

SUMMARY REPORT ON ARCHAEOLOGICAL MAPPING AT
PUEBLO SAN MARCOS (LA 98), 1997 & 1998

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January 7, 1999

In 1996, Dr. Ann Ramenofsky and Christopher Pierce began discussions with the Archaeological Conservancy regarding the potential for long-term, significant research at San Marcos Pueblo (LA98). The site is located on a 60-acre Conservancy preserve adjacent to New Mexico State Highway 14 in the Galisteo Basin south of Santa Fe. At the time, the Conservancy was in the process of acquiring the entire parcel that included numerous room blocks and a mission-complex. Given the integrity of the site, the tourism potential, and the importance of the site for understanding a significant part of Rio Grande prehistory and history to the Pueblo Revolt, the Conservancy was interested and supportive of sustained archaeological field work at San Marcos.

Since that time and continuing through the present, a small group from University of New Mexico under the direction of Dr. Ramenofsky and Mr. Pierce have undertaken background research and limited field work to acquire the necessary knowledge for more in-depth investigations. None of the fieldwork has included the collection of artifacts. The background research began with a research trip to the American Museum of Natural History (AMNH) to examine Nels Nelson's artifact collection and archival materials. Nelson worked at San Marcos in 1912 and again in 1915 (Nelson 1914; 1916). The artifact collection included numerous prehistoric and historic-period native ceramics, Spanish Majolicas, candlesticks, some flaked stone, minerals (selenite and turquoise), a metal bell fragment and some scrap metal. We were fortunate to locate Nelson's original planimetric map of the pueblo (Figure 2). Dr. Ramenofsky also began discussions with Dr. David Thomas, Curator of Archaeology at AMNH, regarding the possibility of doing remote sensing of the mission complex. Dr. Thomas has since begun to explore that part of the settlement.

The initial goal of the fieldwork was to produce modern, detailed planimetric and topographic maps of the pueblo. In addition to Nelson's plan maps, a group from the University of Colorado had produced a series of interpretations and surface maps of the pueblo based on color infrared aerial photographs (Eddy et al. 1996; Welker 1997; Welker and Carr 1995). We benefited from these previous efforts, and used them to familiarize ourselves with the surface complexity of the pueblo. However, none of the earlier maps provides a topographic representation of the site, which is an important tool for management and for archaeological surface and sub-surface research.

In 1997, a crew of four people spent approximately two weeks in the field mapping at San Marcos. We used a Sokkia 4B total station with all measurements collected by an electronic data recorder for later down loading and map production. Although our initial intent was to produce a topographic map, the large size and topographic complexity of the pueblo led us to alter our mapping strategy. We decided to employ aerial photogrammetry to produce the topographic map, and use our field time to map architectural and other cultural features. Consequently, most of the effort in 1997 was devoted to the delineation of room blocks, surface depressions (kivas), surface middens, and adobe wall segments. Boundaries of room blocks were defined by vegetation changes and by topography. We noted where erosion from ephemeral streams and modern trails had cut through room blocks. In generating our planimetric maps, we used this knowledge to connect room blocks that had been previously mapped as separate architectural features (Figure 1). We were not able to map two features recorded by Nelson. These include the room block located west of the main north-south arroyo running through the site and adjacent to Highway 14, and the possible great kiva depression. A short field session limited our ability to map the western room block, and we were unable to locate the possible great kiva depression during the 1997 field work because of dense vegetation cover in that area.

Distinctive patterns of plant growth on the room blocks also delineated adobe walls. The greater compaction of the adobe walls relative to the surrounding sediment at San Marcos results in stunted plant growth on the tops of the walls. This differential growth produces a readily visible signature for the presence of adobe walls on room blocks where the vegetation is dominated by fast-growing annuals. Because this pattern of growth was so clear and repetitive, in 1997, we began mapping wall alignments at San Marcos using these vegetation signatures. The wall mapping was labor intensive and involved first identifying and flagging different kinds of points along the wall segments including wall ends, wall intersections, and wall corners. Sketch maps by room block of the wall alignments and mapped points were then drawn, and the flagged points shot in with the total station. The sketch maps were then used to connect properly the wall points in the computer-generated map. We were only able to map walls on the room blocks in the northwest corner of the site (Figure 1).

The results of the 1997 mapping at San Marcos were presented in a poster at the 1998 Society for American Archaeology meetings (Penman et al. 1998). In the poster, we compared the plan views produced by Nelson, University of Colorado, and our work. These comparisons show several important differences among the three plan maps, many of which we hope will be resolved by the topographic map and future fieldwork. We have also presented other ideas regarding the contact period record at San Marcos at several meetings (Pierce 1998; Pierce and Ramenofsky 1998).

In 1998, we obtained funds from a corporate foundation and the UNM Snead-Wertheim Lectureship to conduct an aerial photogrammetric survey of the pueblo, which would provide a basis for constructing a fine scale topographic map. This work involved establishing eleven precisely located ground control points spaced systematically across the site. The ground control points were shot with the total station and were integrated into the grid established in 1997. The aerial flight was conducted by Pacific Western Technologies. We acquired large-scale, color aerial photographs with stereo coverage of the site. This stereo photographic coverage was used generate digital topographic data for the site. We then employed Arch View to produce the topographic map of the entire site with a 25 cm contour interval (Figure 3). In addition to digitizing the topography, the technician at Pacific Western Technologies also mapped other planimetric features including fences, roads, buildings, and some ancient adobe walls whose plant signatures were readily visible in the photographs.

In summary, we have completed most of our mapping and background research goals at San Marcos. We have considerable knowledge of the surface topography, the distribution of architectural features, and the kinds of artifacts that have previously been collected. We have studied Nelson's records in detail and have generated both plan and topographic maps of the pueblo. We are now ready to move forward and begin to document in more detail the nature of the surface archaeological record.

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Figure 1.

Map of San Marcos University of New Mexico

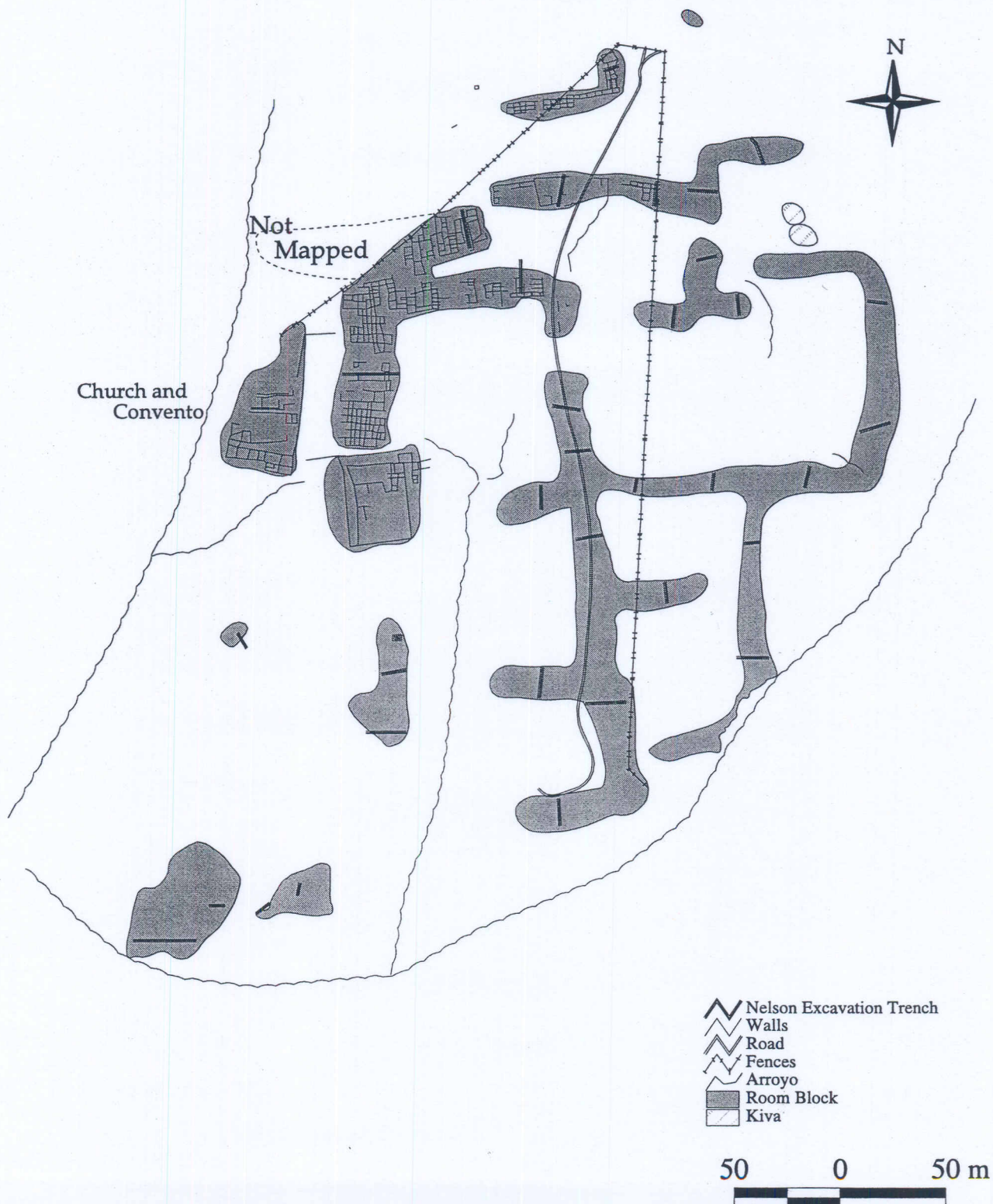


Figure 2.

Map of San Marcos Nels C. Nelson 1915



Figure 3.

Topographic Map of San Marcos Pueblo

University of New Mexico

Fall 1998

