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# A REVIEW OF 1948 EXCAVATIONS OF GRIFFIN AND BULLEN AT THE SAFETY HARBOR SITE (8PI2), WITH SPECIAL ATTENTION TO ARCHITECTURAL PATTERNING

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## Introduction

In 1948, archaeologists John W. Griffin and Ripley P. Bullen of the Florida Parks Service conducted two weeks of excavations at the Safety Harbor site (8PI2) on Old Tampa Bay (Figure 1), the type site for the period and culture of the same name. Although they published a summary of these excavations (Griffin and Bullen 1950), many details were not included. For example, the report includes no plan drawings and artifacts are tabulated only in aggregate (by excavation block, rather than by square). Fortunately, the Florida Museum of

Natural History (FLMNH) curates relatively detailed notes and drawings of the excavations. We use geographic information system (GIS) mapping to review these for new insights, particularly regarding domestic architecture, a facet of Safety Harbor material culture that has remained elusive.

## General Background

The Safety Harbor culture is arguably one of the most poorly understood of the many local manifestations of the broader Mississippian “culture” across the southeastern United States. Safety Harbor ceramics, defined by Willey (1949) (see also Stirling 1936:353; Willey and Woodbury 1942:235, 245) on the basis of burial mound assemblages excavated by Matthew Stirling (1930, 1931) as well as other excavations around Tampa Bay, have been the topic of considerable archaeological interest (e.g., Bullen 1969; Luer 1985, 1992a, 1993, 1996;

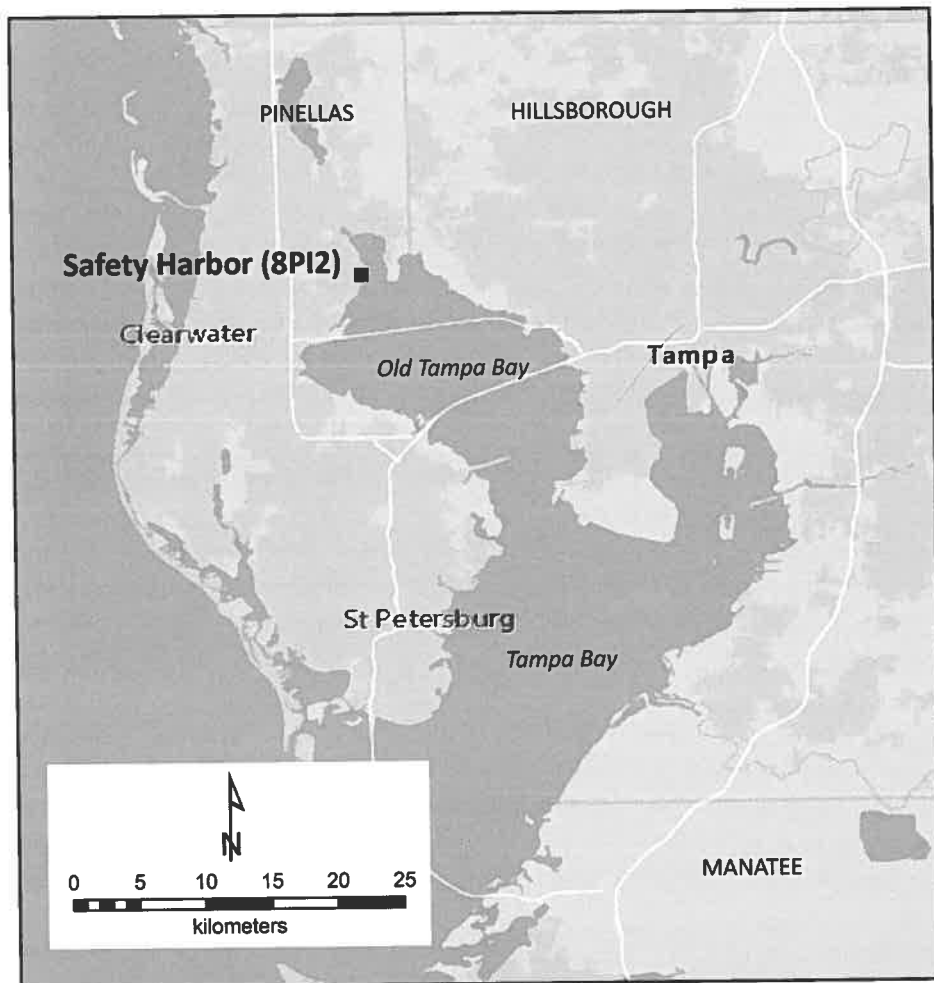


Figure 1. Location of the Safety Harbor Site.

Sears 1967). So too have the mounds and burial practices associated with Safety Harbor period sites (e.g., Hutchinson 2006; Luer 2002a, 2002b; Luer and Almy 1987; Mcleod 2014; Mitchem 1988; Mitchem et al. 1985).

But as Mitchem (1989:583) has noted, “very little” is known about Safety Harbor domestic life (see also Bullen 1978:51). Indeed, Mitchem’s litany of what we do not know about Safety Harbor covers almost every aspect of the daily lives of the Mississippian people of the Tampa Bay area:

Needed are data on house sizes and patterns, faunal remains, floral remains (both utilization of wild species and horticultural production), settlement and population estimates, duration of settlement in a particular location, intrasite activity areas, tool and ornament production, patterns of settlement location, utilization of environmental zones, site specialization (craft specialization, exploitation of particular resources, etc.), and seasonality. This list could easily be expanded, but the gaps in basic information about Safety Harbor habitation sites are clear. [Mitchem 1989:603]

Such broad gaps in our understanding stem directly from the scarcity of excavations of Safety Harbor “habitation sites.” To be fair, however, a large number of studies have taken place in domestic areas dating to the Safety Harbor period since Mitchem wrote his lament in 1989 (and more are under way). Much of the new data relate to radiocarbon dates, subsistence, ceramics, and shell and lithic tool making and use, while domestic architecture is still poorly understood.

In the Circum-Tampa Bay region, studies include work in St. Petersburg at Safety Harbor (Mitchem 1994), Yat Kitischee (8PI1753) (Austin 1995), the Narvaez/Anderson Site (8PI54) (Austin 2000; Simpson 1998), Bayshore Homes (8PI41) (Austin et al. 2008), and the Weeden Island Site (8PI1) (Arthur et al. 2018; O’Donnell 2020; Sampson 2019). In the South-Central region of Safety Harbor culture, they include work in the Bradenton-Sarasota area at Shaw’s Point Ridge 3 (8MA7) (Schwadron 2002:83-84), Eagle’s Nest Site West Midden (8MA132) (Archaeological Consultants 2006), Boylston Mound (8SO35) (Luer 1992b), Old Oak Site (8SO51) (Luer n.d.), the Shell Ridge Midden of the Palmer Site

(8SO2) (Kozuch 1998; Newsom 1998; Quitmyer 1998), and Snake Island (8SO2336) (Koski and Peres 2001). Also in the South-Central region, other work has been conducted at Nineteen Owner Midden (8SO85A) (Luer 2002c) and Tippecanoe Bay Midden (8CH87) (Luer 2002d) on the north side of Charlotte Harbor, and at Big Mound Key (8CH10) on the Cape Haze peninsula (Austin 2020; Luer 2007, 2014a:82-85, 2014b:107-123, 2020).

Nonetheless, the 1948 excavations at the type site of Safety Harbor by John W. Griffin and Ripley P. Bullen remain substantial. Over the course of just two weeks, using a field crew comprised of county prisoners who worked under the supervision of a shotgun-bearing guard (Weisman 1994:224), Griffin and Bullen conducted excavations in three areas of the site (Figure 2): 1) on top of the large platform mound (Area A); 2) on an elevated area in the northern arm of the village (Area B); and 3) in the western extension of the midden (Area C) (Griffin and Bullen 1950:Figure 1).

Excavations of the platform mound revealed a complicated construction sequence (Griffin and Bullen 1950:15-19), including several later platform surfaces with features, as described in more detail below. Their two trenches in the village midden produced uneven results. While the trench in Area B was “not too productive” (Griffin and Bullen 1950:8), the excavations in Area C identified an area of intensive occupation evidenced by dense artifact deposits and numerous features (Griffin and Bullen 1950:20-22).

Griffin and Bullen (1950) published a relatively thorough account of their excavations at Safety Harbor. However, many key details were not included in the report. For example, although the authors noted seemingly important variations in the distribution of material culture, both vertically (in Area A) and horizontally (in Area C), artifacts were tabulated only in aggregate (by excavation block), rather than by square. In addition, although features were encountered (especially in Area C), Griffin and Bullen’s report did not present any plan maps or photographs. Fortunately, FLMNH curates relatively detailed notes and drawings of the excavations. We use GIS to review these archival sources for new insights, particularly regarding domestic architecture.

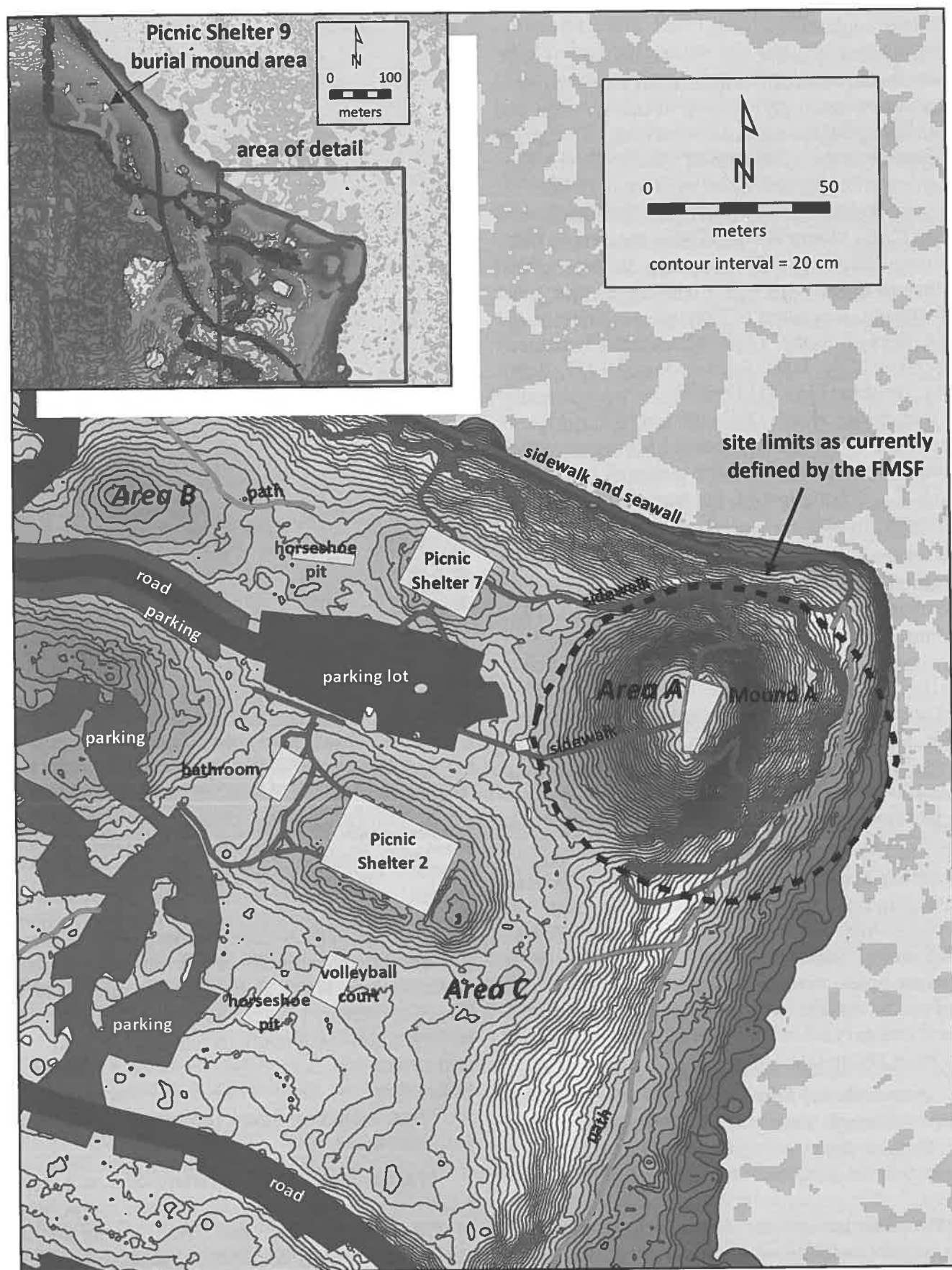


Figure 2. Safety Harbor Site Showing Locations of Areas A, B, C, and Burial Mound.

### Site Background

The Safety Harbor site is located on a high (approximately 4 m tall) natural bluff on the western entrance to a small embayment at the northern end of Old Tampa Bay, the latter consisting of a larger embayment in the northwest of greater Tampa Bay. The site was briefly described by Brinton (1859:118, 171) and Walker (1880:410-411) in the late 1800s, and by C. B. Moore (1903:356) in the early 1900s. Brinton (1859:118, 171) appears to have been the first to associate the site with the Native town of Tocobaga, described in Spanish accounts of the 1560s through early 1700s (Escalante Fontaneda 1944; Hann 1991, 2003; Solís de Merás 2017; Worth 2014). Brinton (1859:118) noted that “a large mound still seen in the vicinity [of Old Tampa Bay] marks the spot” of Tocobaga. Walker and Moore were both denied permission to excavate, although the former provided a description of the stratification of the site’s largest mound.

Matthew Stirling, Chief of the Smithsonian Institution’s Bureau of American Ethnology, visited the “ancient village site at Safety Harbor” in 1929 (Stirling 1930:184) and returned the following year to excavate the burial mound at the site (Stirling 1931:167-172). He and his small crew worked quickly to uncover the remains of over a hundred people and their associated burial goods, mainly pottery. Unfortunately, the methods were coarse and the results minimally reported (Stirling 1931; see also Hrdlicka 1940; Stojanowski and Johnson 2011; Willey 1949).

Gordon Willey (1949) drew on the collections generated by Stirling’s excavations in his development of a chronology for the Florida Gulf Coast. Willey (1949) made Safety Harbor the type site for a pottery complex of the same name and for the local manifestation of the broader spatial, temporal, and cultural category known as “Mississippian,” running from ca. A.D. 1050 to 1600.

As noted above, John Griffin and Ripley Bullen (1950) conducted work at the Safety Harbor site in 1948, the year the property was acquired by Pinellas County for the purposes of creating Philippe Park (Figure 3). The park (the first established in Pinellas County) was named for legendary settler Odet Philippe, who established his small citrus plantation of St. Helena on the location of the former Native



**Figure 3. Area A Excavation in 1948 in the Platform Mound Summit at the Safety Harbor Site. From left: Lucius Ruder (Chair of the Pinellas County Park Board), John Griffin, and Ripley Bullen. Photo in possession of the senior author. This image was originally published in the *St. Petersburg Times* (1948), which noted that “the dog assists in finding old bones.”**

town in the 1850s (see Defoor 1997). Several groups of avocational archaeologists conducted investigations at the Safety Harbor site in the late 1960s (Mitchem 1989:52-53). Results of this work unfortunately have not been published. In the 1980s and 1990s, Mitchem (1994) analyzed a collection of lithics from the Safety Harbor site that is curated at FLMNH, including lithics recovered by Griffin and Bullen in 1948.

More recently, the University of South Florida (USF) began a program of archaeological testing at the Safety Harbor site. The testing included geophysical survey and systematic shovel testing of the village area, as well as additional geophysical

survey and small diameter coring of Mound A. A report of the results of this testing is in preparation; we draw insights from the geophysical survey later in the paper.

## Methods

FLMNH Collections Manager Donna Ruhl brought the primary documentation of Griffin and Bullen's excavations at Safety Harbor to the attention of the senior author on a visit to FLMNH in 2018. Pluckhahn photographed the excavation notes and lab forms. Perusal of the notes and plan maps allowed Pluckhahn to sketch the layout of excavation squares and to determine that these were designated by the coordinates of their southwest corners.

Georeferencing of Griffin and Bullen's (1950:Figure 1) site map allowed us to place their excavations roughly on a modern topographic map of the Safety Harbor site derived by LiDAR (light detection and ranging) technology. As noted below, we were able to pinpoint more precisely the location of one of their excavation trenches (Area B) based on the results of recent geophysical survey.

In 2020, as part of a course the senior author was teaching in GIS methods for anthropological research at USF, then-undergraduate students Almeida and Whittingslow created shapefiles (shp) for the 5 ft excavation squares in the ArcMap component of Environmental Systems Research Institute (ESRI) software. They also transcribed Griffin and Bullen's artifact tabulations to spreadsheets, so that these tables could be joined to the shp files in order to create choropleth maps (maps that unite two datasets) showing quantities of artifacts by square and level.

Griffin and Bullen dug primarily in arbitrary 6 in levels. We assume that the soils were not screened, given the standards of the day, but it is clear that they were relatively meticulous in collecting certain categories of artifacts, especially pottery. For example, 520 sherds were tabulated for a single 6 in level in one 5 ft square in Area C. On the other hand, other categories of artifacts, such as unmodified shell, were not tabulated at all.

We summarize many of Griffin and Bullen's artifact sorting categories, either because they were too detailed for the present analyses, or because they were inconsistently applied. As an example of the former, they described numerous varieties of

Pinellas Plain rim forms, distinctions which may hold diagnostic value but which are not relevant to our focus on domestic architecture. As an example of the latter, although a few European ceramics are described by ware, most are tabulated only as "Spanish pottery" so we subsumed all under this category.

Pluckhahn digitized the features that Griffin and Bullen drew in plan. In a few cases, we have approximated the locations and shapes of features that are mentioned in the field notes or drawn in profile but not in plan. We feel confident in the relative accuracy of these based on Griffin and Bullen's notes regarding the center points and diameters of these features. We have no way of ascertaining how thorough Griffin and Bullen were with regard to documenting features, although the notes are relatively detailed, especially with regard to Area C (as noted below). In a few cases, features end at the boundaries between 5 foot squares. This is usually because one square was not excavated to the same depth as its adjoining square.

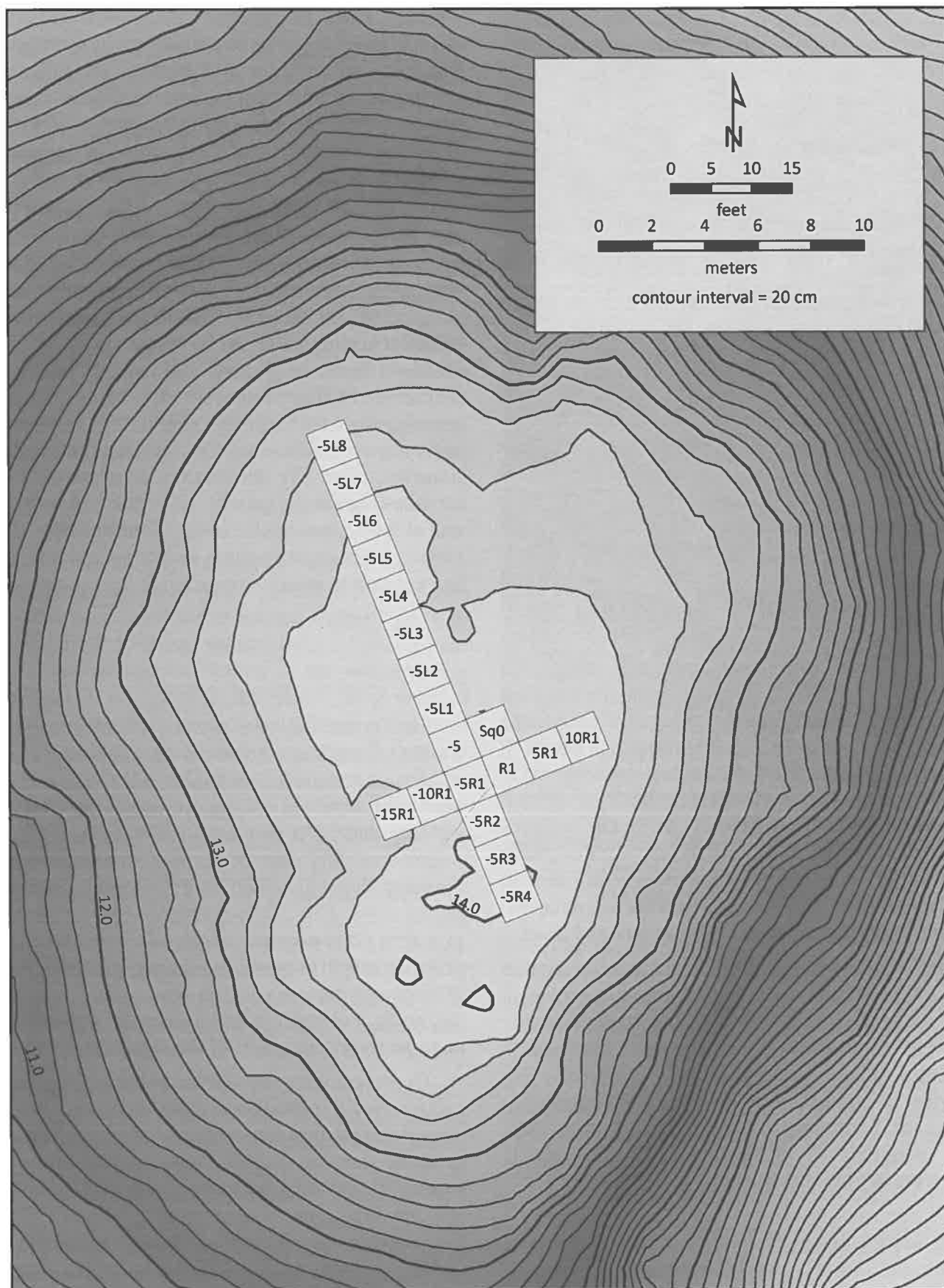
## Results

### *Area A, Platform Mound Summit*

Griffin and Bullen excavated a total of nineteen 5 x 5 ft (1.5 x 1.5 m) squares in Area A on the summit of Mound A at the Safety Harbor site (Figure 4). The units were arranged in a cruciform pattern, 65 ft (19.8 m) long and 30 ft (9.1 m) wide, with the long axis oriented slightly west of north and perpendicular to the ramp that extends down the mound's southwest-facing slope. The units were placed on a grid oriented to a zero point near the center of the cruciform; the grid increased in positive numbers to the east and in negative numbers to the west. Grid corners to the north and south were designated in increasing increments left and right of this line (respectively).

Georeferencing of the excavation plan to our LiDAR-based elevation model indicates that the Area A excavation trench sloped slightly, from 13.5 m at the north to slightly more than 14.0 m at the south. With a total excavated area of 475 ft<sup>2</sup> (44.1 m<sup>2</sup>), the Area A excavations covered about 11.7% of the contemporary mound summit as defined by the 13.6 m contour in our LiDAR-based topographic map, roughly coincident with the 45 ft (13.7 m) contour on Griffin and Bullen's (1950:Figure 1)





**Figure 4. Area A Excavation Plan of Griffin and Bullen in the Platform Mound Summit. Their units are georeferenced on our LiDAR-based elevation model.**

map. The trenches were reportedly dug to a depth of about 5 ft below the mound summit with post hole tests extending downward around another 3 ft (0.91 m) (Griffin and Bullen 1950:15). Griffin and Bullen noted that the total depth of around 8 ft (2.4 m) in their excavations “did not quite penetrate the upper half” of the mound.

In a recent paper, Kendal Jackson, Pluckhahn, and Victor Thompson (2021) described the stratigraphy and dating of Mound A, as revealed through both Griffin and Bullen’s trench and our own, more recent investigations. To summarize briefly, a dome-shaped primary mound comprised of marine clay was expanded into a larger platform mound by the addition of alternating layers and lenses of sand, shell, and re-deposited midden. Above this, in the upper levels of the mound, are a series of included superimposed layers of clay and presumably *in situ* midden.

Griffin and Bullen (1950:17) express some ambivalence about whether these clay layers represent occupational “floors.” On one hand, they note that no post holes were found in association and that the layers consisted in some areas of lumps rather than even lenses, while on the other they noted that the clay layers had “large amounts of occupational debris on and just above them.” Griffin and Bullen described three main occupation layers in the portion of the mound they excavated. We discuss each of these in turn, reconstructing the associated features and artifacts as closely as possible from their published and unpublished descriptions.

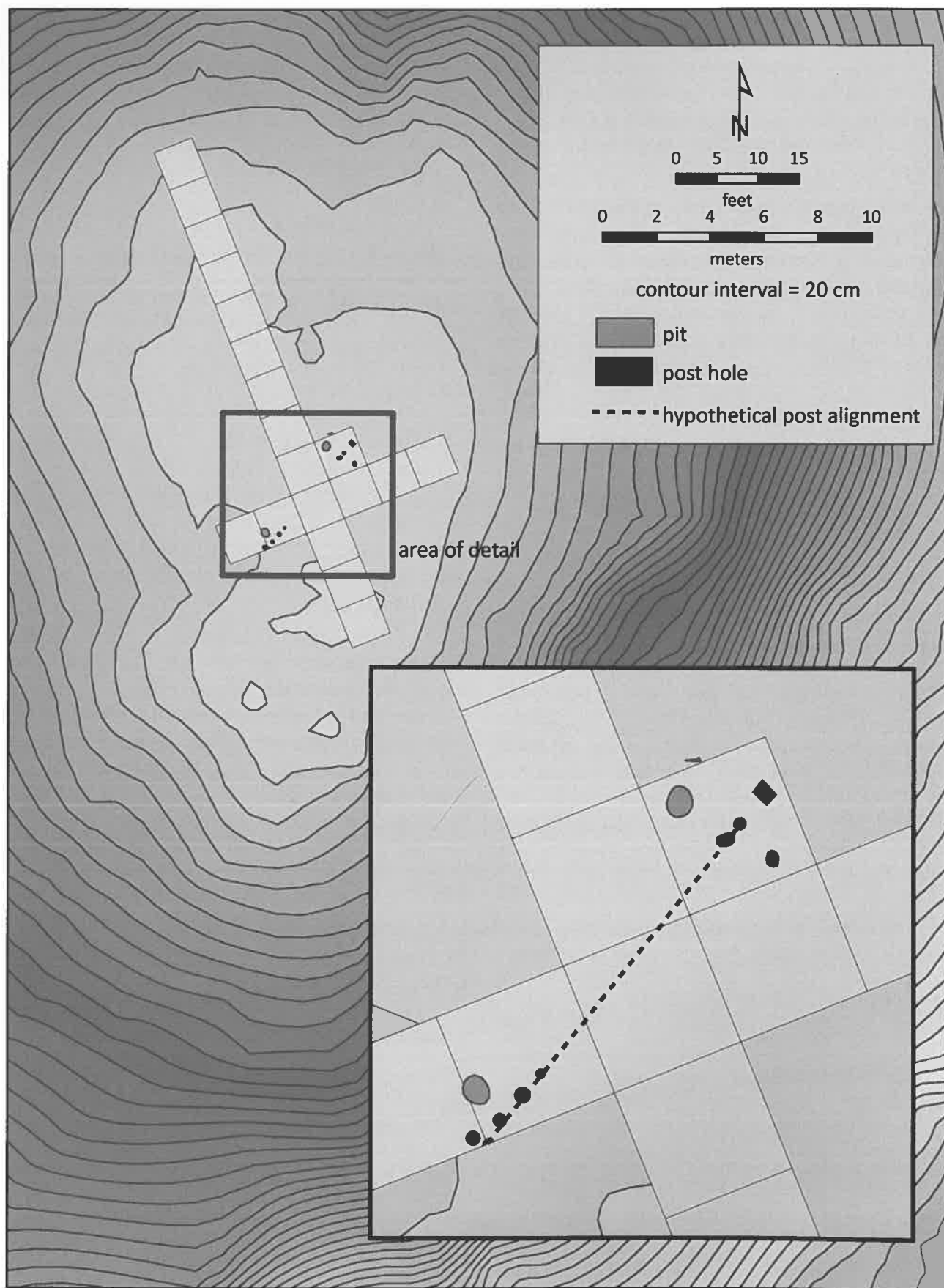
The first occupation layer was identified by features beginning at a depth of around 5 to 7 in (13 to 18 cm) below the modern ground surface. Not surprisingly (given the shallow depth), Griffin and Bullen (1950:19) noted that this layer had been disturbed by “picnickers and others,” as evidenced by the presence of modern materials (a Victrola record fragment, charcoal briquettes, brick, recent glass, fragments of iron) and intrusions (decaying cedar posts, an animal burrow, and a previous excavation). However, they reported that the mound was “otherwise undisturbed” (Griffin and Bullen 1950:19).

We dated a sample of deer bone recovered in Griffin and Bullen’s first level in Area A from 0 to 6 in (0 to 15 cm) below the ground surface. It produced a radiocarbon age of  $730 \pm 25$  B.P., calibrated at 2-sigma to cal A.D. 1230 to 1377 (UGAMS-41138) (Table 1). This is consistent with the middle Safety Harbor period, but younger than another date from lower in their excavation, which probably should be considered an earliest possible date for the final occupation layer.

In their report, Griffin and Bullen (1950:17) noted the presence of two pits and an unspecified number of post holes in association with this layer, but they did not provide further description except to say the post holes were “few in number and formed no recognizable floor plan or pattern.” Examining their notes, we identified 11 features that seem to be associated with this occupation layer (Figure 5).

**Table 1. Radiocarbon Dates of Materials from Griffin and Bullen’s Area A Excavations.** All samples were deer bone collagen. All AMS ages (14C B.P.) are corrected for isotopic fractionation (13C). Calibrations were obtained using OxCal 4.4 (Bronk Ramsey 2021) and the Intcal20 calibration curve (Reimer et al. 2020).

Sample ID#	Provenience	13C, o/oo	14C B.P., 1-Sigma	Calibrated Date, 1-Sigma (68.3%)	Calibrated Date, 2-Sigma (95.4%)
UGA-41138	0 to 6 inches	-21.26	730 +/- 25	A.D. 1270 to 1288	A.D. 1230 to 1244 (3.0%), 1257 to 1300 (91.2%), 1371 to 1377 (1.3%)
UGA-41139	18 to 24 inches	-20.55	710 +/- 25	A.D. 1276 to 1296	A.D. 1267 to 1304 (85.9%), 1366 to 1381 (9.5%)
UGA-41140	24 to 30 inches	-20.38	850 +/- 25	A.D. 1173 to 1224	A.D. 1161 to 1262 (95.4%)
UGA-41141	48 to 54 inches	-20.26	560 +/- 25	A.D. 1327 to 1349 33.1%), 1395 to 1413 (35.1%)	A.D. 1319 to 1360 (46.7%), 1388 to 1425 (48.7%)



**Figure 5. Area A Features Documented in the Uppermost Occupation Layer of the Platform Mound Summit. These are placed on our elevation model.**



One of these is specifically identified in the notes as a pit, and we have assumed the same of one of the other larger mapped features. Eight of the nine mapped post holes have rounded shapes suggestive of Native American architectural features, while the last is rectangular and may correspond with one of several later, historic-era cedar posts that Griffin and Bullen referenced in their notes and report.

The mapped features associated with this occupation layer cluster near the center of the cruciform-shaped excavation block, with one cluster of four posts and one pit in Square 0 and another cluster of five post holes and one pit in Squares -10R1 and -15R1. Given the lack of additional features (or at least mapped features), it is obviously speculative to identify any potential post alignments. However, it is worth noting that four of the five posts in the latter cluster form a line extending northeast to southwest, and that this line corresponds well with two of the three posts in the former cluster; together these could conceivably indicate a wall of posts around 5 m in length, albeit with a large gap at center.

Griffin and Bullen's first occupation layer corresponds with their first and second 6 in levels. Fortunately, the excavation notes break down the artifact totals by level and square, allowing us to plot the density of various categories using choropleth maps (Figure 6). Native American pottery was plentiful in these two levels ( $n=665$ ), especially in the southern half of the excavation and adjacent to the units where features were mapped at this level. By far, the largest concentration is observed in Square -10R1, corresponding to one of the two feature clusters. A slightly higher concentration in Square -5L7 may indicate a separate activity area on the northern edge of the mound.

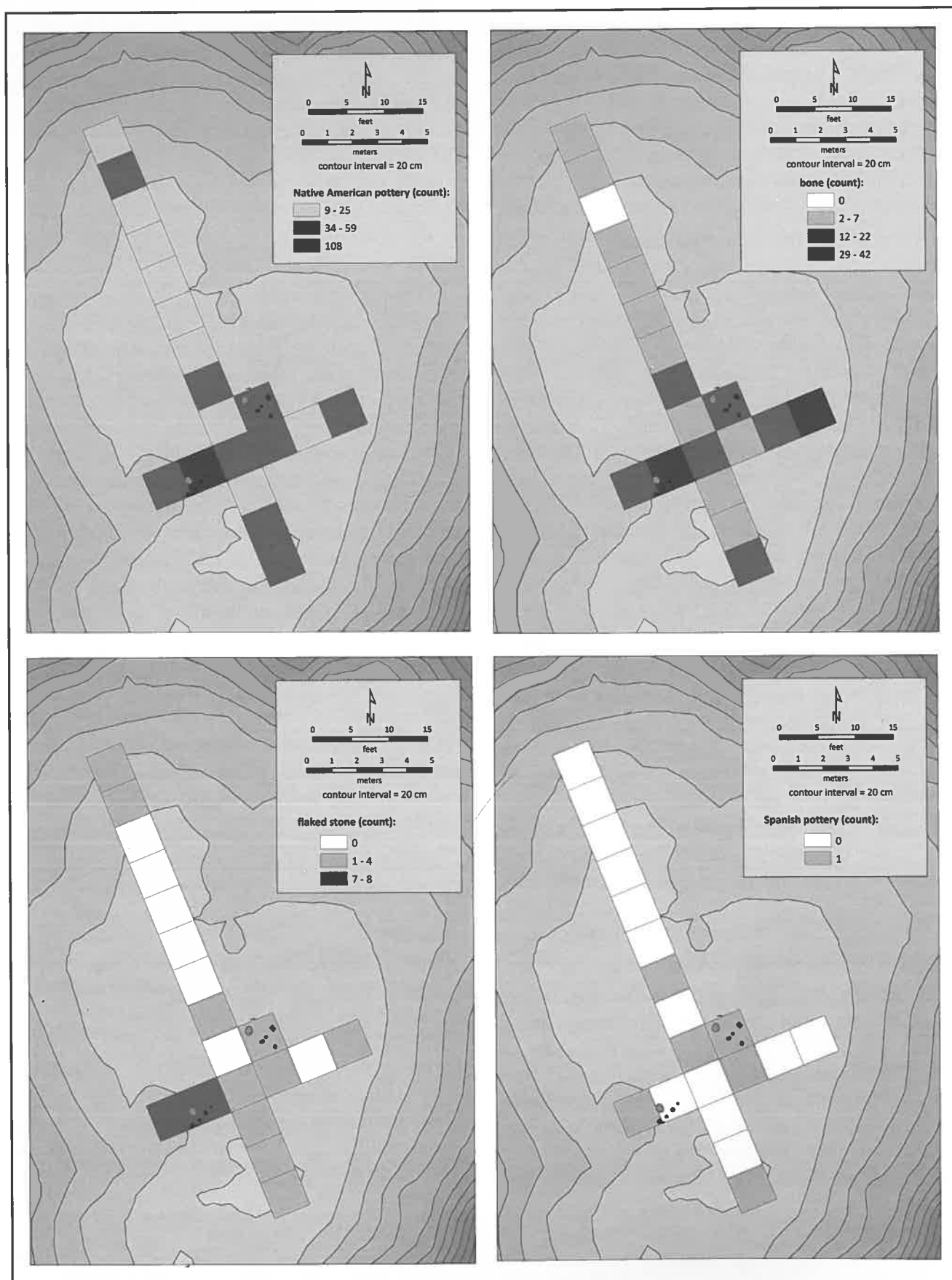
Bone fragments (separated by Griffin and Bullen as "animal," fish, turtle, and bird but combined here) were also plentiful ( $n=209$ ) and follow the same general pattern. However, the concentration of bone in Square -10R1 is matched by that in Square 10R1 to the east. Flaked stone artifacts, despite being relatively uncommon in these two levels ( $n=8$ ), also follow the same trend, with concentrations in the southern half of the excavation block and in two squares to the north.

As may be expected, Spanish pottery was found primarily in association with this uppermost occupation layer; the first two levels accounted for

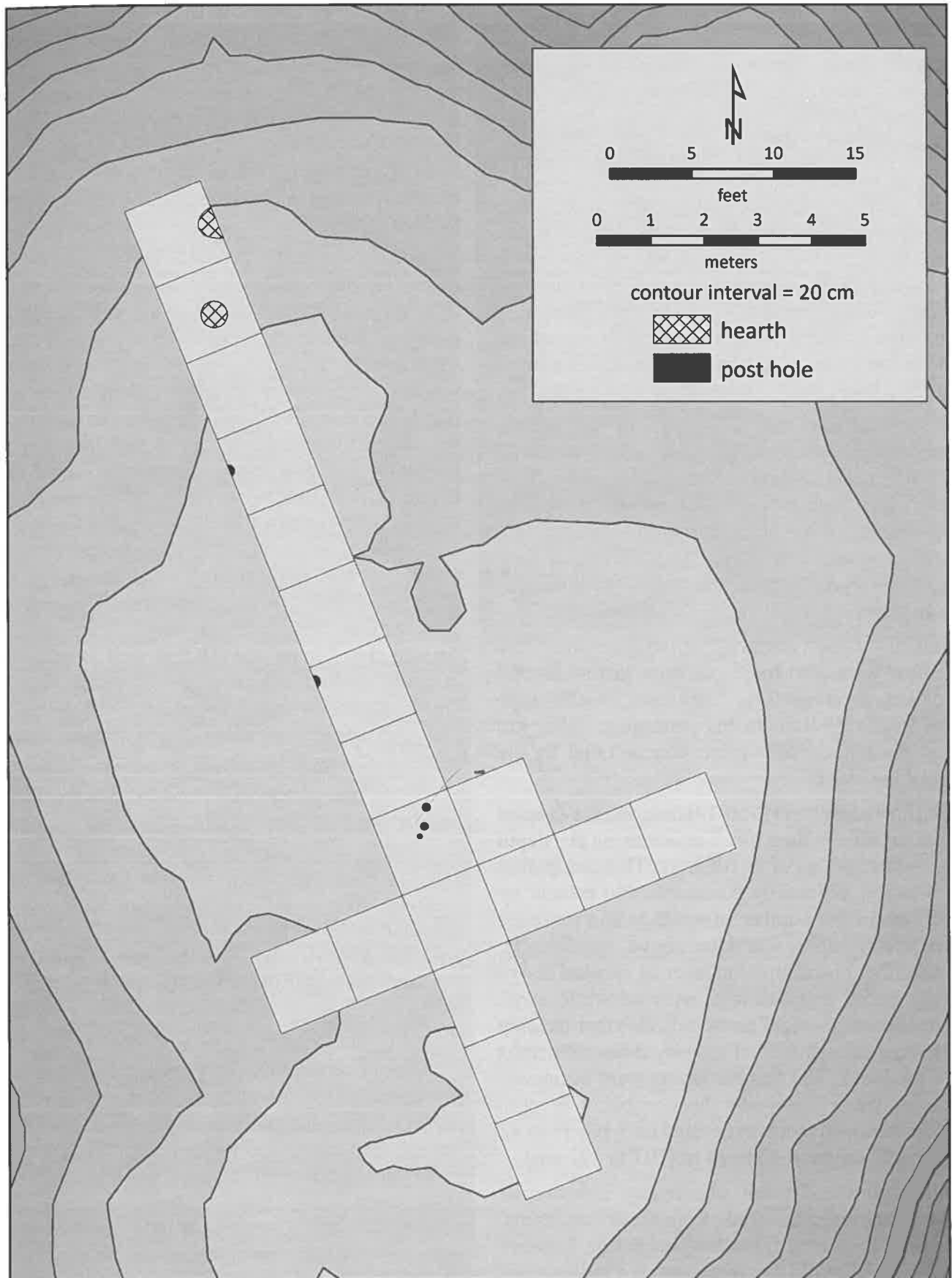
6 of the 9 Spanish ceramics that were found in the Area A excavation block. These 6 sherds of Spanish pottery were dispersed across an equal number of squares in the southern half of the excavation block. Historical accounts (Solís de Merás 2017:178) indicate that the Spanish met with the Tocabaga chief in his house on top of a mound. It may be reasonable to surmise that whatever structure may be indicated by the concentrations of features and artifacts in the southern half of this first occupation layer represents a house of a chief and his family.

Griffin and Bullen (1950:17) described the next presumed occupation zone as represented by a group of post holes encountered at a depth of 14 to 18 in (36 to 46 cm). This corresponds with their third 6 in level, from 12 to 18 in (31 to 46 cm) below surface. However, given that the features encountered at this level continued downward to various depths, we also associate their fourth level, from 18 to 24 in (46 to 61 cm), with this occupation layer. A fragment of deer bone recovered by Griffin and Bullen from the 18 to 24 in level produced a radiocarbon age of  $710 \pm 25$  B.P., calibrated at 2-sigma to cal A.D. 1267 to 1381 (UGAMS-41139). This date is nearly identical to the date from their first level, and likewise suggests use of the mound summit during the middle Safety Harbor period. Consistent with the stratification, it is more recent than another date on deer bone from the level below (24 to 30 in, 61 to 76 cm), at  $850 \pm 25$  B.P. and calibrated at 2-sigma to cal A.D. 1161 to 1262 (UGAMS-41140).

Unfortunately, our examination of the field notes revealed only three post holes mapped in plan view at this level, all in Square -5 near the center of the excavation block (Figure 7). To these, we have added two areas of burning, the locations and dimensions of which were recorded in their field notes at depths of 12 to 13 in within Squares -5L7 and -5L8, at the north end of the excavation block. The stain in the latter square was described as a "black deposit, composed chiefly of charcoal only 1 1/2 in [4 cm] thick" underlain by "brown dirt and shells resting on 'ash layer'" and interpreted as a "place where small fire [was] made." The hearth in Square -5L7 was described as a "thin" area of "charcoal and very black soil" and interpreted as "evidence of fire." We also have added two post features not documented in field notes but recorded in the profile of the trench and further noted in their report (Griffin and



**Figure 6. Area A Artifact Densities in the Uppermost Occupation Layer of the Platform Mound Summit. Shaded units reflect counts of sherds, bone, and stone.**



**Figure 7. Area A Features Documented in the Middle Occupation Layer of the Platform Mound Summit. These are placed on our elevation model.**

Bullen 1950:17). One of the post holes is described as south of grid point -5L3 and the other north of -5L5. Obviously, given the sparseness of the feature record, relatively little may be concluded regarding architectural patterns.

Pottery was more common in these two levels than in the two above, with a combined total of 960 sherds. Similar to the occupation layer above, here pottery was concentrated in the four squares at the center of the cruciform-shaped excavation block, with only slightly lesser density in four of the five adjacent squares (Figure 8). Likewise, there is a second area of slightly lesser concentration near the northern end of the block; in the case of this second occupation level, it is associated with the two hearths.

Bone was also more frequent in the second occupation layer than in the one above, with a total of 372 fragments in the two associated levels. Like pottery, bone fragments are concentrated in squares near the center of the block but, in this case, mainly in Squares -10R1 and -15R1, just above the east-facing slope of the mound. Notably little bone was recovered in the two squares with hearths.

Flaked stone artifacts, although not very numerous, were also more common in this second occupation layer ( $n=23$ ). Artifacts of this type display relatively little spatial patterning. They are also at least nominally more concentrated in the center of the block.

Griffin and Bullen (1950:19) describe the deepest occupation zone in their block as occurring at a depth between 36 to 42 in (91 to 107 cm). This occupation layer was not defined by postmolds, but instead by an increase in the number of artifacts and presence of several clay "floors," as noted above. Specifically, they describe this occupation layer as situated above the clay floors and below a layer of white sand. Examination of the field notes indicates that the clay layers were encountered at slightly different depths across the block, and that the layers were of uneven thickness. We thus consider this occupation level to be associated with levels excavated between 36 to 42 in (91 to 107 cm) and 42 to 48 in (107 to 122 cm).

Although we did not obtain any radiocarbon dates on excavated materials from these two levels, a sample of deer bone from the level below, between 48 to 54 in (122 to 137 cm), produced a radiocarbon age of  $560 \pm 25$  B.P., calibrated at 2-sigma to cal A.D.

1319 to 1425 (UGAMS-41141). This is more recent than the three dates retrieved from levels above, suggesting either a lack of stratigraphic control or an intrusion from layers above. Nevertheless, all the dates we retrieved based on materials from Griffin and Bullen's excavation in Mound A are close in age and suggest either continuous occupation or a series of occupations across the middle Safety Harbor period.

Griffin and Bullen (1950:Figure 2) mapped some of the clay floors associated with the third occupation layer in profile; their excavation notes include plan drawings of the clay layers and other associated stratigraphic zones for some of the excavation squares. However, it is difficult to determine if the clay layers extended into units that were (apparently) not mapped. In some cases, the lack of a plan map may indicate that a square was not excavated to this depth, as their profile drawings suggest was true of at least a few squares (although artifact counts are provided for these levels in these squares as well, adding to the confusion). What we are able to document points to a complicated layer of sediments described as "clay," "thick clay," "clay nodules," "mixed clay," "clay and ash," as well as other areas of reddish, white, gray, and mottled sands (Figure 9). One area of "clay" and "mixed clay" in Squares -5L1 and -5L2 appears to have been more continuous in extent, possibly in keeping with a true "floor."

To an extent, the clay zones that were mapped correspond with squares with higher artifact density, consistent with their interpretation as "floors." For example, pottery ( $n=626$ ) in these two levels was clustered in squares associated with the more continuous layer of clay noted above, as well as with the area of "clay nodules" mapped in the two northern squares (Figure 10). However, sherds were also more dense in association with the sand layers that were mapped in two of the southernmost squares.

Fragments of bone ( $n=494$ ), were particularly prevalent here relative to the other two occupation layers, clustered mainly in Square -5L1. As with pottery, this maps onto the more continuous area of clay near the center of the excavation block. Flaked stone artifacts ( $n=8$ ), not particularly plentiful and spottily distributed here, show a slight concentration in association with this more continuous clay surface, as well as with the area of mixed sand and clay zones to the south in Square -5R2.

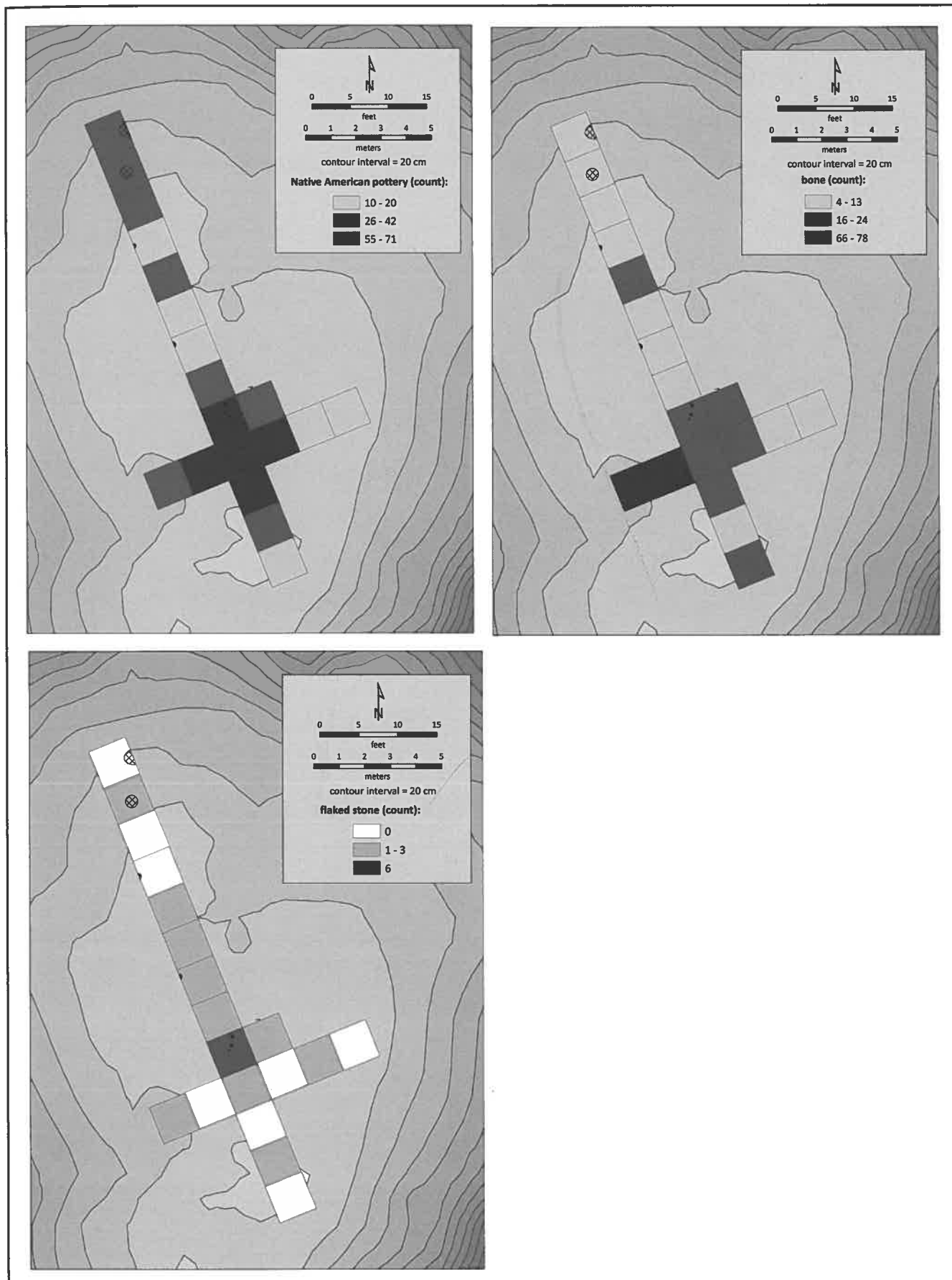
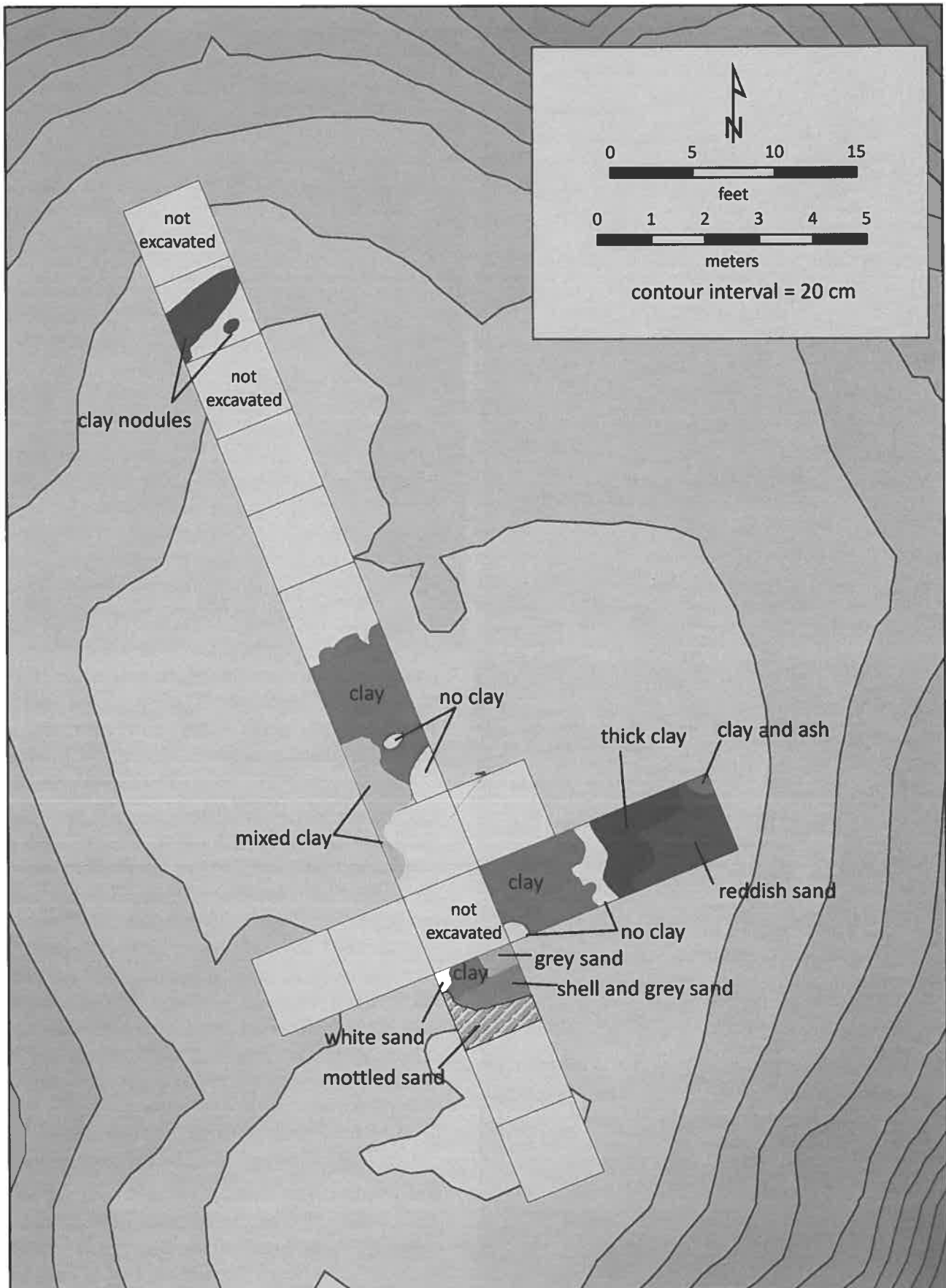
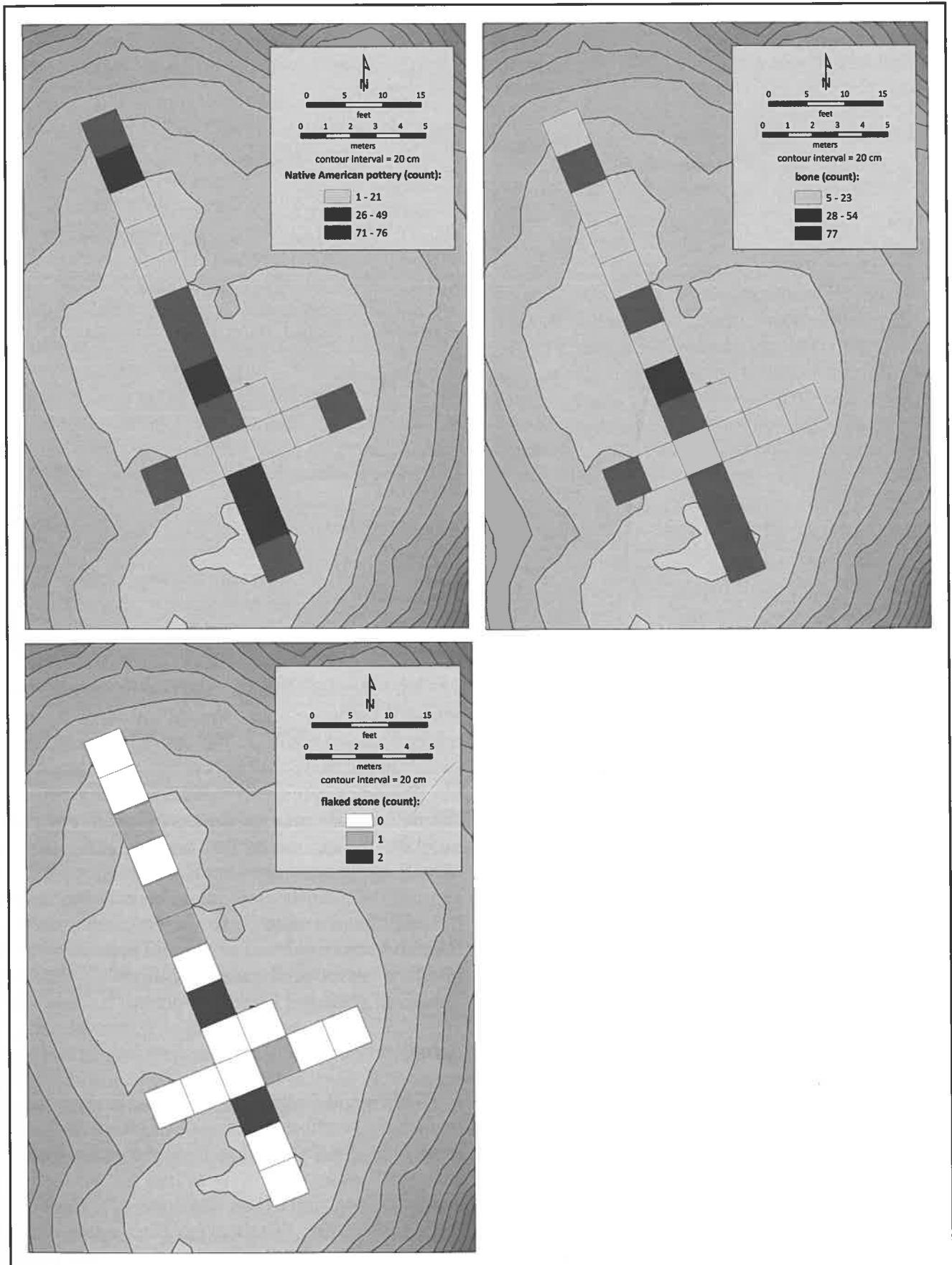


Figure 8. Area A Artifact Densities in the Middle Occupation Layer.





**Figure 9. Area A Features Documented in the Lowermost Occupation Layer of the Platform Mound Summit. These are placed on our elevation model.**



**Figure 10. Area A Artifact Densities in the Lowermost Occupation Layer of the Platform Mound Summit. Shaded units reflect counts of sherds, bone, and stone.**

### *Area B, Small Hillock*

Griffin and Bullen provide little detail regarding their second excavation area, located to the north of Mound A on "a small hillock, reaching a height of about four feet above the surrounding land... located near the parking lot." The elevation they describe is still a conspicuous feature of the site. Griffin and Bullen (1950:8) were apparently attracted to this location by the possibility that it represented an artificial mound; however, their excavation convinced them that it was a natural feature (Griffin and Bullen 1950:20). As we noted above, they apparently were unimpressed with the archaeological deposits in this portion of the site, describing their work here as "not too productive" (Griffin and Bullen 1950:8). Results of recent testing corroborate their interpretation of this rise as mainly a natural feature, albeit one that was augmented by the deposition of midden.

Griffin and Bullen's (1950:Figure 1) published map, in combination with their field notes and sketches, allow us to place the Area B excavations with reasonable precision (Figure 11). The roads and parking areas have been expanded since Griffin and Bullen's work. The hillock they investigated is now located in a grassy area between two parking lots. Field notes indicate that the Area B excavations were laid out as a 5 x 50 ft trench oriented due north and divided into ten 5 x 5 ft squares numbered 1 to 10 (from south to north). Field notes indicate that the northernmost square (10) was located just south of the "apparent top of the mound." Only four of the squares in the trench were excavated: Square 9 and Squares 1, 2, and 3. The southernmost squares appear to have fallen in what is today a gravel parking area bordering a paved road.

The Griffin and Bullen field notes provide a relatively detailed summary of the stratification in the Area B excavations, worth quoting here to supplement the meager description in their published excavation report:

Essentially this area consists of humic stained sand about 5" [13 cm] thick. Below this is a zone of occupation about 17" [43 cm] thick. Next down is a zone of mixed gray and brown sand. These color zones are major in size (not giving a mottled effect). Only a few sherds & shell were found in this mixed zone.

Below is sterile yellow or yellow brown sand. Decided this "mound" was a sand dune on which part of the village site is situated.

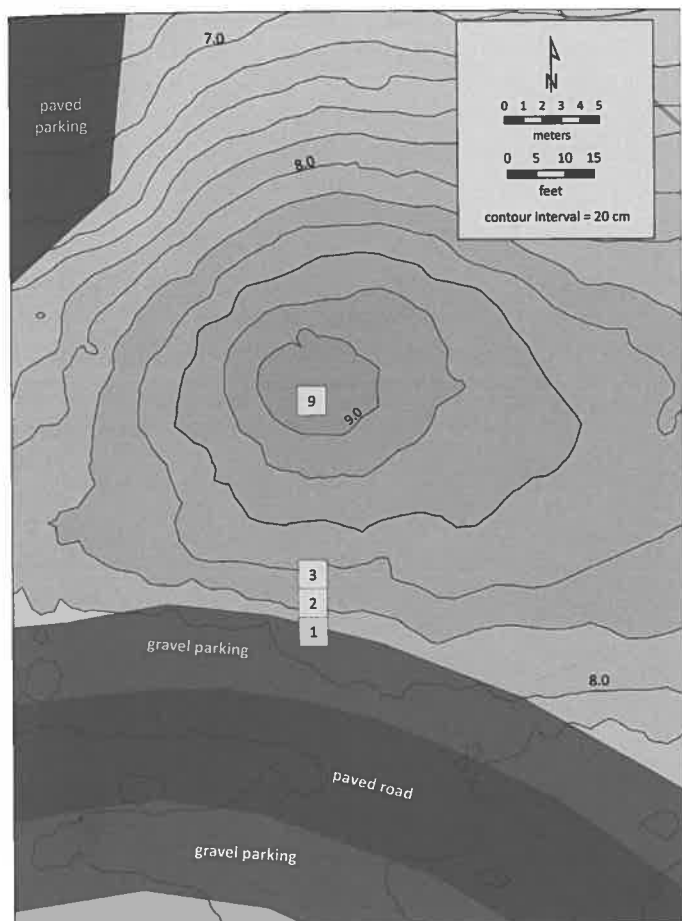
Unfortunately, the field notes provide little detail regarding features in Area B, apparently because few were identified (Figure 12). One pit was drawn in plan view in the northeast corner of Square 2 at a depth of 6 in (15 cm); this was described as 3.5 in (9 cm) deep with a fill of "black dirt, charcoal, f. [frequent?] shells." Two more pits, both in Square 9 at the northern end of the trench, were drawn only in profile and have been approximated here in this plan view (Figure 12).

The pit in the southern wall of this square appears to have been about 4 ft (122 cm) in diameter and 1.5 ft (46 cm) deep, with a fill described as "black gray." The other apparent pit, drawn in the west profile of this square, was about 1.5 ft (46 cm) in diameter and 0.75 ft (23 cm) deep; this is shown as a dip in what was identified as a transitional zone at 12 to 18 in (31 to 46 cm) below the ground surface, between a darker soil with shell above and the underlying yellow brown sand. Thus, the Area B trench included a mixture of small and larger pit features, perhaps consistent with food processing and storage (respectively).

The excavation notes do not include totals of artifacts by excavation square for Area B, so we are not able to visualize the density of materials by square in the same way as is possible for Areas A and C. The aggregate totals for these squares by level, presented in the published report (Griffin and Bullen 1950:Table 2), document mainly Pinellas Plain sherds, along with one sherd of St. Johns Plain and another of Spanish olive jar. The excavation notes indicate that, in addition to these artifacts, the Area B excavations produced a few later historic materials possibly associated with Philippe's plantation, including glass and brick fragments.

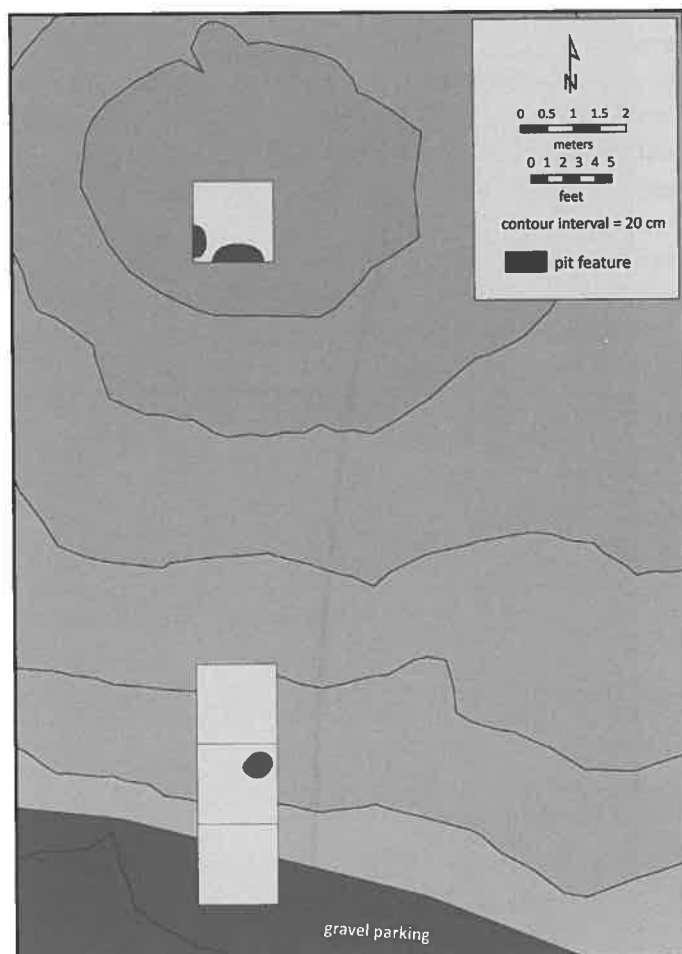
### *Area C, Village*

Griffin and Bullen's excavations in Area C were reportedly positioned across a ridge in the western extension of the village, a higher contour that they suggested was "the result of the accumulation of debris during the Indian occupation" (Griffin and Bullen 1950:20). Their excavation notes describe the trench as extending "from road to east of grove to east over crest of 'dune' towards bay."



**Figure 11. Area B Excavation Plan of Griffin and Bullen in "Small Hillock." Their units are placed on our elevation model.**

Although a noticeable ridge is still apparent in this portion of the site, corresponding with the "hillock" or "dune" they describe, comparison of their topographic map with our own LiDAR-based Digital Elevation Model (DEM) suggests the landscape in this area is now much different. Georeferencing of their site map places the Area C trench to the south of the surviving ridge or knoll, on the edge of the modern bluff (Figure 13). While the georeferencing is prone to errors owing to the general nature of their site map, in this case we are more confident of the placement of their excavation trench because it corresponds well in both size and orientation with a linear anomaly in our Ground Penetrating Radar (GPR) survey of the area. Based on the georeferencing of their topographic map with respect to this geophysical anomaly, the bluff edge is now about 15 m west of the location shown on their map, apparently the result of erosion. In addition, the "hillock" appears to be much reduced, probably owing to their excavation.



**Figure 12. Area B Documented Features Placed on Our Elevation Model.**

The Area C excavations were laid out as a 5 x 100 ft (1.5 x 30.5 m) long trench oriented roughly northeast to southwest. The trench was divided into twenty 5 ft squares, 16 of which were excavated (Squares 14, 15, 17, and 19 were not excavated). Owing to the abundance of features in Squares 3 and 4, the trench was expanded to the north and south "in an attempt to secure the floor plan of a house" (Griffin and Bullen 1950:22). These additional squares were designated by the suffixes L (north) and R (south). Thus, the Area C excavations included a total of twenty 5 ft squares for a total area of 500 ft<sup>2</sup> (46.5 m<sup>2</sup>).

Griffin and Bullen (1950:20) noted that the soil profile in Area C was similar to that observed in Area B, "but more complicated due to more intensive occupation." Their profile of the Area C trench shows a layer of dark soil about 6 in (15 cm) deep. In their notes, they observed that the soil became darker with more charcoal at 6 in, "particularly on top of

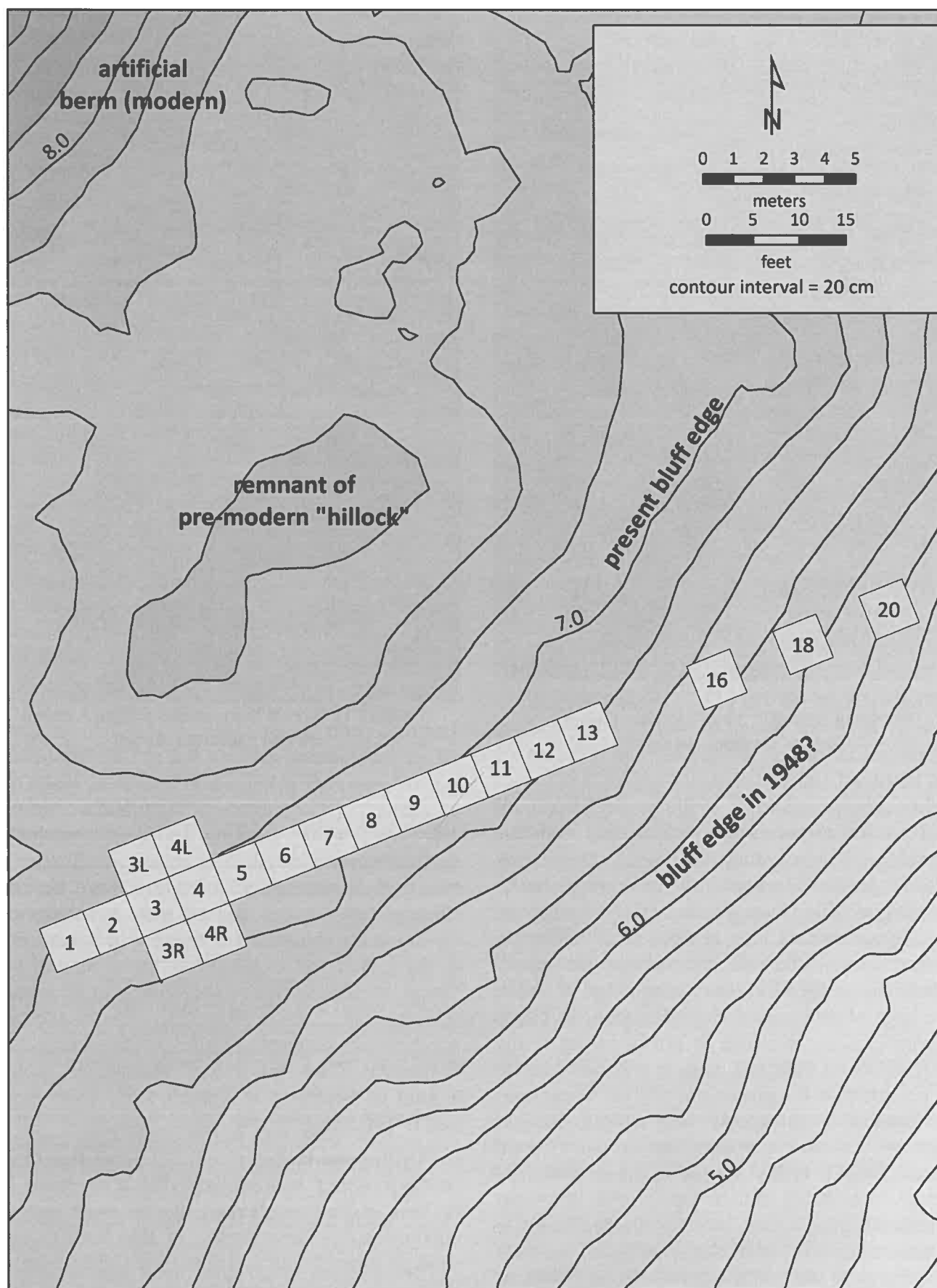


Figure 13. Area C Excavation Plan of Griffin and Bullen in the "Village." Their units are placed on our elevation model.



rise.” Their profile indicates that this was underlain by a gray soil horizon of uneven thickness owing to the presence of a feature, but generally extending another 1 to 2 ft (30 to 61 cm) below the ground surface, all over a yellow brown sand (Griffin and Bullen 1950:Figure 2; see reprint, this issue).

Griffin and Bullen identified a number of potential features in Area C (Figure 14). The excavation notes indicate that they designated pits by numbers and post holes by letters; although the records are unclear regarding the designation of some features, we have assigned the smaller as post holes and the larger as pits. In total, we digitized a total of 83 features from their plan drawings of these units, including 17 pit features and 66 post holes. Features were clearly concentrated in the contiguous squares in the western end of the excavation block, especially the 12 westernmost squares.

Excavation records provide brief notes about several pits in Area C. Pit 1 was described only as “dark” but the notes indicate that it was also quite deep; it was first drawn in plan at 18 in (46 cm) but another plan drawing indicates it continued to a maximum of 61 in (155 cm). Pit 2 “heads down from H. zone... bottom at 35” [89 cm], contains shells, charcoal.” Pit 4 was described as containing shell, with a bottom at 34 in (86 cm). Pits 5a and 5b were each described as “black area,” the former with a bottom at 21 in (53 cm) depth where it was 6 in (15 cm) across and the latter with a bottom at 26 in (66 cm) that was described as “diffuse & rounded.” Pit 7 was described as “top at 24 [61 cm], bottom at 30 [76 cm], basin shaped.” A large, unnumbered stain in Square 11 was described as a pit appearing at 34 in (86 cm) depth with a bottom at 38 in (97 cm) and with a fill containing “much burnt shell,” but a side note cautions that it “may be pit or may be reflection of natural slope of dune.” Finally, a slightly more detailed description was provided for Pit 8: “contains Spanish sherd, troweling of wall produced suggestion that this pit dug from at least as high as a depth of 16” [41 cm]. Basin shaped. Bottom at 30” [76 cm].” In sum, as with Area B, the trench here included a mixture of small and large pit features, perhaps consistent with food processing and storage (respectively). Similar descriptions of depth and shape are provided for most of the post holes that were identified.

Although Griffin and Bullen’s notes include tabulation of the artifacts in Area C by both square and level, there are no indications of superimposed occupation layers here. Summarizing the vertical distribution of artifacts in this area, Griffin and Bullen (1950:20) noted that “Half of the Indian material was found between the depths of 6 and 12 inches [15 and 31 cm], and half of the remainder in the next lower 6 inches [15 cm].” Thus, there seems little benefit in parsing artifact distribution by depth in Area C.

On the other hand, Griffin and Bullen (1950:20) described the horizontal distribution of artifacts in Area C as “rather interesting.” Specifically, they noted that shells and pottery were disproportionately more common in squares to the east of the presumed living area where most of the features were identified:

Seemingly, the Indians living at Safety Harbor preferred to keep their living area clear of shells, which they accomplished either by tossing the shells toward the water, thus forming the shell deposit, or by opening the shells in the area of the deposit and taking the animal rather than the shells to their homes. It is also possible that the great amount of black dirt containing charcoal found with these shells to the east of stake 14 may indicate that shellfish were roasted there. Any of these alternatives would explain the relative lack of cultural debris among the shells. The very large number of sherds found at the western edge of this shell deposit may indicate that this was a place where pots were frequently broken. Such might be the case if vessels were carried to the shell heap to be filled with shucked shellfish, either cooked or uncooked.

Unfortunately, Griffin and Bullen did not quantify the shells that were recovered from Area C, apart from a few shell tools. However, the horizontal distributions of other artifact classes support their hypothesis that the feature-dense area of the trench was a living area kept relatively free of debris, with refuse deposited in the area to the east (Figure 15).

True to this characterization, pottery sherds (although plentiful in the block as a whole [ $n=4736$ ]) were relatively uncommon in the squares where more features were documented, and more common in Squares 12 and 13 to the east. Flaked stones ( $n=237$ ) show the same general pattern, with higher

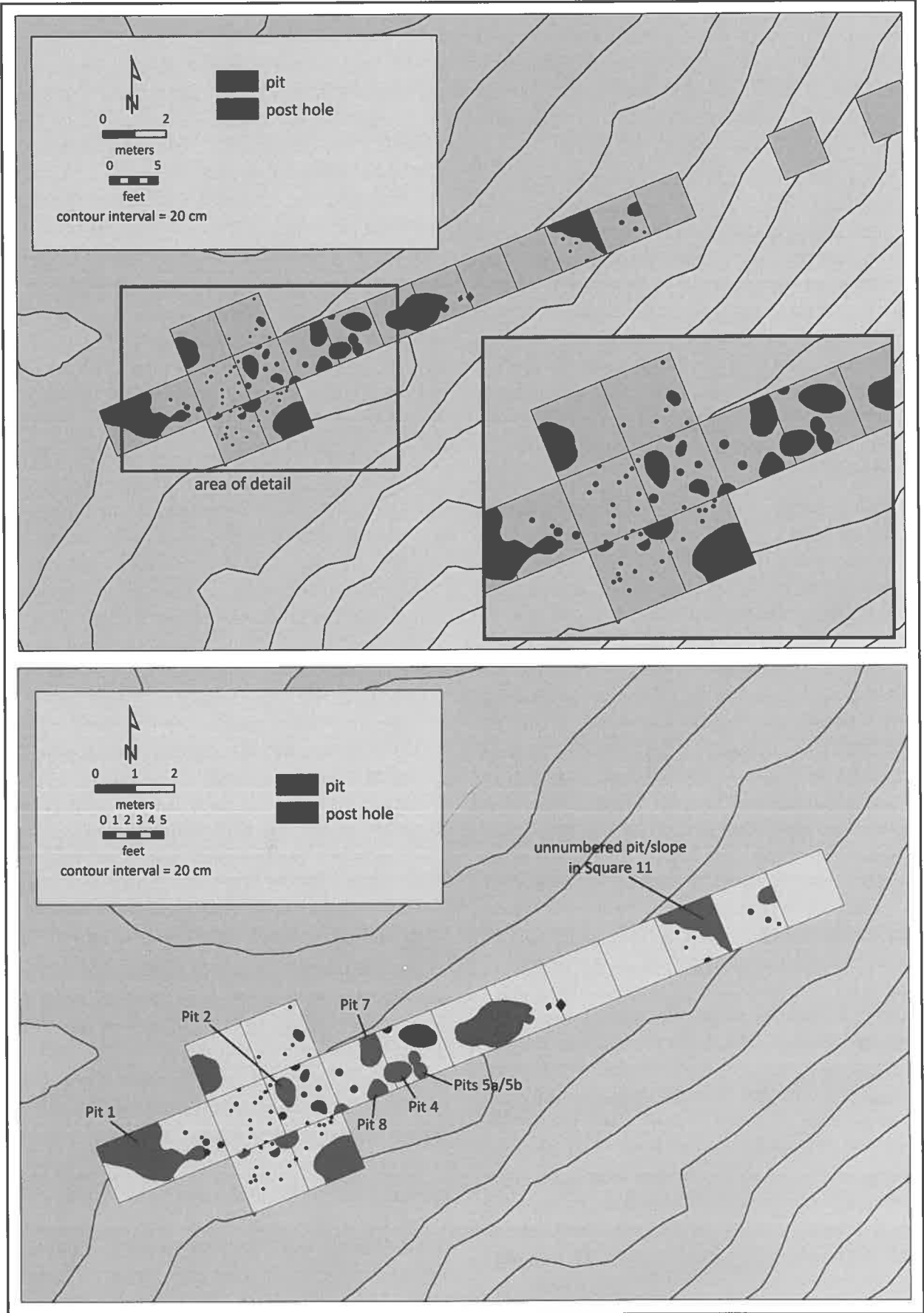


Figure 14. Area C Documented Features (top) and Numbered Pits (bottom) (placed on our elevation model).

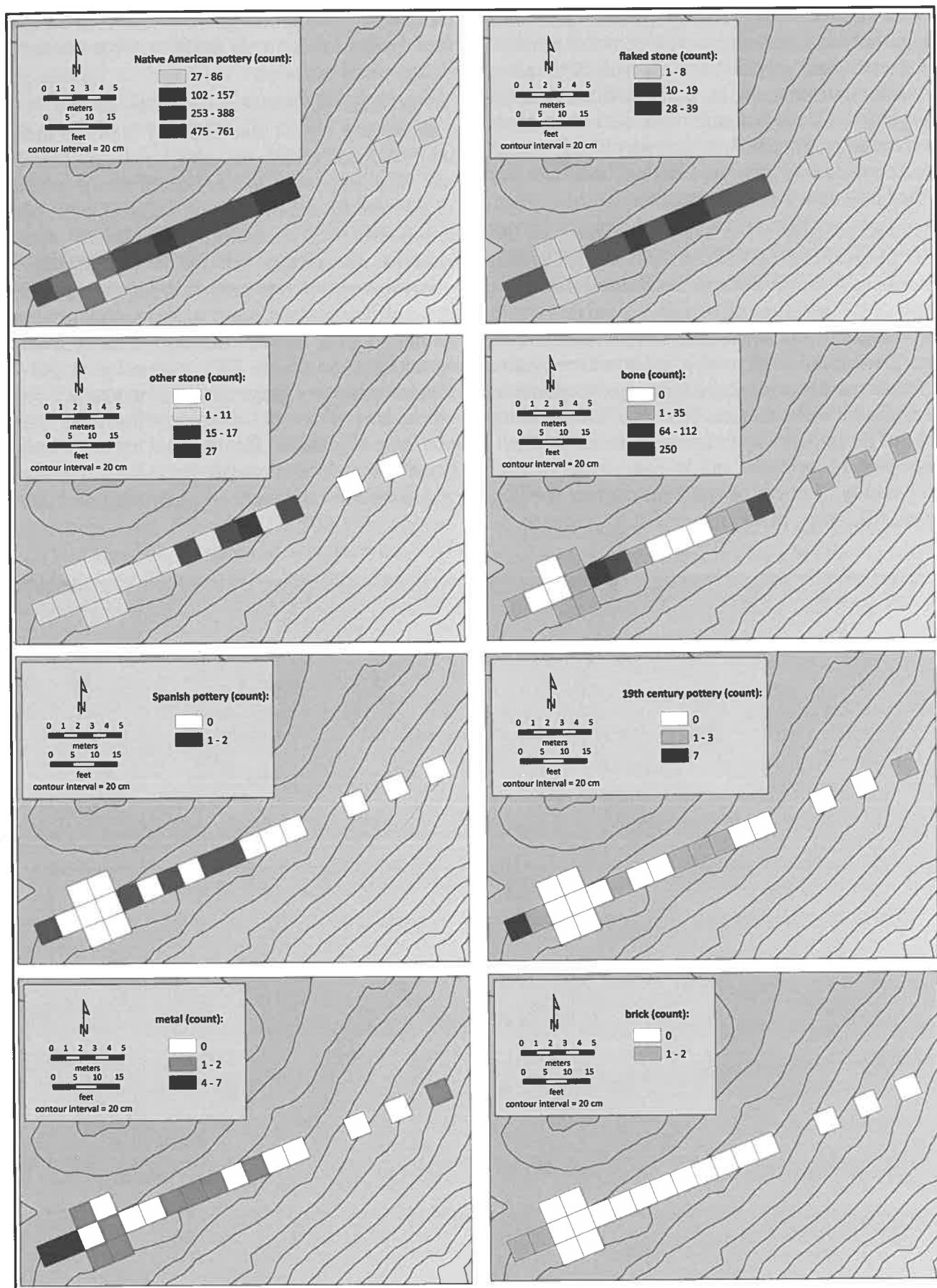


Figure 15. Area C Artifact Densities. Shaded units reflect counts of sherds, bone, and stone.

counts in three squares (7, 9, and 10) to the east of the hypothetical living area. Other stone artifacts (n=149) were similarly distributed, with the highest densities in Squares 8, 10, 11, and 13. Bone (n=527) was slightly different in distribution, with the highest concentration in Square 5, which would fall within the northern end of the hypothetical structure we identified based on post hole patterns.

Historic artifacts were relatively limited in the Area C excavations. Griffin and Bullen recovered six sherds of Spanish pottery from five excavation squares, or a maximum of two sherds in any single square. Most of the Spanish pottery was found in squares just east of the hypothetical structure. Later (19th century) historic artifacts were concentrated primarily in the western edge of the trench, suggesting that one of Philippe’s houses (or the household of one of his enslaved workers) might have been located in this vicinity. Pottery of the 19th century (n=17), for example, was primarily found in Square 1,

on the far western edge of Area C block. Metal (n=21) and brick (n=3) artifacts were concentrated in Squares 1 and 2.

In their published description of the Area C excavations, Griffin and Bullen (1950:22) indicated that “the multiplicity of post holes and small pits, and the impossibility of determining planes of origin, made the delineation of post hole patterns impossible.” The inability to identify structural patterns was clearly not for lack of trying. The excavation notes indicate that Griffin and Bullen, in an effort to make sense of the seemingly random scatter of post features, sorted them by depth and certainty (“good” or “?”) and color coded them accordingly on copies of the plan maps. But the notes also indicate that they identified some tentative post hole alignments that they did not report, perhaps because they lacked confidence in the interpretations, which we have digitized and reproduce in Figure 16.

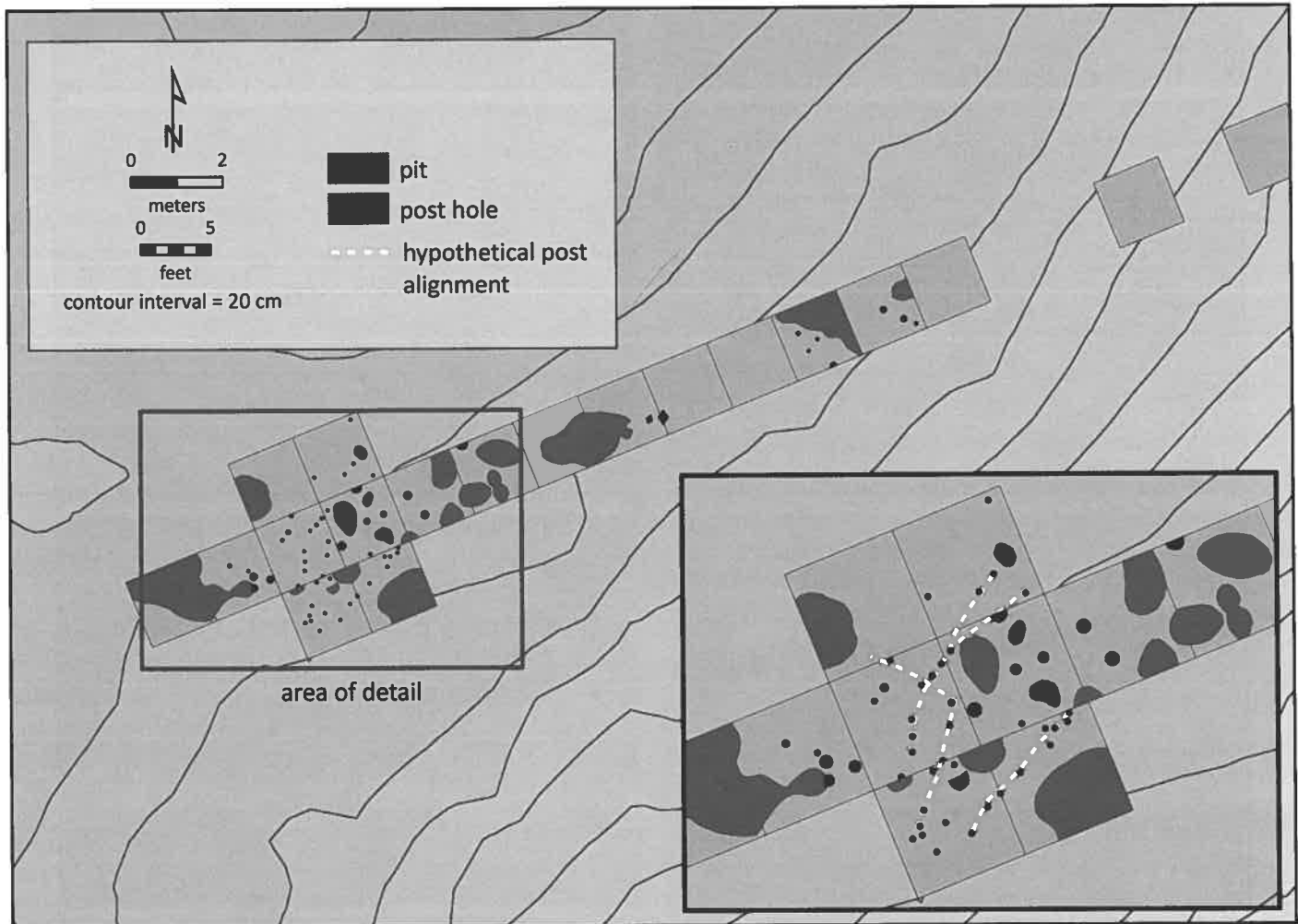


Figure 16. Area C Possible Post Alignments Identified by Griffin and Bullen.

Two parallel and roughly straight lines of post holes identified by Griffin and Bullen seem too closely spaced to represent opposing walls of a square structure. These could conceivably represent a smaller, special-purpose structure such as a storage crib or *garita* (guard house) (see, for example, Scarry 1995:205-206; Scarry and McEwen 1995:Figure 2), although the presumed unimportance of maize for the Safety Harbor culture (Bullen 1955) makes the former interpretation dubious.

On their plan map, Griffin and Bullen penciled in a possible structural pattern comprised of two line segments that intersect at a right angle, suggesting the possibility of a square or rectangular structure. Rectangular structures may be common on contemporaneous sites in the Calusa area in southwest Florida. In that area, small and circular, single-family houses appear to have been replaced by much larger and rectangular, multi-family structures beginning around A.D. 500 (Thompson et al. 2018:39). The rectangular structure on Surf Clam Ridge at the Pineland Site Complex (8LL902) measured 10 x 23 m (Thompson et al. 2014:67). A mound-top house at Mound Key (8LL2), presumably belonging to the Calusa chief and his extended family, was “slightly oval” in shape and approximately 24 m long and 20 m wide (Thompson et al. 2018:35). The rectilinear pattern noted by Griffin and Bullen in the Block C excavations at Safety Harbor is too partial and open-ended to posit the potential size of the hypothetical structure it may represent, but the relatively small size of the posts that make up this hypothetical pattern would seem inconsistent with the larger rectangular structures documented on Calusa sites.

We are more intrigued by a slightly arching line of post holes identified by Griffin and Bullen, suggesting that the Area C trench exposed part of a circular or oval structure that continues to the south. Artifact distribution patterns, briefly noted by Griffin and Bullen and more fully visualized above, suggest that this area of the trench was kept relatively free of debris. This may be expected if a structure floor was routinely maintained.

Recent GPR survey in the vicinity of the Area C excavations provides additional evidence of a circular or oval structure to the south and southeast of the trench. Figure 17 displays a horizontal “slice”

of the GPR data from survey blocks in the vicinity of the Area C trench. Two possibilities seem apparent in the GPR data area: one consisting of a circle of anomalies about 15 m in diameter, and the other comprised of an oval pattern about 7 m wide and 15 m long. Both these potential patterns accord well with the curving lines of post holes identified by Griffin and Bullen in the adjacent trench, especially bearing in mind that our georeferencing of their trench location and orientation (while abetted by the GPR data) is nevertheless approximate.

The larger circular pattern in the GPR data, at 15 m in diameter, is bigger than typical Mississippian houses. However, a circular structure of 11 m in diameter was identified at the Borrow Pit site (8LE170) in northern Florida. Although Scarry (1995:Table 10-1) described this as a probable council house, recent analysis by Kang (2016:43) suggests it was a farmstead.

Lamar-period farmsteads in the Oconee Valley in Georgia included circular “winter” structures of around 8 and 11 m diameter (Hatch 1995:144). Griffin and Bullen (1950:30) noted the recovery of “a single piece of burned clay daub with wattle impressions” from the Area C trench; although they saw this as possible evidence of wattle and daub construction, the paucity of additional fragments suggests it is more likely that only a portion of the structure (perhaps a fireplace vent hole) was daubed. The small size of the post holes identified in their trench would seem to argue against the presence of a large and heavily constructed winter structure.

The interior of the oval pattern is free of anomalies, perhaps consistent with a structure floor, and perhaps also consistent with the reduced artifact density noted in this portion of the trench. Smaller circular and oval structures appear to have been the norm on contemporaneous sites to the north of Tampa, at late precontact Lake Jackson and protohistoric Apalachee sites in northern Florida (Scarry 1995:Table 10-1). Scarry (1995:204) describes the typical houses at the Velda site (8LE44) as round or oval in plan, between 5.5 and 7.5 m diameter, constructed of single-set posts spaced at roughly 1 m intervals. This corresponds well with the oval pattern posited in the GPR data from the vicinity of the Area C excavations.



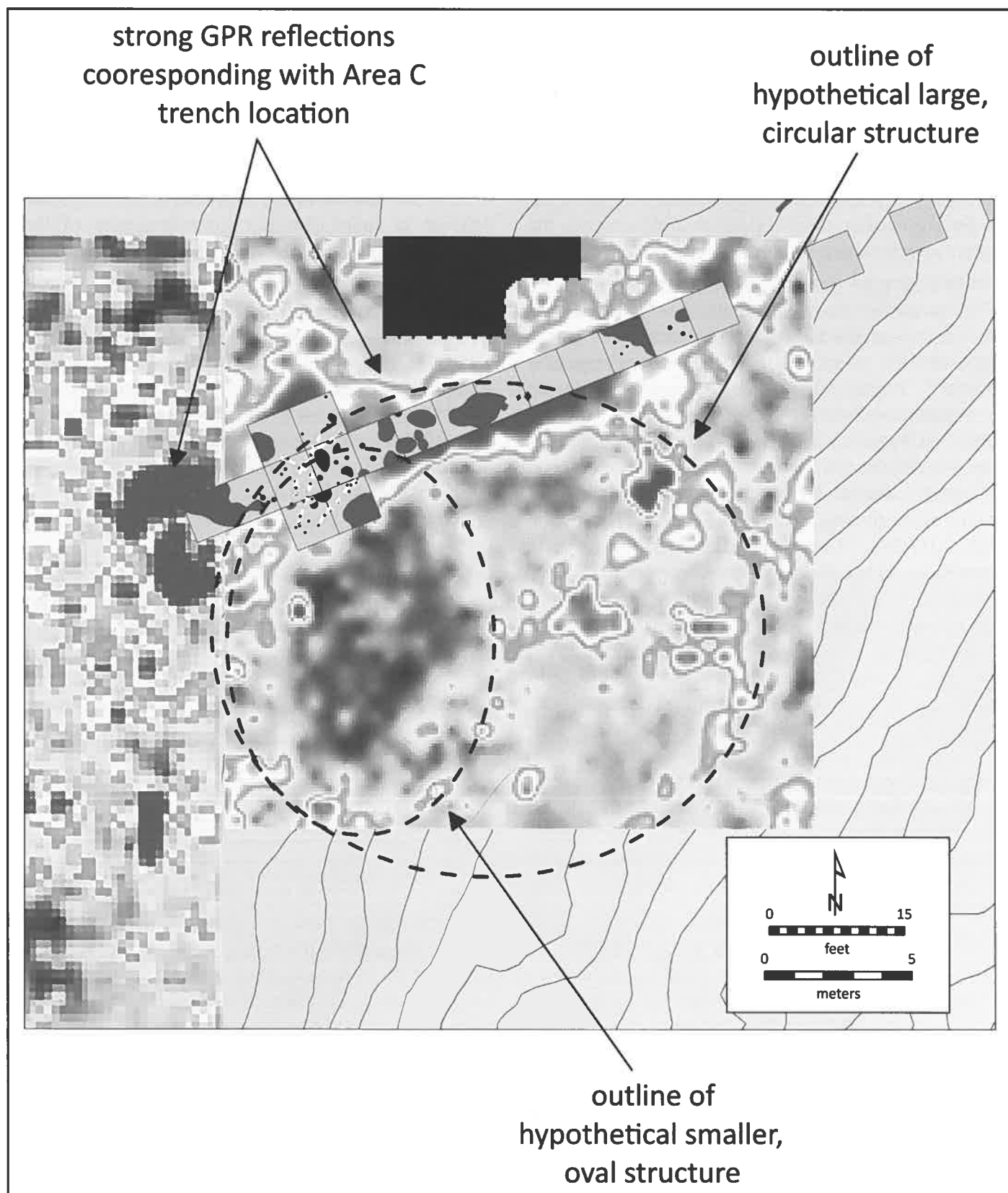


Figure 17. GPR Data from the Vicinity of Area C with Hypothetical Oval and Circular Structure Patterns.

## Concluding Discussion

Griffin and Bullen's Area A excavations provide no definitive evidence of architecture on the summit of Mound A. However, features in the first occupation layer, along with associated distributions of apparent domestic debris, are consistent with ethnographic accounts (see below) suggesting that a residential structure was present on top of the mound when the Spanish invaded in the 1500s. The same pattern appears to hold true for the two earlier occupation layers, one possibly beginning as early cal A.D. 1160 to 1220. The presence of post molds, some in linear arrangements (albeit very partial), suggests that structures were likely of single-set post construction.

The Area B excavations were limited in both extent and documentation. A few pits were identified and, along with the artifact assemblage, indicate relatively intensive occupation of the northern extension of the village during the Safety Harbor period. However, the limited evidence does not support any inferences regarding architectural patterning.

The Area C excavations produced more definite evidence for architecture in the form of dense clusters of features and patterned artifact distributions. Excavation notes indicate that Griffin and Bullen entertained several possible post hole alignments, including one rectangular and another more circular. We lean toward the probability that the Area C trench intercepted a relatively small, oval structure.

Unfortunately, there is little comparable excavation data from other Safety Harbor period sites to help resolve the ambiguity. In the 1990s, members of the Central Gulf Coast Archaeological Society conducted test excavations at the Narvaez/Anderson site, a Safety Harbor period mound and midden complex. The excavations were limited in number and size, but the report provides relatively detailed data regarding the features that were identified. Profile maps indicate potential clusters of two or three postmolds in one excavation unit (Simpson et al. 1998:Figure 8). A plan view photo of another unit shows a potential arching arrangement of such post features (Simpson et al. 1998:Figure 11), possibly lending qualified support to our inference of a circular or oval structure at the Safety Harbor site.

Recently, Christina Sampson (2019:146-147) employed magnetic susceptibility and magnetometer survey to identify five areas of concentrated activities

associated with the Safety Harbor-period occupation at the Weeden Island site. Ground truthing of these anomalies by way of test unit and small block excavations revealed numerous cultural features, including pits, areas of burning, middens, and ceramic concentrations. No architectural patterns were identified, although Sampson (2019:316) notes that "the configuration of some refuse areas... as well as the small cooking features" suggest domestic activity on a small scale, perhaps more consistent with the smaller oval house pattern we have posited.

Unfortunately, ethnohistorical accounts of Native houses in Tampa Bay are few in number and scant in detail, and thus of little help in resolving the ambiguity. These accounts suggest that although large structures were present in the Safety Harbor area, smaller houses were the norm. The so-called "Gentleman of Elvas" (a Portuguese member of the Soto expedition that landed in Tampa Bay in 1539) provided a very brief account of the Native houses in the town of Ucita (presumably on the south side of Tampa Bay), where Soto established his first base camp: "The houses were of wood and were covered with palm leaves" (Robertson 1993:57). Cabeza de Vaca's account of the Pánfilo de Narváez expedition in 1528 includes a brief mention of houses in a village near their landing spot (presumably on the Pinellas Peninsula): "And when we arrived at the Indian huts, or houses, that we had seen we found them abandoned.... One of the huts was very large, in which more than three hundred people could fit. The other were smaller..." (Worth 2014:92).

Thus, we think the preponderance of the archaeological evidence, combined with the comparative archaeological and ethnohistorical data, support the identification of a Safety Harbor domestic structure of oval form, measuring about 7 m wide and 15 m long. We acknowledge that the evidence is less than conclusive, but offer this as a hypothesis for future testing at the Safety Harbor site or at other sites of the same time period. In the conclusion to their report on the excavations at the Safety Harbor site, Griffin and Bullen (1950:32) observed that "It is a recognized axiom of archaeology that the record of life at a site is extremely fragmentary." The architectural patterns we have identified from their excavation notes are likewise fragmentary, but contribute another piece to the puzzle that persists in our understanding of the material culture known as Safety Harbor.

## References Cited

- Archaeological Consultants, Inc. (ACI)**  
2006 Archaeological Mitigative Excavation at the Eagle's Nest Site (8MA132), Manatee County, Florida. Prepared for WCI Communities by ACI, Sarasota.
- Arthur, John W., Elizabeth Southard, Heather Draskovich, Kendal Jackson, Sharlene O'Donnell, and Shaun West**  
2018 They Never Left: Daily Life of a Safety Harbor Period Settlement at the Weeden Island Site (8PI1), Florida. Paper presented at 70<sup>th</sup> Annual Meeting of the Florida Anthropological Society, St. Petersburg.
- Austin, Robert J.** (compiler and contributor)  
1995 *Yat Kitischee: A Prehistoric Coastal Hamlet 100 B.C. – A.D. 1200*. Report prepared for the Board of Pinellas County Commissioners by Janus Research, St. Petersburg. On file, Florida Division of Historical Resources, Tallahassee.
- Austin, Robert J.**  
2020 Siliceous and Non-Siliceous Lithic Raw-Material Use at Big Mound Key. *The Florida Anthropologist* 73(1):51-112.
- Austin, Robert J., Jeffrey M. Mitchem, Arlene Fradkin, John Foss, Shanna Drwiega, and Linda Allred**  
2008 *Bayshore Homes: Archaeological Survey and National Register Evaluation*. Central Gulf Coast Archaeological Society. On file, Florida Division of Historical Resources, Tallahassee.
- Brinton, Daniel G.**  
1859 *Notes on the Florida Peninsula, Its Literary History, Indian Tribes and Antiquities*. Joseph Sabin, Philadelphia.
- Bronk Ramsey, Christopher**  
2021 OxCal 4.4. Electronic document, <https://c14.arch.ox.ac.uk/oxcal.html>. Accessed January 10, 2022.
- Bullen, Ripley P.**  
1955 Archaeology of the Tampa Bay Area. *The Florida Historical Quarterly* 34:51-63.  
1969 Southern Limit of Timucua Territory. *The Florida Historical Quarterly* 47:414-419.  
1978 Tocobaga Indians and the Safety Harbor Culture. In *Tacachale: Essays on the Indians of Florida and Southeastern Georgia during the Historic Period*, edited by Jerald T. Milanich and Samuel Proctor, pp. 50-57. University Press of Florida, Gainesville.
- DeFoor, J. Allison, II**  
1997 *Odet Philippe: Peninsular Pioneer*. Safety Harbor Museum of Regional History, Safety Harbor, Florida.
- Escalante Fontaneda, Hernando d'**  
1944 Memoir of Do. d'Escalante Fontaneda Respecting Florida. Edited by David O. True. Translated by Buckingham Smith. University of Miami and Historical Association of Southern Florida, Miami.
- Griffin, John W., and Ripley P. Bullen**  
1950 *The Safety Harbor Site, Pinellas County, Florida*, edited John M. Goggin. Florida Anthropological Society Publication #2, Gainesville.
- Hann, John H.**  
1991 *Missions to the Calusa*. Translated and edited by John Hann. University Press of Florida, Gainesville.  
2003 *Indians of Central and South Florida 1513-1763*. University Press of Florida, Gainesville.
- Hatch, James W.**  
1995 Lamar Period Upland Farmsteads of the Oconee River Valley, Georgia. In *Mississippian Communities and Households*, edited by J. Daniel Rogers and Bruce D. Smith, pp. 135-155. University of Alabama Press, Tuscaloosa.
- Hrdlicka, Ales**  
1940 Catalog of Human Crania in the United States National Museum Collections: Indians of the Gulf States. *Proceedings of the United States National Museum* 87:315-464. Washington, D.C.
- Hutchinson, Dale L.**  
2006 *Tatham Mound and the Bioarchaeology of European Contact: Disease and Depopulation in Central Gulf Coast Florida*. University Press of Florida, Gainesville.
- Jackson, Kendal, Thomas J. Pluckhahn, and Victor D. Thompson**  
2021 A Deeper Look into Platform Mound Composition at Safety Harbor Site (8PI2), Tampa Bay Estuary. Paper presented May 22, at the 73rd Annual Meeting (virtual) of the Florida Anthropological Society.
- Kang, Jirye**  
2016 An Analysis of Cultural Materials from the Borrow Pit site (8LE170), Leon County, Florida. Undergraduate honors thesis, Department of Anthropology, Florida State University, Tallahassee.

## References Cited (continued)

**Koski, Steve, and Tanya Peres**

2001 *Archaeological Testing of the Snake Island Site (8SO2336)*. Report to U.S. Army Corps of Engineers, Jacksonville District, by New South Associates, Technical Report 827, Stone Mountain, Georgia.

**Kozuch, Laura**

1998 Faunal Remains from the Palmer Site (8SO2), with a Focus on Shark Remains. *The Florida Anthropologist* 51(4):177-192.

**Luer, George M.**

1985 Some Comments on Englewood Incised, Safety Harbor Incised, and Scarry's Proposed Ceramic Changes. *The Florida Anthropologist* 38:236-239. [Legends for Figures 1 and 2 are transposed].

1992a Mississippian-Period Popeyed Bird-Head Effigies from West-Central and Southwest Florida. *The Florida Anthropologist* 45:52-62.

1992b The Boylston Mound: A Safety Harbor Period Shell Midden, with Notes on the Paleoenvironment of Southern Sarasota Bay. *The Florida Anthropologist* 45(3):266-279.

1993 A Safety Harbor Incised Bottle with Effigy Bird Feet and Human Hands from a Possible Headman Burial, Sarasota County, Florida. *The Florida Anthropologist* 46(2):238-250.

1996 Mississippian Ceramic Jars, Bottles, and Gourds as Compound Vessels. *Southeastern Archaeology* 15:181-191.

2002a Ceramic Bottles, Globular Vessels, and Safety Harbor Culture. In *Archaeology of Upper Charlotte Harbor, Florida*, edited by George M. Luer, pp. 95-110. Florida Anthropological Society Publication #15, Tallahassee.

2002b The Aquí Esta Mound: Ceramic and Shell Vessels of the Early Mississippian-Influenced Englewood Phase. In *Archaeology of Upper Charlotte Harbor, Florida*, edited by George M. Luer, pp. 111-181. Florida Anthropological Society Publication #15, Tallahassee.

2002c Settlement and Subsistence at a Late Weeden Island-Safety Harbor Period Inland Midden in North Port. In *Archaeology of Upper Charlotte Harbor, Florida*, edited by George M. Luer, pp. 73-93. Florida Anthropological Society Publication #15, Tallahassee.

**Luer, George M. (continued)**

2002d Archaeology and Faunal Analysis at Tippecanoe Bay. In *Archaeology of Upper Charlotte Harbor, Florida*, edited by George M. Luer, pp. 49-93. Florida Anthropological Society Publication #15, Tallahassee.

2007 *Mound Building and Subsistence During the Late Weeden Island Period (ca. A.D. 700-1000) at Big Mound Key (8CH10), Florida*. Ph.D. dissertation, Department of Anthropology, University of Florida, Gainesville.

2014a New Insights on the Woodland and Mississippi Periods of West Peninsular Florida. In *New Histories of Pre-Columbian Florida*, edited by Neill J. Wallis and Asa R. Randall, pp. 74-93. University Press of Florida, Gainesville.

2014b Interpreting the Age and Growth of Big Mound Key. In *Big Mound Key Near Charlotte Harbor, Florida*, edited by George M. Luer, pp. 97-133. Florida Anthropological Society Publication #17, Tampa.

2020 Shell Caches from Big Mound Key and Nearby Sites: Clues to Production and Resource Control. *The Florida Anthropologist* 73(1):1-49.

n.d. Landward Components of the Early Safety Harbor Period at the Old Oak Site (8SO51), Sarasota, Florida. Report in preparation. Notes, radiocarbon dates, and collections with the author.

**Luer, George M., and Marion M. Almy**

1987 The Laurel Mound (8SO98) and Radial Burials with Comments on the Safety Harbor Period. *The Florida Anthropologist* 40(4):301-320.

**McLeod, James Bart**

2014 Digital Modeling and Non-Destructive Technological Examination of Artifacts and Safety Harbor Burial Practices at Picnic Mound 8Hi3, Hillsborough County, Florida. M.A. thesis, Department of Anthropology, University of South Florida, Tampa.

**Mitchem, Jeffrey M.**

1988 Some Alternative Interpretations of Safety Harbor Burial Mounds. *The Florida Scientist* 51:100-107.

1989 *Redefining Safety Harbor: Late Prehistoric/Protohistoric Archaeology in West Peninsular Florida*. Ph.D. dissertation, Department of Anthropology, University of Florida, Gainesville.

1994 An Analysis of Artifacts from the Safety Harbor Site, Pinellas County, Florida. *The Florida Anthropologist* 47(2):147-160.

## References Cited (continued)

**Mitchem, Jeffrey M., Marvin T. Smith, Albert C. Goodyear, and R. R. Allen**

1985 Early Spanish Contact on the Florida Gulf Coast: The Weeki Wachee and Ruth Smith Mounds. In *Indians, Colonists, and Slaves, Essays in Memory of Charles H. Fairbanks*, edited by K. W. Johnson, J. M. Leader, and R. C. Wilson, pp. 179-219. Special Publication 4. Florida Journal of Anthropology, Gainesville.

**Moore, Clarence B.**

1903 Certain Aboriginal Mounds of the Central Florida West-Coast. *Journal of the Academy of Natural Sciences of Philadelphia* 12:361-438.

**Newsom, Lee A.**

1998 Archaeobotanical Research at Shell Ridge Midden, Palmer Site (8SO2), Sarasota County, Florida. *The Florida Anthropologist* 51(4):207-222.

**O'Donnell, Sharlene K.**

2020 Discovering the Bayscape at Weedon Island During the Safety Harbor Period: A Zooarchaeological Analysis at the Weedon Island Site. *The Florida Anthropologist* 73(2):141-177.

**Quitmyer, Irvy R.**

1998 Zoological Indicators of Habitat Exploitation and Seasonality from the Shell Ridge Midden, Palmer Site (8SO2), Osprey, Florida. *The Florida Anthropologist* 51(4):193-205.

**Reimer, Paula J., William E. N. Austin, Edouard Bard, Alex Bayliss, Paul G. Blackwell, Christopher Bronk Ramsey, Martin Butzin, Hai Cheng, R. Lawrence Edwards, Michael Friedrich, Pieter M. Grootes, Thomas P. Guilderson, Irka Hajdas, Timothy J. Heaton, Alan G. Hogg, Konrad A. Hughen, Bernd Kromer, Stuart W. Manning, Raimund Muscheler, Jonathan G. Palmer, Charlotte Pearson, Johannes van der Plicht, Ron W. Reimer, David A. Richards, E. Marian Scott, John R. Southon, Christian S. M. Turney, Lukas Wacker, Florian Adolphi, Ulf Büntgen, Manuela Capano, Simon M. Fahrni, Alexandra Fogtmann-Schulz, Ronny Friedrich, Peter Köhler, Sabrina Kudsk, Fusa Miyake, Jesper Olsen, Frederick Reinig, Minoru Sakamoto, Adam Sookdeo, and Sahra Talamo**  
2020 The IntCal20 Northern Hemisphere Radiocarbon Age Calibration Curve (0-55 Cal k BP). *Radiocarbon* 62:725-757.

**Robertson, James Alexander**

1993 The Account by a Gentleman from Elvas. In *The De Soto Chronicles: The Expedition of Hernando de Soto to North America in 1539-1543*, Volume I, edited by Lawrence A. Clayton, Vernon James Knight, Jr., and Edward C. Moore, pp. 19-220. University of Alabama Press, Tuscaloosa.

**Sampson, Christina Perry**

2019 *Safety Harbor at the Weedon Island Site: Late Pre-Columbian Craft, Community, and Complexity on Florida's Gulf Coast*. Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.

**Scarry, John F., and Bonnie G. McEwan**

1995 Domestic Architecture in Apalachee Province: Apalachee and Spanish Residential Styles in the Late Prehistoric and Early Historic Period Southeast. *American Antiquity* 60:482-495.

**Scarry, John F.**

1995 Apalachee Homesteads: The Basal Social and Economic Units of a Mississippian Chiefdom. In *Mississippian Communities and Households*, edited by J. Daniel Rogers and Bruce D. Smith, pp. 201-223. University of Alabama Press, Tuscaloosa.

**Schwadron, Margo**

2002 *Archaeological Investigation of DeSoto National Memorial*. SEAC Technical Report #8. National Park Service, Southeast Archeological Center, Tallahassee.

**Sears, William H.**

1967 The Tierra Verde Burial Mound. *The Florida Anthropologist* 20(1-2):25-73.

**Simpson, Terrance L. (compiler and contributor)**

1998 *The Narvaez/Anderson Site (8Pi54): A Safety Harbor Culture Shell Mound and Midden, A.D. 1000-1600*. Central Gulf Coast Archaeological Society. On file, Florida Division of Historical Resources, Tallahassee.

**Simpson, Terrance L., and University of South Florida Geography Department**

1998 Stratigraphy, Features, and Soil. In *The Narvaez/Anderson Site (8Pi54): A Safety Culture Shell Mound and Midden, A.D. 1000-1600*. Central Gulf Coast Archaeological Society. On file, Florida Division of Historical Resources, Tallahassee.



## References Cited (continued)

**Solís de Merás, Gonzalo**

2017 *Pedro Menéndez de Avilés and the Conquest of Florida: A New Manuscript*. Edited, annotated and translated by David Arbesú. University Press of Florida, Gainesville.

**St. Petersburg Times**

1948 Indian Village Unearthed in Park. Thursday, August 12, page 15.

**Stirling, Matthew W.**

1930 Prehistoric Mounds in the Vicinity of Tampa Bay, Florida. In *Explorations and Field Work of the Smithsonian Institution in 1929*, pp. 183-186. Washington, D.C.

1931 Mounds of the Vanished Calusa Indians of Florida. In *Explorations and Field Work of the Smithsonian Institution in 1930*, pp. 167-172. Washington, D.C.

1936 Florida Cultural Affiliations in Relation to Adjacent Areas. *Essays in Anthropology in Honor of Alfred Louis Kroeber*, edited by Robert L. Lowie, pp. 351-357. Berkeley, California.

**Stojanowski, Christopher M., and Kent M. Johnson**

2011 Brief Communication: Preliminary Radiocarbon Dates From Florida Crania in Hrdlička's Gulf States Catalog. *American Journal of Physical Anthropology* 145:163-167.

**Thompson, Victor D., William H. Marquardt, and Karen J. Walker**

2014 A Remote Sensing Perspective on Shoreline Modification, Canal Construction and Household Trajectories at Pineland along Florida's Southwestern Gulf Coast. *Archaeological Prospection* 21:59-73.

**Thompson, Victor D., William H. Marquardt, Karen J. Walker, Amanda D. Roberts Thompson, and Lee A. Newsom**

2018 Collective Action, State Building, and the Rise of the Calusa, Southwest Florida, USA. *Journal of Anthropological Archaeology* 51:28-44.

**Walker, S. T.**

1880 Preliminary Explorations among the Indian Mounds in Southern Florida. *Annual Report of the Smithsonian Institution for 1879*, pp. 392-413. Washington, D.C.

**Weisman, Brent R.**

1994 John Griffin on Florida Archaeology: Excerpts from a Conversation. *The Florida Anthropologist* 47(2):223-225.

**Willey, Gordon R.**

1949 *Archeology of the Florida Gulf Coast*. Smithsonian Miscellaneous Collections 113. Washington, D.C.

**Willey, Gordon R., and R. B. Woodbury**

1942 A Chronological Outline for the Northwest Florida Coast. *American Antiquity* 7:232-254.

**Worth, John E. (editor and translator)**

2014 *Discovering Florida: First-Contact Narratives from Spanish Expeditions along the Lower Gulf Coast*. University Press of Florida, Gainesville.