet's inner/eastern wall of Sacbe I, Operation 29.



Figure 8. Cut limestone blocks in Structure D-7, Operation 30.

Excavations of the limestone quarry did not yield any tools, which limits our ability to date the feature at this time. Future excavations may reveal tools or other artifacts that date the feature. Operation 29 excavations of this feature reveal conflicting evidence for dating. There is evidence that the quarry potentially dates before the Late Classic period, as a portion of the modified bedrock extends beneath the adjacent eastern parapet wall. Additional excavations on

the parapet and Sacbe I would be needed to verify this theory. Lithic flakes recovered in the quarry confirm that tool use occurred in the feature. A sample of the recovered lithics across the different suboperations was identified in the field laboratory as tertiary flakes by Dr. Rachel Horowitz. The finished cuts in the bedrock correspond with the cut limestone in Group D's architecture and on the inner facing wall of Sacbe I's parapet. This correlation indicates the quarry might have been used for local construction during the Late Classic.

Artifact Analysis

Basic artifact analysis was conducted on ceramic sherds from each excavated unit and lot. Of the total 1,789 ceramics recovered during the 2024 excavation season, 37 sherds were identified as Belize Red (19), Savana Orange (10), or Mount Maloney Black (7). Most recovered sherds were too heavily eroded to properly identify. While the artifact data is minimal, the identified sherds align with the ceramic dating of previous excavations at Group D and the overall Classic Xunantunich area.

Sacbe I

The majority of the ceramic sherds recovered on the sacbe and in the parapet were too eroded to be properly identified. The presence of Mount Maloney Black and Belize Red ceramic types corresponds with previous research that determined Classic Xunantunich was occupied in the Late Classic II and Late Classic III. These ceramic types are both prominent in Xunantunich's archaeological record (LeCount et al., 2002). Minimal Savana Orange ware is also present in the parapet fill, indicating a possible repurposing of Preclassic ceramics in constructing Sacbe I.

Limestone Quarry

The majority of ceramic sherds recovered in the quarry area were too eroded to properly identify. Because the quarry is situated between D-7 and the Late Classic platform (D-8), I

believe it is possible the ceramic data collected from the quarry may have been washed into the area from D-7 and/or the platform (D-8) over time. Identifiable sherds from the quarry correspond with the identifiable ceramics on Sacbe I and its parapet.

Discussion, Conclusions, and Future Directions of Research

Discussion and Conclusion

The 2024 excavations demonstrate the need to assess how and why structures are built within Group D and how the understanding of construction contributes to wider discussions of ancient social landscapes. Why structures are built is indicative of social conditions and perceived needs for socially constructed spaces. Previous excavations demonstrate the ritual purpose of Group D and the continued understanding of the locale's ritual significance. The connection between Group D and Plaza A via Sacbe I further illustrates the locale's ritual significance.

While the findings of the 2024 excavation season yield many questions, they demonstrate the possible local use of materials to construct Group D's structures and Sacbe I's parapets. Sacbe I's terminus at Group D demonstrates that the southern portions of the causeway were likely built contemporaneously with its northern counterparts, based on construction style uncovered in earlier research (Keller, 2006). Because excavations of Sacbe I were taken down to bedrock, there is no evidence of a Preclassic formal pathway on the eastern edge of the causeway's Group D terminus.

The limestone quarry was an unexpected discovery. The initial aim of excavating outside Sacbe I was to investigate the possibility of ritual-related refuse to further support dating of the terminus and how the connection of Sacbe I and Group D creates a ritual landscape. It is possible that ritual refuse exists outside of Sacbe I, either closer to D-8 or further north on its pathway, or on the other side of the sacbe (unexcavated). It is also possible that rain over time washed away

these items, as the recovered ceramic evidence and state of the eastern parapet's inner facing wall demonstrate poor preservation conditions. The quarry itself raises questions about construction at Group D, which relates to discussions of the social landscape of Group D and wider Xunantunich by demonstrating the perceived need to create and/or recreate ritual space.

Through this special project, I gained significant knowledge in both archaeological excavation and laboratory methods, as well as knowledge of Maya *sacbe* and quarries. I gained an understanding of how *sacbeob* and quarries were constructed and utilized by the ancient Maya, which has led to questions regarding the implications of a quarry being located near a ceremonial architectural group at Xunantunich. This experience has sparked my interest in pursuing a Ph.D. focused on exploring the methods by which Xunantunich's population procured building materials for their structures, and how these materials were transported, both through formal infrastructure and informal routes, across the site.

Future Directions of Research

Beginning in the 2026 MVPP field season, as part of my dissertation research, I aim to continue excavating the limestone quarry uncovered during the 2024 excavation season. The purpose of this excavation will be to expose the possible continuation under Sacbe I and determine the quarry's boundaries. This will inform us about the dating of the quarry based on it possibly continuing under the Late Classic structures. The continued excavations may also reveal tools used in the quarry – key evidence in dating the feature. I also plan to reopen the quarry excavated by Braswell (1998) to determine if the feature is a quarry, whether it was depleted of resources or abandoned like the limestone quarry uncovered in 2024, and the dating of the feature. By dating the two quarries in Group D, I will determine if they were utilized to construct local structures in Group D and investigate the labor energetics involved in employing these

resources. This data will provide information on ancient construction and the required labor and energetic costs.

I also aim to address questions of how Group D's ritual significance transcended from Xunantunich's Preclassic occupants to its Late Classic occupants. The limestone quarry potentially extends beneath the Late Classic causeway (Sacbe I), raising questions about the time frame the quarry was utilized. The dating of this feature and the possible quarry excavated by Braswell relates to the social landscape of Group D and wider Xunantunich, because the features demonstrate moments of expansion and can provide evidence about the materials builders utilized in the construction of Group D: local materials, a combination of local and imported materials, or solely imported materials. I also plan to research architectural energetics to investigate the efforts Xunantunich's residents were willing to expend to create and recreate a ritual space. This expenditure will reflect on the hierarchical dynamics that undoubtedly played a part in the Late Classic revitalization of Group D. Because Group D is also connected to Plaza A via Sacbe I, analysis of the energetics of movement and construction will expand on how Group D's ritual significance was bolstered by efforts to modify and reuse a Preclassic space in the Late Classic. Investigating the energetics of a complex social landscape will help us make sense of Group D's history and revitalization, as well as other places at Xunantunich and other ancient Maya sites

I hope to utilize GIS least-cost pathways to assess possible movements of quarry materials within Group D and wider Xunantunich. Understanding the physical pathways used to build Group D's structures is important within the context of Xunantunich's social landscape because it demonstrates the energy costs of Group D's construction and other structures at Xunantunich (Preclassic and/or Late Classic). Assessing the cultural landscape of Xunantunich

and archaeological energetics will contribute to larger discussions about the acquisition and movement of resources across the landscape and the creation of social spaces. My research at Group D will contribute to larger discussions in these areas. My investigations will connect to questions of the construction of other areas at Xunantunich to further understand the reoccupation of this site and reoccupation at other ancient Maya sites.

Acknowledgements

Thank you to the University of Texas at San Antonio's International Education Fund scholarship, and the university's Department of Anthropology's Master's Student Small Grant.

Thank you, Dr. Kathryn Brown and Dr. Jason Yaeger, for the opportunity to be a part of the Mopan Valley Preclassic Project, your leadership, and the opportunities you provided during the field season to elevate my understanding of ancient Maya history, the history of Belize, and to give back to the Succotz community.

Thank you, Dr. Whitney Lytle, Dr. Kathryn Brown, and Dr. Jason Yaeger, and Dr. Bernadette Cap for your mentorship during the field season. Dr. Lytle, without your daily guidance and willingness to supervise my excavations when I was absent, this research would lack data critical to my interpretations and future directions.

Thank you, Dr. Kathryn Brown, Dr. Jason Yaeger, and Dr. Rebecca Bria for serving as members of my master's committee and mentoring me as I worked to accomplish this degree.

Thank you, Mariano López, Carlos Ortiz, Emerson Cano, and Mark Tut for your incredible work. I would not have accomplished my goals this season without your diligence and effort. It was an honor to work with you all.

References

Braswell, J. B. (1998). *Archaeological investigations at Group D, Xunantunich, Belize* [Ph.D., Tulane University].

Brown, M. K., Yaeger, J., & Cap, B. (2016). A tale of two cities: LiDAR survey and new discoveries at Xunantunich. *Research Reports in Belizean Archaeology*, *13*, 51–60.

Brown, M. K., Yaeger, J., Chase, A. F., & Chase, D. Z. (2020). Monumental Landscapes, Changing Ideologies, and Political Histories in the Mopan Valley. In B. A. Houk, B. Arroyo, & T. G. Powis (Eds.), *Approaches to Monumental Landscapes of the Ancient Maya* (1st ed., pp. 290–312). University Press of Florida.

Chapman, T. (2013). *An Analysis of Chert Tools from Xunantunich, Belize.* [M.A. thesis, University of Texas at San Antonio]

Devio, J. (2016). *Reconstructing Late Classic Food Preparation at Xunantunich, Belize, Using Starch Grain Analysis*. [M.A. thesis, University of Texas at San Antonio]

Keller, A. H. (2006). *Roads to the center: The design, use, and meaning of the roads of Xunantunich, Belize* [Ph.D., University of Pennsylvania].

Keller, A. H. (2010). The Social Construction of Roads at Xunantunich, from Design to Abandonment. In L. J. LeCount & J. Yaeger (Eds.), *Classic Maya Provincial Politics: Xunantunich and Its Hinterlands*. University of Arizona Press.

LeCount, L. J., Yaeger, J., Leventhal, R. M., & Ashmore, W. (2002). Dating the rise and fall of Xunantunich, Belize: A Late and Terminal Classic Lowland Maya regional center. *Ancient Mesoamerica*, *13*(1), 41–63.

Lytle, W. C. (2020). *A Diachronic Approach to the Sociopolitical Role of Ancestor Veneration at Xunantunich, Group D* [Ph.D., The University of Texas at San Antonio].