The Analysis of Archaeological Ceramics from Four Sites in the Cañada Alamosa, New Mexico (Part 1 of 3)

By

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Cover Photo: Mimbres Classic Middle Style III from a gopher hole at the Montoya Site (LA 88891)

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DEDICATION

Dedicated to the great pioneers in the field of Southwestern ceramic studies. These individuals were among the very best.

Anna O. Shepherd,

Florence H. Ellis,

Emma Lou Davis,

Linda S. Cordell.

Dedication Photo: Magdalena Black-on-white. A virtual rendition created from a single sherd from the Gallinas Springs Pueblo, LA 1178. Courtesy Phil Yost.

A NOTE FROM THE SERIES EDITOR

Ordinarily the Maxwell Museum Technical Series does not include reports not edited and reformatted by the museum. In this case the authors have done such a careful job of preparing the report that the museum will publish the report as submitted. To do any more would be to seriously delay publication of the report. That would be a disservice to the many researchers who will find it to be an essential research reference.

David A. Phillips, Jr.

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INTRODUCTION

The Cañada Alamosa research project began in 1999. Set in the Cañada Alamosa, a little known and isolated New Mexico canyon where the high desert dominates the landscape, the canyon has been blessed with a stream fed by the year-round waters of a deep, warm-water spring. Known locally as the Ojo Caliente, or Warm Spring, it is a sacred and special place for Native Americans and Europeans alike. The stream, known as the Rio Alamosa or Alamosa Creek, flows in the Rio Grande above Elephant Butte (Figure 1).

The Cañada Alamosa contains pithouse and pueblo ruins, Apache camps and Euro-American homesteads. It was not until the early 1990s that comprehensive documentation of the area began when the National Park Service sponsored a study by Human Systems Research, Inc. (HSR), a non-profit organization devoted to archaeological and historical research based in Las Cruces, New Mexico (Laumbach 1992). Most of the sites are on private land and have survived looting and destruction because of difficult access and protective owners.

In 1998, Dr. Dennis and Trudy O'Toole purchased a ranch containing a cluster of the major sites. Founding the Cañada Alamosa Institute, the O'Tooles joined in a collaboration with Human Systems Research, to create the Cañada Alamosa Project and explore 4,000 years of human adaptation to the ever-changing environment of the region. The Cañada Alamosa Project conducted field research and analysis for over thirteen years. Partnerships included the New Mexico Farm & Ranch Heritage Museum, University of Colorado at Boulder, Eastern New Mexico University, Earthwatch Institute, and a cast of hundreds.

The Rio Alamosa watershed drains the southeastern corner of the Plains of San Augustin and encompasses 728 square miles from its headwaters to its confluence with the Rio Grande. Bounded on the east by the San Mateo Mountains and to the south and west by the foothills and mountains of the Black Range, the Alamosa is the northernmost drainage in this range, each stream running east towards the Rio Grande, sometimes on the surface and other times dropping underground. From north to south the creeks are the Alamosa, Cuchillo Negro, Palomas, Seco, Las Animas, Percha, Trujillo, Tierra Blanca, and Berrenda (Laumbach 2004). As the drainages flow from west to east, each pass through the representative zones of a Southwestern landscape, marked first by ponderosa, then by pinyon and juniper, by grasslands, by mesquite and creosote bush, and finally to the riparian bottoms of the Rio Grande. The geology of the area was determined by vulcanism during the Tertiary Period in the form of rhyolitic and andesitic intrusions. Most of the

exposed geology consists of andesite-latite flows and dykes. Occasionally, siltstone and sandstone sediments are exposed between the flows (McLemore 2010).

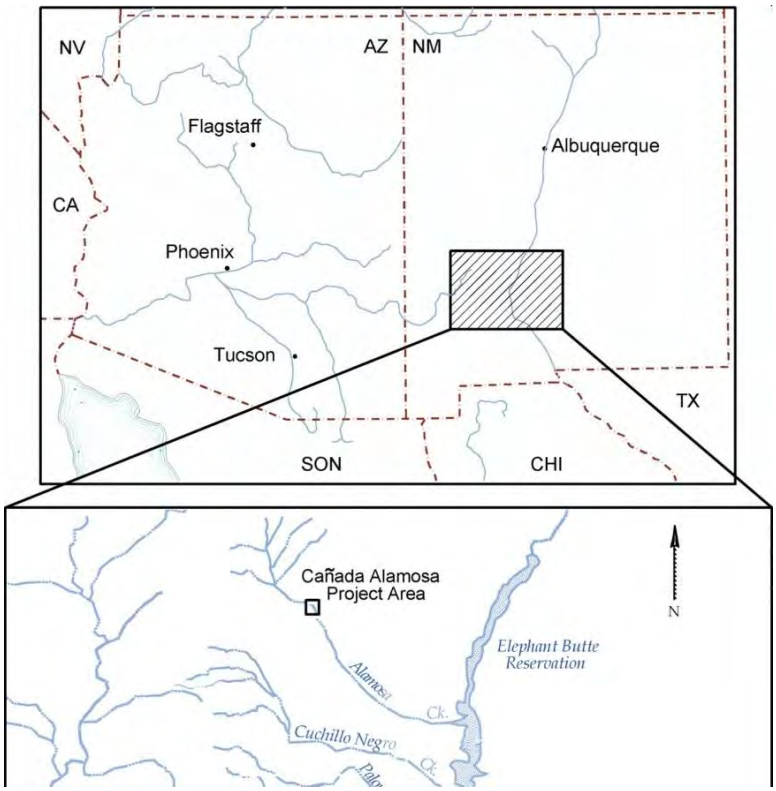

Figure 1. Location of the Cañada Alamosa Project Area.

The center of the project area lies under the shadow of Montoya Butte, a Native American shrine to multiple occupations of the canyon. This core area (Figure 2) is an oasis of farmable land with a spring-fed creek that has made this location a center of human activity for at least 4,000 years. Four sites in this area were systematically investigated over the course of 13 years to better understand their history and the people who lived there. The largest of the sites is the 60-acre Victorio Site (LA 88889), which spans the late pithouse to late pueblo periods, and is overlain by an Apache component. Next in size is the Pinnacle (LA 2292), built on a steep rhyolite intrusion and occupied by an Early Pit House occupation and, much later, a sequence of Late Pueblo Phases (Magdalena to Glaze). The Kelly Canyon site was built by the makers of Socorro B/w in the Early Pueblo Period and was only occasionally visited by later components. Finally, the colluvium on the terrace of the Montoya Site masks a Late Archaic component (ca. 4000-2000 BP), capped by structures from Mimbres Classic and Socorro Phases, both Early Pueblo occupations (Laumbach and Laumbach 2022:79-84).

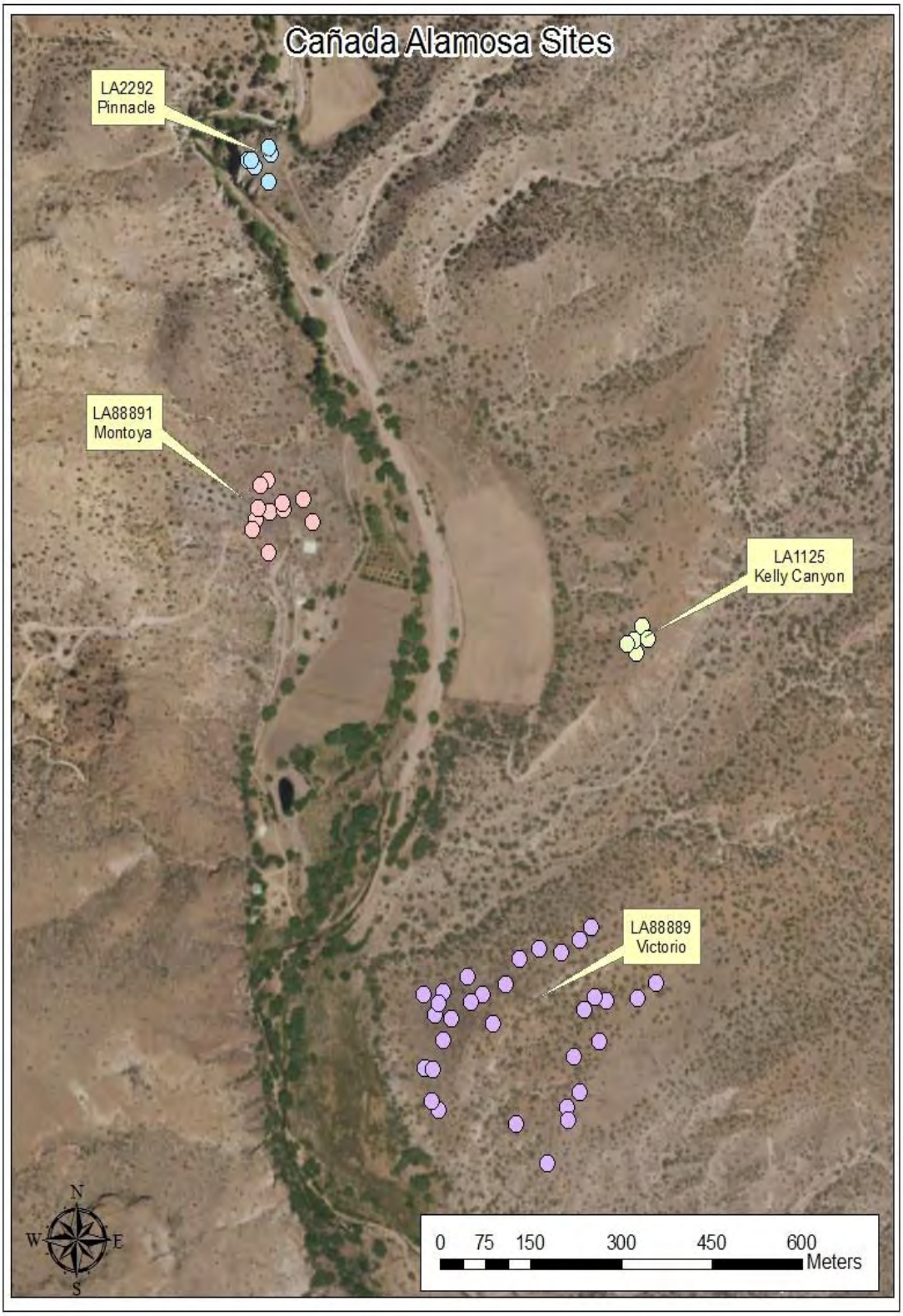

Figure 2. The Core Area of the Cañada Alamosa Project.
Dots reflect excavated areas on each of the four sites.

Although corn was introduced into the American Southwest about 4,000 years ago (Merrill et al. 2009), it took 2,000 years for it to become a dependable crop that allowed for permanent settlement. The 4,000-year-old corn found at the Montoya Site in the Cañada Alamosa makes it one of the "old" corn sites in the Southwest (Laumbach and Laumbach 2022:79-84). The next oldest corn from the Cañada Alamosa dates to 3100BP and was found in a buried living surface in an exposed river terrace.

Sites dating to the early settlement period (circa A.D. 1 – 850-900) are composed of defensive hill tops and pithouse villages. The earliest pithouse villages in the Cañada Alamosa are located in defensive positions high above the canyon bottom and contain the highly-polished brown and red slipped wares of the Mogollon Culture. By circa A.D. 600 pithouses were dug into the first terrace above the drainage. By A.D. 700, a northern ceramic type, San Marcial Black-on-white, joins the Mogollon ceramic suite of Alma Plain, San Francisco Red, and Mogollon Red-on-brown in the pithouse component of the Victorio Site. The occurrence of San Marcial Black-on-white in association with southern and northern architectural styles (southern pithouses are usually quadrilateral with ramp entrances, northern pithouses have ventilators and are entered through the roof) clearly marks the area as an interactive frontier between north and south during the Pithouse Period (Seamont 2010). Mimbres Boldface B/w becomes the dominant painted type after A.D. 800, replacing Mogollon R/b.

By the beginning of the 11th century both the Mimbres and Chaco areas were experiencing an increase in both population and social complexity. For the Ancestral Pueblo, the resultant movement into more marginal areas like the Rio Salado and the Cañada Alamosa has been called the Pueblo II expansion (McGregor 1965:278-279; Lekson 2008:299-300, note #172). Although this term is not commonly used in Mogollon archaeology, a similar expansion occurred in southwestern New Mexico (Clark and Laumbach 2011). This movement was supported by the increased precipitation of the late 11th century which ensured the success of slope-wash farming. This expansion also brought objects and ideas to the hinterlands, including the Cañada Alamosa, eventually resulting in the establishment of Mimbres ceramic production areas in the Black Range and Rio Grande areas (Creel 2022;128, 229-230).

The Mimbres sites are small and located up and down the canyon in dispersed farming locations. Most were built with stone foundations (cimientos) for cobble-stone walls or sticks and mud (wattle and daub). Their paint decorated ceramics came from the Mimbres area to the south and included Mimbres Classic Black-on-

white and lesser amounts of the earlier Mimbres Transitional B/w. Mimbres components were tested on both the Victorio and the Montoya Sites. The Montoya Site (LA 88891), dating from A.D. 1000 to 1130, is a 30-room pueblo consisting primarily of jacal (wattle and daub) construction. The Montoya Site and other sites like it in the canyon are interpreted as having multiple short-term occupations, suggesting that the people would occasionally take advantage of seasonal resources or better farming conditions in other locales. The presence of Socorro Black-on-white from the north is evidence that the earlier interaction continued.

Excavation of a masonry structure found among the jacal structures of the Montoya Site revealed a wonderful stratigraphic sequence of three 12th century occupations—Mimbres, Socorro, and Tularosa. Mimbres Black-on-white pottery was found on the bottom floor, a mixture of Mimbres and Socorro Black-on-white on the upper floor and a few sherds of Tularosa Black-on-white were found in the upper levels. This stratigraphic sequence supports the concept of a continuous but changing occupation of the canyon during the 1100s (Laumbach et al. 2007 and 2013).

After a severe drought in the early 1100s (Grissino-Mayer 1996; Grissino-Mayer et al. 1997), the Mimbres people already living in the canyon were joined by groups from the north, most likely from the Rio Salado (Clark and Laumbach 2011). Attracted by the permanent water of the Alamosa, the newcomers brought with them different styles of pottery that included Socorro Black-on-white and two utility wares— Los Lunas Smudged and Pitoche Rubbed Ribbed (Ferguson et al. 2016). Traveling as a small community, they also brought their style of architecture, which featured a linear masonry pueblo and an associated kiva. This kiva is an underground room, quadrilateral in shape with a ventilator, and was used for religious and social functions. The pueblo's linear configuration and associated kiva are identical to sites found 60 to 100 miles north in the Ancestral Pueblo heartland at the time of the rise of the Chaco Canyon as a regional center. Evidence from the Kelly Canyon Site (LA 1125) suggests a strong Socorro Tradition occupation spanning the period from A.D. 1130 to A.D. 1200, thereby possibly overlapping and clearly postdating the Mimbres component at the Montoya Site. The Kelly Canyon Site and nearby communities are the southernmost Socorro Tradition sites in New Mexico.

During the early to mid- 1100s both the Mimbres and Socorro tradition sites were scattered up and down the canyon in areas where rain water could be directed to their crops. But by A.D. 1200 both groups had merged and began to build their homes on a single location—the Victorio Site (LA 88889). It is uncertain why they

joined forces, but by doing so they presumably increased their labor resources and improved agriculture production. Jacal and masonry architectural styles found on the site suggest a continuation of both Mimbres and Socorro masonry traditions. But the ceramic styles had changed. The production areas for both Mimbres and Socorro pottery became defunct by A.D. 1200 and were replaced with production from the ancestral Zuni area in west central New Mexico. Primary imports were Tularosa Black-on-white and St. Johns Polychrome. As the Victorio Site grew, the site layout also became similar to sites found in the Zuni area. The last room blocks built on the Victorio Site date to the latter half of the 1200s. By A.D. 1260, the Victorio Site was the largest aggregated pueblo community for miles around and was located on the extreme southeastern edge of Tularosa Phase site distribution (Clark and Laumbach 2011; Ferguson et al. 2016).

In the mid-1200s, a new Pueblo group arrived in the canyon. Based on carbon painted ceramics, choice of site location, and architectural style, the presence of an immigrant population from the area of northwestern New Mexico/southwestern Colorado has been postulated (Lekson et al. 2002; Clark and Laumbach 2011). The Pinnacle, situated on a rocky outcrop, is about a half mile north of the Victorio Site. Thought to be from the San Juan Culture Area originally (Four Corners/Mesa Verde region), the immigrants perhaps settled in the Chaco Canyon area then moved east toward the Rio Puerco and continued south to tributaries of the Rio Salado. There they built a large pueblo (Gallinas Spring Pueblo, LA 1178) and there produced a McElmo/Mesa Verde B/w look-like carbon (plant-based) painted ware, which was named "Magdalena" white ware and has been interpreted as being the result of a migrant population from the Mesa Verde culture area (Davis n.d., 1964; Ellis 1974). At Cañada Alamosa sixty miles further south, the Pinnacle (LA 2292) with its compound slab masonry and carbon painted pottery (Magdalena Black-on-white), is considered to be a satellite connected to Gallinas Spring Pueblo.

Climate research suggests that the abandonment from the Four Corners area of northwestern New Mexico began in the early 1200s due to long winters and shortened growing seasons, ending with the Great Drought of A.D. 1276–1299 (Douglass 1929; Cordell 1997:383-384). Lower temperatures in the Four Corners area would have affected maize productivity and, in particular, low temperatures may have reduced the range of arable land and led to the depopulation of the Mesa Verde region during the 1200s (Peterson 1988).

The architecture of the Pinnacle is compound slab masonry. Masonry construction found at the other three sites involves local clasts and cobles stacked with the

support of copious amounts of adobe. At the Pinnacle, purposefully shaped thin slabs of locally occurring latite were quarried and shaped to be used for the masonry. As the walls were built, the slabs were placed evenly on both sides of the wall to attain a consistent width and flat face, making them "compound walls." This architectural style differs greatly with the cobble stone masonry used at the Victorio Site and elsewhere in the region.

Multiple radiocarbon dates from both the Pinnacle and the Victorio Site indicate that the two populations were contemporary in the mid-to late 1200s (Laumbach et al. 2018). But this arrangement only lasted for a short time as both groups abandoned the canyon by A.D. 1300. Despite the close proximity of the Pinnacle to the Victorio Site, there appears to have been strong social boundaries between the two groups. This is reflected in the distribution of painted ceramic distribution between the two sites. Magdalena Black-on-white, painted with plant-based pigments as was common in the San Juan region circa A.D. 1075 – 1300, is dominant on the Pinnacle while Tularosa Black-on-white and St. Johns Polychrome, both decorated with a mineral-based pigment, are the major types on the Victorio Site.

Excavation of a deep stratified midden found on the Pinnacle revealed that the organic painted ceramics of the migrants are found in the lowest levels, and the glaze ware ceramics of a post migrant occupation are in the upper levels. Demolished rooms and evidence of remodeling suggest abandonment by the northern migrants and reoccupation by people using glaze wares sometime in the early 1300s (Laumbach 2006; Clark and Laumbach 2011).

The final occupation at the Pinnacle is characterized by the early Zuni and Rio Grande Glaze ware traditions. The Glaze Ware occupation at Pinnacle and two sites near the Ojo Caliente appear to be the last pueblo occupation in the Cañada Alamosa. These sites were abandoned around A.D. 1400 and it is likely the entire Cañada Alamosa was abandoned by pueblo people, possibly at the same time as the arrival of the Eastern Chiricahua Apache.

The Eastern Chiricahua Apache were known among the early Spanish explorers, and later Americans, as the Gila, Coppermine, Mimbres, and Ojo Caliente (or Warm Springs) Apache. The Warm Springs band called themselves *Tchene (Chiende)*, which means "Red Paint People" and the Cañada Alamosa drainage was the traditional homeland of the *Tchene*. The name "Warm Springs" is a term first used in the mid-1870s in connection with the short-lived Warm Springs Reservation located above the historic community of Cañada Alamosa, known

today as Monticello. The Tchene utilized a large portion of southwestern New Mexico and northern Chihuahua on a seasonal basis. During seasonal rounds through the region, they hunted and gathered wild food products (Thrapp 1980; Basehart 1959).

The 2005 field season of the Cañada Alamosa Project focused on intensive surface collections and testing across the Victorio Site. The effort resulted in 109 test units and associated 5 m diameter collection areas at 20 m intervals as well as 840 individual collections of diagnostic artifacts. In addition to the expected ceramic types, sherds dating to a much later time period were recovered. These included three sherds of Matsaki Polychrome (A.D. 1475-late 1600s) and one sherd of San Lazaro Polychrome (A.D. 1470-1600?). It is our interpretation that these four sherds represent early Apache use of the site during the 15th and 16th centuries (Laumbach et al. 2018:165-182).

It has been well established that the raiding and trading relationship between the Apache and pueblo communities resulted in late pueblo ceramics being brought to Apache camps (Seymour 2010:165-167). As the sherds of Matsaki Polychrome and San Lazaro Polychrome were most likely manufactured during the 16th century, they are chronologically linked to the period of initial Spanish contact represented on the Victorio Site by the Clarksdale style hawk bell (Connaway 2015:23; Flint 1997:49), a European style falconer's bell attributed to the early 16th century, circa 1500 to the early 1600s, also recovered from the Victorio Site. While metal artifacts might have been curated and left on the site during the succeeding centuries, it is likely that the sherds were deposited during the production years for those ceramic types.

This concludes the discussion related to the cultural context of the ceramic types found and analyzed in the Cañada Alamosa assemblage. The Apache occupation continued into the 1880s. European settlers, both Hispanic and Anglo arrived in the 1860s and 1870s.

THE ANALYSIS

Thirteen years of testing and excavation of four sites resulted in the recovery of 160,550 ceramic artifacts representing seventy-four ceramic types ranging in date from A.D. 1 to A.D. 1600. Analysis of ceramic artifacts began immediately following the 1999 summer field season and the initial testing at the Montoya Site, the Victorio Site, and the Pinnacle. As the great majority of the ceramics recovered in 1999 came from the Victorio Site, the initial analysis for the Pinnacle assemblage waited until the spring when Toni Laumbach took the first hard look. The ceramic types present were unlike those from the Victorio Site and included both early Zuni Glaze Wares and black-on-white sherds decorated with organic plant-based black pigment. The carbon painted ceramics stood out like sore thumbs against the otherwise mineral painted assemblage common to all temporal periods at Cañada Alamosa. Analysis coupled with a literature review finally concluded that the carbon paint ware was Magdalena Black-on-white. Little did we know that this would be the first of several amazing discoveries made during the 13 years of field work.

The ceramic laboratory, manned by volunteers and overseen by Karl and Toni Laumbach, began in a variety of venues before relocating first to rented space at the Institute of Historical Survey Foundation, and lastly to the Human Systems Research laboratory space in Las Cruces. Laboratory work generally started in August and continued through winter and spring until May (just before the next field season started in June). Some volunteers participated in the lab work for the entirety of the project (indicated by *) while others came and went over the years. Laboratory volunteers included:

John Fitch (*)	Ozzie Bagg
Corky Samaniego	Deborah Hulett
Ron Nelson	Bink Nelson
Martha Sharp	Robert Pick (*)
Steve Phillips (*)	Marlene Tate
Fran Clark	Sue Hanning
Tom Hanning	Bob Hutson (*)
Wilma Hutson (*)	Mike Hughes
Redonna Guthrie	Meliha Duran
Patricia Candelaria	Rita Decker
Jim Gunderson	Pinky Kingsley

Sue Baron	Rae Gunderson
Susan Rossman	Margaret Lindsley
Nina Williams	Edie Wyndham

Ceramic analysis of the range of types recovered from Cañada Alamosa required that volunteers be trained and retrained again in the Southwestern system of ceramic classification, analytical terminology and procedure, the use of a handlens and microscope, and the details involved with the critical and methodical observations that were applied to each sherd in order to determine a typology. Volunteers also catalogued and rebagged ceramic artifacts. This monumental effort resulted in the identification of seventy-four ceramic types ranging from those associated with the early pithouse period, to the pueblo period, and lastly the Apache occupation. Additionally, two new ceramic varieties, in the corrugated styles of Reserve (oblique indented or plain) and Seco (vertical stacked), were identified for Red Slipped Corrugated.

In tandem with the development and creation of ceramic typologies and descriptions, the ceramic analysis also included Integrated Neutron Activation Analysis (NAA) of 783 ceramic and clay samples conducted by Dr. Jeffery R. Ferguson, MURR Archaeometry Laboratory, Research Reactor Center, University of Missouri, Columbia. The NAA analysis included 165 samples collected outside the project area in the pursuit of locating production areas for selected ceramic types. Dr. Virginia McLemore, geologist with the Bureau of Mining and Minerals at the New Mexico Institute of Mining and Technology, identified local clay, mineral and lithic resources within the Cañada Alamosa Project area. Petrographic analysis was performed by Dr. Mary F. Ownby, Desert Archaeology, Inc., on samples of San Marcial B/w, Socorro B/w, Tularosa B/w and St. Johns Polychrome to aid in the identification of possible ceramic production locales and gain insight to the means of ceramic exchange for these types. Dr. Judith Habicht-Mauche performed lead sourcing analysis on glaze pigments used for decorating Agua Fria Glz/r, Chupadero B/w, Heshotauthla Glaze Polychrome, Kwakina Glaze Polychrome, Pinedale B/r and Polychrome, and Socorro B/w.

This effort was supported and administered by Dr. Deborah Dennis, Executive Director of Human Systems Research. Ann Lewis performed the laborious task of formatting the 650-page document. Ron Washburn meticulously generated the ceramic distribution maps in ArcMap GIS, providing the opportunity for visual assessment and comparison of ceramic distributions.

TEMPORAL CONTEXTS OF CAÑADA ALAMOSA CERAMICS

Anyon, Gilman, and LeBlanc (1981) revised the accepted chronology for the Mimbres area of the Mogollon using new radiocarbon and tree-ring dates and well as information from contemporary surveys and excavations in the area. They developed a hierarchical schema of periods and phases with the desired outcome being tighter temporal control. They viewed periods as being major changes in the adaptive strategies utilized by prehistoric people and the phases as observable changes in material culture within each period. The Cañada Alamosa Project adapted this schema of periods and phases to the unusual sequencing encountered with the testing and excavation of the four sites (Table 1). What we learned was that because the sites are adjacent to two different culture areas, the Cañada Alamosa sequence includes Ancestral Pueblo phases in an otherwise Mogollon sequence. The application of a modified schema based on that developed for the Mimbres area (Anyon et al. 1981) provided an appropriate format to define the temporal contexts for the ceramic assemblage and the chronology of the sites.

Table 1. Temporal Contexts for Ceramics Recovered from the Cañada Alamosa Sites.

CA Period	Date Range	Principal Diagnostic Ceramics	CA Site Contents	Contemporary Phases
Early Pithouse	A.D. 1-550	Alma Series (Plain, Scored, Rough, Punctate) San Francisco Red late	Early Pithouse date from subfloor Feature 3 at Pinnacle Ruin, unexcavated sites at Montoya Butte and above Monticello Box	Pine Lawn Phase
Early Pithouse Georgetown Phase	A.D. 550-675/700	Alma Series (Plain, Scored, Rough, Punctate) San Francisco Red late	Not Recognized in Tested Sites at Cañada Alamosa	Georgetown
Late Pithouse San Francisco/ San Marcial Phases	A.D. 675-750/800	Mogollon Red-on-brown Alma Neck Banded San Francisco Red	Victorio Site early pithouses (Features 2, 5, 20, and 37)	San Francisco/San Marcial
Late Pithouse Three Circle Phase	A.D. 750/800-900	Mimbres Boldface B/w Three Circle Neck Banded Kiatuthlana B/w San Francisco Red	Victorio Site late pithouses (upper fill of Features 2 & 5, also present in Feature 37)	Three Circle

CA Period	Date Range	Principal Diagnostic Ceramics	CA Site Contents	Contemporary Phases
Early Pueblo Mimbres Transi-tional/Red Mesa Phases	A.D. 950-1000	Mimbres Transitional B/w Red Mesa B/w	Few sherds of either type, Floor 3 of Feature 9, Victorio Site dates to this period	Early Mimbres
Early Pueblo Mimbres Classic	A.D. 1000-1130	Mimbres Classic B/w, Mimbres Red Washed Mimbres Corrugated	Mimbres components include scattered rooms on Montoya Site and on the Victorio Site	Mimbres Classic
Early Pueblo/ Socorro Phase	A.D. 1130-1200	Socorro B/w Los Lunas Smudged, Pitoche Rubbed Ribbed	Kelly Canyon Site and part of Montoya Site, also present on Victorio Site	Black Mountain/Doña Ana
Late Pueblo/ Tularosa Phase	A.D. 1200-1290	Tularosa B/w St. Johns Polychrome Tularosa Patterned Corrugated Reserve Indented Corrugated	Victorio Sites and smaller sites	Late Doña Ana/ Animas
Late Pueblo/ Magdalena Phase	A.D. 1250-1290	Magdalena B/w	Pinnacle Site & possibly two pueblos by spring	Late Doña Ana/ Animas
Late Pueblo/ Glaze A	A.D. 1300-1400	Heshotauthla Glaze Polychrome, Pinedale Polychrome, Pinedale B/r, Kwakina Polychrome Pinnawa Polychrome, Seco Corrugated	Pinnacle Site & two pueblos by spring	El Paso/ Animas/Cliff

DESCRIPTIONS AND DISCUSSION OF ANALYZED CERAMIC TYPES

Reconstructed Socorro Black-on-white Jar From Room Feature 3, LA 1125, Kelly Canyon Site.

AGUA FRIA GLAZE-ON-RED

(RIO GRANDE GLAZE WARE/GLAZE A)

Key Attributes. Dark red to orange-red slip, controlled subglaze to glaze pigment, designs laid out in a narrow band; rims are direct and inwardly curved with flat to rounded rim lips (Glaze A rim).

Dates. Accepted: A.D. 1315 – 1425 and later 1500+. CAP period dates: Late Pueblo Period/Early Glaze Period, A.D. 1300 – 1400.

Basis of the Present Description. One hundred four sherds of Agua Fria G/r (Table 2) were recovered from the Pinnacle (LA2292). See also Mera (1933), Ellis (1936), Eighth Southwest Ceramic Seminar (1966), Honea (1968), and Eckert (2006). Figure 3 illustrates the spatial relationship of sherds from on Pinnacle. Figures 4 and 5 present images of representative sherds.

Table 2. Count of Agua Fria Glaze-on-red by Site.

Type	1125	2292	88889	88891	Grand Total
Agua Fria Glaze-on-red		104			104

Construction. Hand coiling and scraping.

Paste. Hard; medium texture; color ranges from reddish brown to gray with reddish brown margins; occasionally a dark core. Temper in the Cañada Alamosa Agua Fria G/r assemblage was predominately mixed igneous rock. Because of Agua Fria's long production period throughout most of the Rio Grande area (Shepard 1942), other researchers have reported a variety of rock types used for temper including the occasional use of sherd (Eckert 2008:112).

Surface Color. Self-slipped or thin deep red to orange red slip applied to bowl interiors and exteriors and on jar exteriors and the interior of jar necks.

Surface Finish. All bowl surfaces are smoothed and polished as are the exterior surface and interior neck surface of jars. The polish ranges from intermittent to well done.

Vessel Forms. Open bowl forms with rounded bottoms are typical. Jars have a low neck and globular body.

Decoration. Bowls have rectilinear and paneled designs framed within an upper/lower band on the upper interior. A small design may occasionally occur

in the bottom center. Bowl exteriors are usually undecorated but may have glaze painted paired slashes, or a cross motif, which are repeated on opposite sides of the exterior just below the rim. Jars have a wide paneled band design between two framing lines on the upper body. The neck is left plain. Common designs include wide, narrow, and oblique lines, triangles, hatching and cross hatching, stepped lines (crenulated lines), dots, ticks, checkerboards, dotted eyes, stylized birds, and occasionally life-forms.

Paint. Mineral-based pigment that is usually a strong black color to a matte or muted appearance with patches of subglazed pigment, to a full, glassy appearance. Regardless of appearance, the paint pigment always holds the line creating sharp edges and is never runny. Pigment on eleven sherd samples of Agua Fria Glaze-on-red from the Pinnacle underwent lead isotope analysis conducted by Judith Habicht-Mauche to identify potential resources for the ore. Six of these sherds showed lead associated with the Hansonburg mining district near Socorro, New Mexico, and five sherds had a mix of lead from both the Cerrillos (Santa Fe County, upper Rio Grande) and Hansonburg mining districts in the upper Rio Grande. Please see Appendix A for the complete results of the analysis.

Neutron Activation Analysis. All of the nine samples of Rio Grande Glazeware (all Rio Grande Glaze-on-red) from the Pinnacle at Cañada Alamosa were a match for one of four groups developed by Habicht-Mauche and Eckert (2021). One of these groups is from the Albuquerque area, another from Acoma and a third from the Western Pueblo area in the Techado Province north of Quemado. The fourth group is Tijeras Group 3. The data suggest that five of the sherds belong to Tijeras Group 3, which is attributed to production in the Western Pueblo area near Techado Pueblo (Habicht-Mauche and Eckert 2021). Two sherds are assigned to the WP31 group and seem to come from the Acoma area. Tijeras Groups 1 and 2 each have one assigned sample from Pinnacle. Tijeras Group 1 was likely produced in the Lower Zuni/Upper Little Colorado River and/or areas east of Zuni while Tijeras Group 2 was likely produced in the Albuquerque basin. (See Ferguson et al. 2024).

Remarks. No one working with Rio Grande Glaze Wares confidently commits to a typology unless rims are present. Rim style can also be used as a reference point with which to place and include associated glaze ware body sherds in the Rio Grande Glaze Ware chronology. The rim style associated with the earliest of Rio Grande Glaze Wares, including Agua Fria, is a direct rim with direct and parallel sides, and the lip may be rounded to near flat. This rim style is likely the most

common rim morphology seen on Southwest prehistoric pottery, thus making Agua Fria G/r often difficult to distinguish from other red slipped pottery types of the same time period.

In southern New Mexico, Agua Fria Glaze-on-red is most often confused with St. Johns Black-on-red and St. Johns Polychrome (White Mountain Red Ware), Madera Black-on-red (Casas Grandes Decorated Red Ware), and Lincoln Black-on-red (Three Rivers Red Ware). The paint pigment on Agua Fria Glaze-on-red is often dull black and grainy with patches of subglazing or it can be a true glaze. Although the pigment on Lincoln Black-on-red may produce patches of subglazing, that on Madera Black-on-red does not become glassy.

Slip color on Agua Fria Glaze-on-red and St. Johns Polychrome tends to be a brighter red/orangish red color than that on Lincoln and Madera Black-on-red. Madera Black-on-red tends to have a deep red to a maroon red colored slip. Lincoln Black-on-red has floated surfaces and the color may range from red to terracotta. The interior and exterior slip on St. Johns Polychrome is generally thick (1mm) and is easily observable in cross section. Madera Black-on-red and Agua Fria Glaze-on-red tend to have thinly applied slip.

There are also some striking differences in the paste among these four types. Agua Fria Glaze-on-red, Lincoln Black-on-red and Madera Black-on-red all tend to have grainy, and medium to fine textured cores. Agua Fria Glaze-on-red commonly has a grey core. Occasionally the core color is close to the reddish orange color of the surface. Grey streaks are also common in St. Johns Polychrome but are rare in Madera Black-on-red. Likewise, for Lincoln Black-on-red, the surface color most often carries through to the paste. Grey cores and carbon streaks are very rare in Lincoln Black-on-red. The paste texture of St. Johns Polychrome is unique among these four types. It is generally hard and blocky. The blocky quality is related to the texture created by the use of abundant amounts of processed sherd temper. Some temper particles may range 0.3mm to an occasional 1mm width. Temper material in Agua Fria Glaze-on-red may is crushed igneous rock. The crushed rock temper can be in combination with fine crushed sherd temper. White particles of feldspar and grey rock are typical inclusions seen in Lincoln Black-on-red. Madera Black-on-red always has sand temper.

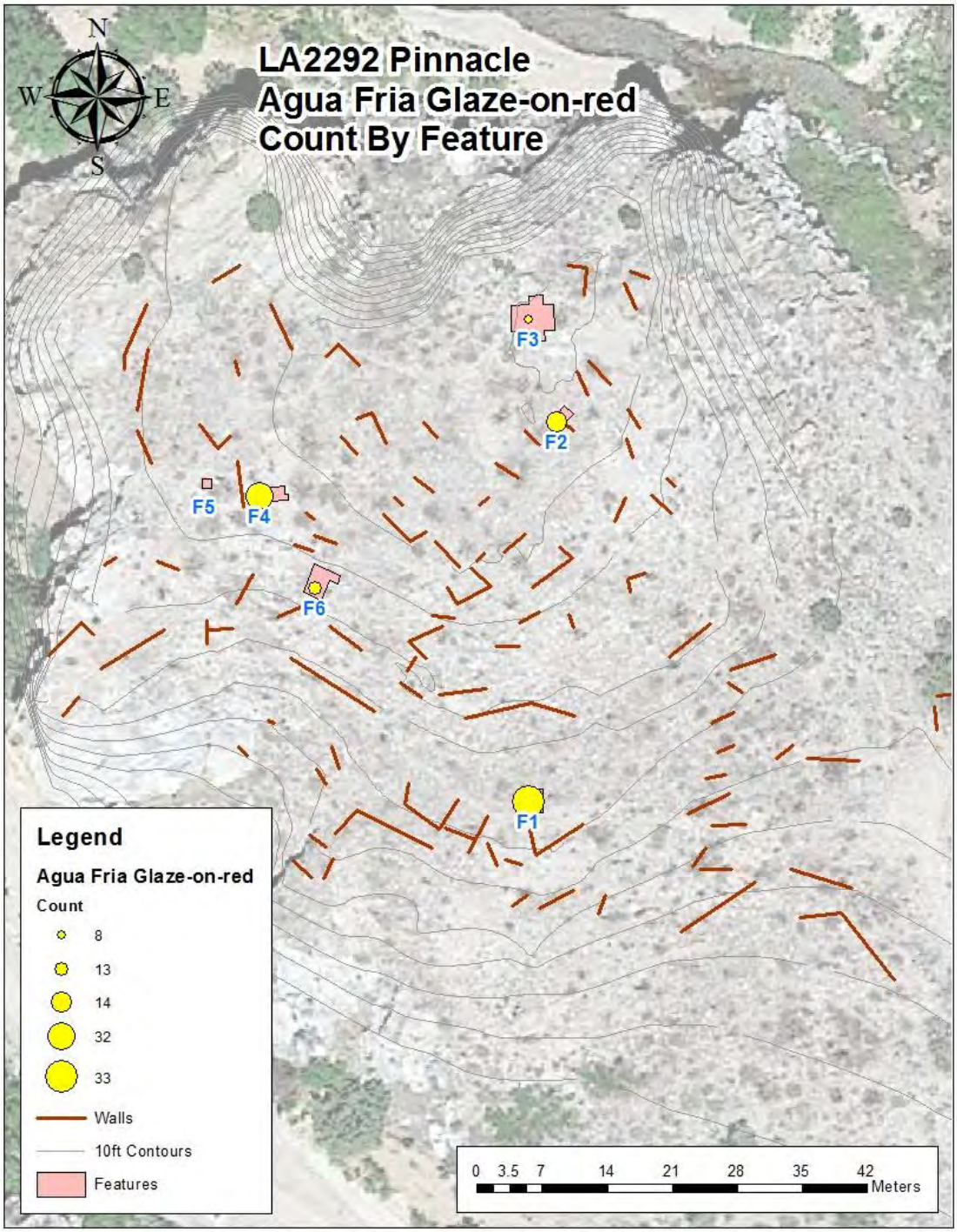

Figure 3. Distribution of Agua Fria Glaze-on-red on LA 2292.

Figure 4. LA 2292: Agua Fria Glaze-on-red Bowl Interiors (00-204, 01-01- 08-142).

Figure 5. LA 2292: Agua Fria Glaze-on-red Bowl Exteriors (00-204, 01-01- 08-142).

ALMA NECK BANDED

(MOGOLLON BROWN WARE)

Key Attributes. Two to six wide bands (unobliterated coils of manufacturing) located on the exterior of jar necks characterize this type. The plain vessel body below the neck bands is smoothed and polished.

Dates. Accepted: circa A.D. 550 to 900 (production starts within the Georgetown Phase and ends sometime in the early Three Circle Phase; production is most common within the San Francisco Phase). CAP Period/Phase dates: Late Pit House Period, circa A.D.675 – 750/800 (San Francisco and San Marcial Phases) and Three Circle Phase (circa A.D. 750/800 – 900) but intrusive in the Three Circle Phase.

Basis of the Present Description. Most of the Alma Neck Banded sherds were recovered from the Victorio Site (LA 88889) with 283 sherds primarily from Late Pit House (San Francisco Phase) contexts. Remaining counts are three from the Kelly Canyon Site (LA1125), one from the Pinnacle (LA 2292), and two from the Montoya Site (LA 88891). See also Haury (1936), Hawley (1936), and Nesbitt (1938). Table 3 presents a count of the type by site. Figures 6, 7 and 8 present the distribution of Alma Neck Banded sherds on LA 88889, LA 1125, LA 88891. Figure 9 presents representative sherds from the Victorio Site.

Table 3. Count of Alma Neck Banded Sherds by Site.

Type	1125	2292	88889	88891	Grand Total
Alma Neck Banded	3	1	286	2	292

Construction. Hand coiling and scraping.

Paste. The soft paste and ranges from brown, buff, and gray colors; carbon streaks are common. Texture ranges from fine to coarse depending on the amount and particle size of the temper which consists of prepared opaque detritus and sand or just fine-grained sand alone.

Surface Color. Color ranges from medium brown, reddish brown, yellowish-brown, to buff; surface color sometimes grades to gray and dark brown, fire clouds are common.

Surface Finish. Surfaces on jar exteriors are smoothed and polished. Smoothing stria as well as uneven surfaces and wall thicknesses may occur. The interiors of jar necks are polished and there is usually intermittent polishing stria observable

on the lower body of the interior surface jars. There is polishing, which is sometimes intermittent, on the jar neck bands. Temper rarely protrudes the surfaces.

Vessel Forms. Jar forms only.

Decoration. Distinguished by two to six broad, unobliterated coils of manufacture located on the neck portion of jar forms. These coils, or bands, are between 8mm and 1 cm in width, which may vary on any given specimen, and appear to be stacked on top of one another with very little overlap at the junction between the coils. Each coil appears to be flattened by smoothing and then they were polished. At times, the coils have been severely smoothed to the point that their visibility is diminished. The presence of the neck bands on sherd specimens is necessary to distinguish Alma Neck Banded from later styles of corrugated Mogollon Brownware.

Paint. None.

Neutron Activation Analysis. Analysis indicated primarily local production but includes imports from the Gila Forks area and the Upper Mimbres Valley (See Ferguson et al. 2024).

Remarks. Alma Neck Banded and Kana'a Gray Neck Banded are representative of the first attempts by southern and northern prehistoric potters in the Southwest to produce a textured exterior surface by not obliterating some of the original coils of manufacture during the course of pottery production. These neck banded styles are the forerunners of the partial and full-bodied, plain, indented, and obliterated indented corrugation styles of the 10th through the 14th centuries.

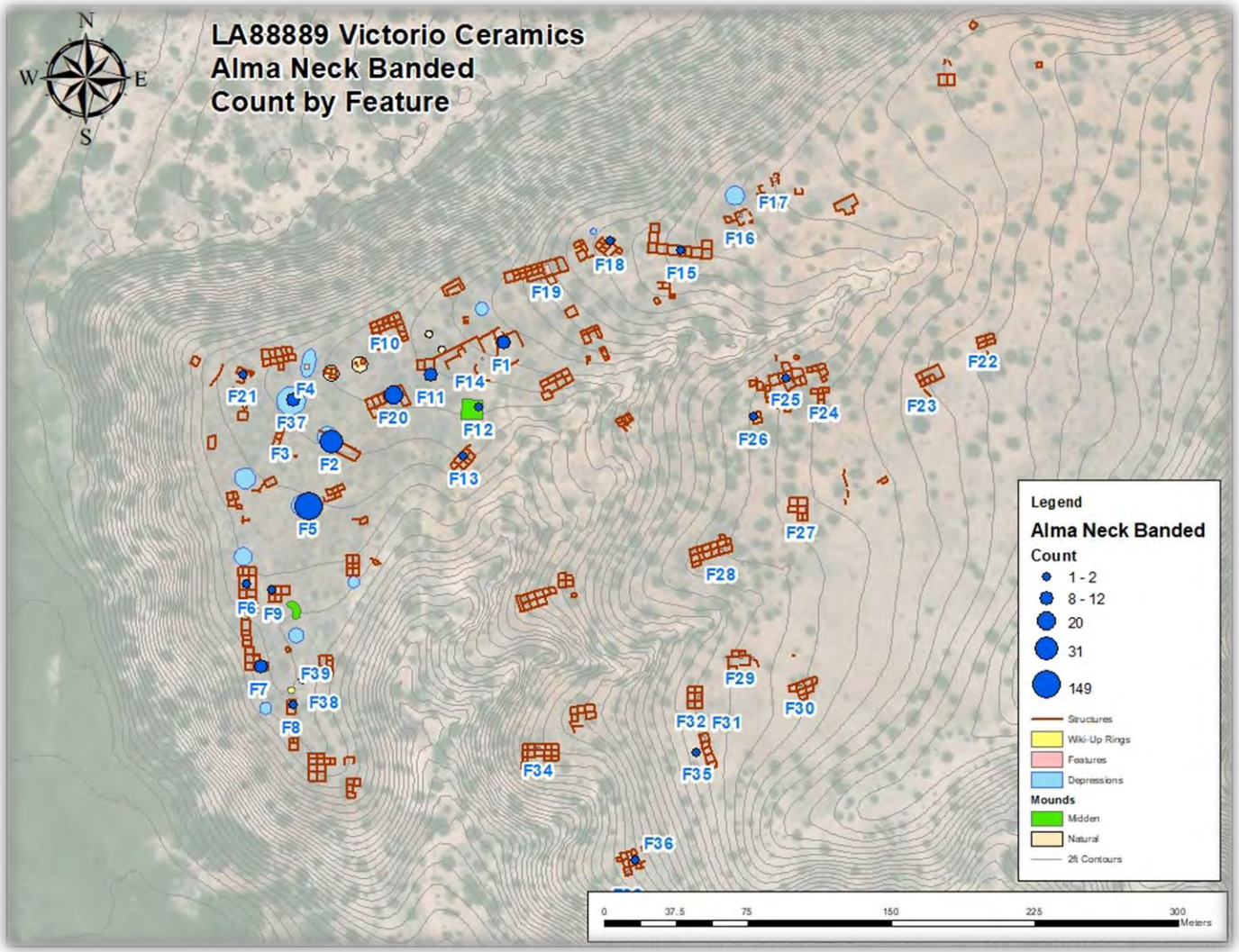

Figure 6. Distribution of Alma Neck Banded on LA 88889.

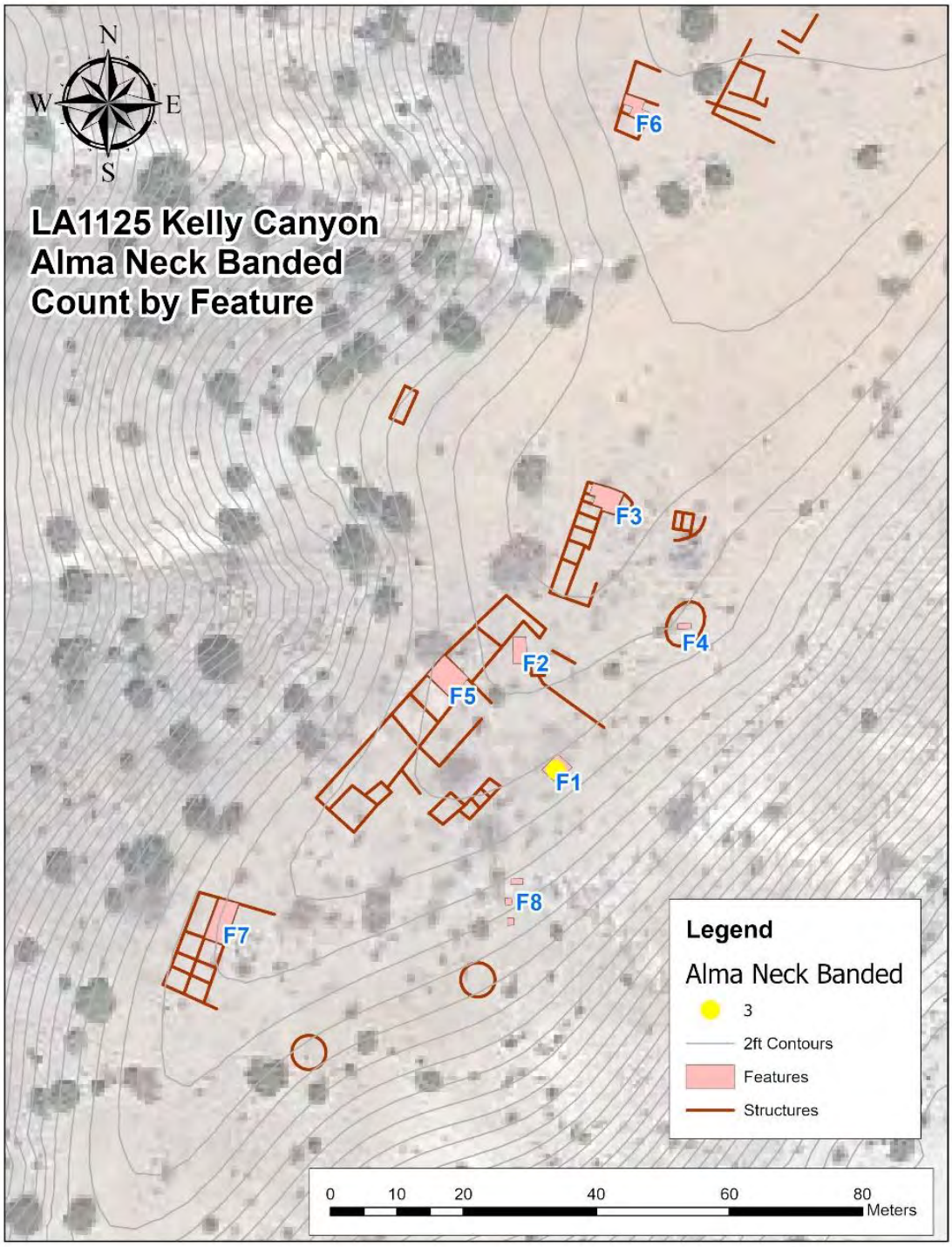

Figure 7. Distribution of Alma Neck Banded on LA 1125.

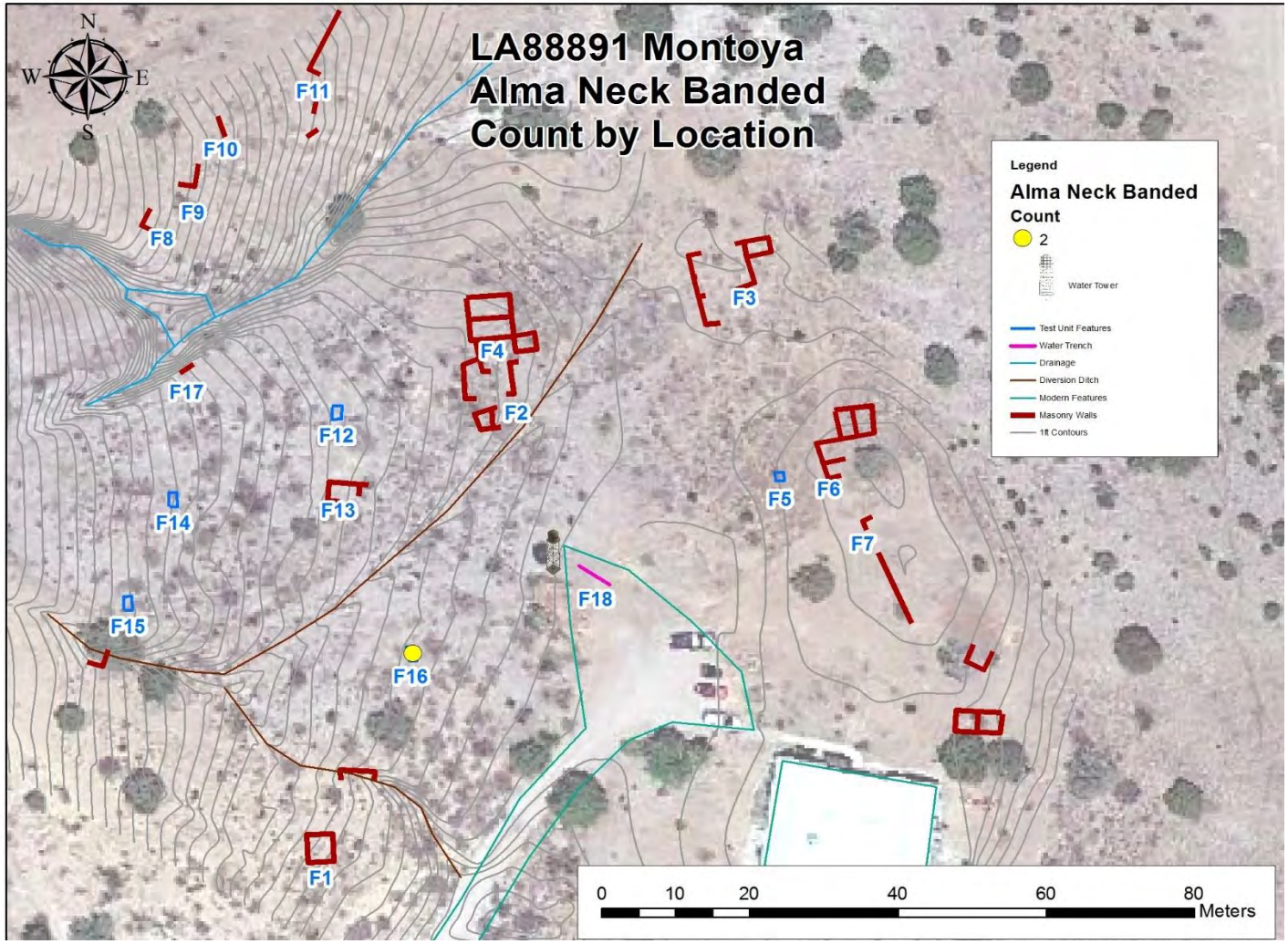

Figure 8. Distribution of Alma Neck Banded on LA 88891

Figure 9. LA 88889: Alma Neck Banded Jar Rim Sherds (07-255, 08-418, 08-377, 06-956).

ALMA PLAIN (INCLUDING TEXTURED VARIETIES ROUGH, SCORED/INCISED, AND PUNCTATE)

(MOGOLLON BROWN WARE)

Key Attributes. Well smoothed and well-polished medium brown to dark buff-colored surfaces that may be plain or textured.

Dates. Accepted: circa A.D.300 – 1300. CAP Period/Phase dates: Early Pit House Period (Pine Lawn Phase) circa A.D. 1 – 550. There is an early pithouse date from a subfloor feature in the Pinnacle; also found at unexcavated sites at Montoya Butte and near the Monticello Box. There are no collected specimens of Alma Plain from an Early Pit House context. Alma Plain continues through the Georgetown Phase (Early Pit House Period, A.D.550-675/700) and San Francisco Phases (Late Pit House Period, A.D.675 – 750/800). Also found in the Late Pit House Period (circa A.D.750/800, Three Circle Phase) and Early Pueblo Period, circa A.D. 950 – 1200 (Early Mimbres, Mimbres Classic).

Basis of the Present Description. A total of 17,110 sherds of Alma Plain and its varieties were recovered from all four of the sites in Late Pit House (San Francisco and Three Circle Phases) and in Early Pueblo (Mimbres and Socorro) contexts (Table 4). One partially restored jar of Alma Plain and three miniature vessels typed as Alma Plain were recovered from the Victorio Site. A small jar of Alma Plain was found in the Montoya Site. See also Haury (1936), Hawley (1936), and Nesbitt (1938). Figures 10, 11, 12, and 13 present the distribution of Alma Plain and its varieties on the Victorio Site. Figures 14-26 display representative sherds.

Table 4. Count of Alma Plain Varieties by Site.

Type	1125	2292	88889	88891	Grand Total
Alma Plain	78	26	1,407	526	2,037
Alma Punctate	1		463	6	470
Alma Rough	15	1	343	39	398
Alma Scored/Incised	25	1	844	34	904

Construction. Hand coiling and scraping.

Paste. The paste is soft and ranges in color from brown, buff, and gray; carbon streaks are common. Texture ranges from fine to coarse depending on the amount and particle size of the temper which consists of prepared opaque detritus and sand or just fine-grained sand alone.

Surface Color. Color ranges from medium brown, reddish brown, yellowish-brown, to buff; surface color sometimes grades to gray and dark brown, fire clouds are common. Intentional smudging on bowl interiors is not common in the earliest Mogollon phases. However, smudging has its roots in the Mogollon ceramic tradition (Haury 1936:44; 1940:93-95: Martin and Rinaldo et al. 1952:55). Both Haury (1940:87-90) and Wheat (1955:219-220) have indicated that the development of smudged pottery may have begun as early as A.D. 600 as an interior smudged variety of Alma Plain. Smudging makes a strong appearance in the Reserve and Tularosa Phases (circa A.D. 1000-A.D. 1300) with the production of a plain and polished smudged brown ware called Reserve Plain.

Surface Finish. All surfaces on bowls and jars are generally well smoothed although smoothing stria may occur. The exterior surface of jars and both interior and exterior surfaces of bowls are polished, often to a luster. Keep in mind that there are specimens that are only intermittently polished and have uneven surfaces and wall thickness. The interiors of jar necks are well polished and there is usually intermittent polishing stria observable on the lower body of the interior surface jars. Temper rarely protrudes the surfaces.

Vessel Forms. Hemispherical bowls, short-necked jars, and neckless jars. Rims on both bowls and jars are direct with rounded rim lips.

Decoration. Alma Plain is a plain culinary ware that was occasionally embellished with exterior surface textured effects created during the course of making the pottery while the clay was still plastic. These textured varieties are recognized by the type of texturing but remain to be Alma Plain in terms of surface color and finish and paste attributes. Textured Alma Plain identified in the Cañada Alamosa assemblage are the following:

1. Rough. The exterior surfaces of bowls and jars are rough scraped, possibly with a grass bundle, and unpolished. The scraping may appear shallow or deep.

2. Scored/Indented. This texturing style is typically found in bands around jar exterior necks and less commonly on bowl exteriors with textured bands located just below the rim or on the body. The scores and incisions, done with a grass bundle or pointed tool of some kind, are usually shallow and parallel to one another. When Haury (1936) defined the two types, Alma Incised (1936:40) has incisions that usually crisscross one another while this description is contrasted by that for Alma Scored (1936:38) which has

scoring accomplished "with a tool drawn back and forth." This is, forgive the pun, a fine-lined, really obscure difference between scoring and incising that is problematic when sherds or even whole vessels are being analyzed. The difference between scoring and incising in the literature is so nebulous that to distinguish the two styles is difficult at best. Hence for this project, the two terms were lumped to describe the texturing style. Scoring/incising was done on a vessel with the clay still plastic and then allowed to dry. The portions of the exterior surface left without scoring/incising was then polished before firing.

3. Punctate. Found on the exterior surface of jars and bowls, this texturing style involves using a pointed tool such as a stick, fingernail, or bone awl, to poke or puncture plastic clay to create a shallow pit in the surface. Punctate texturing is found in bands around jar exterior necks and less commonly on bowl exteriors with textured bands located just below the rim or on the body, or punctates may cover the entire vessel exterior surface. Similar to the scored/incised texturing style, punctates were created while the clay was plastic, then after drying, the vessel was polished.

4. Dimpling occurs on Alma Plain but not consistently enough to warrant a variety designation. In the Cañada Alamosa assemblage, dimpled Alma Plain occurs most frequently in Pit House Period contexts. This texturing method consists of shallow depressions, conceivably created with the tip of a finger, that cover the entire exterior surface of bowls and jars. Dimples were created in plastic clay which was dried, polished, and then fired. This is a unique form of texturing also seen occasionally on bowl exteriors of San Francisco Red.

Paint. None

Remarks. Being the point of origin or "mother type" for all Mogollon plain and corrugated brown ware pottery, Alma Plain, as a type, was produced throughout all phases, being dominant early (circa A.D. 200/300) and declining over time (circa A.D. 1000). Because the basic "recipe" for manufacturing Alma Plain gives rise to all other Mogollon Brown Ware, it is necessary to have rim sherds in the assemblage to differentiate Alma Plain from some of the later Mogollon Brown Wares. The later brown wares, including Alma Neck Banded, Three Circle Neck Corrugated and Mimbres Corrugated, along with Tularosa Fillet Rim and the Reserve/Tularosa Series, and Seco Corrugated, all of which have diagnostic texturing features, but many also have plain, smoothed and polished bodies below

the areas of corrugation that look just like Alma Plain. Hence, the need for rims and corrugated portions of vessels in order to identify appropriately.

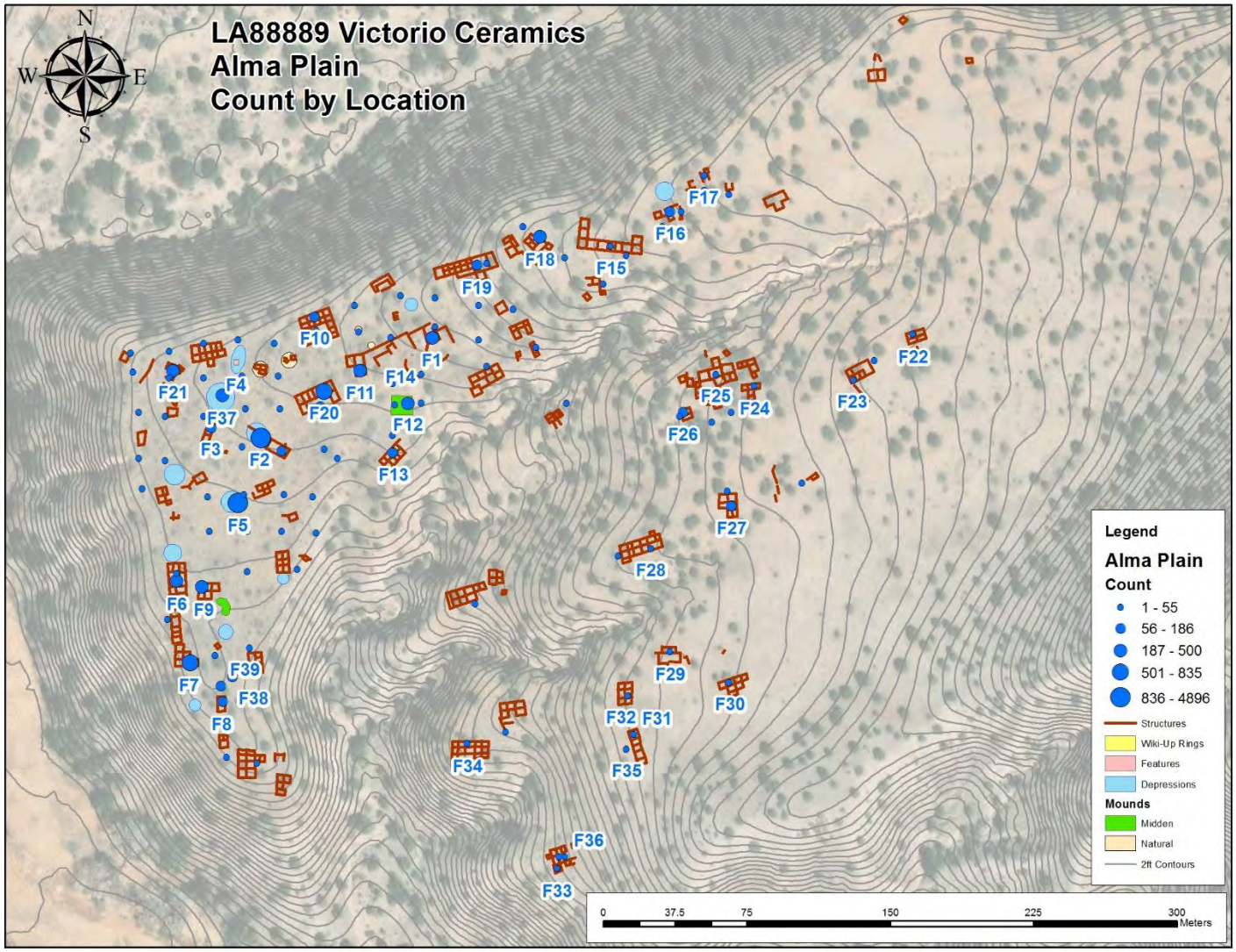

Figure 10. Distribution of Alma Plain on LA 88889.

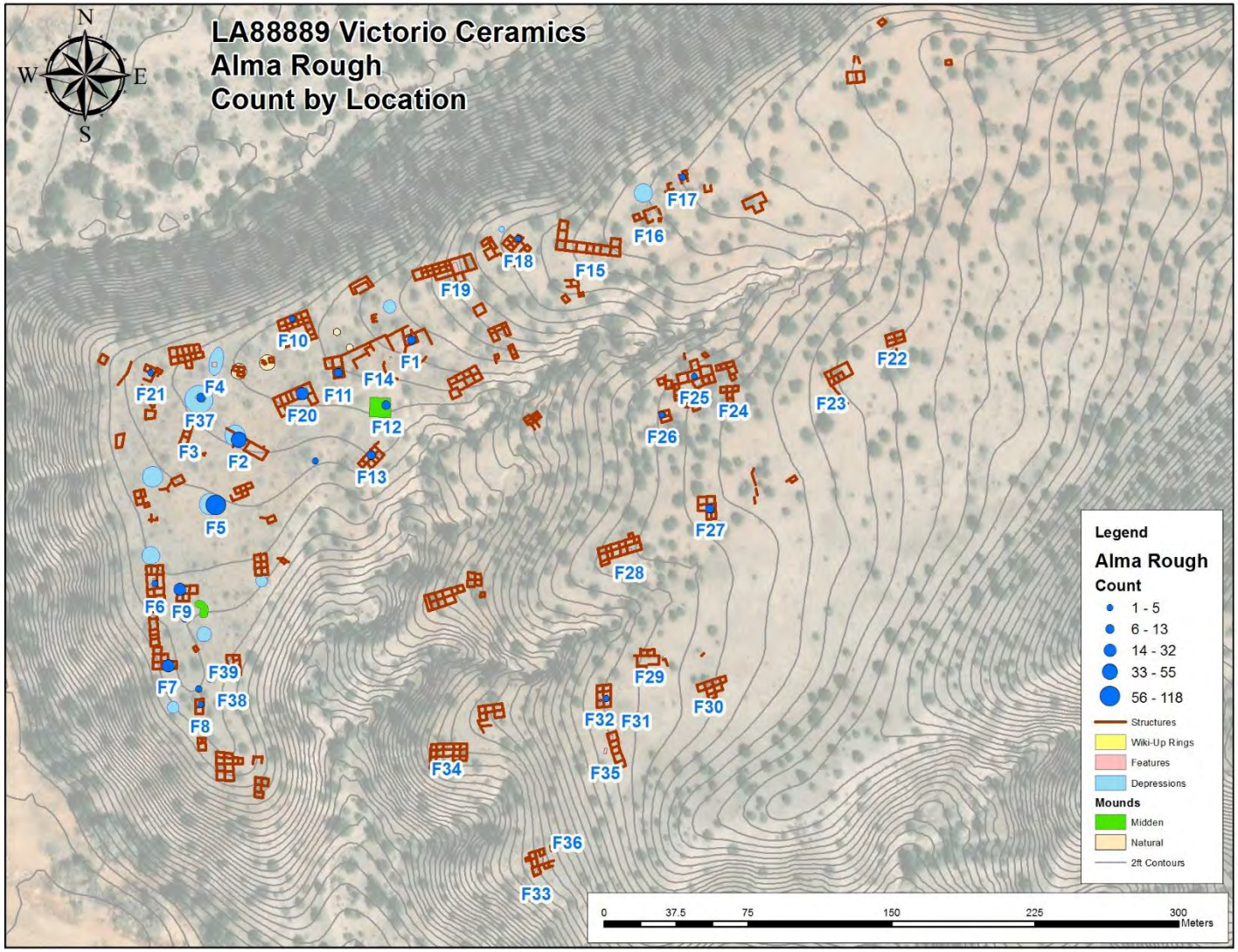

Figure 11. Distribution of Alma Rough on LA 88889.

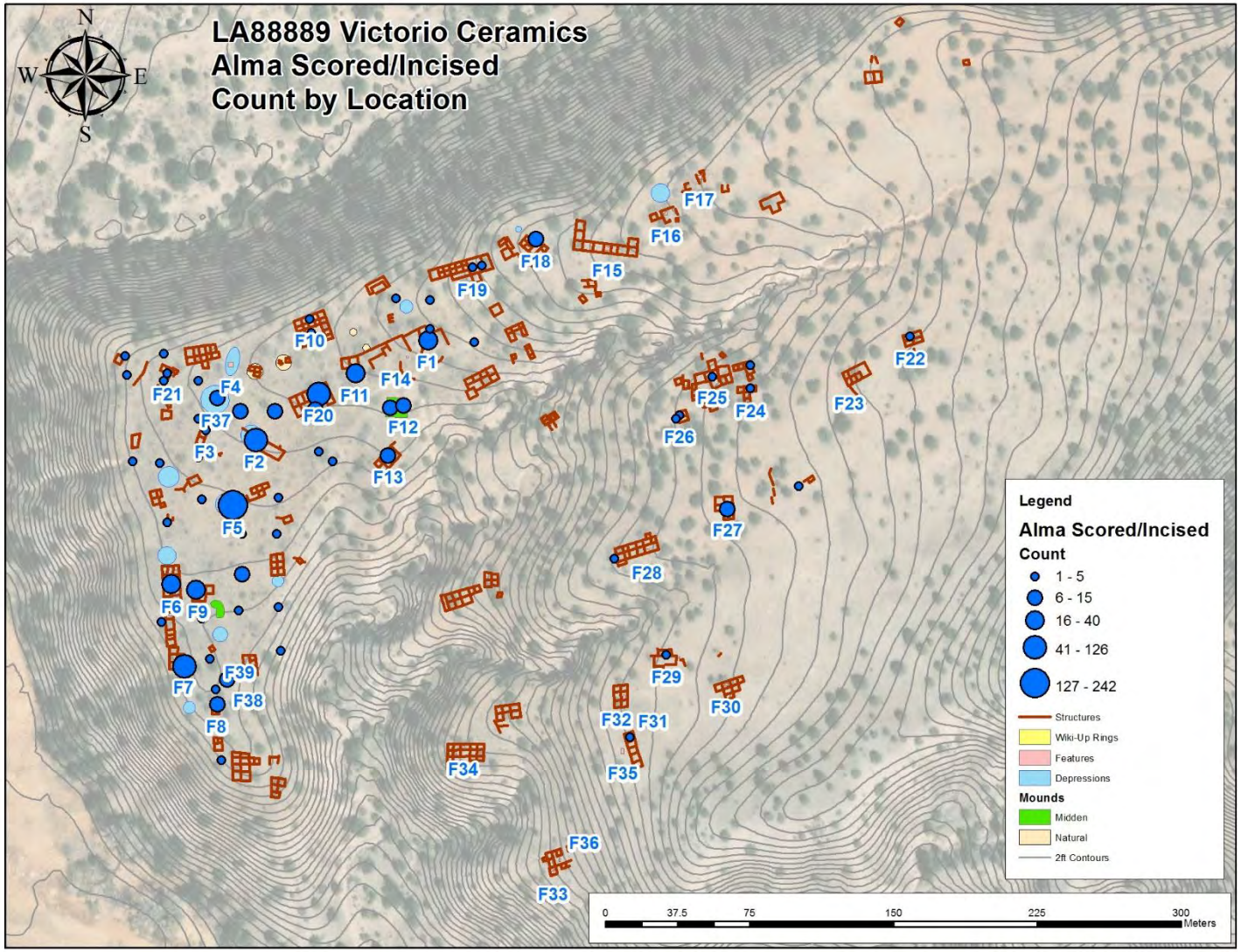

Figure 12. Distribution of Alma Scored/Incised on LA 88889.

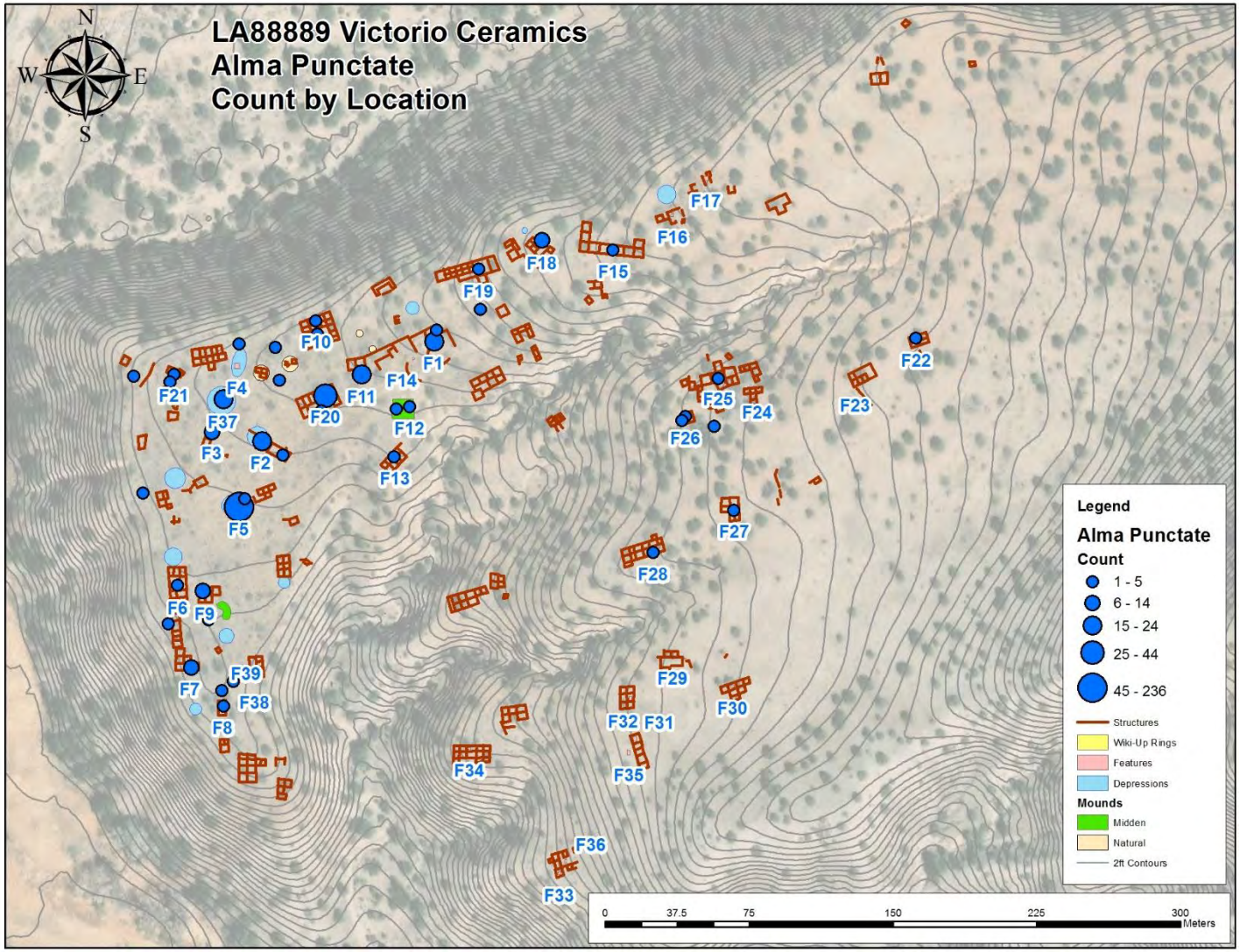

Figure 13. Distribution of Alma Punctate on LA 88889.

Figure 14. LA 88891: Alma Plain Miniature Jar (04–39).

Figure 15. LA 88891: Alma Plain Jar and Bowl Rims (01-254).

Figure 16. LA 88889: Alma Plain Jar Sherds (06-435).

Figure 17. LA 88889: Alma Plain Miniature Vessel (08-1467).

Figure 18. LA 88889: Alma Plain Miniature Vessel (09-1811).

Figure 19. LA 88889: Alma Plain Miniature Vessel (09-1812).

Figure 20. LA 88889: Alma Plain Reconstructed Jar (09-1336).

Figure 21. LA 88889: Alma Plain Bowl Sherd (left) and Jar Sherds (middle, right) (06-435).

Figure 22. Left to right:
LA 88891: Alma Rough Jar Sherd (04-672)
LA 1125: Alma Rough Jar Sherd (03-436)
LA 88889: Alma Rough Bowl Exterior Sherds (05-339, 09-315 interior surfaces are polished).

Figure 23. LA 88889: Alma Incised Jar Sherds (07-1072, 07-210).

Figure 24. LA 88889: Alma Punctate Jar Sherd (10-607)

Figure 25. LA 88889: Alma Punctate Jar Sherds (06-435, 09-1274).

Figure 26. LA 88889: Alma Plain with Dimpled Surface (08-250).

APACHE CERAMIC WARE

(QUEMADO GRAY WARE/PELONCILLO BROWN WARE?)

Key Attributes. Brown or gray colored non-micaceous paste and body, wiped and unpolished surfaces, minimal incised decoration if any at all.

Dates. Accepted: 1500 (?) – 1900. CAP Period/Phase dates: Proto-historic/Apache, circa A.D. 1400 to 1600 plus.

Basis of the Present Description. Two sherds, both recovered from the Victorio Site (LA88889; Table 5). See also Brugge (1963), Baugh and Eddy (1987), Ferg (1987;2004), Seymour (1992; 2008; 2010; 2017). Figures 27 and 28 present images of the sherds while Figure 29 places them in their collected context at the Victorio Site.

Table 5. Count of Apache Sherds by Site.

Type	1125	2292	88889	88891	Grand Total
Apache			2		2

Construction. Hand coiling and scraping; paddle and anvil (Seymour 2008:167 – 168).

Paste. Paste color in one sherd is dark gray and dark brown in the other. The paste is soft in both sherds and there is a hint of a carbon streak in the brown paste sherd. The texture is medium for both sherds and the tempering material for both is mixed particle sand with flecks of feldspar and quartz. There is no mica in the clay paste and light reflected off of quartz particles may give a "sparkle" to the paste and surfaces.

Surface Color. The surface color of one of the sherds is a dark gray while the surface color on the other sherd is brown. It is not known if the resulting gray color in the one sherd was purposeful and the original vessel was fired in a reducing or neutral atmosphere or if the color is the result of inadequate firing, fireclouds, or discoloration from usage.

Surface Finish. All surfaces on vessels are smoothed and may be wiped with a grass bundle or other material that created stria. The surfaces on both of the Apache sherds from the Cañada Alamosa assemblage look relatively smooth although fine line striae are observable on the brown colored sherd. Surfaces are not stone polished. Temper may be visible on the surfaces.

Vessel Forms. Wide mouth jars used for cooking, storage, and as drums, tubular smoking pipes and modeled toys. Vessels have hemispherical rounded or pointed bottoms. Both the gray sherd and the brown sherd from the Victorio Site appear to be jar forms.

Decoration. Decoration is rare on Apache pottery and entails minimal and simple, incised linear designs encircling a vessel or individual unit designs. Of the two sherds in the Cañada Alamosa assemblage, only the gray colored sherd has a subtle, linear design that was created by depressing or impressing the plastic clay surface to create a shallow, furrow-like design. This sherd was shown to Alan Ferg who remarked he was unfamiliar with decoration of this style on Apache pottery. Perhaps this is a rare and unusual form of decoration for southern Apache pottery or perhaps the sherd isn't Apache.

Paint. None.

Remarks. Ancestral Apache in southwest New Mexico and southeast Arizona were not sedentary and moved from camp to camp on a seasonal round to optimize their sustainability in a difficult and hostile environment. Being such, and with the need to move and relocate effectively, they developed a limited material culture that would allow for frequent moves without too much "baggage." This limited material culture included pottery production (Ferg 2004:1) of predominately wide-mouthed vessels, namely jar forms, that were used for cooking, storage, and drum pots. However, they produced pottery on an extremely small scale and never had much of it on hand. They likely did not take it with them from camp to camp (Seymour 1992) but stored some vessels in hidden caches that were revisited overtime. Apaches acquired pottery by other means including that taken in raids or traded from Pueblo groups, and pottery produced by captives who were familiar with the skill.

At best, recognizing Apache pottery can be illusive and difficult. Compounding the difficulty is that Apache pottery is a plain ware, and particularly when found in sherd form, blends in with prehistoric Mogollon and Ancestral Puebloan plainwares. With close and careful examination of attributes and possibly with the elimination of known plain ware types in the assemblage, the Apache sherds might stand out as being different from the known types. That is basically how the two "Apache" sherds from the Victorio Site were sorted out from the rest.

On the Victorio Site, a prehistoric pueblo dating circa A.D.600 – 1300, the Apache presence on the site indicates more than 300 years of Apache utilization of the

terrace circa A.D. 1500 – 1880. The presence of sherds of San Lazaro Glaze Polychrome and Matsaki Polychrome are interpreted as representative of an early Apache presence on the Victorio Site. It has been well established that the raiding and trading relationship between the Apache and pueblo communities resulted in late pueblo ceramics being brought to Apache camps (Seymour 2010:165-167). These painted wares were most likely manufactured during the 16th century. It's unfortunate that the two Apache plain ware sherds cannot provide a clear association to a typology or to a date. The problem lays with the fact the two plain ware sherds are one of a kind, plain, small, and without a vessel rim or textured decoration.

Brugge (1963) published a typology and descriptions of Navajo pottery which included one of the initial attempts at a typology for Chiricahua pottery. This was revised at the 1985 Southern Athapaskan Ceramics Conference and Baugh and Eddy (1987: Fig. 1 and 2), further refined the nomenclature to include the Oscuro Series (Mescalero and Chiricahua pottery types), the Pine Flat Series (Western Apache pottery types) and the Navajo Series of pottery, all of which make up what is known as Quemado Gray Ware (see also Ferg:2004). Hence, the two sherds thought to be Apache and recovered from the Victorio Site could at least be classified as Quemado Gray Ware.

The two Cañada Alamosa Apache sherds are not produced from micaceous clay and are not believed to be associated with the Jicarilla Apache (Gunnerson 1969) in northeastern and north central New Mexico. The two sherds are differentiated by paste and surface color as one is gray and the other is brown. Deni Seymour's research (2008) points to a potential significance in the colors of these two sherds. Based on her work in southern and southeastern New Mexico, she has shown that proto-historic Chiricahua and Mescalero Apache pottery does not have a gray paste. This paste color is associated with the Quemado Gray Ware, Pine Flat Series of Apache pottery types affiliated with the Western Apache of east central Arizona and west central New Mexico. Seymour (2008:166-167) places the brown paste Chiricahua and Mescalero pottery under the Oscuro Series of Peloncillo Brown Ware which is temporally parallel to the Quemado Brown Ware but distinct from it. Additionally, Seymour states that Quemado Gray Ware was made by the coil and scrape method while the Peloncillo Brown Ware were made via paddle and anvil. No distinction between manufacturing techniques can be made on the two, small Apache sherds in the Cañada Alamosa assemblage.

We just can't tell much from the two small sherds thought to be Apache and even this label may be inaccurate. However, they do stand-out from the prehistoric

assemblage. They were recovered from an area known to have been utilized by Apache over time. Perhaps the gray sherd, is of Western Apache origin and the brown sherd of Chiricahua Apache origin.

Figure 27. LA 88889: Apache Ware Jar Sherds, exterior surfaces (05-264, 10-404); note the furrow-like design on the left-hand sherd.

Figure 28. LA 88889: Apache Ware Jar Sherds, interior surfaces (05-264, 10-404).

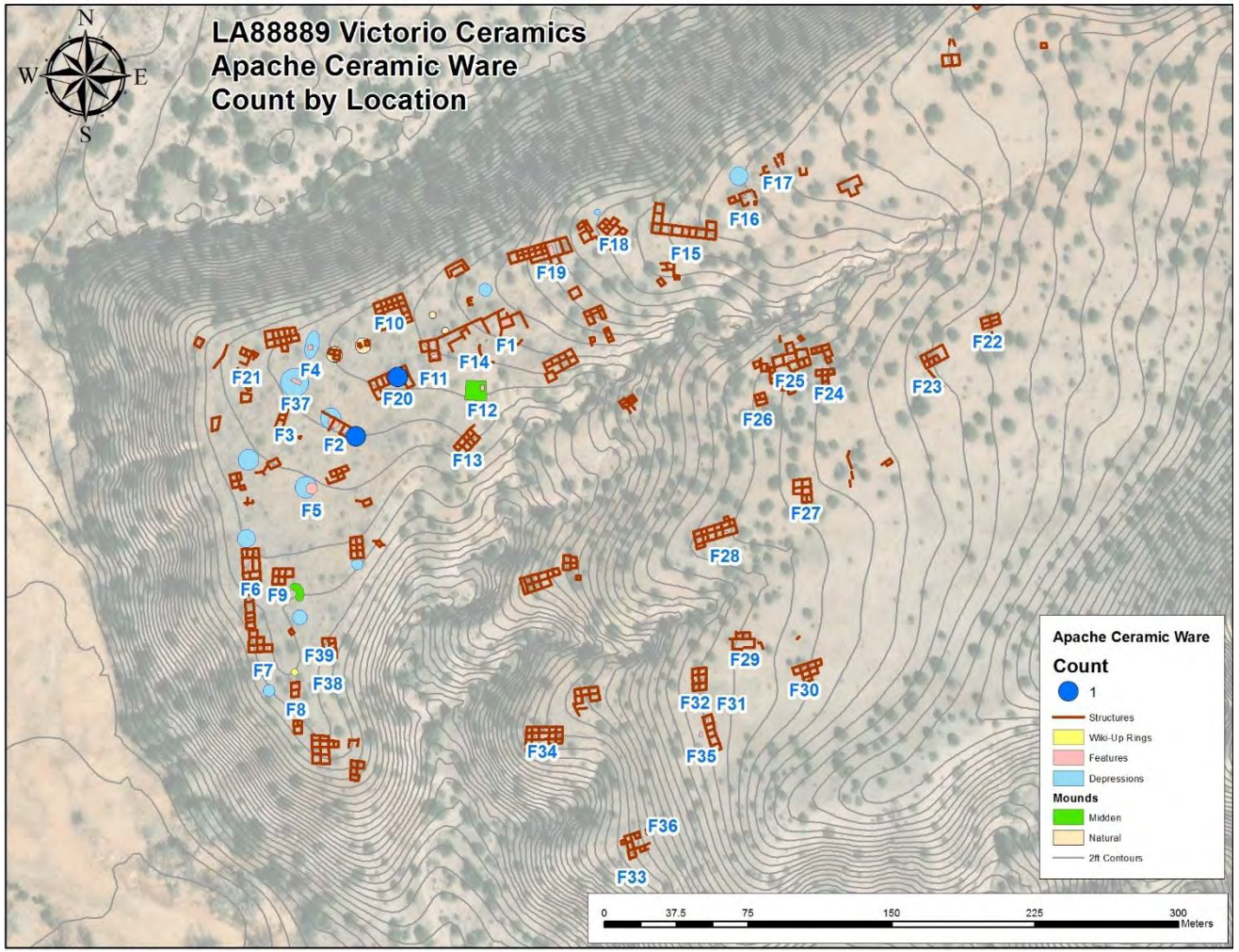

Figure 29. Distribution of Apache Sherds on LA 88889.

CASAS GRANDES PLAIN WARE
(PLAIN BROWN, INCISED, AND PUNCTATE VARIETIES)
(CASAS GRANDES PLAIN WARE)

Key Attributes. Smooth and polished light brown/tan colored surfaces that are plain or occur with a variety of exterior surface treatments (incised, corrugated, textile impressed, punctated, etc.).

Dates. Accepted: Casa Grandes plain wares span both the Viejo and Medio periods circa A.D.800 to A.D. 1450. CAP Period/Phase dates: Late Pueblo Period, Early Glaze Phase, circa A.D. 1300 -1400. The majority of the sherds are on the Victorio Site and date to Tularosa Phase and on the Pinnacle Site to the Early Glaze Phase. But, the term "Casas Grandes Plain Ware" is likely a misnomer. What is true is that plain and textured brownware sherds comparable to the Mogollon Brown Ware found at Cañada Alamosa are present at Paquime (DiPeso et al. 1974:108). This is not unusual as Wilson (2014: Office of Archaeological Studies Pottery Typology Project electronic document) notes that "these types exhibit characteristics and variation similar to that noted in the Mogollon Highlands to the north."

Basis of the Present Description. Nineteen sherds (Table 6) were typed as Casas Grandes Plainware (fourteen were plain and untextured, three were incised and two were punctated). An incised sherd was recovered from the Kelly Canyon Site (LA 1125), two plain sherds came from the Pinnacle (LA 2292), there were two incised and two punctated sherds out of sixteen found at the Victorio Site (LA 88889), and there were no sherds of this type on the Montoya Site (LA 88891). Figures 30, 31, 32 and 33 provide spatial context for the sherds. See also Brand (1935), Sayles (1936), Di Peso et al. (1974), VanPool et al. (2008).

Table 6. Count of Casas Grandes Plainware by Site.

Type	1125	2292	88889	88891	Grand Total
Casas Grandes Brown		2	12		14
Casas Grandes Incised	1		2		3
Casas Grandes Punctate			2		2

Construction. Hand coiling and scraping.

Paste. The color ranges from reddish-brown, yellowish-red, to light-brown or tan. Texture may be fine to medium depending on the size of the temper particles.

Temper is a mix of igneous detritus, and sand with both opaque and translucent particles. Carbon streaks occur.

Surface Color. Ranges from reddish-brown to light brown and tan and is uniform through-out the vessel. Fire clouds occur.

Surface Finish. Original coils of manufacturing are obliterated and surfaces seen on bowl interiors and exteriors and jar exteriors are generally well smoothed and polished. Smoothing/polishing streaks may be visible. Jars interiors are well smoothed. Samples that are poorly finished certainly occur.

Vessel Forms. Jar shapes dominate; bowl and effigy forms. Jar rims are recurved or everted with rounded rim lips. This same rim style may be seen on bowl forms. Bowl rims are most commonly direct or inwardly curved with rounded rim lips.

Decoration. Casas Grandes Plain Ware does not have painted decoration, but there are many textured varieties with names that reflect the type or style of the texturing. Only two of the textured varieties were identified in the Cañada Alamosa assemblage. These were Casas Grandes Incised and Casas Grandes Punctate (Figure 34). As with any texturing, it was done while the vessel clay was plastic and before firing. Both of these texturing techniques require a tool. Incising involves the use of a pointed tool to cut or engrave the plastic clay surface. Puncturing involves a similar tool to pierce or poke the plastic clay to create a hole of divot in the upper surface. These texturing types may have been used to create simple marks or unit designs on vessels or they may be patterned to create organized and formal design.

Paint. None.

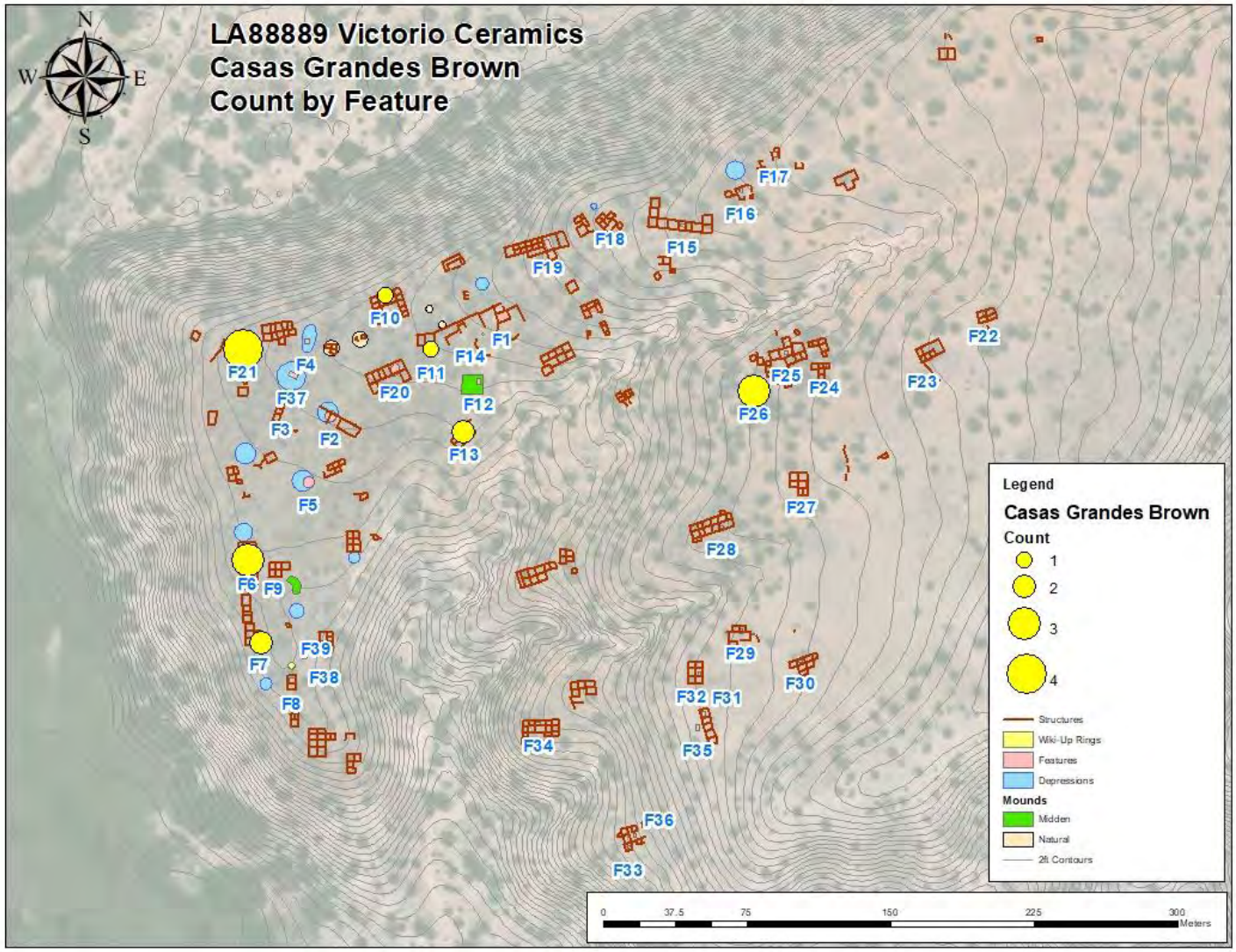

Figure 30. Distribution of Casas Grandes Brown Sherds on LA 88889.

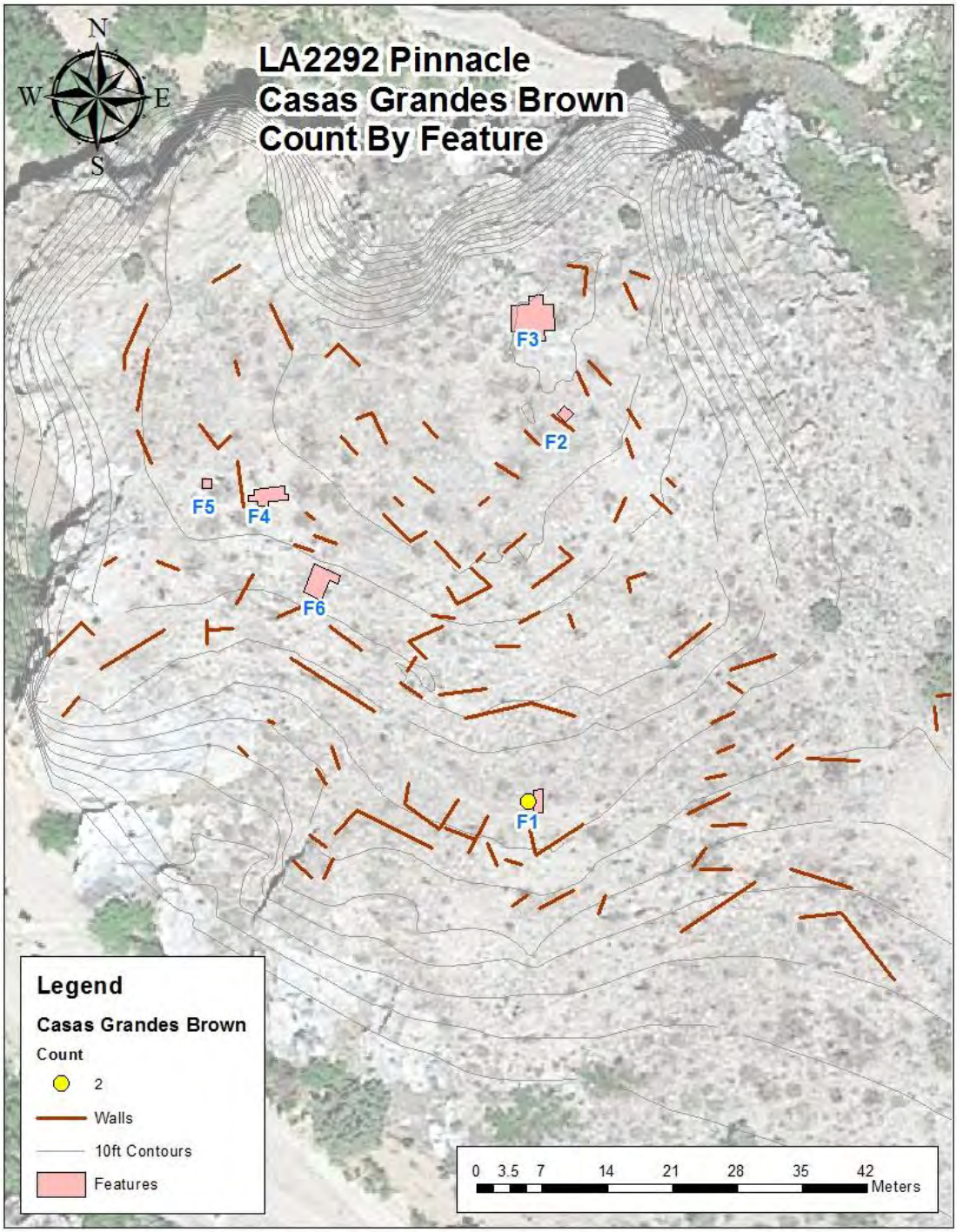

Figure 31. Distribution of Casas Grandes Brown Sherds on LA 2292.

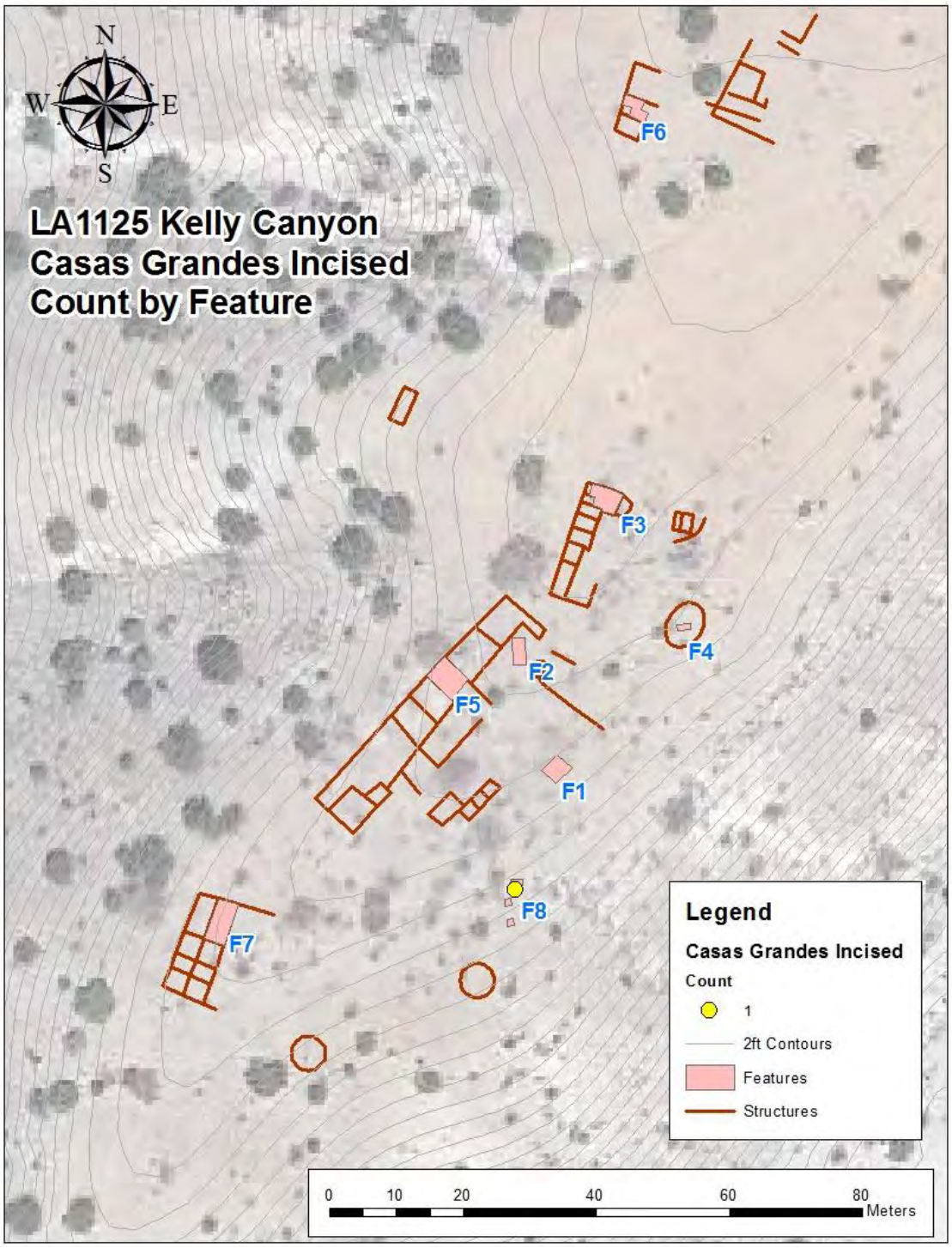

Figure 32. Distribution of Casas Grandes Incised Sherds on LA 1125.

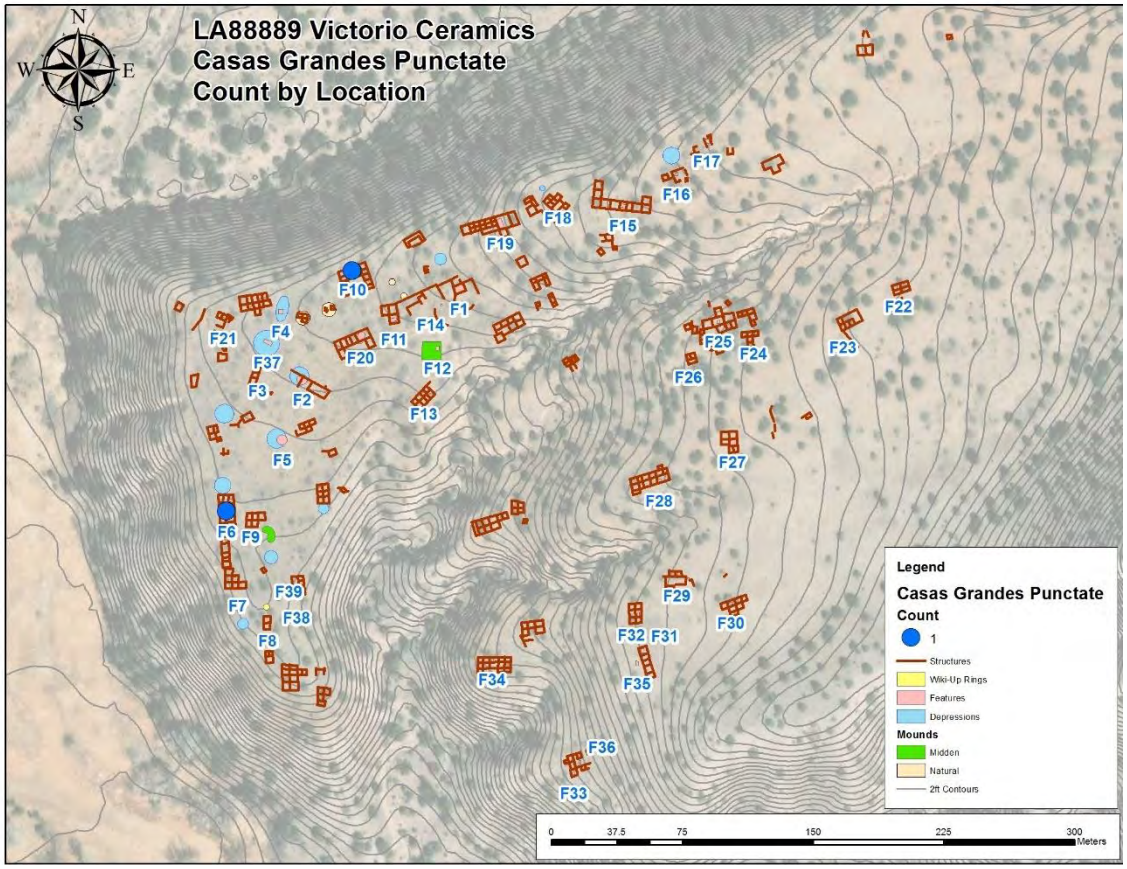

Figure 33. Distribution of Cases Grandes Punctate Sherds on LA 88889.

Figure 34. LA 88889. Examples of Casas Grandes Brownware.
Left: Punctate (07-37); Right: Incised (08-264)

CASAS GRANDES POLYCHROMES

(RAMOS POLYCHROME, BABICORA POLYCHROME)

(CHIHUAHUAN/CASAS GRANDES POLYCHROME WARE)

Key Attributes. Well-drafted black and red colored geometric designs integrated with life-forms at times on an ivory white, buff, light brown, or light orange well-finished surface; light-colored (or color similar to that observed on the surface), fine, granular paste and fine-grained temper if visible.

Dates. Accepted: circa A.D. 1200 – 1475. CAP Period/Phase dates: Late Pueblo Period/Early Glaze period circa A.D. 1300 – 1400. Both Ramos Polychrome and Babicora Polychrome are associated with the upper levels and surface contexts at the Pinnacle.

Basis of the Present Description. Seven sherds of Ramos Polychrome, one sherd of Babicora Polychrome, and two sherds of undifferentiated Casas Grandes Polychrome were identified from the Pinnacle (Table 7); no sherds of these types were found at the Kelly Canyon Site (LA 1125), Victorio Site (LA 88889), or the Montoya Site (LA 88891). See also Sayles (1936), Di Peso et al. (1974), VanPool et al. (2008). Figure 35 illustrates representative sherds while Figure 36 presents the spatial relationship of the sherds on Pinnacle.

Table 7. Count of Casas Grandes Polychromes by Site

Ceramic Type	1125	2292	88889	88891	Grand Total
Ramos Polychrome		7			7
Babicora Polychrome		1			1
Undifferentiated Casas Grandes Polychrome		2			2

Construction. Hand coiling and scraping.

Paste. Ramos Polychrome tends toward and ivory white, buff, or light brown color while Babicora Polychrome tends toward light brown and light orange; both have a hard and fine, granular paste. Temper is often difficult to see with the unaided eye and may be fine-grained sand or volcanic tuff. Carbon streaks are rare.

Surface Color. Ramos Polychrome vessels are unslipped and surface color and paste color are often the same, ranging from ivory white, buff, light brown, or light orange. Babicora Polychrome vessels may have a thin wash that matches the surface color.

Surface Finish. Smooth and polished, floated surfaces on bowl interiors and exteriors and jar exteriors. Some specimens will exhibit a dull to low luster finish. Jar interiors may be not as nicely finished as exteriors but they are smoothed and may show smoothing stria.

Vessel Forms. Jar forms dominate for both Ramos and Babicora Polychromes; bowls, effigies, and eccentrics forms were also produced. Bowl rims tend to be inwardly curved with rounded rim lips. Jar rims are recurved with rounded lips.

Decoration. The decoration on the Pinnacle sample of Ramos Polychrome and the one sherd of Babicora Polychrome cannot be described in detail because the sherds are very small and may only have a tiny piece of decoration. Typical for Ramos Polychrome are solid red colored elements outlined in black. A variant of Ramos Polychrome called Capulin Polychrome has the red design elements but these are not outlined in black. The designs on Ramos Polychrome are laid-out in a framed band, starting just below the rim and extending to just below the greatest diameter of the vessel, on the exterior surface of both bowl and jar forms. Designs are bold and finely done and include complex geometrics, rectilinear and curvilinear and parallel multilinear elements, stylized lifeforms, and geometric solids. Designs on Babicora Polychrome are similar to those seen on Ramos Polychrome. However, designs on Babicora Polychrome tend to be boldly expressed and sometimes poorly drafted. Additionally, solid red elements are not outlined in black as seen on Ramos Polychrome.

Paint. Both black and red pigments are mineral-based paints.

Remarks. Ramos Polychrome is by far, the most common of the Chihuahuan polychromes to be traded into the southern regions of New Mexico and southeast Arizona. It is typically found on late El Paso Phase sites in association with El Paso Polychrome and Chupadero Black-on-white and some of the Salado Polychromes.

Figure 35. LA 2292: Ramos Polychrome Jar Body Sherds on the left side of image (99-5) and Babicora Polychrome on the right side of image (03-45).

All seven sherds identified as Ramos Polychrome were very SMALL and only simple design elements were observed on each sherd. The sherd of Babicora Polychrome exhibits typical wider line elements.

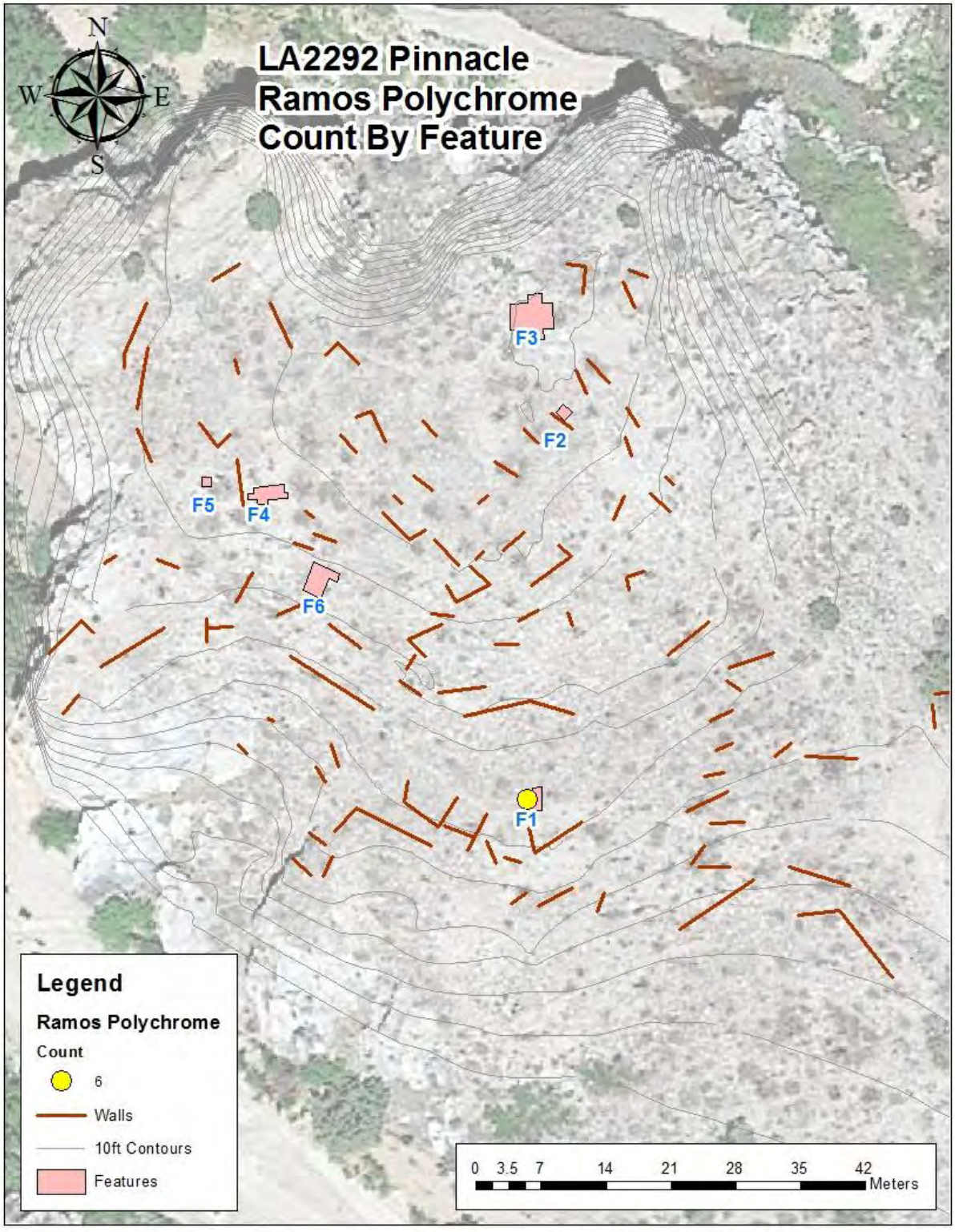

Figure 36. Distribution of Casas Grandes Polychrome Sherds on LA 2292.

CHUPADERO BLACK-ON-WHITE

(NORTHERN JORNADA WHITE WARE)

Key attributes. Bowl exteriors and jar interiors are typically scored, there is a thin and often streaky white slip, iron-based mineral pigment that subglazes, and simple, repetitive geometric designs.

Dates. CAP Period/Phase dates: Late Pueblo Period/Tularosa Phase context, A.D. 1200 – 1290, Late Pueblo Period/Magdalena Phase context, A.D. 1250 – 1290, and Late Pueblo Period/Early Glaze period context, A.D. 1300+. Although the occurrence of Chupadero B/w is quite common in central-east and southern New Mexico, its origin it is not well dated. Tree ring dates compiled by Breternitz (1966:72) best dates Chupadero B/w at A.D. 1150 – 1400+. Anyon (et al. 1981) suggested a starting date of A.D. 1150 because of the association of Chupadero pottery with Mimbres Classic B/w in the final years of its production. From the perspective of the Cañada Alamosa, we did not find Chupadero with Mimbres Style III ceramics, rather with the later types of Reserve and Tularosa Black-on-whites, Magdalena Black-on-white, and with Zuni and Rio Grande Glaze wares. Wiseman (1982) thinks a beginning date of A.D. 1100 is acceptable for the Sierra Blanca region and possibly a little earlier at A.D. 1050 as suggested by Kelly and Peckham (1962). On the other hand, data for end dates for Chupadero B/w are firmer. Clark (2006:68) suggests the A.D. 1400s for the reduction and end date of Chupadero production with the abandonment of the Sierra Blanca region. Production may have continued a little later in the Salinas region as Hayes et al. (1981:97) reports that the production of Chupadero pottery came to an end with the introduction of Tabirá Black-on-white in A.D. 1545.

Basis of the Present Description. A total of 273 sherds of Chupadero B/w were in the Cañada Alamosa assemblage (Table 8). No sherds of the type were recovered from the Kelly Canyon Site (LA1125), forty-seven sherds were identified from the Pinnacle (LA 2292), 223 sherds from the Victorio Site (LA88889), and 3 sherds from the Montoya Site (LA 88891). Figures 37 and 38, display the distribution of the type on LA 2292 and LA 88889. Figures 39-47 display representative sherds of Chupadero Black-on-white. See also Mera (1931), Kelly (1966), Jelinek (1967), Hayes et al. (1981), Wiseman (1986), and Clark (2006).

Table 8. Count of Chupadero Black-on-white by Site.

Type	1125	2292	88889	88891	Grand Total
Chupadero Black-on-white		47	223	3	273

Construction. Hand coiling and scraping.

Paste. Generally hard and not friable. Light gray, gray, and occasionally dark gray, carbon streaks are very rare. At times the paste may appear as a grayish brown color. Temper consists of processed sherd particles and igneous rock detritus composed of black mineral particles, feldspar, and quartz.

Surface Color. Thin and streaky, to thin and chalky white slip on bowl interiors and jar exteriors. Some Chupadero pottery may have floated surfaces with decorative paint applied. Non slipped areas on vessels will be the color of the under-laying clay body.

Surface Finish. The decorated surfaces of bowl interiors and jar exteriors are well scraped and smooth. The undecorated surfaces of these vessel forms are typically rough scraped or striated with varying degrees of intensity and depth to the scraping. Chupadero pottery also occurs with hand-smooth undecorated surfaces (Wiseman 1986:7-8; Clark 2006:253-254). Slipped and floated surfaces are polished. This may occur as intermittent polish to well-polished.

Vessel Forms. Hemispherical bowls and jars dominate, with globular jars having narrow, restricted orifices are the most common jar form. Ladles and forms other than bowls and jars are rare.

There are two bottom or base styles known for Chupadero pottery. The most common is a rounded base, formed by the course of coiling and scraping and building-up the vessel. The other base style is flat, like a pancake, upon which during vessel construction, clay coils were pinched onto the flat base and then coiled further to build-up the pot. Flat bottoms on Southwestern prehistoric pottery are extremely uncommon except for Chupadero B/w. Another phenomenon, although not unique to Chupadero B/w, is the occasional occurrence of unobliterated coils of manufacture left exposed on painted bowls. This unobliterated "corrugation" is typically flattened and looks stacked. Other texturing styles are known to occur on these unobliterated exterior coils such as clapboard, indented and obliterated (Kurota 2016:12-33). No flat-bottomed bowl

sherds and only one bowl sherd (Artifact 05-786, Figure 42) with unobliterated exterior coils were recovered from Cañada Alamosa assemblage.

Rims on both bowls and jars tend to be direct and straight-up from the vessel wall. Jar rims may be slightly outwardly flared. Rim-lip shape on bowl and jar forms are commonly rounded. Square rims may be seen on bowls. Tapered and beveled rim-lips occur occasionally.

Decoration. Designs are typically laid out, on both bowls and jars, in a band and framed with linear elements at the top and bottom of the band. Geometric designs are simple and repetitive and include diagonal hatching, hatching with opposed solids, solids only, singular and multiple wide and narrow linear elements, checkerboard, wide and narrow zig-zag linear elements, cross-hatching, and dots. Curvilinear elements and motifs as well as singular designs on the center bottom of bowls occur but are rare. Designs are fairly well drafted most of the time.

Paint. Mineral/iron-based paint pigment that ranges from reddish brown, when exposed to air (oxidation) during firing, and a rich, solid black. This mineral based paint is also known to vitrify and form a sub-glaze in painted elements. Pigment on two sherd samples of Chupadero Black-on-white, both from the Victorio Site, underwent lead isotope analysis conducted by Judith Habicht-Mauche to identify potential resources for the ore. One sherd showed lead associated with the New Placers mining district in the San Pedro Mountains in Santa Fe County and one sherd was associated with the Cerrillos mining district also located in Santa Fe County, New Mexico in the upper Rio Grande region. Please see Appendix A for the complete results of the analysis.

Neutron Activation Analysis. Analysis indicated that sherds of Chupadero were produced from both the Salinas Pueblos (Quarai) and from the Capitan Mountain (Robinson Pueblo) and the Sierra Blanca areas. Pinnacle has greater compositional variety than the Victorio Site with sherds from both Quarai and the Capitan Mountain/Sierra Blanca areas.

Remarks. This pottery was widely traded throughout southern New Mexico, northern Chihuahua, and west Texas (Wiseman 1986). Based on compositional studies, Clark (2006:176-224) identified two production areas for Chupadero Black-on-white. These are the Salinas area (Gran Quivira, Chupadero Arroyo) in central New Mexico and the Sierra Blanca area (northern Sacramento Mountains), also in central New Mexico. Clark's study showed that there was wide spread circulation of Chupadero Black-on-white from Sierra Blanca area sources and that

the majority of the Chupadero Black-on-white samples tested from throughout southern New Mexico and west Texas sourced to production sites in the Sierra Blanca area.

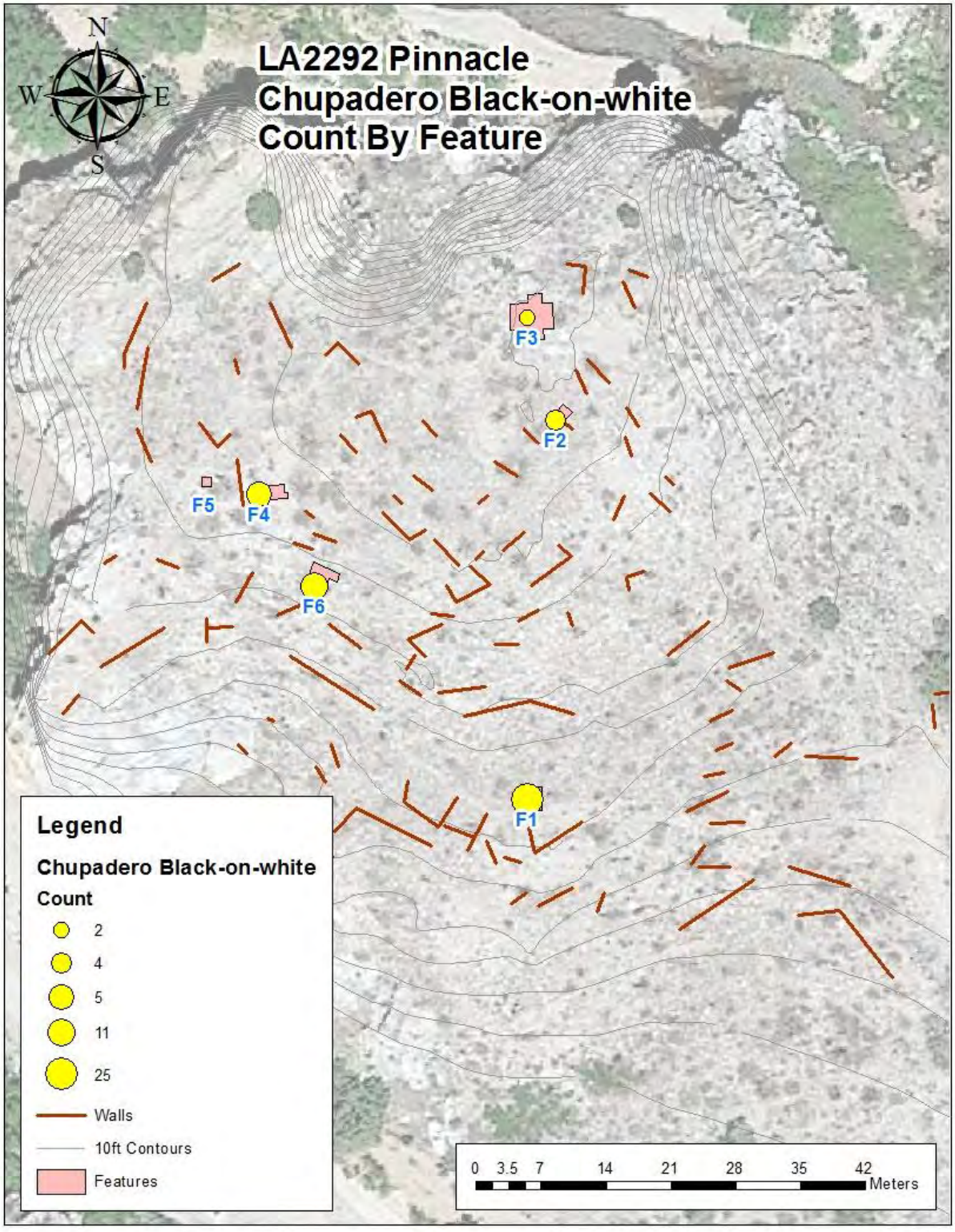

Figure 37. Distribution of Chupadero Black-on-white sherds on the Pinnacle, LA 2292.

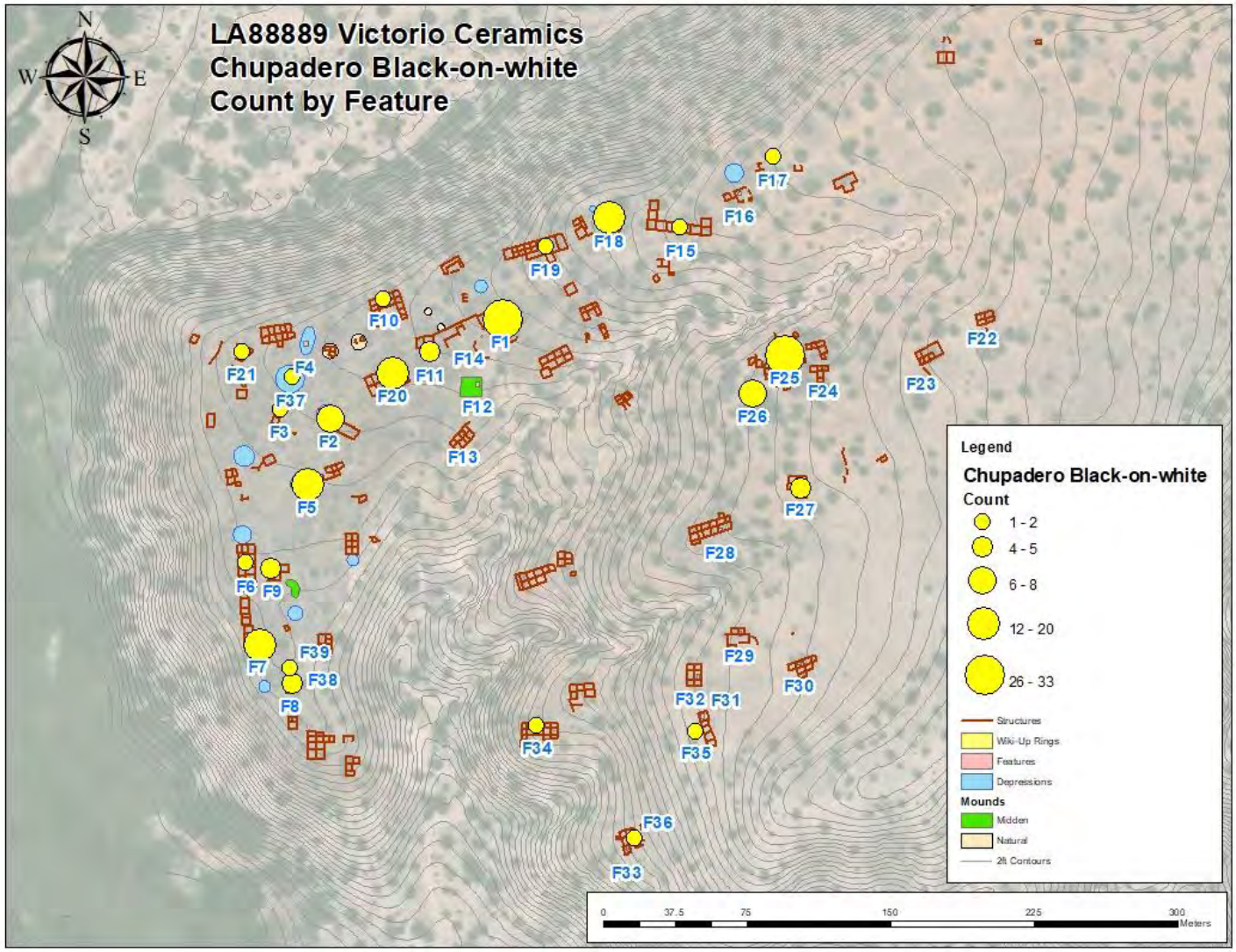

Figure 38. Distribution of Chupadero Black-on-white Sherds on the Victorio Site, LA 88889.

Figure 39. LA 2292: Chupadero Black-on-white, left to right, Jar Rim and Jar Exterior Body Sherds (00-44, 04-391, 00-338, 02-194, 99-4).

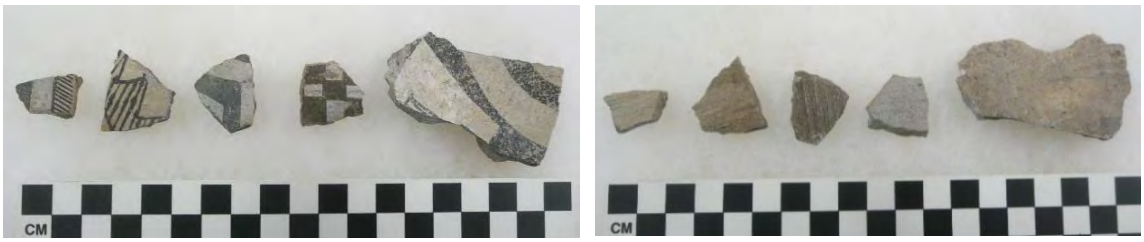

Figure 40. LA 88889: Chupadero Black-on-white Bowl Sherds (05-65, 05-93, 05-174, 05-670, 05-786), Interior and Exterior Views.

Figure 41. LA 88889: Chupadero Black-on-white Bowl Sherd Interior Surface (05-786).

Figure 42. LA 88889: Chupadero Black-on-white Bowl Sherd Exterior Surface (05-786).
Note the unobliterated original coils of manufacturing.

Figure 43. LA 88889: Chupadero Black-on-white Bowl Sherd with Subglazed Pigment (07-652).

Figure 44. LA 88889: Chupadero Black-on-white bowl sherd exterior surface (07-652).

Figure 45. LA 88889: Chupadero Black-on-white Bowl Rim Sherd (08-1319).

Figure 46. LA 88889: Chupadero Black-on-white Jar Rim and a Bowl Body Sherd (09-994, 09-507), interior and exterior views.

Figure 47. LA 88889: Chupadero Black-on-white Jar Body Sherd (10-105).

CIBOLA GRAY WARE

(CHACO SERIES)

Key Attributes. Light gray to medium gray colored surfaces and paste; indented corrugations; sherd and sand temper.

Dates. Accepted: A.D. 550 – 1450 for the entire Cibola Gray Ware series. CAP Period/Phase dates: Late Pueblo Period, A.D. 1200– 1290. See remarks below.

Basis of the Present Description. Nineteen sherds were classified as Cibola Gray Ware as being representative of the late variety in this series (Table 9). One sherd was recovered from a glaze-mixed context (Late Pueblo Period circa A.D. 1300-1400) at the Pinnacle (LA 2292) and eighteen were from the Victorio Site (LA 88889). Fourteen of these from the Victorio Site were in the Late Pueblo Period/Tularosa Phase context (A.D. 1200 – 1290) while the remaining four sherds were intrusive to later mixed and Apache contexts. Figures 48 and 49 display the distribution of this type on LA 2292 and LA 88889. Figure 50 provides images of representative sherds. See also Hawley (1936), Olson and Wasley (1956), Windes and McKenna (2009).

Table 9. Count of Cibola Gray Ware by Site.

Type	1125	2292	88889	88891	Grand Total
Cibola Gray Ware		1	18		19

Construction. Hand coiling and scraping.

Paste. Color ranges from light gray to dark gray, carbon streaks occur; texture ranges from medium to coarse; prepared sherd and sand make-up the tempering material.

Surface Color. Light gray to medium gray, fire clouds occur.

Surface Finish. Overall indented corrugations.

Vessel Forms. Jars and pitchers with fillet rims.

Decoration. Overall indented corrugations that may be embellished with incisions or punctates.

Paint. None.

Remarks. The focus in this analysis is on the Chaco Series of Cibola Grayware as opposed to Cibola Gray Ware from the Tusayan Series of northeastern Arizona. This basically entails a difference in accepted type names between the Chaco Series and the Tusayan Series, but stye changes through time are similar for both series. Hence, the term Cibola Gray Ware, Chaco Series, encompasses several pottery types that are associated with the same culture in the San Juan Basin of northwestern New Mexico and follow one another chronologically. The primary difference among the pottery types within Cibola Gray Ware, Chaco Series, is in the manipulation/treatment of the vessel surfaces. With the passage of time, these surface treatments become more complex. The earliest of the Chaco Series Cibola Gray Wares are Lino Gray (A.D.500-750/800) and its varieties, all of which have plain, untextured surfaces. Next in the sequence is Kana'a Gray (A.D. 700 – 900) with wide neck bands on the upper half of the vessel and a smooth, plain surface on the bottom one half of the vessel. Tohatchi Banded (A.D.900-1050) is a larger and more refined version (narrow bands confined to the neck area) of Kana'a Grey. Next in the sequence is Coolidge Corrugated (circa A.D.975-1075), which has indented corrugations, or a combination of plain and indented corrugations, restricted between the rim and the vessel upper shoulder. The last type in this series is Chaco/Cibola Corrugated (A.D. 1040-1200) which has overall indented corrugation. Although sherd temper begins to occur in late Tohatchi Banded (Windes and McKenna 2009:42), it becomes increasingly more common in both Coolidge and Chaco/Cibola Corrugated.

The very small collection of Cañada Alamosa sherd tempered, indented corrugated Cibola Gray Ware is thought to fall into the Chaco Series of Cibola Gray Ware fairly late and likely represents vessels of Chaco/Cibola Corrugated. Without rims or whole or partial vessels, the features of well-formed obliquely oriented indented corrugations and the presence of sherd temper provide the only insight into the classification of these textured, gray ware sherds.

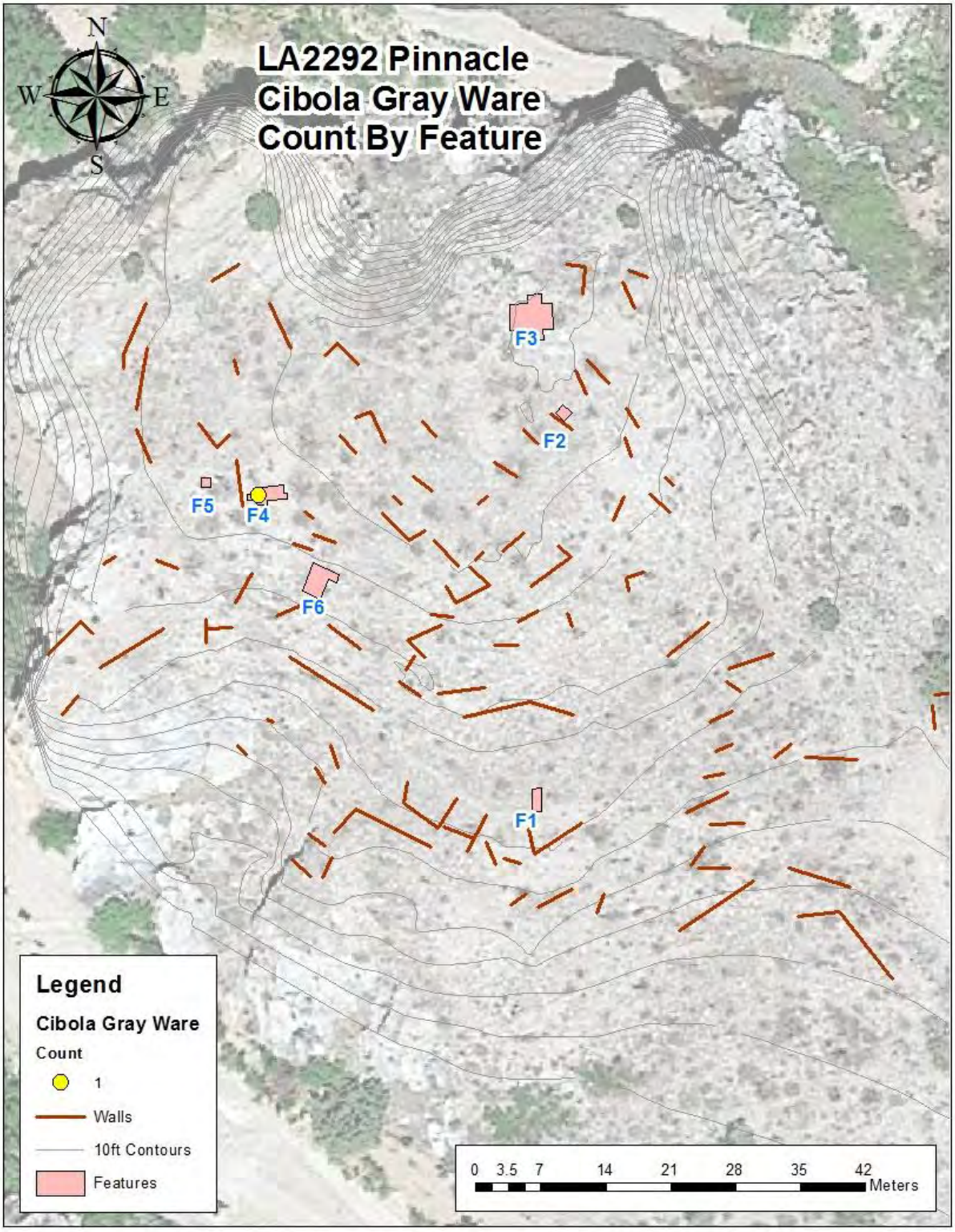

Figure 48. Distribution of Cibola Gray Ware Sherds on LA 2292.

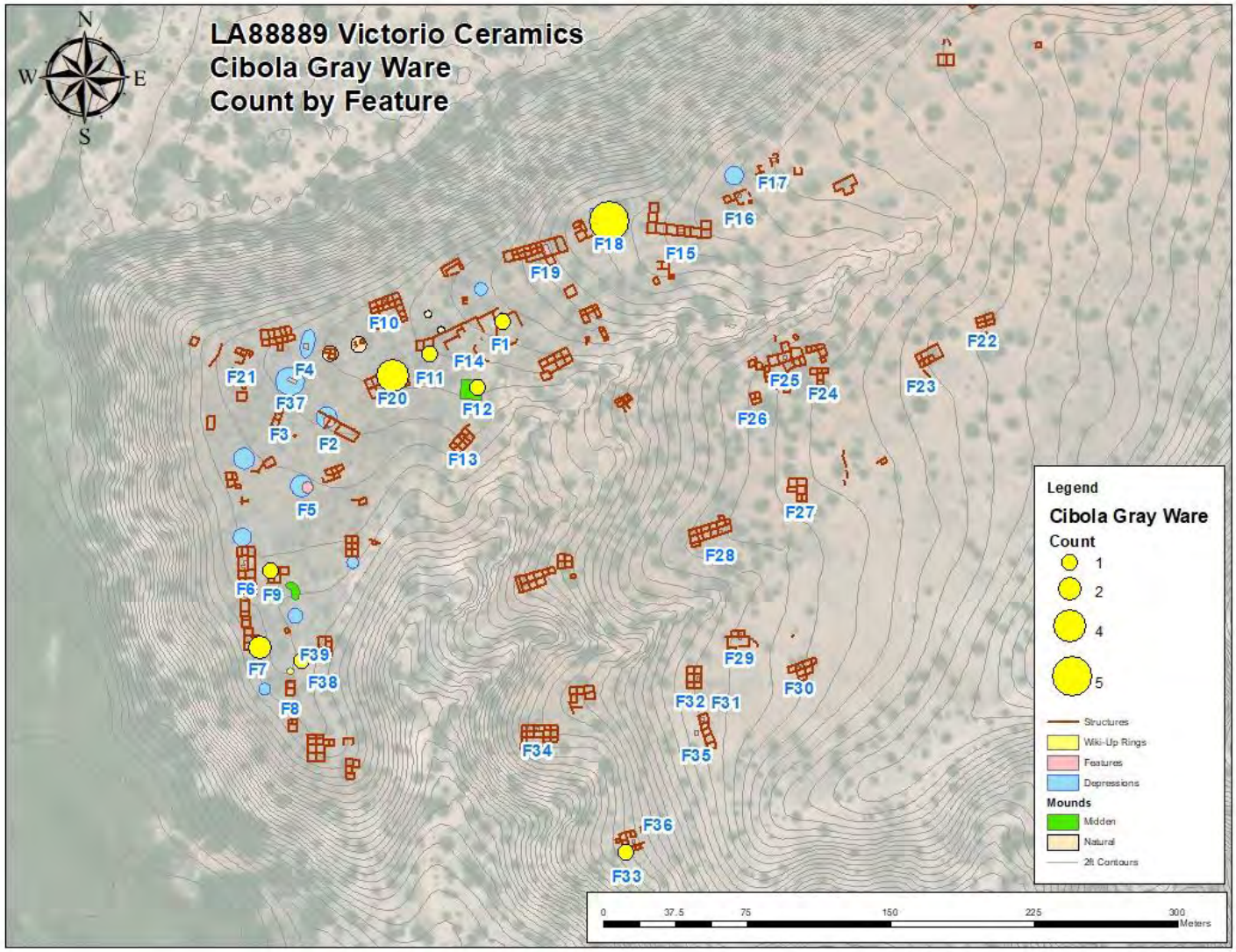

Figure 49. Distribution of Cibola Gray Ware Sherds on LA 88889.

Figure 50. LA 88889: Cibola Gray Ware, Chaco Series, Jar Sherds (07-1187, 07-140).

EL PASO BICHROME

(SOUTHERN JORNADA MOGOLLON BROWN WARE)

Key Attributes. Simple linear elements, singular or multiple groupings of two to three parallel lines, done with black or red pigment and confined to the neck or shoulder of jars and on the interior surface of bowls just below the rim.

Dates. CAP Period/Phase dates: Early Pueblo Period, Mimbres Phase context, A.D. 1000 – 1130. Miller (2005) assigns El Paso Bichrome to the Early Doña Ana Phase (A.D. 1000 – 1150), Jornada Mogollon sequence. Carmichael (1986:69) assigns this type to the Doña Ana Phase and uses Lehmer's (1948) dates of A.D. 1100 – 1200. Whalen (1978:60-63) describes El Paso Bichrome as being transitional between later El Paso Brown and early El Paso Polychrome. He cites a radiocarbon date of Circa A.D. 1000 for late El Paso Brown and places "painted, black/red geometric designs" (aka El Paso Bichrome) in transition around A.D. 1100 (Whalen1978:60, Figure 16). Clearly, its production occurred in that period between late El Paso Brown and El Paso Polychrome.

Basis of the Present Description. There are thirty-five sherds of El Paso Bichrome in the Cañada Alamosa assemblage (Table 10). There are four sherds from the Kelly Canyon Site (LA 1125), six from the Pinnacle (LA 2292), twenty-four from the Victorio Site (LA 88889), and one sherd from the Montoya Site (LA 88891). CAP Period/Phase contexts for El Paso Bichrome indicate that at the Kelly Canyon Site one sherd was located in context in the Socorro Phase (Early Pueblo Period, A.D. 1100-1200) strata and three other sherds were recovered from a mixed Socorro/ Tularosa phase context near the surface and are considered to be in context. Figures 51-54 present the distribution of the type on the four sites. Figures 55-59 display representative sherds.

See also Lehmer (1948), Whalen (1978:60), Human Systems Research Technical Manual (1973), and Mills (1988:164-165).

Table 10. Count of El Paso Bichrome by Site.

Type	1125	2292	88889	88891	Grand Total
El Paso Bichrome	4	6	24	1	35

Construction. Hand coiling and scraping.

Paste. Soft and friable; Color ranges from uniform reddish brown to black; carbon streaks are very common with black to dark brown cores sandwiched between reddish brown edges. Texture ranges from coarse to fine. Temper includes angular

fragments of various sizes of opaque igneous rock, typically rhyolite or granite, and quartz and feldspars. Depending on particle size as well as the amount of deterioration of the surfaces, temper may or may not protrude the surface.

Surface color. Ranges from reddish brown to medium brown and is unslipped.

Surface finish. Interior and exterior surfaces of jars (and presumably bowls) are moderately to well smoothed, wiped, or floated, but in all cases with some visible striae. Polish on jar exteriors and bowl interiors can be intermittent to uniform but it is rarely lustrous.

Vessel Forms. Vessel forms may be limited to jars only as bowl forms go unreported. Vessel shapes are similar to those described for Late El Paso Brown (Whalen 1978:60-63) and include jars with a broad, open orifice and a short, direct neck, and may include hemispherical bowls.

Rims on these vessels are direct with rounded or flattened at the rim lip. Rims are not painted.

Decoration. El Paso Bichrome is distinguished from all other El Paso Brown Wares by the presence of simple linear elements located below the rim and on the neck portion of jars. This linear decoration occurs in either red pigment (iron based mineral pigment) or black (plant based organic pigment), but never both colors on the same vessel. There may be one linear element or as many as three, and they occur as a single unit design with the linear element all parallel to one another. Multiple unit designs on a single vessel likely do not occur.

Paint. Two types of paint pigment were utilized separately, never together, on individual vessels. Iron based mineral pigment that ranges in color from a deep red to an orangish red. Plant based organic pigment that ranges in color from a deep black to a washy grayish black.

Neutron Activation Analysis. Sherds of El Paso Bichrome and Polychrome were produced in a wide-ranging number of locations in the Tularosa basin and adjacent areas to include the west slope of the Sacramento Mountains, the eastern and centra Hueco Bolson, the San Andres Mountains, and from the Hueco Bolson/southern Tularosa Basin (Ferguson et al. 2024).

Remarks. Unless sherds occur with the distinct red or black linear elements are observable within an assemblage, El Paso Bichrome will be lost within a sea of undifferentiated El Paso Brown. Likewise small sherds of El Paso Bichrome will

be lost in an assemblage that also includes unslipped and unpainted body sherds of El Paso Polychrome.

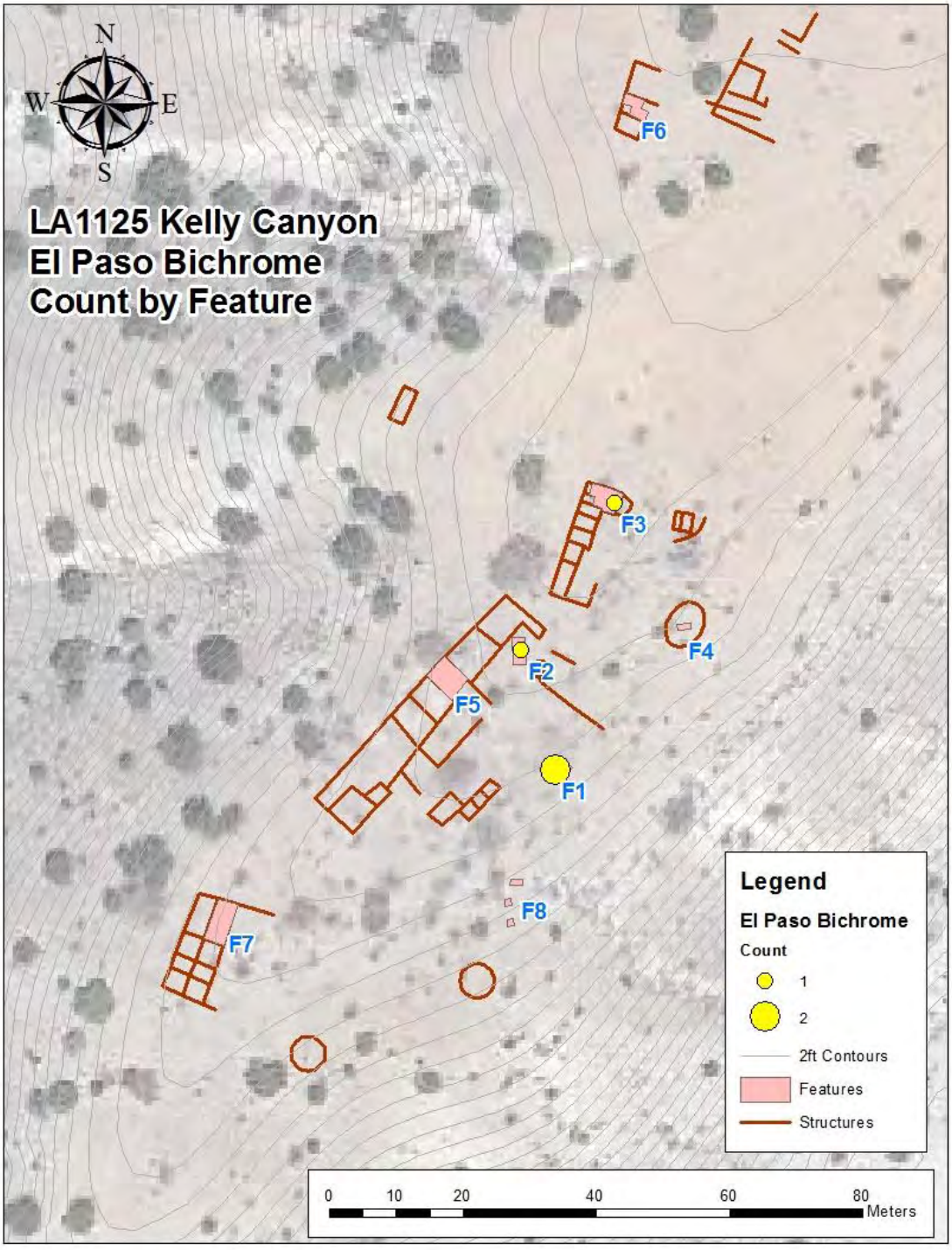

Figure 51. Distribution of El Paso Bichrome Sherds on LA 1125.

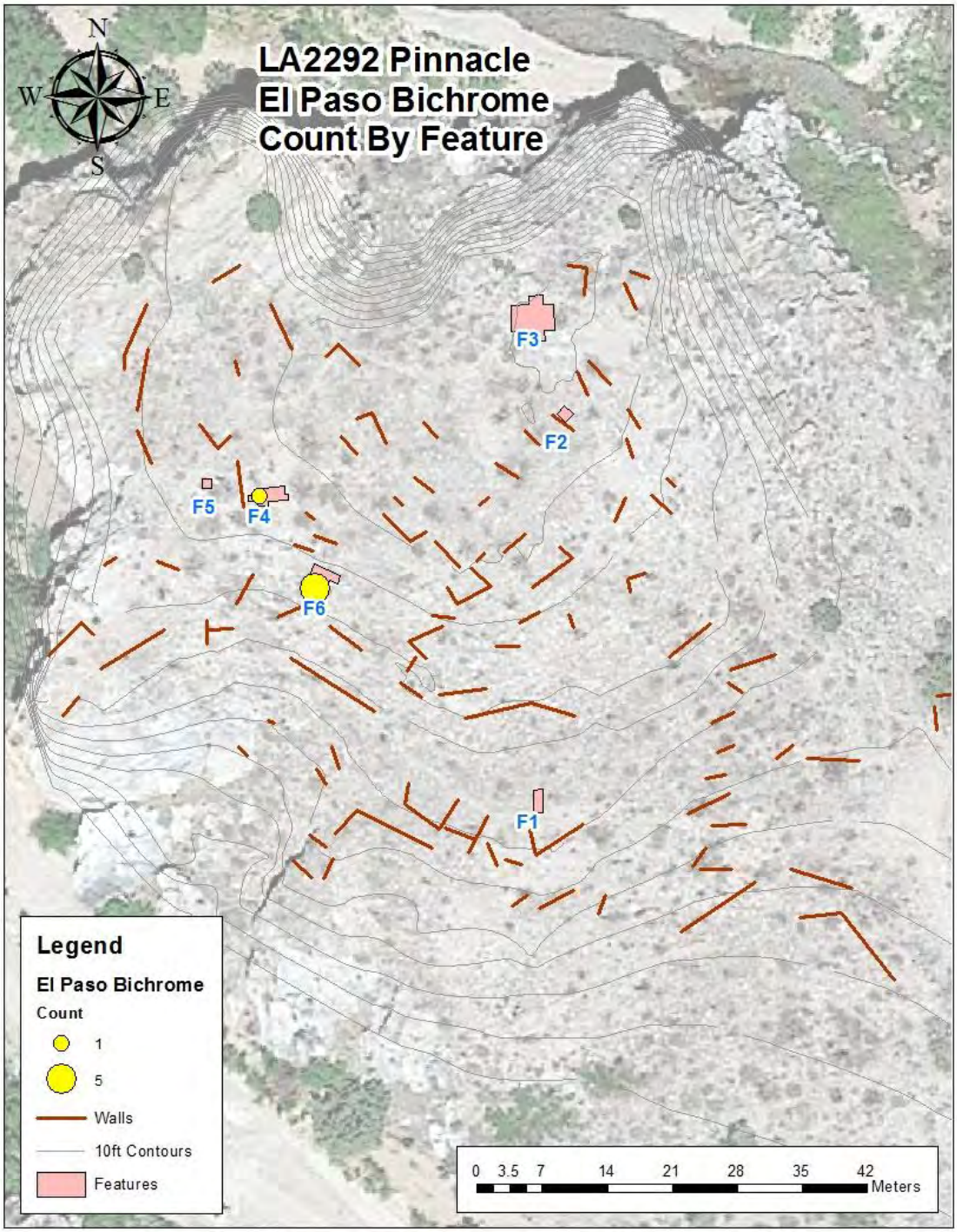

Figure 52. Distribution of El Paso Bichrome Sherds on LA 2292.

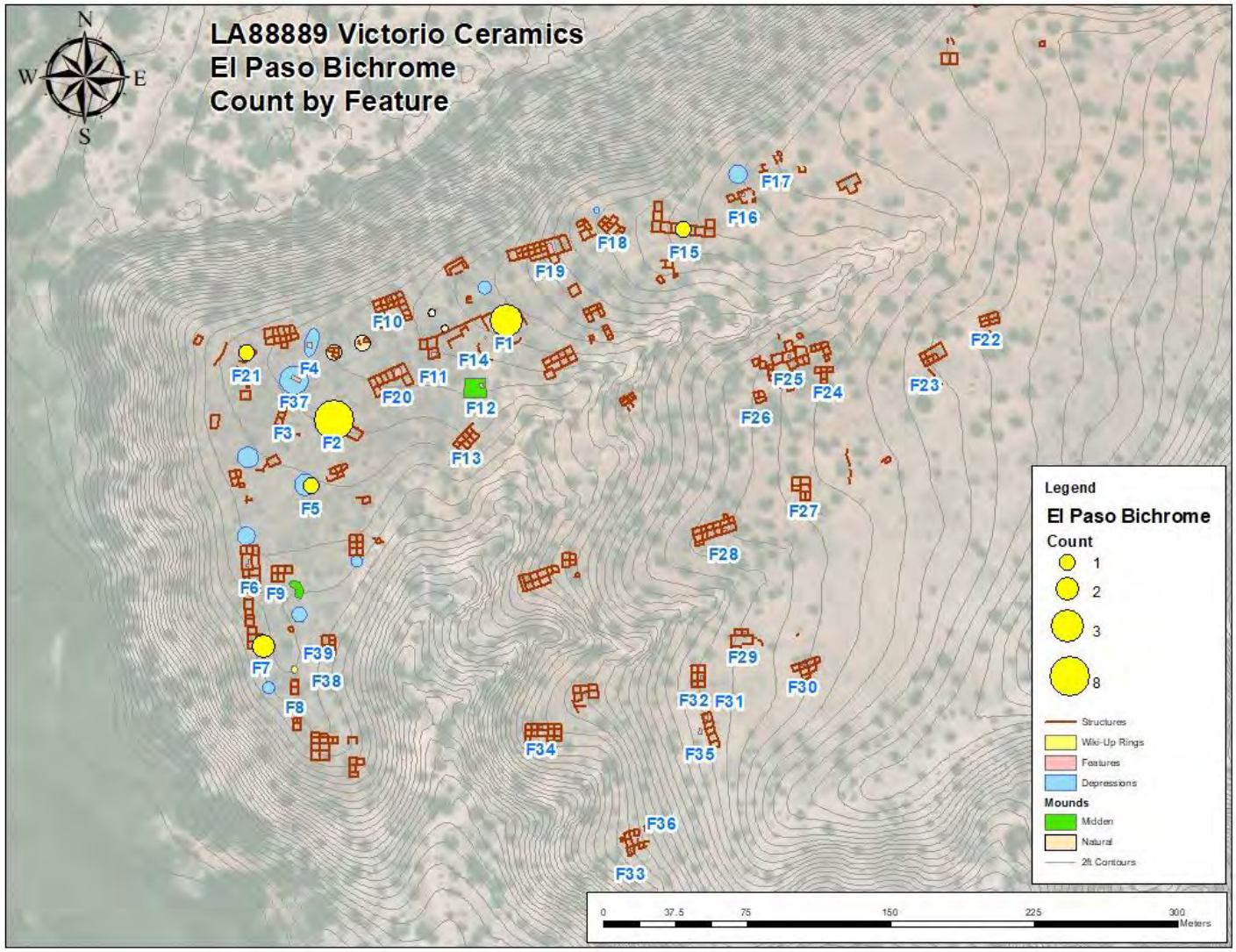

Figure 53. Distribution of El Paso Bichrome Sherds on LA 88889.

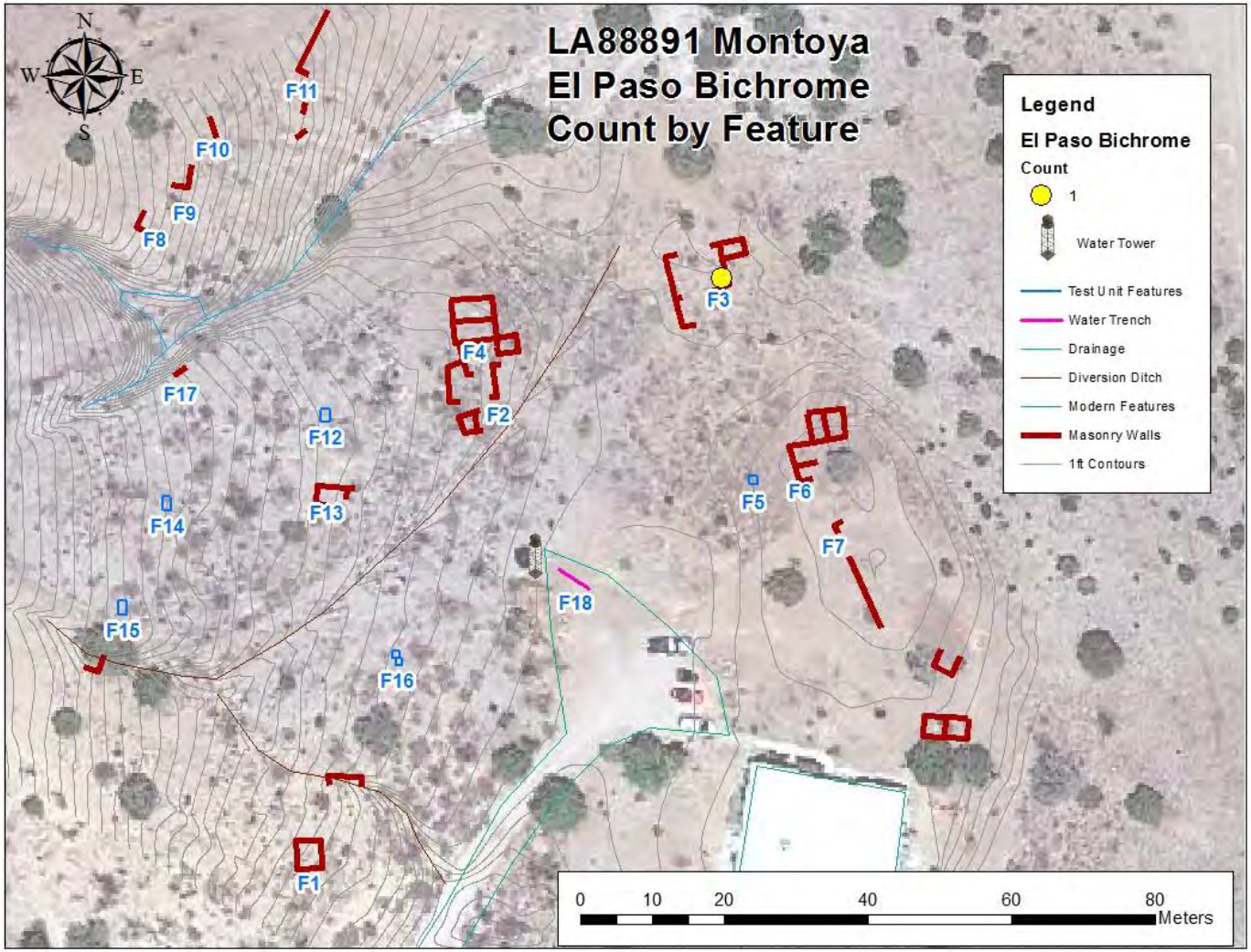

Figure 54. Distribution of El Paso Bichrome Sherds on LA 88891.

Figure 55. LA 88891: El Paso Bichrome Jar Sherd (01-110).

Figure 56. LA 1125: El Paso Bichrome Jar Sherd (02-135).

Figure 57. LA 1125: left to right- El Paso Bichrome Jar Rim Sherd El Paso Bichrome Jar Body Sherd (03-593, 03-597).

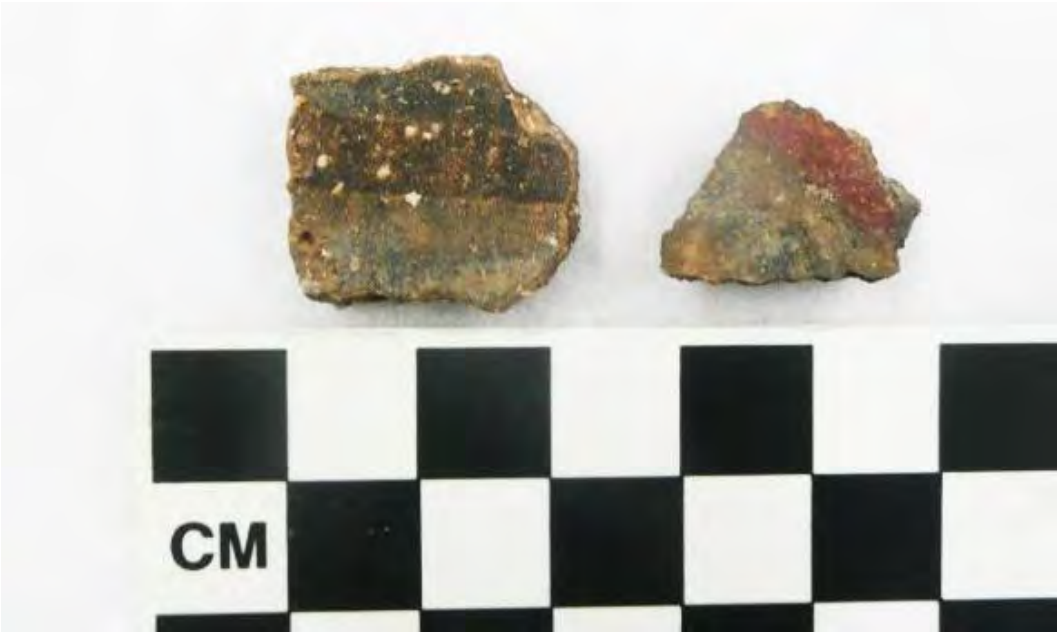

Figure 58. LA 88889: El Paso Bichrome Jar Sherds (07-534 and 06-532).

Figure 59. LA 2292: El Paso Bichrome Jar Sherds (04-453, 04-398).

EL PASO BROWN

(SOUTHERN JORNADA MOGOLLON BROWN WARE)

Key Attributes. Plain, unslipped light brown/medium brown/reddish brown colored surfaces that erode easily to expose underlaying temper material; two distinct rim styles including a pinched rim (Early El Paso Brown) and a direct rim with flat or rounded rim lip (Late El Paso Brown).

Dates. Accepted: A.D. 200/400 – 700 for early rim style (pinched) El Paso Brown, and A.D. 950 -1150 for the later rim style (rounded) El Paso Brown. CAP period dates: Based on five late style El Paso Brown rims–Late Pit House Period, circa A.D.675-750/800 through the Early Pueblo Period (Socorro Phase), A.D. 1130 – 1200 and Late Pueblo Period (Tularosa Phase), A.D. 1200 – 1290. See *Remarks* below.

Basis of the Present Description. Twenty-two sherds of El Paso Brown were recovered (Table 11) from the Victorio Site (LA 88889), no sherds of the type were found on the Kelly Canyon Site (LA 1125), Pinnacle (LA 2292) or the Montoya Site (LA 88891). Figure 60 displays the distribution of the type on the Victorio Site. Figures 61 and 62 display representative sherd. See also Lehmer (1948), Human Systems Research Technical Manual (1973), Whalen (1978:60), Carmichael (1986), Mills (1988), and Perttula et al. (1995).

Table 11. Count of El Paso Brown by Site

Type	1125	2292	88889	88891	Grand Total
El Paso Brown			22		22

Construction. Hand coiling and scraping.

Paste. Soft and granular; medium brown to reddish brown color frequently with a dark brown to black carbon streak. Temper consists of prepared detritus of igneous material containing granite with feldspar and quartz.

Surface Color. Ranges from reddish brown to medium brown and is always unslipped.

Surface Finish. Interior and exterior surfaces of all vessels are moderately to well smoothed, wiped, or floated, but in all cases with some visible striae and drag marks. Polish on jar exteriors and bowl interiors can be intermittent to uniform but it is rarely lustrous. Surfaces show a range in degree of smoothing. Surfaces can be rough with visible scraping striae and undulating surfaces. The surface looks and

feels gritty with visible temper. On the other hand, El Paso Brown may have surfaces that are nicely smoothed and finished with polishing. On whole vessels, polishing striae are noted to be perpendicular to the rim of the vessel.

Vessel Forms. Hemispherical bowls, necked jars, and neckless jars (seed jars). There are two rim styles, found predominately on jar forms, that have chronological e. Early El Paso Brown, dating circa A.D. 200/400 – 1000 (Perttula et al. 1995:212-213), is characterized by a direct and pinched rim that has been narrowed to a point at the lip. Later El Paso Brown, dating circa A.D. 1000 – 1150, (Perttula et al. 1995:212-213), has a direct rim with uniform thickness to the lip which is either rounded or flattened. Five rims of El Paso Brown from the Victorio Site (LA 88889) assemblage were identified as being the Late El Paso variety of rim style.

Decoration. None

Paint. None.

Remarks. Five rounded, late style El Paso Brown rims were recovered from the Victorio Site (LA 88889). One of these rims was found in Late Pit House period (San Francisco Phase) context dating A.D. 675 – 750, however, this sherd is thought to not be in good context as it was found in a level immediately below a Tularosa Phase floor and in association with eleven sherds of undifferentiated El Paso Polychrome. One rim was found in the Early Pueblo Period, Socorro Phase context, dating A.D. 1100 – 1200 while the other three were in a Late Pueblo Period, A.D. 1200 – 1300 (Tularosa Phase) context. The rounded late rim style of El Paso Brown is associated with Late Pithouse through the Early Pueblo Periods.

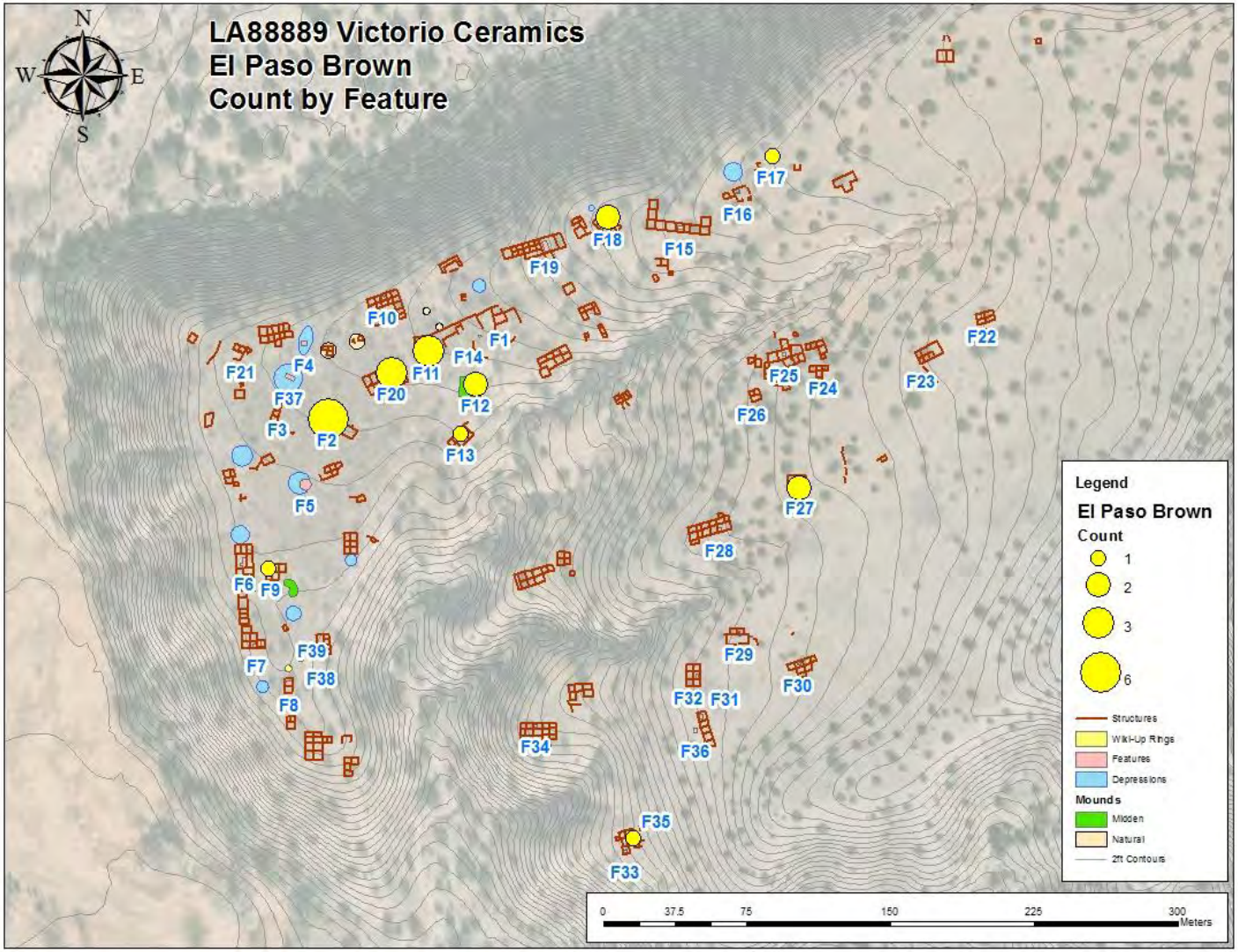

Figure 60. Distribution of El Paso Brown Sherds on LA 88889.

Figure 61. LA 88889. El Paso Brown Bowl Rim and Cross Section of the Direct Rounded Rim (08-1271).

Figure 62. LA 88889: Sherds of Undifferentiated El Paso Brown (06-664).

EL PASO POLYCHROME

(SOUTHERN JORNADA MOGOLLON BROWN WARE)

Key Attributes. A polychrome ware consisting of black organic pigment in combination with red mineral-based pigment on a natural reddish-brown surface; bold and complex geometric designs; two rim styles on jars include the earlier thickened rim and the later everted rim.

Dates. Accepted: A.D. 1200 – 1300 for jars with thickened rims, A.D. 1300 – 1400 for jars with everted rims (Whalen 1978:60). Early El Paso Polychrome A.D. 1150-1275/1300 (Late Doña Ana Phase), Late El Paso Polychrome (El Paso Phase) A.D. 1275/1300-1450 (Miller 1995; Miller 2005; Miller and Kenmotsu 2004). CAP Period/Phase dates: Late Pueblo Period, Tularosa, Magdalena, and Early Glaze phases. Also found in Socorro through Tularosa phases A.D. 1130 – 1290. The two early style rims recovered from the Kelly Canyon Site were found in the Socorro-Tularosa Phase contexts. At the Pinnacle, five sherds were in the Magdalena Phase temporal context, A.D. 1250 – 1290, while twenty-one early style rims were in the glaze-mixed context dating A.D. 1300 – 1400 but are considered to be intrusive. Early style El Paso Polychrome rims (N=10) were predominately in the Tularosa Phase temporal context on the Victorio Site while other early style rims were in the Tularosa-Mixed (N=2), and Socorro-Tularosa phases (N=1). The three late style rims from Pinnacle were only found in the glaze-mixed context. The late style rim from the Victorio Site was found in an upper-level mixed context.

Basis of the present description. There are fifty-one rim sherds of El Paso Polychrome in the Cañada Alamosa assemblage (Table 12.). Two early style rims are from the Kelly Canyon Site (LA 1125) were found, twenty-six early style rims and three late style rims from the Pinnacle (LA 2292), nineteen early style rims and one late style rim from Victorio Site (LA 88889) and no rim sherds of El Paso Polychrome were recovered from the Montoya Site (LA 88891). Figures 63-66 display the distribution of this type on the sites. Figures 67-92 display images of representative sherds. See also Stallings (1931), Hawley (1936), Lehmer (1948), Human Systems Research Technical Manual (1973), Whalen (1978), Carmichael (1986); Seaman, Doleman, and Chapman (1988), and Perttula et al. (1995).

Table 12. Count of El Paso Polychrome by Style and Site.

Type	1125	2292	88889	88891	Grand Total
Early El Paso Polychrome	2	26	19		47
Late El Paso Polychrome		3	1		4

Construction. Hand coiling and scraping.

Paste. Soft and friable; Color ranges from uniform reddish brown to black; carbon streaks are very common with black to dark brown cores sandwiched between reddish brown edges. Texture ranges from coarse to fine. Temper includes angular fragments of various sizes of opaque igneous rock, typically rhyolite or granite, and quartz and feldspars. Depending on particle size as well as the amount of deterioration of the surfaces, temper may or may not protrude the surface. Speaking of protruding temper, the colloquial term "popcorn temper" was first coined during surveys in the late 1980s in the Jornada region of southern New Mexico where the term was used to describe the appearance of temper found in El Paso Brown Wares. "Popcorn temper," however, is not observed consistently throughout the entire Jornada Mogollon area where El Paso Brown Wares were produced and distributed. Temper in any of the El Paso Brown Wares can be quite fine and it can be quite coarse.

Surface color. Ranges from reddish brown to medium brown and is unslipped. Two different pigment colors used for designs were laid on top of the natural brown surface color creating the look of a "polychrome style." This color combination on El Paso Polychrome does not make a true polychrome by definition, wherein only two colors were actually applied to the surface. Substantial portions of both jars and bowls were left unpainted and unslipped.

Surface finish. All surfaces of both bowls and jars are moderately to well smoothed, wiped, or floated, but in all cases with some visible striae. The undecorated portions of jar interiors and bowl exteriors are moderately smoothed and unpolished and usually show scraping stria. Polish on jar exteriors and bowl interiors can be intermittent to uniform but it is not commonly lustrous.

Vessel Forms. Jars and large ollas dominate; bowl forms also occur but bowls with crenulated rims, effigies and ladles are rare forms. Vessel wall thickness is relative to vessel size. Large jars may have walls as thick as one centimeter. The antithesis to this is extremely thin vessel walls of two to three millimeters thickness in smaller bowls and jars.

Rims on bowls are direct with rounded to squared-off rim lips that tend to have the same thickness as the vessel wall, although the terminus end of the rim may be somewhat thickened. There are two rim styles for jars which are chronologically sensitive. The early style, circa A.D. 1200-1300 (Whalen 1978:60; Carmichael 1986:79), is a direct rim, straight-up off of the vessel wall and frequently with

thickening at the terminus end of the rim. Whalen calls this a wedge-shape (1978:63). The rim lip on the early style rim may be rounded to flat. The later style rim, circa A.D. 1300-1400 (Whalen 1978:60; Carmichael 1986:79), is characterized by a flared/everted rim style that turns outwards off of the vessel wall with a terminus end that can appear somewhat bulbous.

Decoration. Designs are rendered in a bold, wide-line manner. Rectilinear geometric designs, from simple to highly complex layouts, occur from the edge of the exterior rim lip, down the neck and onto the shoulder of jars and the entire interior surface of bowls. Pigment in the form of a single red or black linear element is applied to the interior surface just below the rim on jar rims. Occasionally, this single linear element is seen just below the rim on the exterior surface of bowl forms. Although not common, curvilinear motifs and abstracted life-forms were used. Draftsmanship varies from crude to fine. When the red and black pigments were applied, they sometimes overlap giving the impression of sloppiness and careless drafting. Unfortunately, El Paso Polychrome has been described as crude and not particularly attractive (Stallings 1931:6; Burgett 2006:158). LeBlanc (1982:117) described El Paso Polychrome as "the least esthetically pleasing pottery ever produced in the Southwest." It is this author's opinion that comments like these are overly subjective and that some researchers have not seen enough whole vessels of El Paso Polychrome to justify such a statement. Quite frankly, El Paso Polychrome reflects a design style that is original and representational of the time and place in which it was created, and it has a simple and bold beauty.

Paint. Black organic/carbon-based pigment and red iron/likely hematite-based pigment. El Paso Polychrome was defined as a polychrome style (Stallings 1931) by the use of the black and red pigments on what was thought to be a brown slipped surface. However, El Paso Polychrome is not slipped and the brown color is the natural color of the fired clay. A polychrome vessel results from the application of three or more colors. El Paso Polychrome is actually a bichrome because only two colors, red and black, were applied to create designs.

Neutron Activation Analysis. Sherds of El Paso Polychrome were produced in a wide-ranging number of locations in the Tularosa basin and adjacent areas to include the west slope of the Sacramento Mountains, the eastern and central Hueco Bolson, the San Andres Mountains, and from the Hueco Bolson/southern Tularosa Basin (Ferguson et al. 2024).

Remarks. Both Lehmer (1948) and Whalen (1978:79) have made observations that rim profiles on El Paso Brown Wares changed through time. To objectively quantify these observations of rim finishing, a rim sherd index (RSI) was developed (West 1982) that continues to be applied to assemblages of El Paso Brown Ware rims to place them chronologically in time (West 1982; Carmichael 1986; Seaman and Mills 1988; Russell 2010). The rim sherd index is based on the relationship between rim thickness and wall thickness. Rim thickness is measured at 2mm below the rim lip and wall thickness is measured at 15 mm below the rim unless the rim sherd has an everted and bulbous terminus end (West 1982; Carmichael 1986; Seaman and Mills 1988; Russell 2010). In these cases, rim thickness is measured at the thickest point of the rim, and wall thickness is measured just below the beginning of the "bulge" and the vessel wall. The rim thickness value at the 2mm point on the rim is then divided by the wall thickness value (at the 15mm point or the thickest portion of the rim resulting in the Rim Sherd Index). This calculation results in an RSI value of around 1.00 for direct rims and an RSI value of 1.01 or higher for everted and thickened rims. RSI values of less than 0.99 are associated with pinched or tapered rims (Seaman and Mills 1988:170). Research has shown that lower RSI values indicate earlier ceramic manufacture and higher RSI values indicate later ceramic manufacture (e.g., West 1982; Whalen 1981; 1993, 1994, 1996; Carmichael 1985, 1986; Seaman and Mills 1988).

Most assemblages to which the Rim Sherd Index has been applied have been those in which El Paso Brown Wares, including both plain and painted varieties, have been the most common diagnostic ceramic types. This is not the case in the four sites studied within the Cañada Alamosa Project where El Paso Brown Wares are but a tiny portion of the entire assemblage. The Pinnacle (LA 2292) had no plain El Paso Brown Wares and thirty-five of painted wares of which only twenty-two were rim sherds. This by far was the "largest" assemblage of El Paso Brown Wares. The next largest assemblage was that recovered from the Victorio Site (LA 88889), which had twenty-two plain brown El Paso sherds and forty-four painted sherds of which only eight were rim sherds. The Kelly Canyon Site (LA 1125) had no El Paso plain brown sherds and six painted with only three rim sherds in the assemblage. Although the Montoya Site had no El Paso plain brown sherds and only one painted sherd, there were no rim sherds. Given the very small sample sizes from the sites and the paucity of rim sherds, only El Paso Polychrome jar rim sherds, and only those from the Pinnacle were studied using the Rim Sherd Index. The small rim sherd sample from Pinnacle and the presence of their RSI values helped to provide further temporal insight for the site.

RSI values for both direct rims and everted rims from the Pinnacle were reduced to a single site mean value which is 1.382222. This site mean RSI value from the Pinnacle was compared with the site mean RSI data derived from other larger studies (Carmichael 1986:81, Seaman and Mills 1988:178) to arrive at a relative "RSI age" for the Pinnacle El Paso Polychrome jars sample. El Paso Polychrome with RSI mean values of 1.00-1.12 are assigned to the Doña Ana Phase (earlier) while those sherds with an RSI mean value of 1.31-1.43 are assigned to the later El Paso Phase (Carmichael 1986:81). Similarly, site RSI means from the Borderstar-85 Survey (Seaman and Mills 1988:178) place mean values of 0.79-1.07 within the Doña Ana Phase, and mean values of 1.31-1.43 within the El Paso Phase. The overall site mean-value of El Paso Polychrome sherds of 1.382222 falls within the "later" or El Paso Phase values from both studies. The Pinnacle, although not an El Paso Phase site, certainly falls within accepted dates for the El Paso Phase. This site is multicomponent with the earliest being the Magdalena Phase, *circa* A.D. 1240-1300, and the Glaze Period Phase of A.D. 1300-1350 is the latest.

The RSI values from the twenty-two rim sherds of El Paso Polychrome were also reviewed from the perspective of direct style rims (earlier) verses everted style rims (later) from the Pinnacle and where these might fall within the site's two phases. The mean-value of all direct rims is 1.35, which suggests an association with the later El Paso Phase or in the Pinnacle, with the Glaze Period Phase. This high RSI value seems out of sync with a sample of rims that are "direct" and thought to be earlier than everted rims. There were two direct rims in the sample that didn't quite fit the mold for direct rims. Although these rims were direct and straight-up from the vessel wall, they were both unusually thickened below the rim lip (at the 2mm position). Earlier El Paso Polychrome rims are slightly thickened at the rim, but these two sherds were finished in such a way that one (see image 2000-52) rim-lip was flattened to create a broad, slight flaring-out at the lip that resulted in a high value measured at the 2mm position. The other sherd (2002-7) was unusually thickened below the rim and appeared as a broad wedge in cross-section. At the 2mm position, its RSI value was high at 2.09. Given the aberrant configuration of these two sherds and the high RSI values, they were eliminated from the direct rim sample, resulting in an overall mean RSI value of 1.24 for all direct rims. This value falls slightly below the mean RSI value for direct rims at 1.27 (range 1.00-1.80) identified for Borderstar 85 El Paso Phase necked jars with direct rims (Seaman and Mills 1988:178). With only three sherds of El Paso Polychrome with everted rims from the Pinnacle, the mean RSI value for these was 1.54. This value is slightly higher than the mean RSI value of 1.50 (range 1.04 -2.26) for Borderstar 85 (Seaman and Mills 1988:178). All three of the everted style rims

from the Pinnacle were found in mixed temporal contexts associated with the later Glaze Period Phase. Of the direct rims, four were found in a context directly associated with the earlier Magdalena Phase, while the other six were in the mixed contexts of the later Glaze Period Phase. Even with such a small sample of El Paso Polychrome rims from the Pinnacle, it seems that the RSI values and the "age" derived from these values are chronologically significant. Certainly, both styles are associated with the El Paso Phase, but the direct rims associated with the Magdalena Phase context support the components contemporaneity to the late Tularosa Phase on the neighboring Victorio Site. The three everted rims recovered from the later Glaze Period Phase/mixed contexts are basically in the "right" post A.D. 1300 context. Further, Will Russell (2010) compared RSI values for El Paso Polychrome from the Tularosa Phase contexts at the Victorio Site and the post-Magdalena Glaze period contexts at the Pinnacle to other sites in the Black Range including the Roadmap Site (Schollmeyer, Swanson, and Nelson, n.d.) and Animas Village (Hegmon and Nelson 2018). Russell found that the mean RSI value at Victorio (1.05) is significantly lower (earlier) than that in the glaze context at the Pinnacle (1.63). Given what we know of the chronology of both of these sites, Russell's analysis clearly positions the Victorio Site to be earlier than the Pinnacle and the RSI values do not overlap. In like manner the El Paso Polychrome rims from the earlier Magdalena component appear to be contemporary with those found on the Victorio Site.

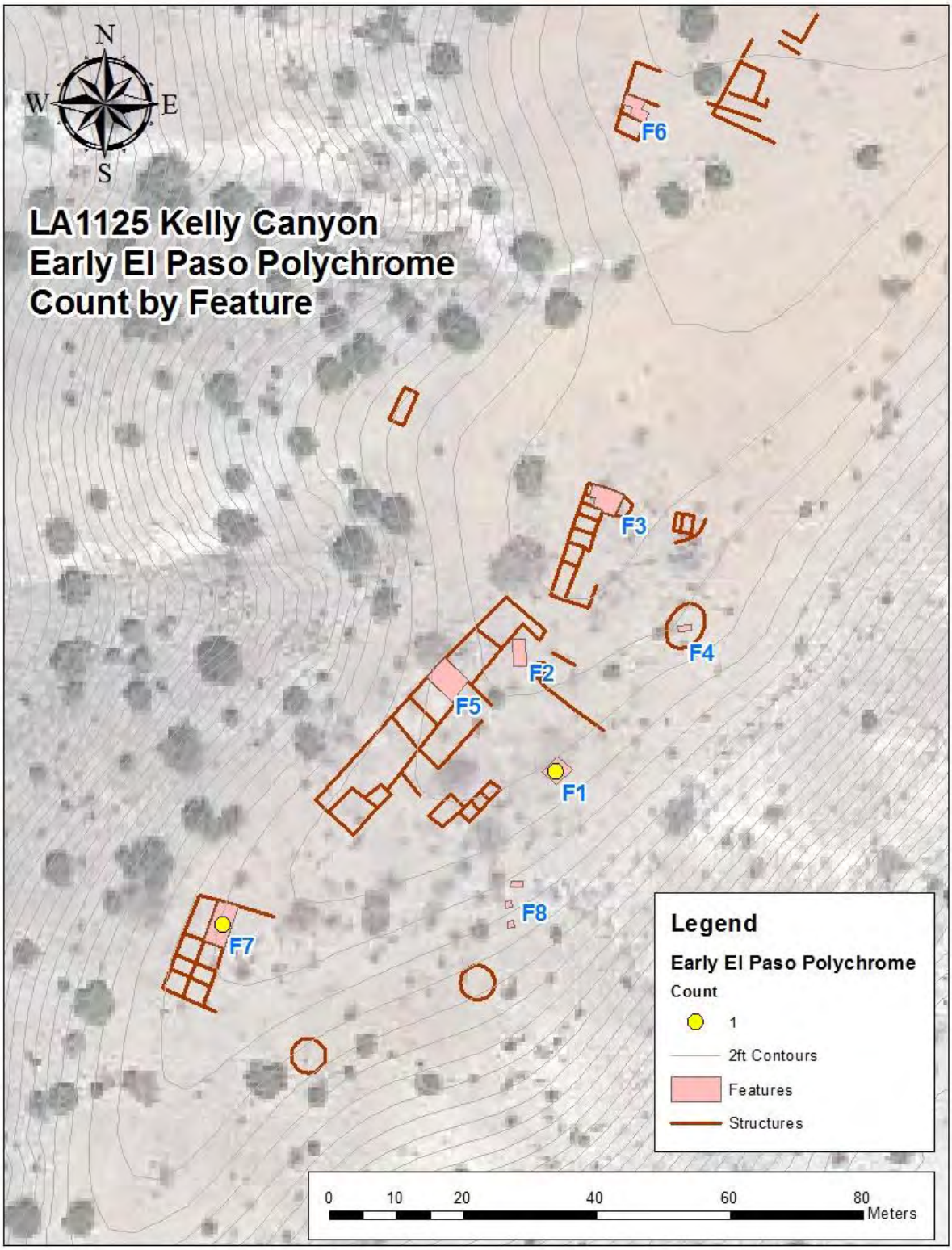

Figure 63. Distribution of Early El Paso Polychrome Sherds on LA 1125.

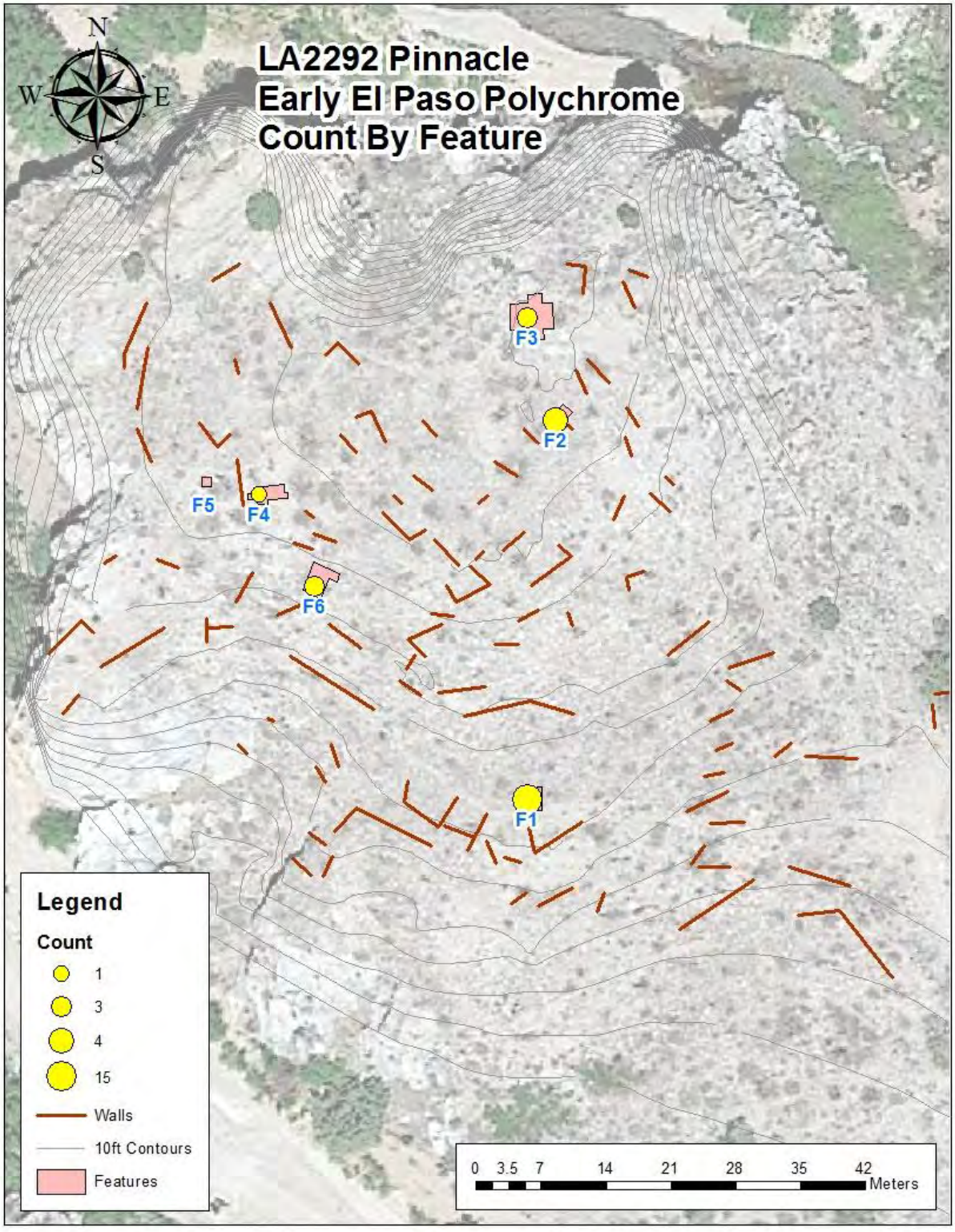

Figure 64. Distribution of Early El Paso Polychrome Sherds on LA 2292.

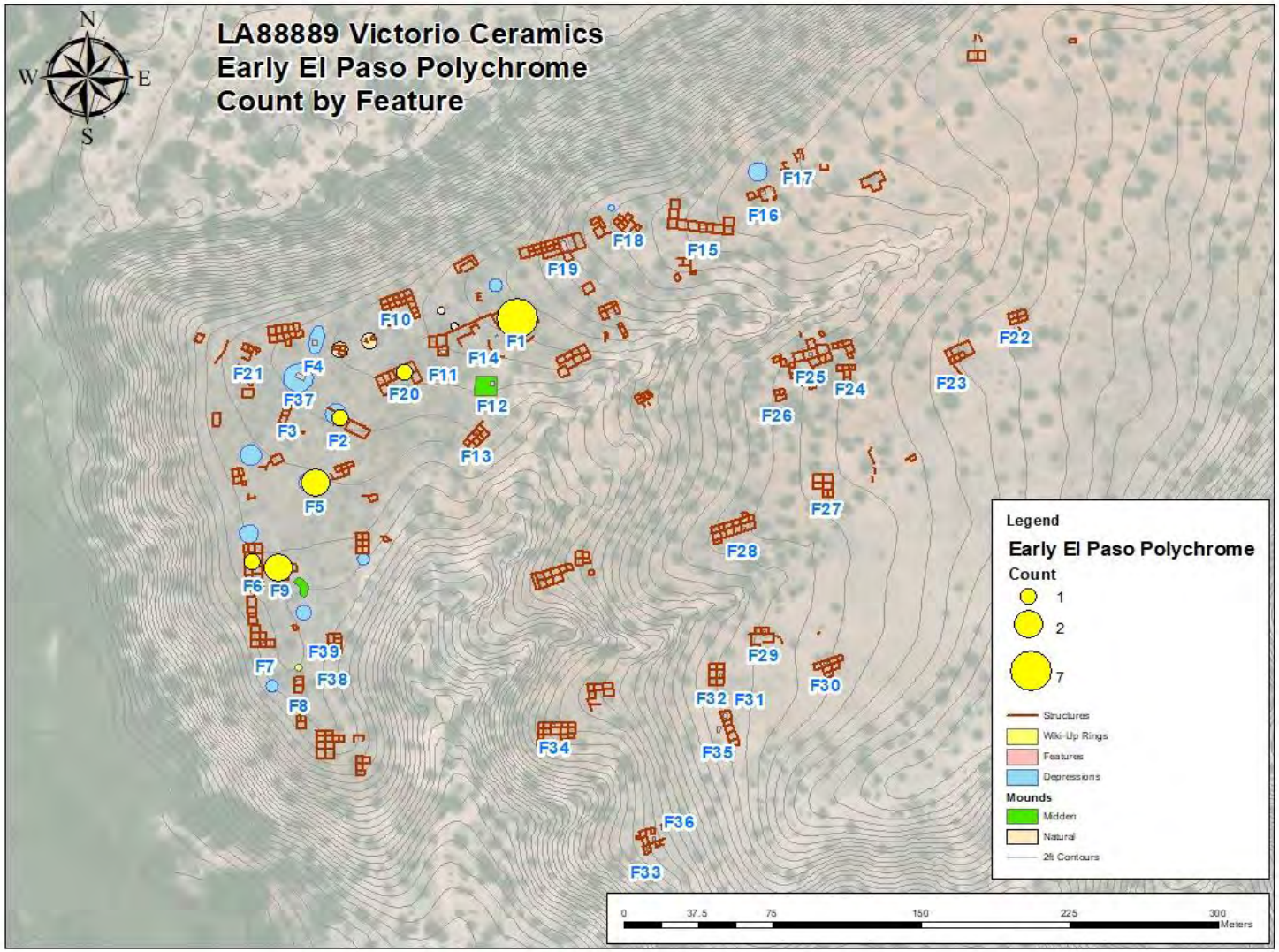

Figure 65. Distribution of Early El Paso Polychrome Sherds on LA 88889.

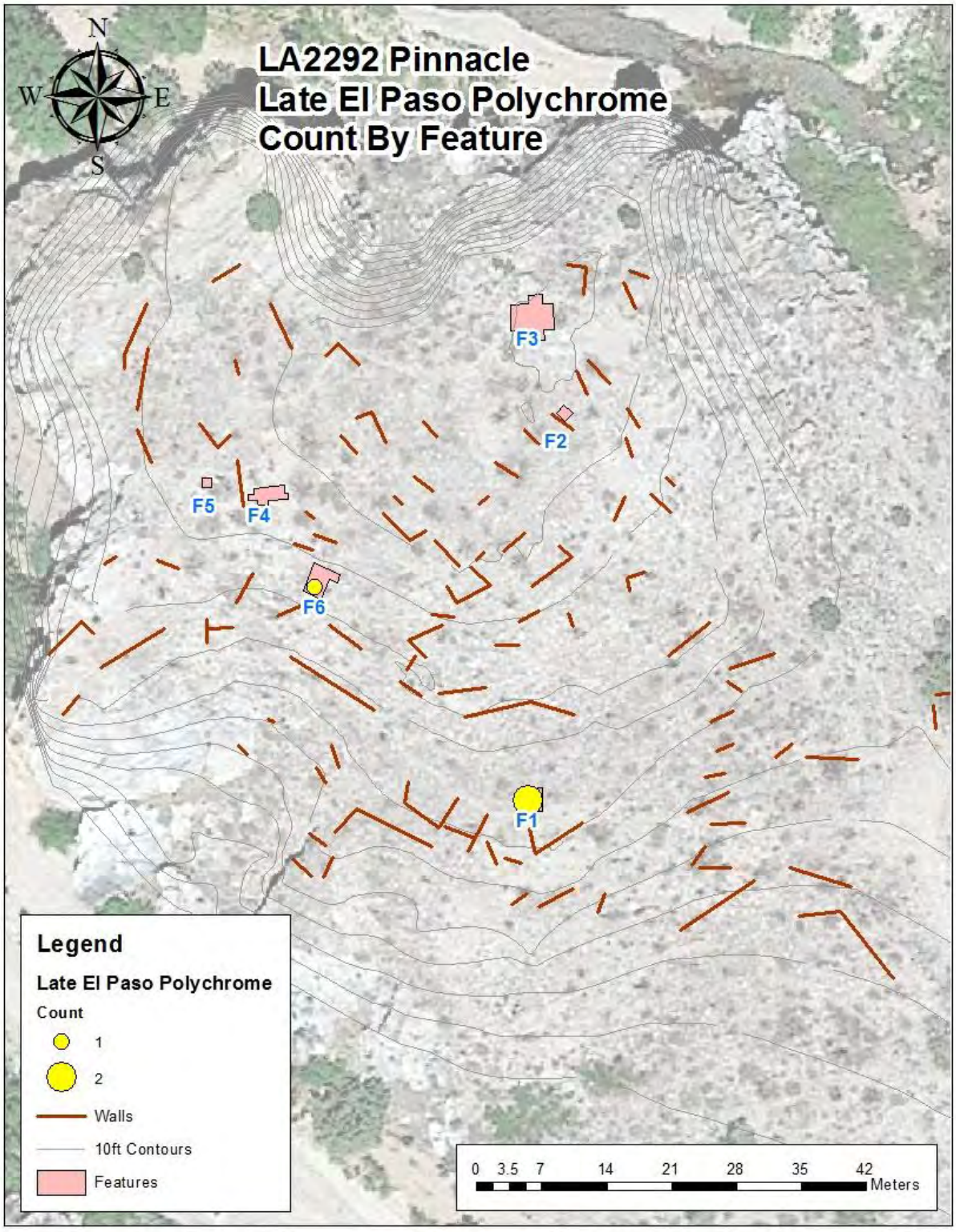

Figure 66. Distribution of Late El Paso Polychrome Sherds on LA 2292.

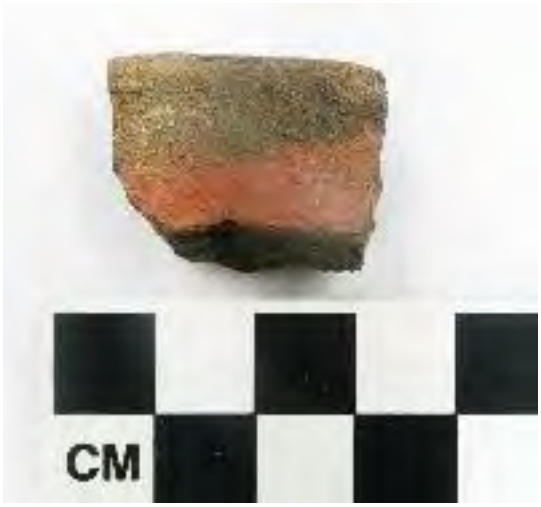

Figure 67. LA 1125: Early El Paso Polychrome Jar Rim (02-226).

Figure 68. LA 1125: Early El Paso Polychrome Jar Rim (03-554).

Figure 69. LA 1125: El Paso Polychrome Jar Body Sherd (02-264).

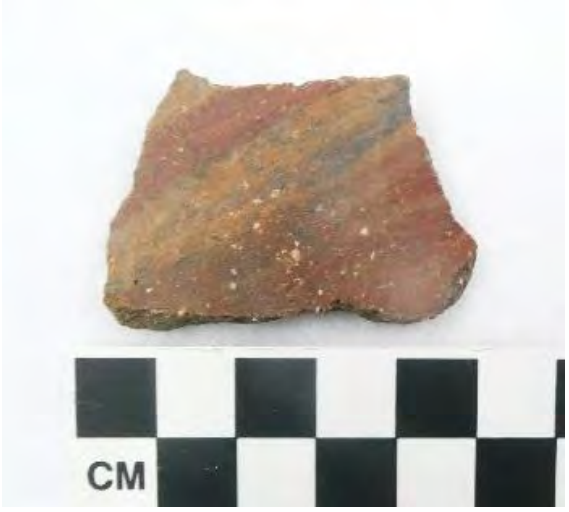

Figure 70. LA 1125: El Paso Polychrome Jar Body Sherd (03-607).

Figure 71. LA 88889: Early El Paso Polychrome Jar Rims, Exterior View (99-282, 99-426, 99-988).

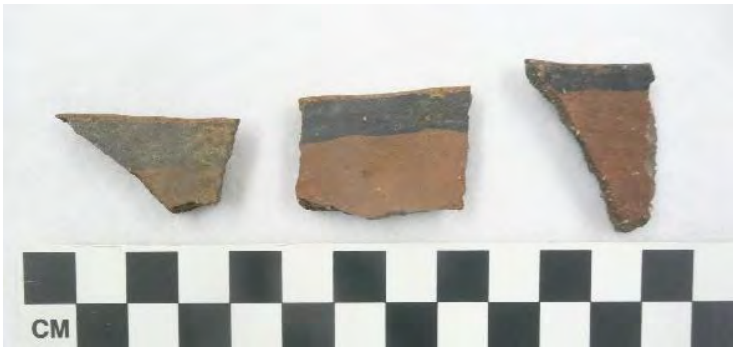

Figure 72. LA 88889: Early El Paso Polychrome Jar Rims, Interior View (99-282, 99-426, 99-988).

Figure 73. LA 88889: Early El Paso Polychrome Jar Rims, Exterior View (05-699, 06-1059, 08-13).

Figure 74. LA 88889: Early El Paso Polychrome Jar Rims, Interior View (05-699, 06-1059, 08-13).

Figure 75. LA 88889: left-Early El Paso Polychrome Jar Rims Exterior View (09-1297, 10-022).

Figure 76. LA 88889: left- Early El Paso Polychrome Jar Rims, Interior View (09-1297, 10-022).

Figure 77. LA 88889: Undifferentiated El Paso Polychrome Jar Body Sherds (09-21, 09-1157, 09-1300, 09-1727).

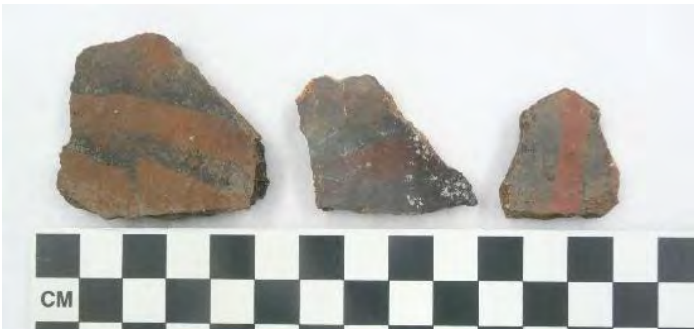

Figure 78. LA 88889: Undifferentiated El Paso Polychrome Jar Body Sherds (08-149, 08-1317, 08-1315).

Figure 79. LA 88889: Undifferentiated El Paso Polychrome Jar Body Sherds (99-179, 99-426).

Figure 80. LA 88889: Undifferentiated El Paso Polychrome Jar Body Sherds (07-25, 07-177).

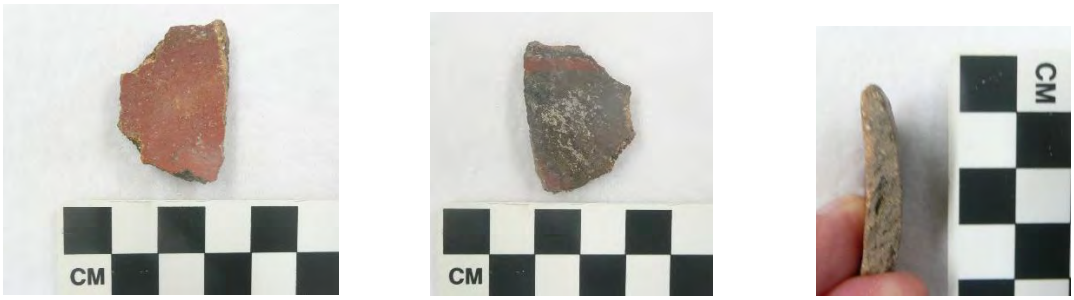

Figure 81. LA 88889: El Paso Polychrome Bowl Rim Sherd (09-505, Exterior Surface, Interior Surface, Cross-Section Showing Rim Configuration).

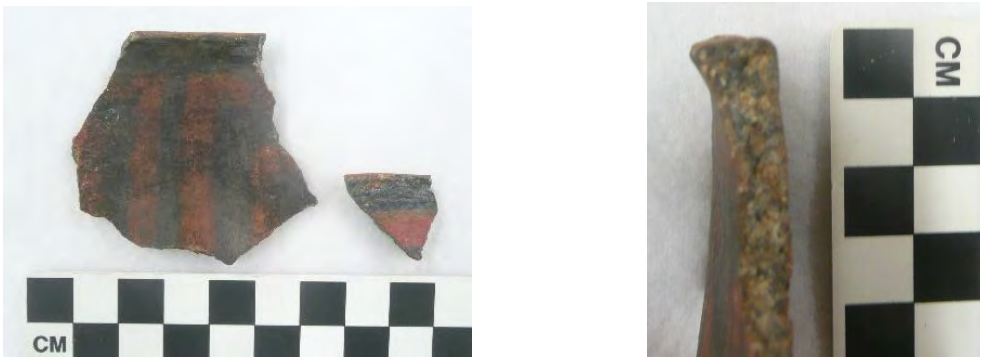

Figure 82. LA 2292: Early El Paso Polychrome Jar Rim Sherds and Wall/Rim Cross-Section Showing Rim Configuration of Large Sherd on the Left (00-52).

Figure 83. LA 2292: Early El Paso Polychrome Jar Rim Sherds and Wall/Rim Cross-Section Showing Rim Configuration of Large Sherd on the Left (01-11) and Its Interior Surface on the Right.

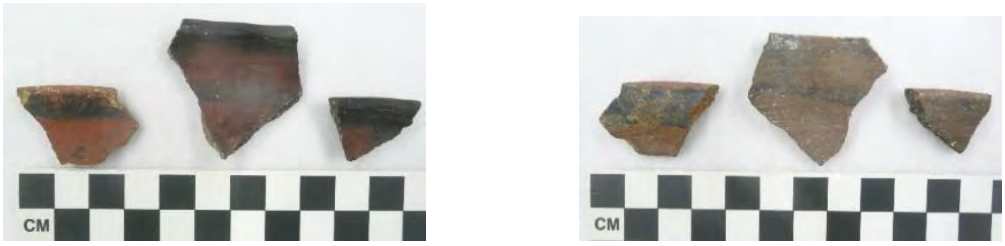

Figure 84. LA 2292: Early El Paso Rim Sherds Showing Exterior Surfaces on Right and Interior Surfaces on the Left (02-455, 02-07).

Figure 85. LA 2292: Late El Paso Polychrome Jar Rim Sherd (02-234, Exterior Surface on Left, Interior Surface Middle, and Wall Cross-Section on Right Showing Rim Configuration).

Figure 86. LA 2292: Late El Paso Polychrome Jar Rim Sherds (04-144 on left, 02-151 on right) Showing Exterior Surfaces, Interior Surfaces (Middle Image) and Wall/Rim Cross-Section of Sherd 02-151 Showing Rim Configuration.

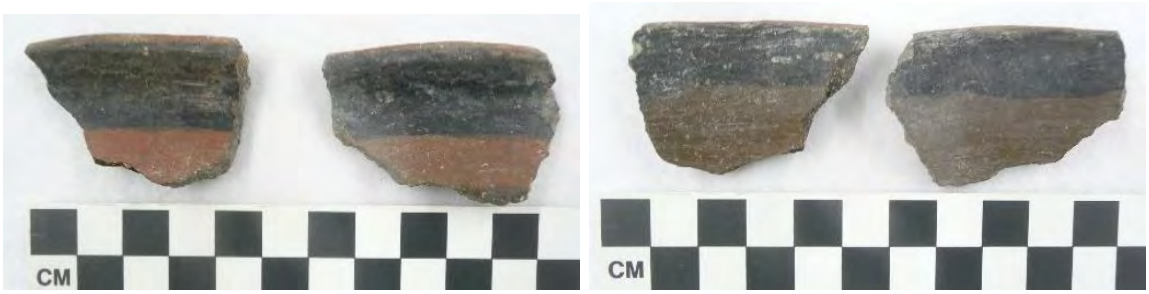

Figure 87. LA 2292: Late El Paso Polychrome Jar Rim Sherds (02-234, 02-1510) Showing Exterior Surfaces on the Left and Interior Surfaces on the Right.

Figure 88. LA 2292: El Paso Polychrome Bowl Rim Sherds (00-320, 02-489) Showing Interior Surfaces on Upper Left, Exterior Surfaces on Upper Right, and Wall/Rim Cross-Sections of Both Rims.

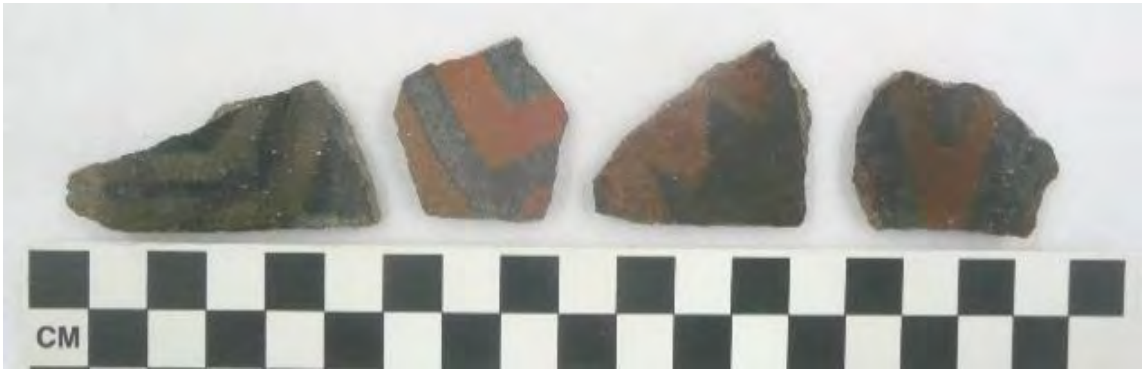

Figure 89. LA 2292: Undifferentiated El Paso Polychrome Jar (l-r: 02-234, 02-201, 02-90).

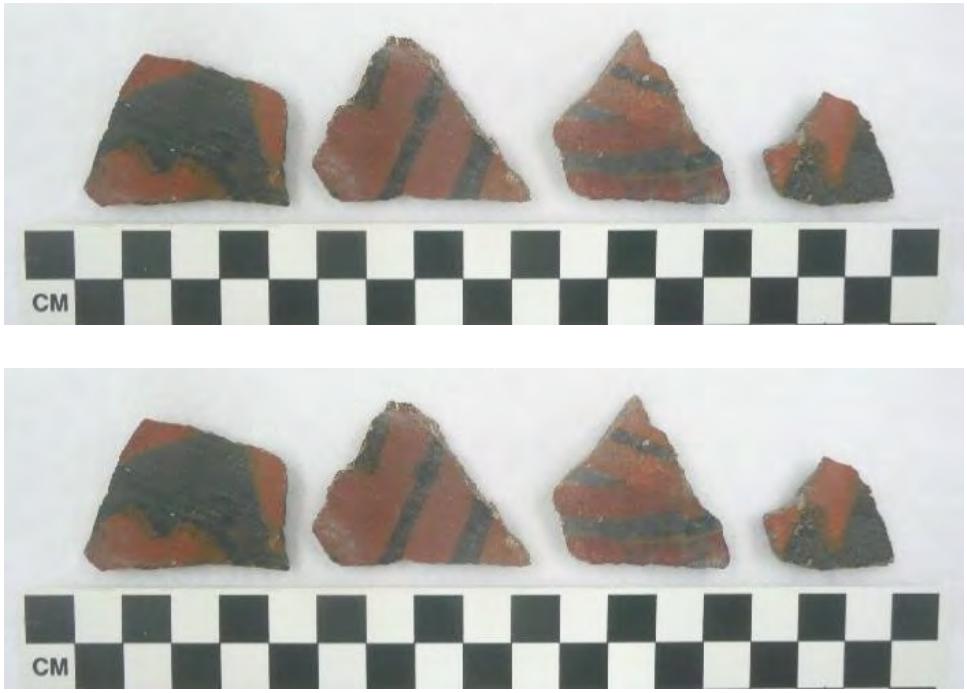

Figure 90. LA 2292: Undifferentiated El Paso Polychrome Jar Body Sherds (l-r: 02-567, 02-441, 02-238, 02-51).

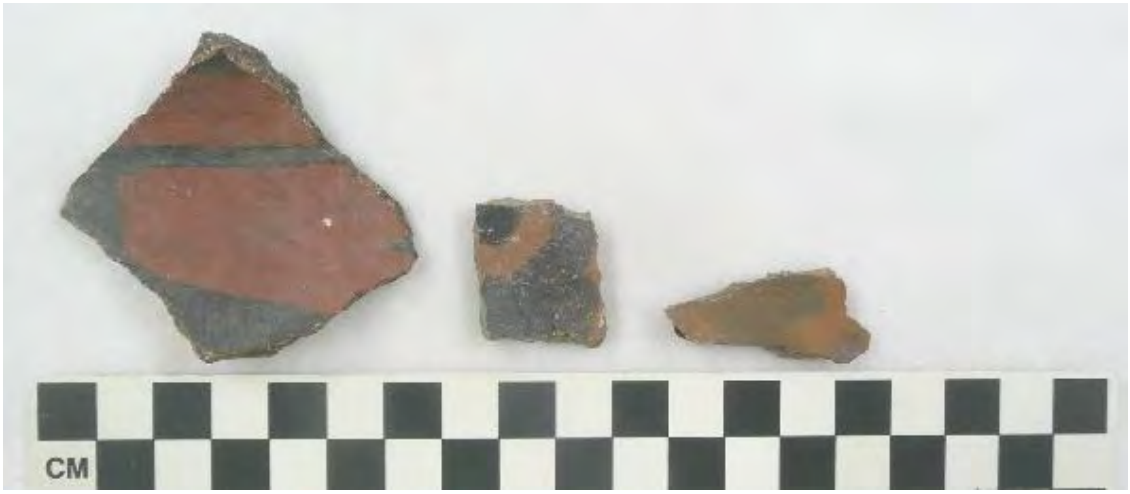

Figure 91. LA 2292: Undifferentiated El Paso Polychrome Jar Sherds (04-126, 04-510, 04-330).

Figure 92. LA 2292: Undifferentiated El Paso Polychrome Sherds (04-496, 04-110, 04-384) Jar.

GALLUP BLACK-ON-WHITE

(CIBOLA WHITE WARE)

Key Attributes. Thin white slip with streaky polish; sherd, sherd and sand, or sand temper; Dogoszhi-style (Colton 1953: 46-47) design featuring multiple bands filled with diagonal hatching with occasional use of solid elements.

Dates. Accepted: circa A.D. 1030 – 1150/1200. CAP Period/Phase dates: Late Pueblo Period; at the Pinnacle, the one sherd of Gallup Black-on-white was recovered on the Early Glaze phase temporal context, A.D. 1300 – 1400, and the one sherd from the Victorio Site was recovered from a Tularosa Phase context, A.D. 1200 – 1290. Table 13 lists the sherds by site. Figures 93 and 94 display distributions of the type by site. Figures 95 and 96 present representative sherds.

Basis of the Present Description. Only two sherds of Gallup Black-on-white were identified in the assemblage, one was found on the Pinnacle (LA 2292) and the other from the Victorio Site (LA 88889). See also Hawley (1936), Windes (1977), Hays-Gilpin (1998), and Windes and McKenna (2009).

Table 13. Count of Gallup Black-on-white by Site.

Type	1125	2292	88889	88891	Grand Total
Gallup Black-on-white		1	1		2

Construction. Hand coiling and scraping.

Paste. The paste is hard with a texture that ranges from medium to fine; color ranges from light gray to white; temper may be prepared sherd, sherd and sand, or sand alone.

Surface Color. A thin, chalky white slip was applied in either a uniform or streaky manner to the interiors of bowls and sometimes to the exterior surface as well, and sometimes no slip was applied. Jars have slip on the exterior surface and the interior surface of jar necks.

Surface Finish. Interior and exterior surfaces are smoothed and but surfaces will often minor undulations or scrape marks.

Vessel Forms. Bowls, jars, and dippers were produced. Bowl forms have direct, straight-sided walls, and rims that range from round to flat.

Decoration. The design system of Gallup Black-on-white is of the Dogoszhi style seen in Tusayan White Ware. It is dominated by the use of multiple parallel

framing bands filled with closely spaced diagonal hatching. The line-width of both band framing lines and hachure lines is the same and ranges from 2-4 mm width. Occasionally, solid elements (triangles, triangles with pendant dots, ticked lines) are used but do not interlock with hatched designs. The rim lip is left unpainted.

Paint. Iron-based mineral pigment that ranges in color from black to dark brown.

Remarks. The one sherd recovered from the Pinnacle is worked to an oval shape. It was found in a late, glaze-mixed context making one wonder how this relatively early sherd (circa A.D. 1030-1150/1200) was associated with late ceramic material dating to the early 1300s. Although speculative, it may be that the sherd of Gallup B/w was someone's heirloom.

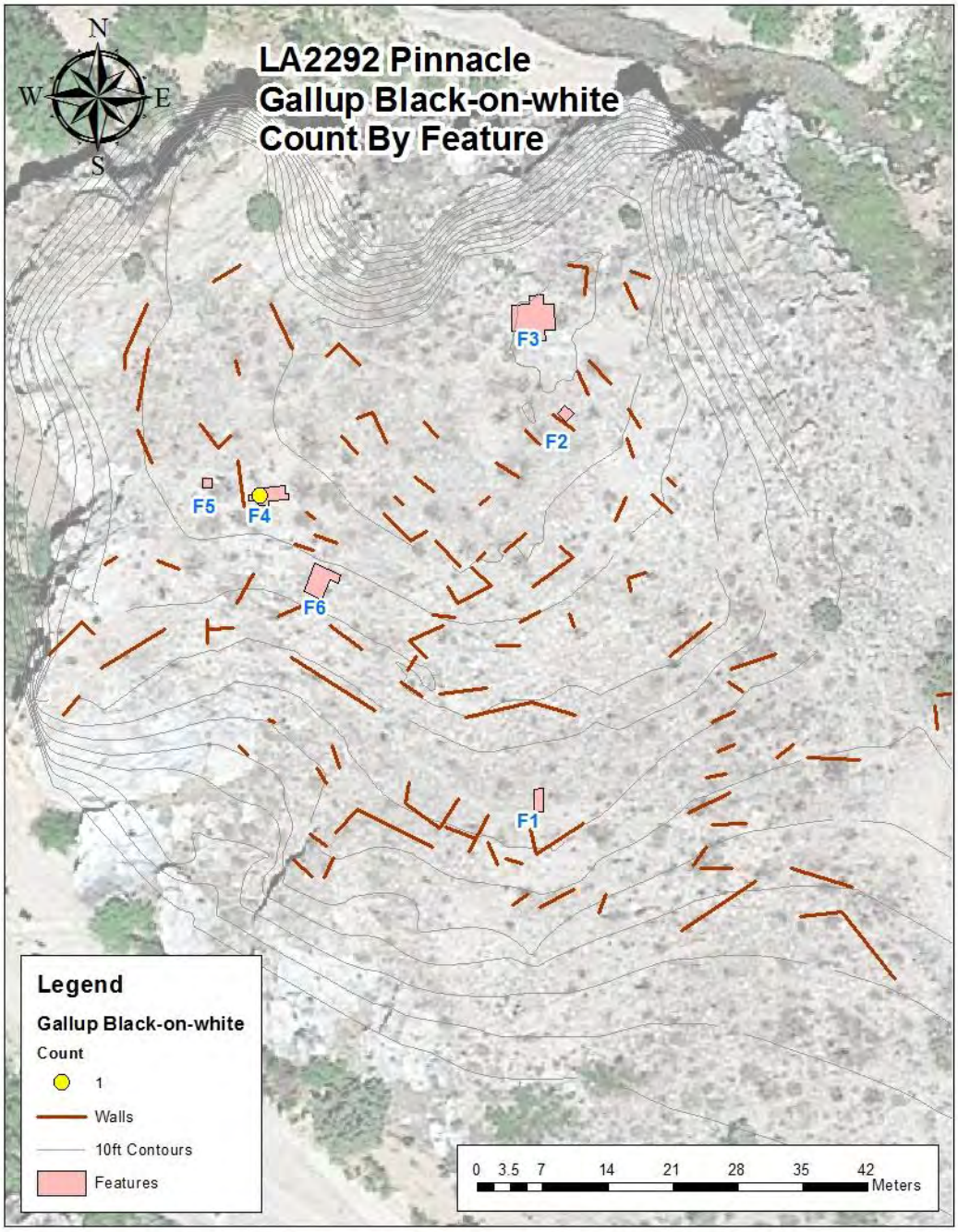

Figure 93. Distribution of Gallup Black-on-white Sherd on LA 2292.

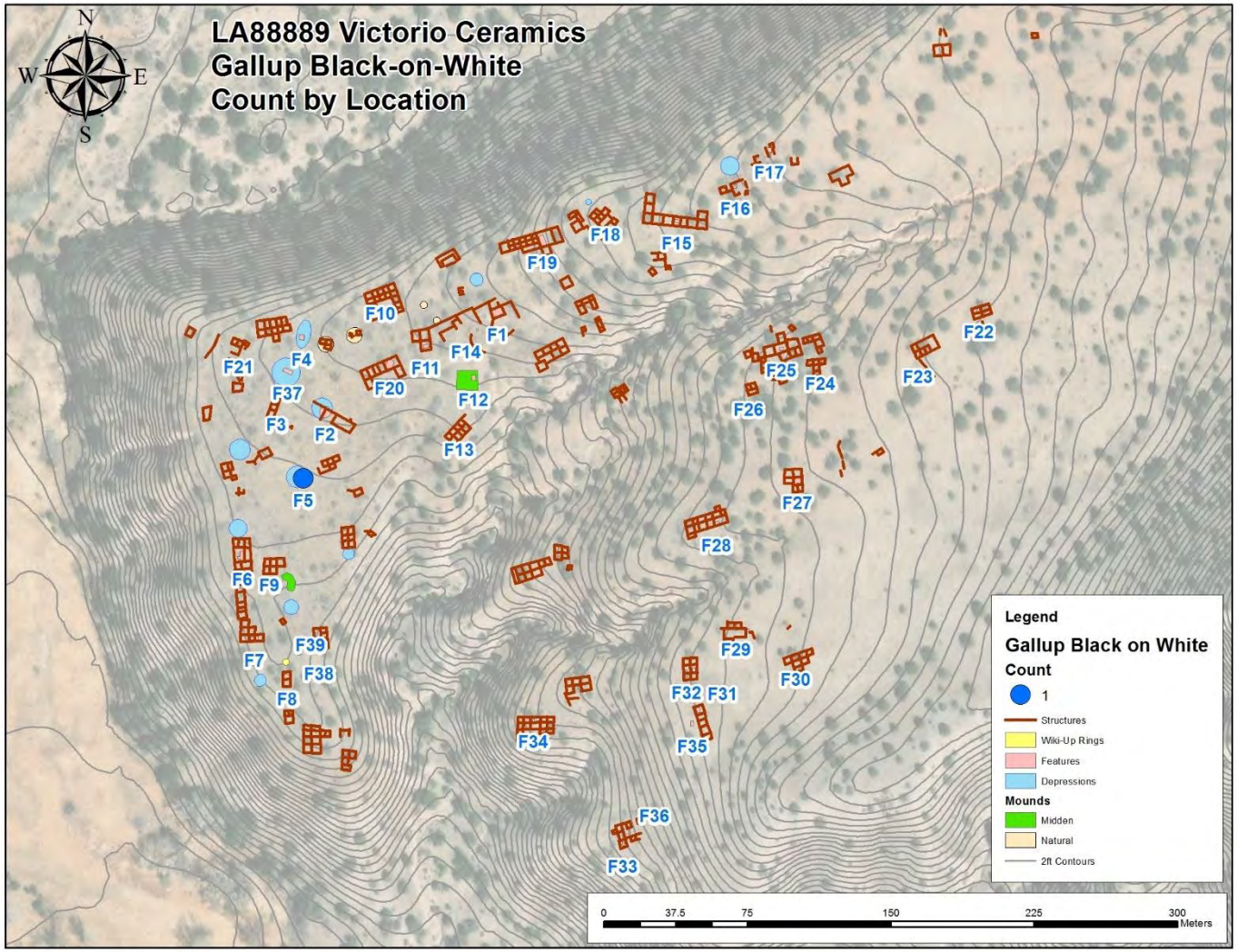

Figure 94. Distribution of Gallup Black-on-white Sherd on LA 88889.

Figure 95. LA 2292: Gallup Black-on-white Bowl Sherd (02-616)
l- Interior Surface, r-Exterior Surface with Edges Ground to Create an Ovoid Shape.

Figure 96. LA 88889: Gallup Black-on-white Bowl Rim Sherd (09-424),
Interior Surface.

GILA POLYCHROME

(SALADO POLYCHROMES/ROOSEVELT RED WARE)

Key Attributes. Chalky off-white slip on bowl interiors with bold designs done in organic/carbon-based paint and red slipped undecorated exteriors. Jars have the same color pattern but with the white slip held within a wide band on the upper two-thirds of the vessel, the bottom third is slipped in red and the base of the vessel is often unslipped.

Dates. Accepted: A.D. 1300 – 1450. CAP Period/Phase dates: Late Pueblo Period; all three of the Gila Polychrome sherds were found in the upper levels of the Early Glaze phase temporal context of A.D. 1300 – 1400.

Basis of the Present Description. Only three sherds of Gila Polychrome were recovered from the Pinnacle (Table 14). Figure 97 presents the distribution of the sherds on Pinnacle and Figure 98 provides images of the sherds. See also Gladwin and Gladwin (1930a), Hawley (1936), Ninth Southwester Ceramic Seminar (1968), Crown (1994), Neuzil and Lyons (2005), and Lyons (2012).

Table 14. Count of Gila Polychrome by Site.

Type	1125	2292	88889	88891	Grand Total
Gila Polychrome		3			3

Construction. Hand coiling and scraping.

Paste. Relatively fine-textured, brown colored paste. Temper material is sand or a mixed sand and small particle detritus.

Surface Color. Bowls have a chalky, off-white/creamy white slip on the interior surface and a red to brownish-red slip on the exterior surface. Jars utilize the same colors in a wide, horizontal band of off-white slip (with the decorations) that encircles the shoulder and midpoint of the vessel and red slip on the undecorated bottom portion of the vessel.

Surface Finish. Slipped and painted surfaces are generally well-smoothed but surfaces will occasionally have minor undulations. The off-white slip may be thin or thick and may show crackling. It is chalky in appearance and is rarely polished. Red slip on jars and the exteriors of bowls ranges from thin to thick and it is usually polished. Unslipped/unpolished jar interiors are scraped smooth but may undulate slightly.

Vessel Forms. Bowls, jars, and effigies were produced. Of the three sherds found at the Pinnacle, all were determined to be jar sherds. Bowls are generally hemispherical with slightly incurving side walls and rounded lips. Jars tend to have long slopping shoulders, with the greatest body diameter being midway between the narrow vessel base and its rim.

Decoration. A notable feature on Gila Polychrome is the presence of a broad, black-colored linear band, always painted just below the rim of both bowls and jars. This banding line has been referred to as a "life-line" (Neuzil and Lyons 2005:21; Crown 1994:19) and may be painted as a continuous line or one with an unpainted break in the line. The main vessel design is positioned below this band on both bowls and jars. On bowl interior surfaces, the design may be held within framing lines leaving an open center at the bottom or the design may include the bottom. Similarly, designs on jar exteriors may be appended from the "life-line" band or there is some open space and the design is painted within framing lines positioned below the "life-line" band.

Designs on Gila Polychrome are typically bold, geometric solids. Design elements include stepped linear elements, toothed lines, pendant dots, hatching, curvilinear and rectilinear interlocking scrolls, cross-hatching, solids with scalloped edges, and multiple linear elements. The rim lip of both bowl and jars is left undecorated.

Paint. Organic-based black pigment that often appears eroded, possibly due to the absence of polish over the pigment.

Neutron Activation Analysis. The initial sample submitted for NAA included thirteen specimens but upon further analysis the five very small samples of supposedly Gila Polychrome from the Pinnacle were, in fact, oxidized sherds of Magdalena Black-on-white. The remaining eight sherds were from the El Paso Phase component at Cottonwood Springs Pueblo (LA175), located on the west slope of the San Andres Mountains. A few of these samples were a match for a group on the Upper Gila while most of the samples are matches for Gila Polychrome recovered from 76 Draw south of Deming, New Mexico, and the combined assemblages are a match for Salado Group 20 which is the dominant group for southwestern New Mexico and southeastern Arizona (Ownby et al. 2022).

Remarks. An interesting thing happened with the analysis of Gila Polychrome. Initially, there was a total of eight sherds that were identified as Gila Polychrome. Five of these were sent for Neutron Activation Analysis. Much to our surprise, the

NAA results tied these five sherds to the chemical signature for Magdalena Black-on-white. That just couldn't possibly be! Upon reexamination, the error of our ways was discovered. Both Gila Polychrome and Magdalena B/w have polished organic paint pigment, Gila Polychrome has a red slipped exterior (bowls) while the slip color on Magdalena bowl exteriors is the same off-white creamy color as that on the interior surfaces (note also that Gila Polychrome has an off-white slip on bowl interiors). The temper in both types is similar with Gila Polychrome having sand or a combination of sand and fine particle detritus and Magdalena has prepared rock/detritus temper. Under normal circumstances these two types should, however, be easily distinguished. What wasn't seen was the mis-firing on the Magdalena sherds (slip on the backside oxidized to a red color) thought to initially be Gila Polychrome. Lesson learned—look carefully at design elements (this was finally the key to separating the sherds in question, and pay attention to NAA and petrographic analyses, these analyses may "see" what you can't).

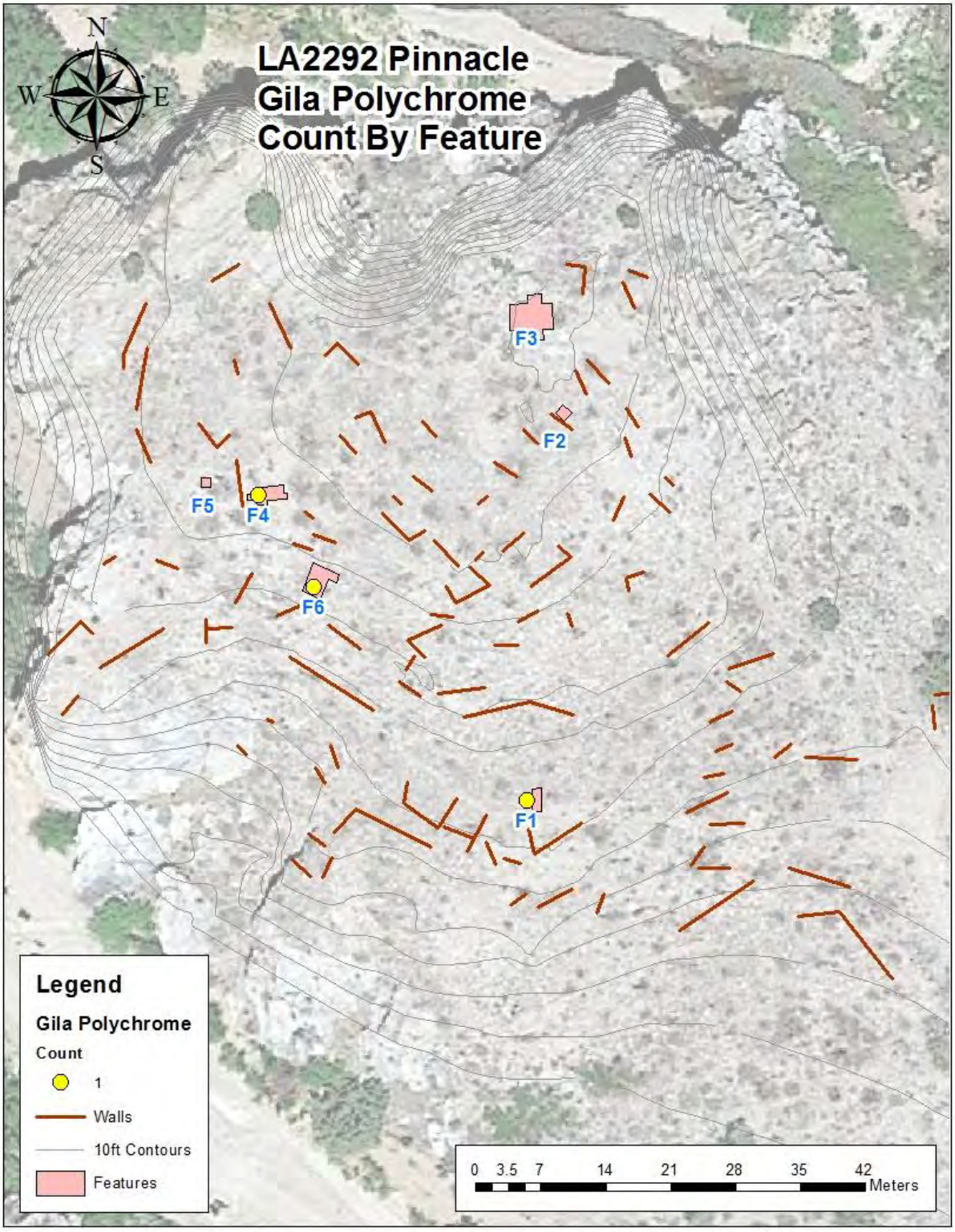

Figure 97. Distribution of Gila Polychrome Sherds on LA 2292.

Figure 98. LA 2292 Gila Polychrome Bowl Sherds (99-60, 02-294, 08-143).

GILA WHITE-ON-RED

(ROOSEVELT RED WARE/SALADO REDWARE)

Key Attributes. Well-polished, orange-red to terracotta colored slip with designs done in a thin, chalky white pigment. Designs only on the exterior surface of unsmudged bowls and jars.

Dates. Accepted: A.D. 1200 – 1400. CAP Period/Phase dates: Late Pueblo Period, A.D. 1300 – 1400, Early Glaze phase upper level temporal context.

Basis of the Present Description. Two sherds from the Pinnacle (LA2292) were tentatively identified as Gila White-on-red (Table 15). One of these sherds varies just enough in slip color to make the classification as Gila White-on-red inconclusive. Figure 99 presents the distribution of the sherds on Pinnacle and Figure 100 provides images of the sherds. See also Gladwin and Gladwin (1930b), Colton and Hargrave (1937), DiPeso (1958), Ninth Southwestern Ceramic Conference (1968), and Neuzil and Lyons (2005).

Table 15. Count of Gila White-on-red by Site.

Type	1125	2292	88889	88891	Grand Total
Gila White-on-red		2			2

Construction. Colton and Hargrave (1937:177) state that construction of Gila White-on-red was done by paddling. On the other hand, Di Peso (1958:101) states that the mode of manufacture for this type was the same as that for Gila Polychrome, which is hand coiling and scraping. The Cañada Alamosa sherds are small and rimless and therefore very difficult to determine the method of construction.

Paste. The color ranges from orangish-red, tan, to reddish gray. Temper is sand and opaque angular fragments that render a medium texture to the paste.

Surface Color. Exteriors of bowls and jars and interiors of bowls are slipped with color that ranges from orange-red to a light terracotta. One of the sherds in the Pinnacle assemblage has slip that is orangish-red while the other has a reddish-tan colored slip. Neither of these sherds have smudging on the interior surface.

Surface Finish. Slipped and painted surfaces are generally well-smoothed but surfaces will occasionally have minor undulations. These same surfaces are highly polished to a luster. The interior surface of both Pinnacle sherds is polished, but not to a luster, using broad polishing striae all of which go in one direction.

Vessel Forms. Bowls, jars, and effigies were produced. Bowl forms range from a square to round shape and are hemispherical. Jars have globular bodies with no neck, or small bodies and extended necks that are disproportionate to the body. Jars may also have the Gila shoulder which can be created by using a puki to form the base of the vessel, then coils are added above the edge of the puki which are maneuvered inward, not upward and outward, thus creating a unique shape to the vessel looking similar to an umbrella with a bowl-shaped base. Both sherds recovered from the Pinnacle (LA 2292) were classified as jar sherds with unsmudged interiors.

Decoration. Designs are applied to the exterior surface of bowls and jars. Common design elements include multiple narrow lines, narrow lines nested within square or other geometric motifs, diamonds, chevrons, interlocking rectilinear scrolls, lines with pendant dots.

Paint. Chalky white pigment, presumed to be derived from kaolin clay, was used to create designs. It was not polished over and tends to erode easily.

Remarks. The identification of these two sherds has been perplexing because there are only two of them, they are small, both are jar body sherds, and both were found in the Pinnacle in the upper-most post A.D. 1300 Glaze mixed strata near the surface. One sherd has a polished, reddish tan slip while the other has a polished orangish red slip but in every other way, they are very similar.

The sherd with the reddish tan slip was initially identified as Cliff White-on-red (see Neuzil and Lyons 2005:31-33). The primary reason was the appearance of the white-on-red design. However, the designs on Cliff W/r consist primarily of wide lines or a combination of wide and narrow lines rendered in white. Additionally, bowls are smudged and jar forms are all but absent. In comparison, Neuzil and Lyons point out that that Gila White-on-red designs are usually narrow-lined and, they emphasize "pattern-polishing" and the absence of smudging on the interiors of bowls. Hence, we can be certain that the Pinnacle sherds are not Cliff White-on-red because they are jar sherds, lack smudging, and linear designs are drawn in a consistently narrow fashion.

It was suggested (Peeples: 2017 personal communication) that the two sherds recovered from the Pinnacle may represent an unidentified white-on-red pottery that occurred with Roosevelt Red Ware in Zuni assemblages dating to the late 1300s (see also Mills 2007:233-234). This unidentified white-on-red is tempered with prepared sandstone. Upon examination, it was not convincing that the two

Pinnacle sherds contain sandstone temper. These have individual sand particles in combination with opaque, multi-colored particles; particles of sand in a sandstone matrix were not seen.

Among other classification possibilities for the two Pinnacle sherds are Salado White-on-red and Tularosa White-on-red, but both of these are not likely. Salado White-on-red (Gladwin and Gladwin 1930b; Hawley 1936; Ninth Southwestern Ceramic Seminar 1968; Neuzil and Lyons 2005) is an obliterated corrugated style of pottery with red slipped exteriors and smudged bowl interiors. Designs consist predominately of narrow lines and pendant dots on both bowl and jar exteriors. Tularosa White-on-red (Rinaldo and Bluhm 1956:173, 177) occurs only in bowl forms with smudged interiors and reddish-orange slipped exteriors (there are also two to three rows of indented corrugation on the exterior just below the fillet rim). The white painted designs on Tularosa White-on-red are similar in style of those seen on the exterior of St. Johns Polychrome bowls. With a date range of A.D. 1100 to 1200, Tularosa White-on-red would be too early for the context in which the two Pinnacle white-on-red sherds were found.

Descriptions and images of Gila White-on-red in the literature are very rare. The two sherds recovered from the Pinnacle and typed as Gila White-on-red may well be something entirely different. But after considering a variety of possibilities, it is likely that these two sherds are Gila White-on-red.

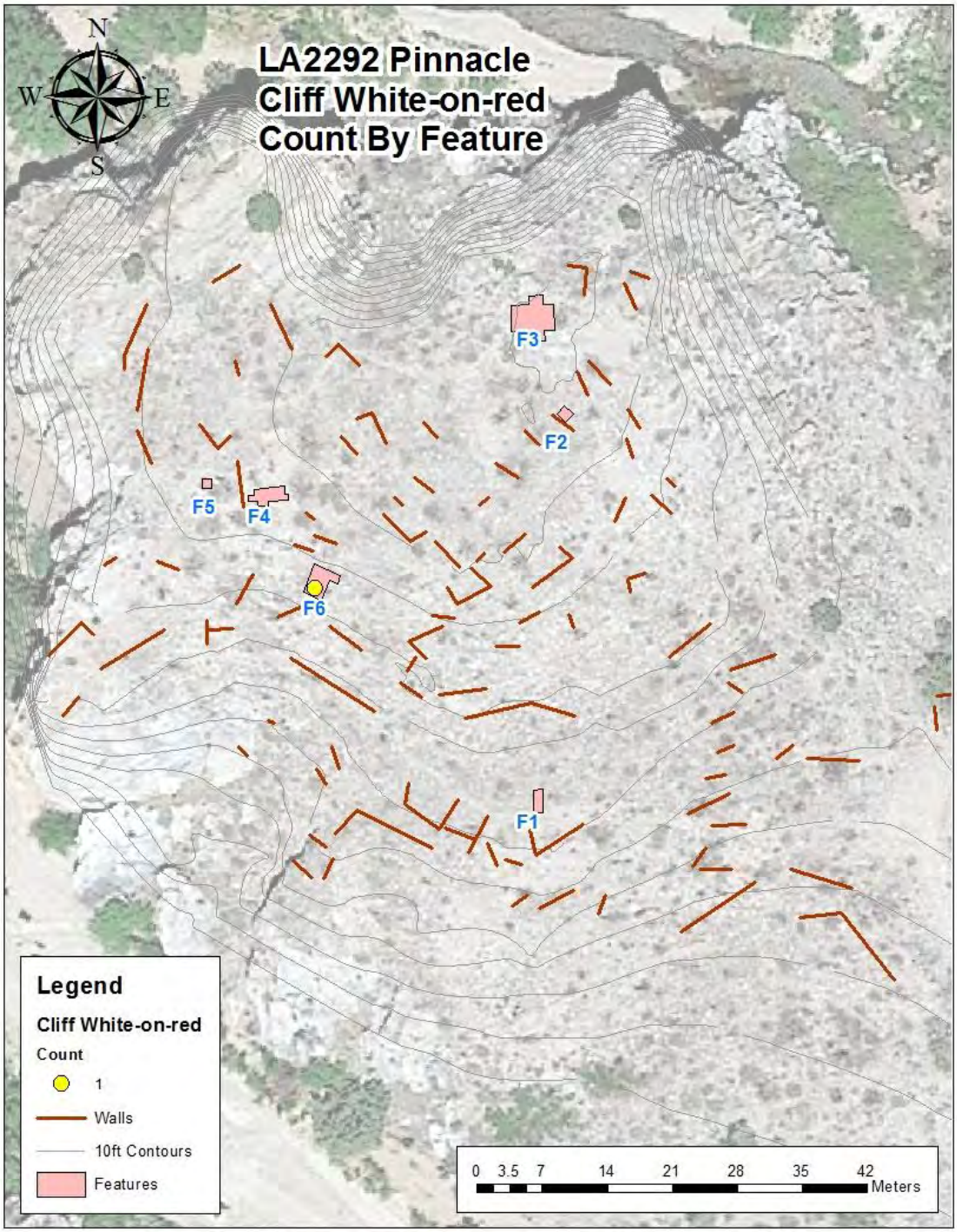

Figure 99. Distribution of Gila White-on-red Sherds on LA 2292.

Figure 100. LA 2292: Jar Body Sherds Tentatively Identified as Gila White-on-red; Upper Image Shows Exterior Surfaces and the Bottom Image the Interior Surfaces (08-143 and 02-692).

HESHOTAUTHLA BLACK-ON-RED

(ZUNI GLAZE WARE)

Key Attributes. Thick, red to orangish-red slip, designs done with a sub-glaze to glaze mineral-based paint pigment, and a relatively wide band encircling bowl interiors just below the rim from which framed elements and motifs are appended and run obliquely from the rim.

Dates. Accepted: circa A.D. 1275 – 1400. CAP Period/Phase dates: Late Pueblo Period, A.D. 1250 – 1290, found only at the Pinnacle, one sherd of Heshotauthla Black-on-red was recovered from the Magdalena Phase temporal context, A.D. 1250 – 1290 where it may intrusive, while thirty-five other sherds were found in the Early Glaze period context of A.D. 1300 – 1400.

Basis of the Present Description. Thirty-nine sherds of Heshotauthla B/r are in the Cañada Alamosa assemblage (Table 16; Figure 101). All of these were excavated from Pinnacle (LA 2292). None were recovered from the Montoya Site (LA 88891), Kelly Canyon Site (LA 1125) or the Victorio Site (LA 88889). Figures 102 and 103 present images of representative sherds. See also Rinaldo (1959), Woodbury and Woodbury (1966), Carlson (1970), Huntley (2008). And Eckert (2008).

Table 16. Count of Heshotauthla Black-on-red.

Type	1125	2292	88889	88891	Grand Total
Heshotauthla Black-on-red		39			39

Construction. Hand coiling and scraping.

Paste. Light colored paste ranges between white, light gray, buff, and pinkish white. Pale gray carbon streaks occur. The paste is hard and the texture may range from fine to coarse, depending on the size and quantity of the temper particles. Temper material consists of prepared sherd, sand, and rock detritus.

Surface Color. Bowl interiors and exteriors and jar exteriors slipped with a red to orange-red. The slip is evenly applied over the surface and polished after drying and before applying decoration.

Surface Finish. Slipped and painted surfaces are generally well smoothed and typically have a uniform polish. The slip is thick, similarly to St. Johns B/r and polychrome. Unslipped/unpolished jar interiors are scraped smooth but may undulate slightly or show some scraping stria.

Vessel Forms. Deep, open bowls and jars with high or low straight necks, high shoulders, globular bodies, and strap handles. Rims are direct or slightly incurving and beveled towards the interior or they may be rounded or slightly flattened.

Decoration. A broad, painted band encircles the vessel just under the rim on bowl interiors and jar exteriors. Design elements and motifs are appended from this band and appear to flow obliquely from the band which serves as the upper framing line of the banded design layout seen on both bowls and jars. The very bottom of bowls is left open and undecorated. Design elements include parallel hatching, pendant dots, stepped/crenulated elements that may be stacked or interlocking, and solid rectilinear elements. Curvilinear motifs and designs like those seen on Tularosa B/w or St. Johns B/r and polychrome are absent.

Paint. Mineral based subglaze to glaze pigment that may appear black but with hints of green undertones.

Remarks. It is probable that some sherds identified as Heshotauthla Black-on-red are actually from Heshotauthla Glaze Polychrome sherds. Without evidence of the distinct, white-colored, continuous thin-lined geometric motif that encircles the exterior surface of Heshotauthla Glaze Polychrome bowls, it is difficult to separate the black-on-red variety from the glaze polychrome variety of Heshotauthla.

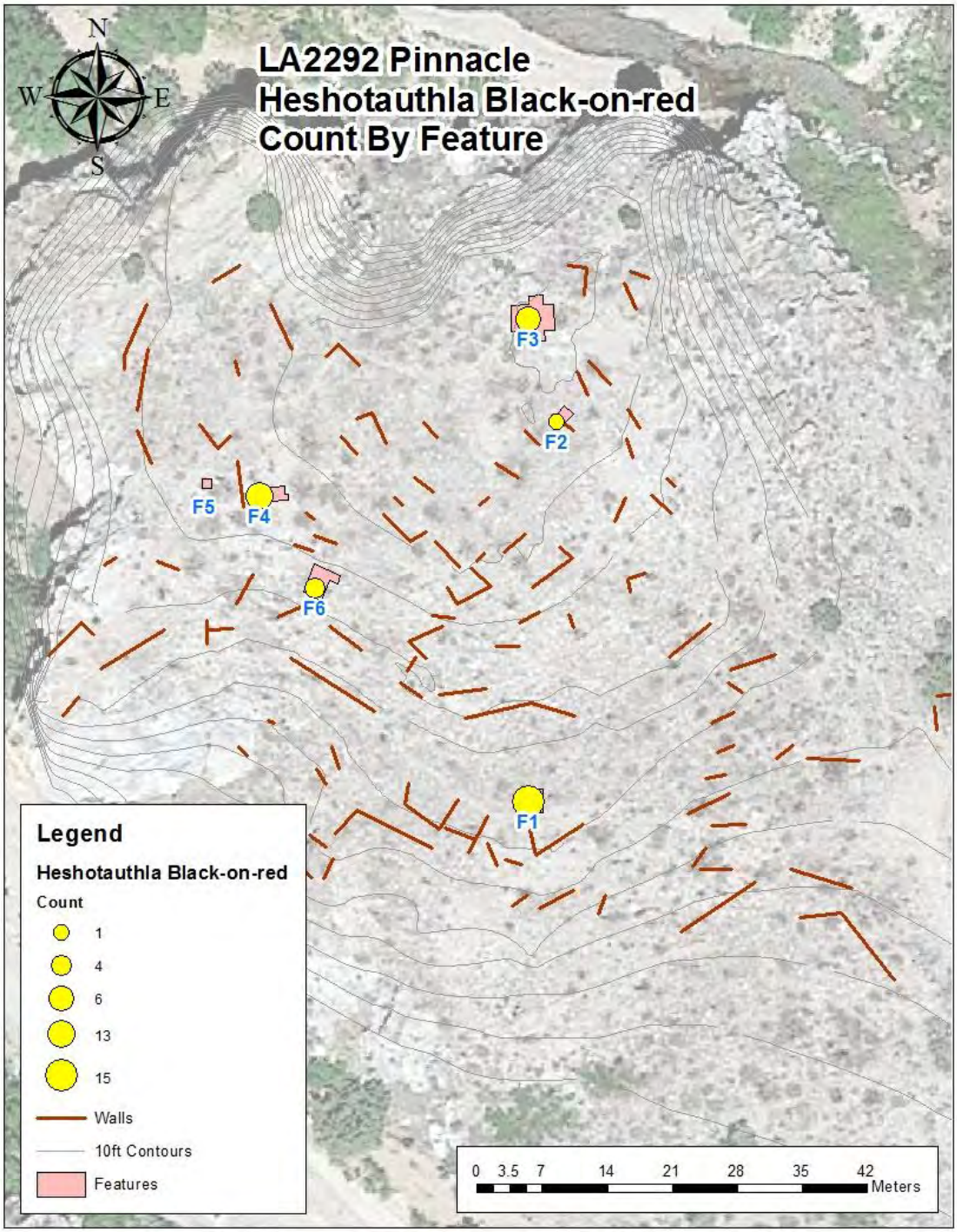

Figure 101. Distribution of Heshotauthla Black-on-red Sherds on LA 2292.

Figure 102. LA88891: Heshotauthla Black-on-red bowl Body Sherd (04-04) Interior and Exterior Surfaces

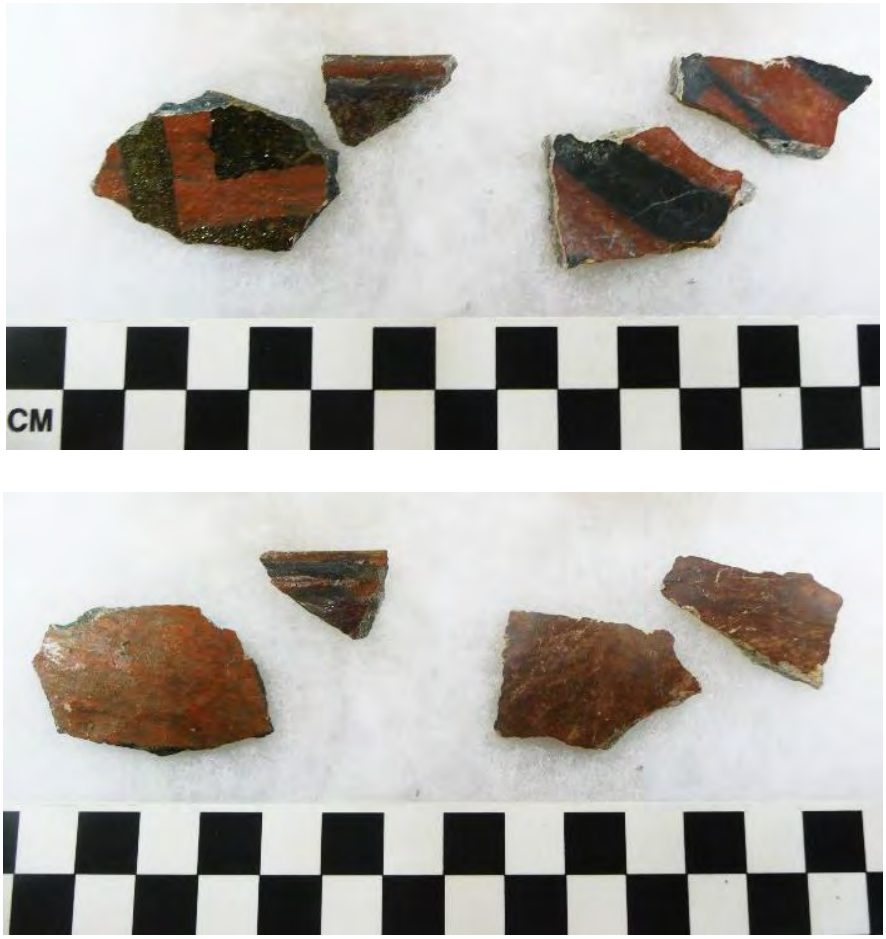

Figure 103. LA 2292: Heshotauthla Black-on-red Bowl Body Sherds (00-28, 00-56) Interior (u) and Exterior Surfaces (l)

HESHOTAUTHLA GLAZE POLYCHROME

(WHITE MOUNTAIN RED WARE/ EARLY ZUNI GLAZE WARE)

Key Attributes. Thick red, orangish-red or orange colored slip is evenly applied to vessel surfaces and motifs are created with a sub-glaze to glaze mineral-based paint pigment. Designs are characterized by a relatively wide band encircling bowl interiors just below the rim from which framed elements and motifs are appended and run obliquely from the rim. Thin-line, white colored geometric designs are rendered in a continuous pattern that encircles the exteriors of bowls.

Dates. Accepted: circa A.D. 1275/1300 – 1400. CAP Period/Phase dates: Late Pueblo Period A.D. 1250 – 1400. Sherds of Heshotauthla Glaze Polychrome (N=1) were found in the Socorro Phase (A.D. 1130 – 1200) context at the Kelly Canyon Site (see Remarks), all sixty-four sherds at Pinnacle were recovered from the Early Glaze period context, A.D. 1300 – 1400, two from the Victorio Site came from the Tularosa Phase temporal context A.D. 1200 – 1290, and the one sherd found at the Montoya Site was in a mixed temporal context.

Basis of the Present Description. Sixty-eight sherds are in the Cañada Alamosa assemblage (Table 17). One sherd was recovered from the Kelly Canyon Site (LA 1125), sixty-four from the Pinnacle (LA 2292), two from the Victorio Site (LA 88889), and one from the Montoya Site (LA 88891). Figures 104-107 place the sherd spatially on the sites. Figures 108-111 present images of representative sherds. See also Rinaldo (1959), Woodbury and Woodbury (1966), Carlson (1970), and Eckert (2008).

Table 17. Count of Heshotauthla Glaze Polychrome.

Type	1125	2292	88889	88891	Grand Total
Heshotauthla Glaze Polychrome	1	66	2	1	70

Construction. Hand coiling and scraping.

Paste. The paste is hard and ranges from off-white, light tan, light gray, to occasionally a dark gray paste. Carbon streaks are not common. The texture can range from coarse to fine depending on the particle size and abundance of the prepared sherd temper.

Surface Color. Bowl interiors and exteriors and jar exteriors slipped evenly with red, orange-red, orange slip. The slip is polished after drying and before applying decoration.

Surface Finish. Slipped and painted surfaces are well smoothed and typically have a uniform polish. The slip is thick, similarly to St. Johns B/r and polychrome. Unslipped/unpolished jar interiors are scraped smooth but may undulate slightly or show some scraping stria.

Vessel Forms. Deep, open bowls and jars with high or low straight necks, high shoulders, globular bodies, and strap handles. Rims are direct or slightly incurving and beveled towards the interior with rounded or slightly flattened rim lips.

Decoration. On bowl interiors, there is a wide band that encircles the rim and is located just below the rim. Motifs are appended off of the band and drawn down into the interior where a framing-line borders the design allowing the bottom of the vessel to remain undecorated. Typical motifs and elements include parallel hatching, sets of parallel lines, pendant dots, solid geometric elements, interlocking and stacked steps, crenulated elements, zig-zag and zipper-like lines. Curvilinear motifs like those seen on St. Johns Polychrome are uncommon. A band of continuous, thin-line geometric designs occur on bowl exteriors that are done in a matte white pigment. White color is also used on jar exteriors to frame black designs.

Paint. Mineral based subglaze to glaze pigment that may appear black but with green overtones. Pigment on nine sherd samples of Heshotauthla Glaze Polychrome from the Pinnacle underwent lead isotope analysis to identify potential resources for the ore. Five of these sherds showed lead associated with the Hansonburg mining district near Socorro, New Mexico, while 4 sherds showed a lead mix associated with both the Hansonburg and Cerrillos (upper Rio Grande) mines. Please see Appendix A for the complete results of the analysis.

Neutron Activation Analysis. The analysis for Heshotauthla Glaze Polychrome and Kwakina Glaze Polychrome had similar results and are discussed together. Like Pinedale Polychrome, none of the eight sherds of Heshotauthla Glaze Polychrome and none of the eight sherds of Kwakina Glaze Polychrome submitted from Pinnacle were a match for identified groups in the Zuni area as defined by Peeples (2018) or Safi (2015). However, there is a strong match for both types with Tijeras Group 1 as defined by Habicht-Mauche and Eckert (2021). Their analysis suggests that Tijeras Group 1 is produced in the Lower Zuni River/Little Colorado and/or areas east of Zuni. The working hypothesis developed from this project is that these sherds may have been produced even farther east in the area that includes the Gallinas Mountains and the lower Rio Salado. This hypothesis is supported by a positive comparison with the Socorro/San Marcial groups from that same

region. However, unlike Pinedale Polychrome, none of the Heshotauthla G/poly and Kwakina G/poly samples were a match with Group 10, which is believed to have been produced at Gallinas Springs Pueblo in that same area (Ferguson et al. 2024).

Remarks. Heshotauthla Glaze Polychrome is often confused with St. Johns Polychrome because they do look similar. Heshotauthla G/p has a good, glaze pigment while the mineral pigment on St. Johns is either matte or subglazed in patches. The white colored designs on the exteriors of Heshotauthla bowls are notably thinner at 2-3 millimeters in width as compared to those on St. Johns Polychrome being wider at 5-10 millimeters. Designs on Heshotauthla G/p tend to be more open and less closely spaced than those on St. Johns Polychrome. The curvilinear hatched and solid motifs typically seen on St. Johns Polychrome are absent on Heshotauthla Glaze Polychrome.

Note that the single sherd of Heshotauthla Glaze Polychrome from the Kelly Canyon Site was found on the floor of a kiva dating to the 1100s. We are unsure as to how it got deposited there. Perhaps it represents a revisitation to the site and an offering to the ancestors.

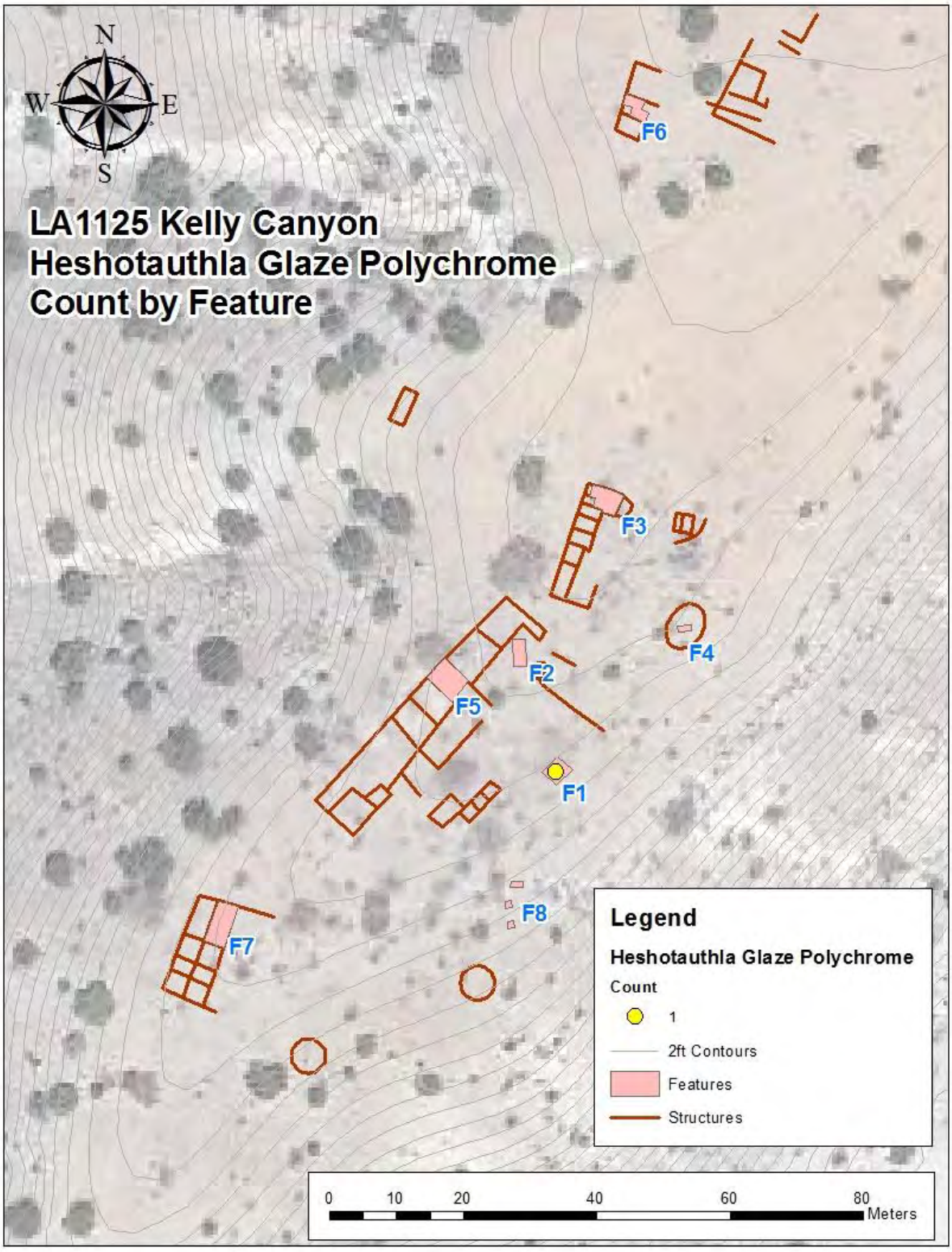

Figure 104. Distribution of Heshotauthla Glaze Polychrome Sherds on LA 1125.

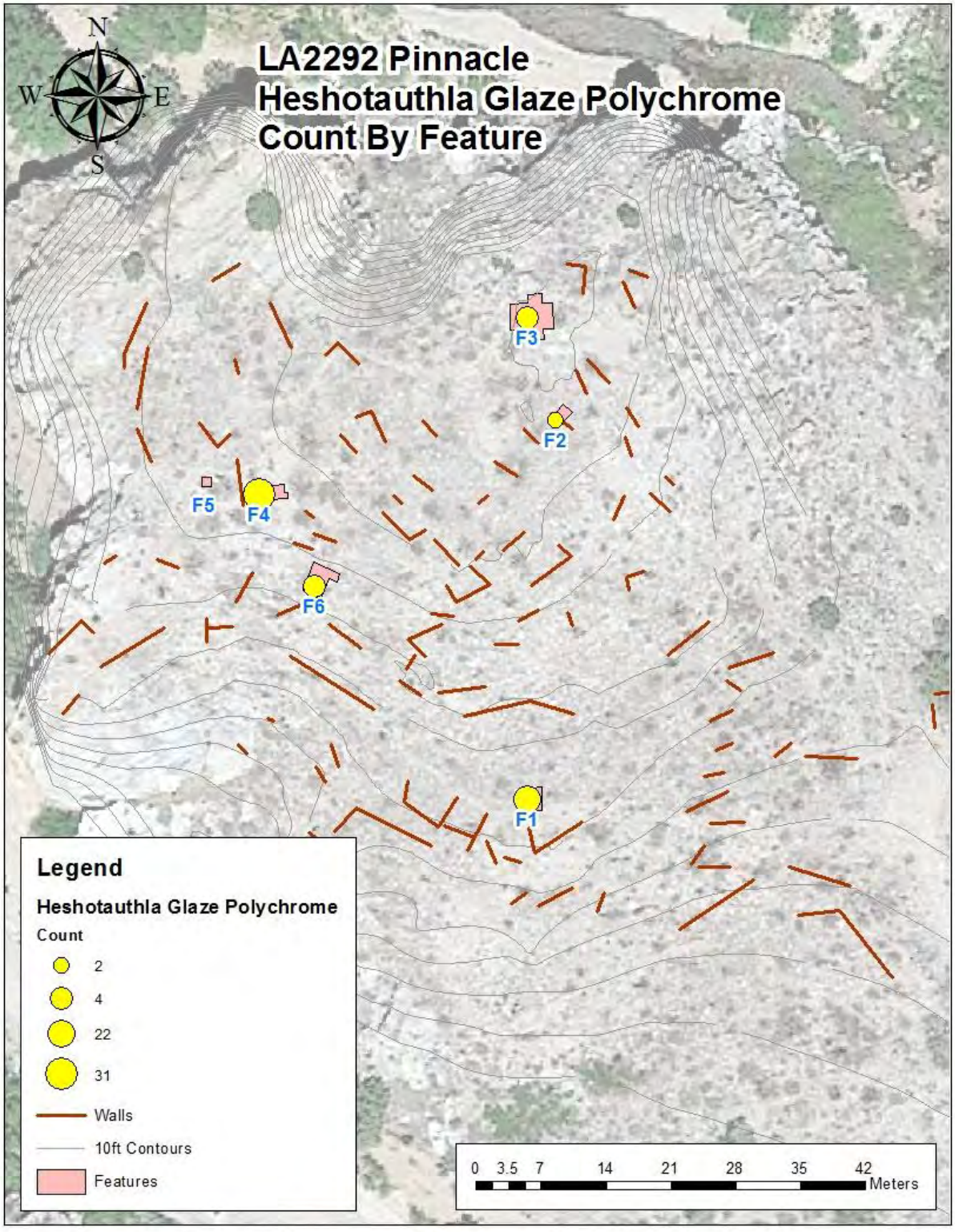

Figure 105. Distribution of Heshotauthla Glaze Polychrome Sherds on LA 2292.

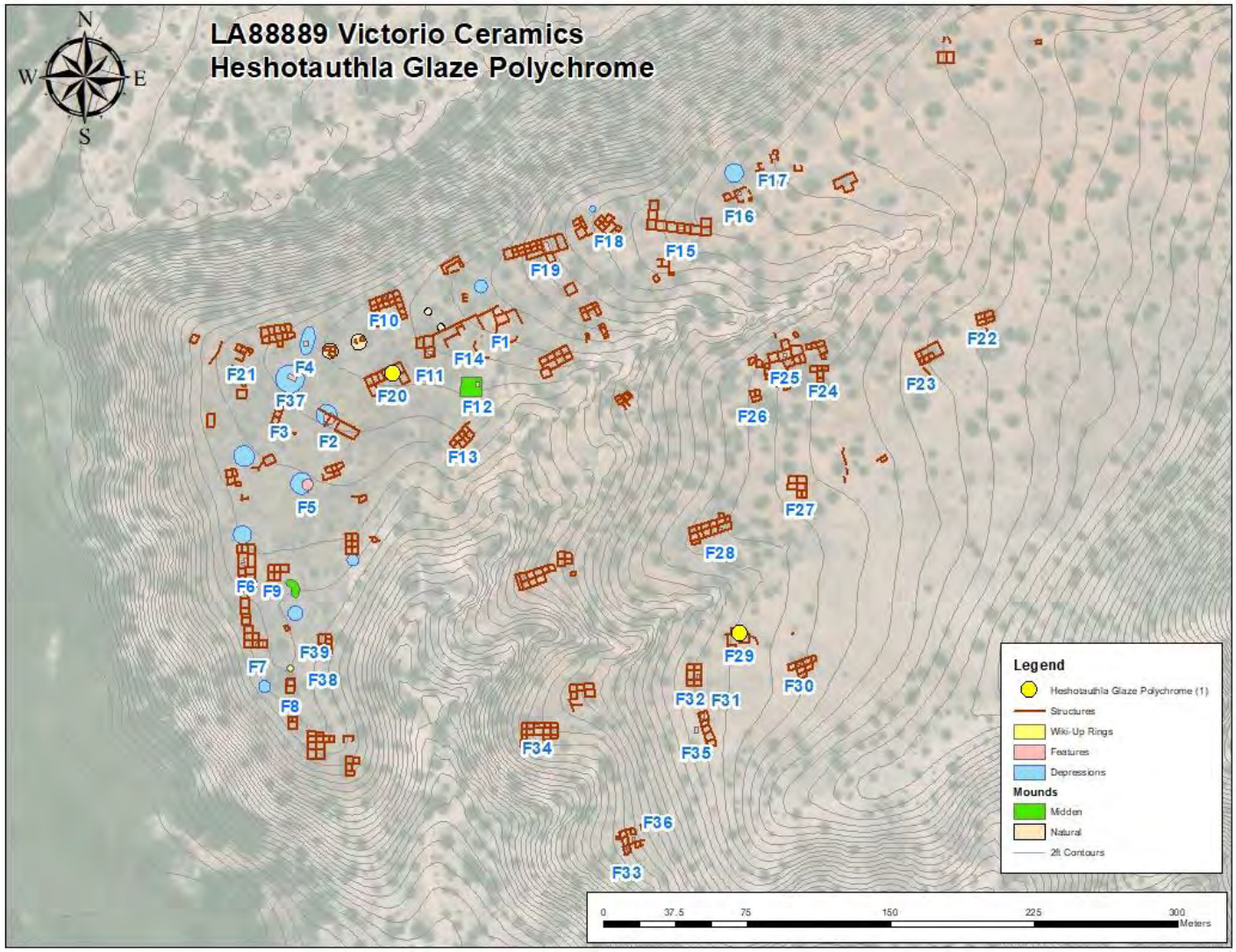

Figure 106. Distribution OF Heshotauthla Glaze Polychrome Sherds on LA 88889.

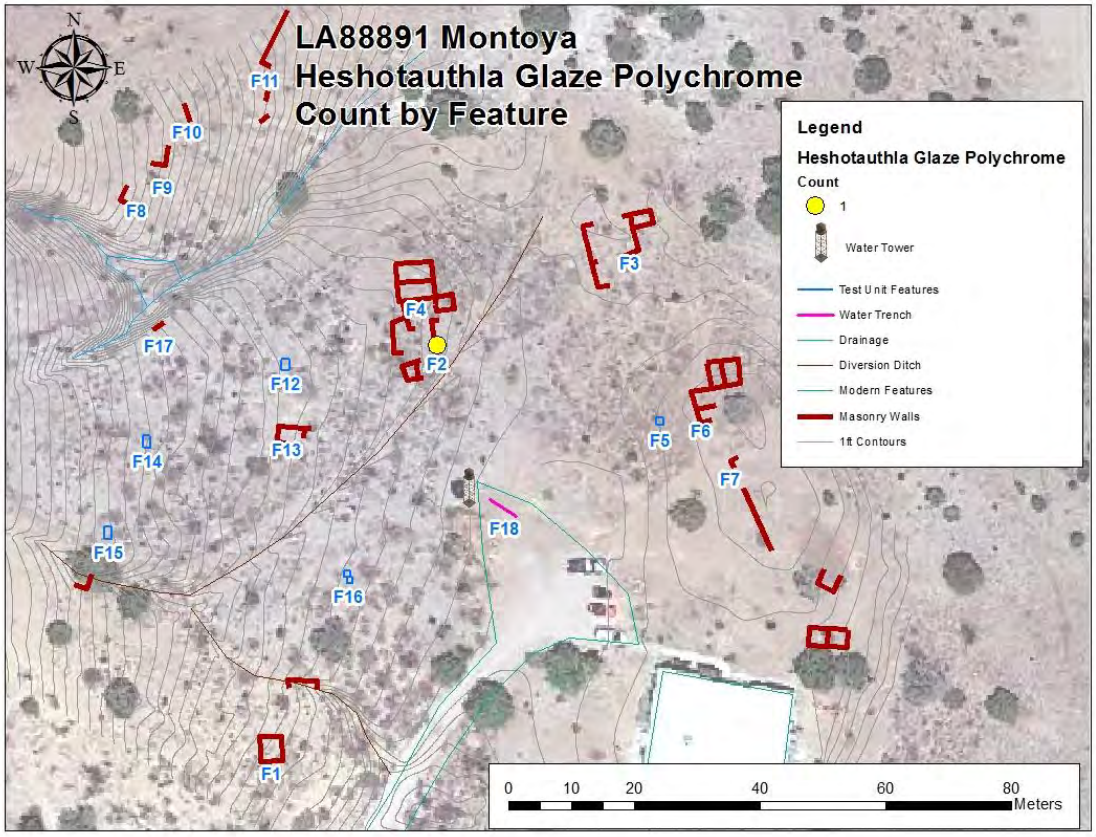

Figure 107. Distribution of Heshotauthla Glaze Polychrome Sherds on LA 88891.

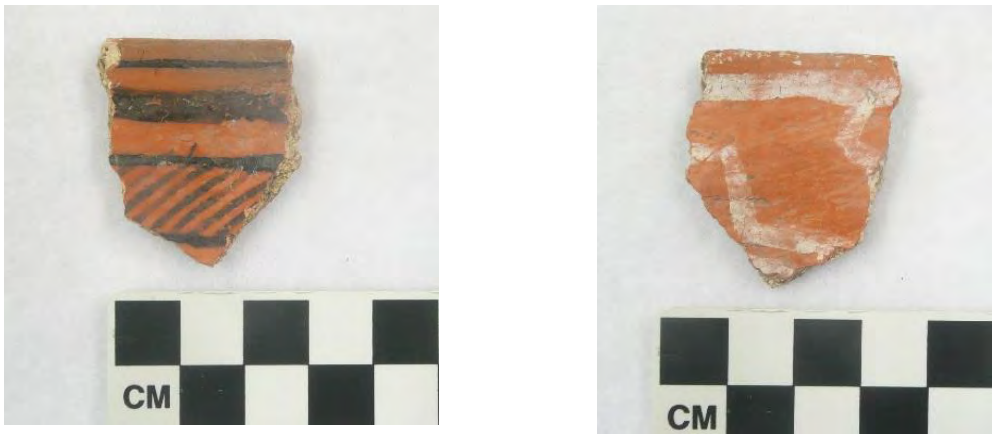

Figure 108. LA 1125: Heshotauthla Glaze Polychrome bowl rim sherd (03-552) interior (l) and exterior I surfaces.
This sherd was found on the floor of a Socorro Phase kiva. Its presence there is problematic but is tentatively interpreted as an offering to the ancestors.

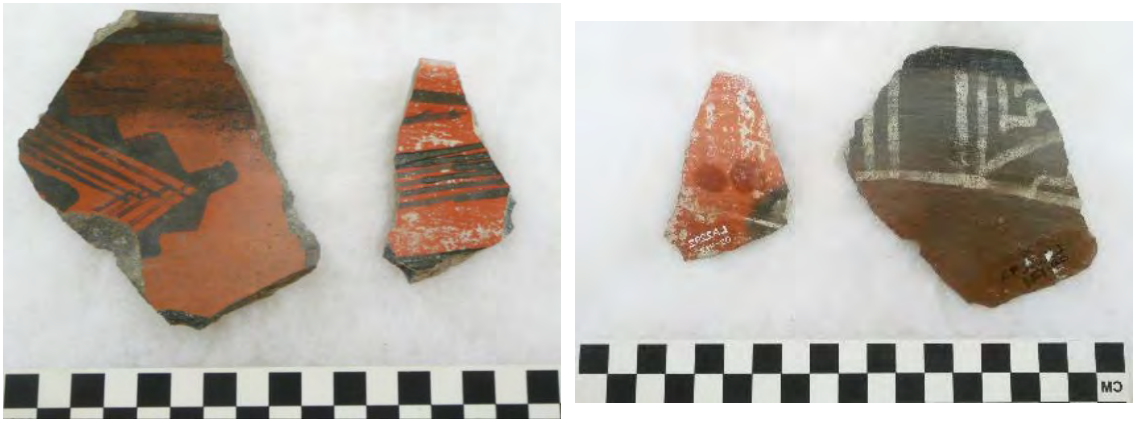

Figure 109. LA 2292: Heshotauthla Glaze Polychrome Bowl Rim Sherds (04-121, 02-413), Interiors (l), Exteriors I.

Figure 110. LA 2292: Heshotauthla Glaze Polychrome Bowl Body Sherds (08-273, 02-195, 99-5), Interiors (l), Exteriors I.

Figure 111. LA 2292: Heshotauthla Glaze Polychrome Bowl Rims (02-404, 02-692), Interior and Exterior Views.

KANA'A BLACK-ON-WHITE

(TUSAYAN WHITE WARE/KAYENTA SERIES)

Key Attributes. Fine sand temper that may protrude the surface; decorated surfaces are smoothed and polished and may or may not be slipped; organic-based pigment; design elements include nested parallel lines, lines that border solid elements, and ticked solid elements.

Dates. Accepted: circa A.D.750-1000, most common A.D. 850-950. CAP Period/Phase dates: Proto-historic to Historic Period. One sherd of the type was found on the surface of the Victorio Site within a surficial Chiricahua Apache-mixed temporal context. Although only one sherd of the type was found on the surface of the Victorio Site within the Proto-historic/Chiricahua Apache mixed temporal context, the type is considered to be a Late Pit House to Early Pueblo Period type dating circa A.D. 750/800 – 950.

Basis of the Present Description. Only one sherd of Kana'a Black-on-white was recovered (Table 18) from the Victorio Site (LA 88889). Figure 112 provides the location of the recovered sherd and Figure 113 presents an image of the sherd. See also Hawley (1936), Colton and Hargrave (1937), Colton (1955), and Hays-Gilpin (1998).

Table 18. Count of Kana'a Black-on-white Sherds.

Type	1125	2292	88889	88891	Grand Total
Kana'a Black-on-white			1		1

Construction. Hand coiling and scraping.

Paste. Color ranges from light to medium gray, carbon streaks are common. The paste is hard with medium to fine texture. Temper material consists of fine quartz sand.

Surface Color. Slipping is not common, but when bowl interiors and jar exteriors are, slip color ranges from white to creamy white. When slip is used, it may be thin and difficult to see or it may be applied adequately enough to hide temper particles that protrude the decorated surface. The color of unslipped surfaces ranges from light gray to medium gray; fireclouds do occur.

Surface Finish. The undecorated surfaces of bowls (exteriors) and jars (interiors) are scraped smooth but some scraping striae are visible; protruding temper may be

particularly visible on these surfaces. When decorated surfaces are slipped, both slip and paint are polished over.

Vessel Forms. Bowls, jars, and pitchers.

Decoration. Designs consist of linear elements of 1 to 3 mm width, and are often drawn in a parallel series of 3 to 8 lines with a good amount of open space in between each line. Combined and bordered with the linear elements are chevrons, solid triangles, dots appendant from linear and solid designs, wavy lines and wavy line hachure, frets, and zig-zag lines. Designs tend to intersect the bowl rim at an angle. This design system is reminiscent of those designs seen on Kiatuthlana Black-on-white.

Paint. Organic-based pigment.

Remarks. There is no explanation for why the single sherd of Kana'a Black-on-white was found near the surface and within cultural contexts identified as being Chiricahua Apache. This is not to suggest that the vessel representing Kana'a Black-on-white was brought in by Apaches. More likely, Apache settlement on the Pueblo period material of the Victorio Site fortuitously occurred on or near the depositional location of the sherd. Regardless of its depositional circumstances, particularly in a sea of mineral painted ceramics, there is no confusing Kana'a Black-on-white with its late Basketmaker/early Pueblo I design system and organic pigment.

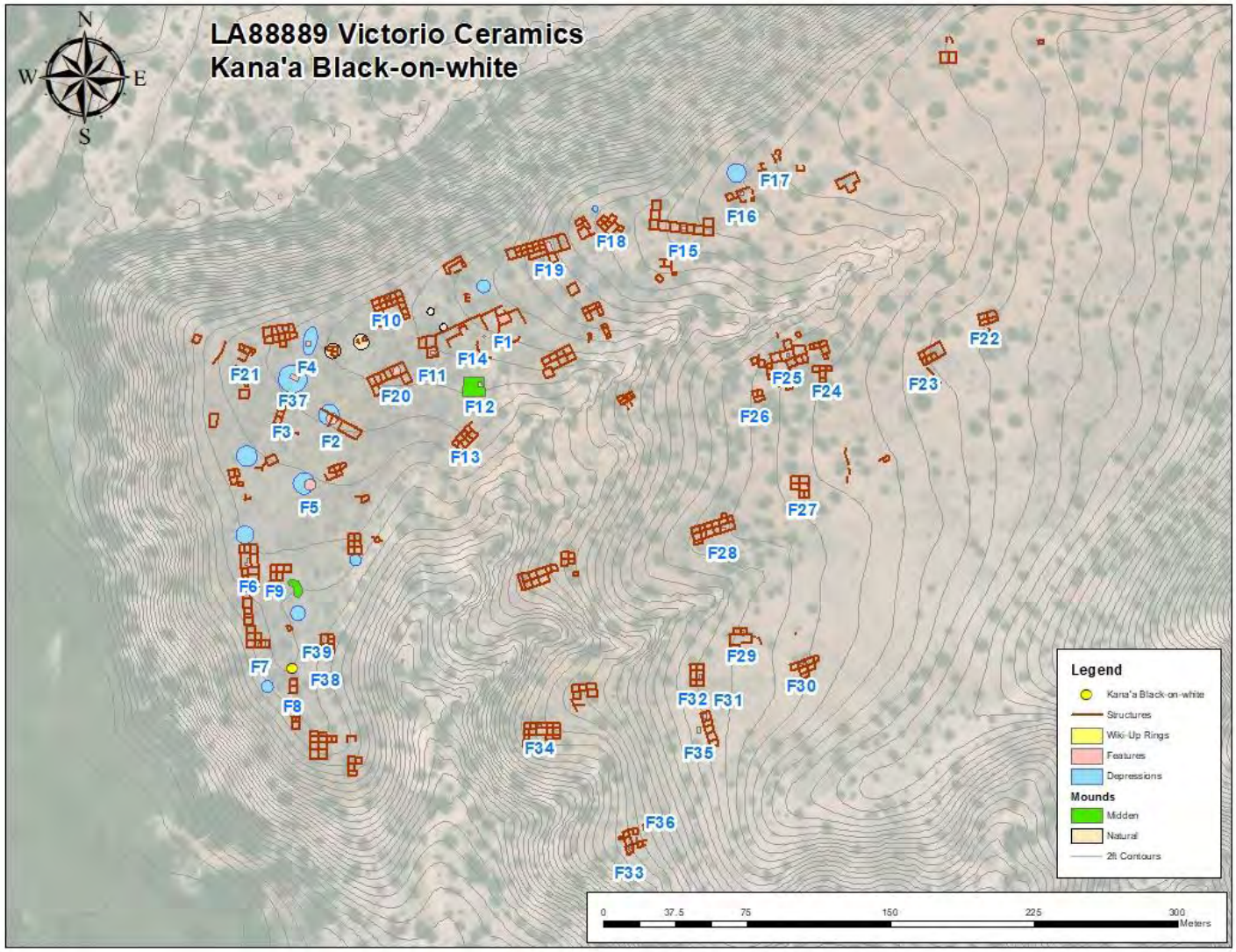

Figure 112. Distribution of Kana'a Black-on-white Sherd on LA 88889.

Figure 113. LA 88889: Kana'a Black-on-white Jar Body Sherd (10-688).

KANA'A GRAY (NECK BANDED)

(TUSAYAN GRAY WARE, CIBOLA GRAY WARE/CHACO SERIES)

Key Attributes. Unobliterated, flattened neck bands occur from the vessel rim to the upper shoulder, the lower body is scraped smooth but is rough due to the protruding sand temper.

Dates. Accepted: circa A.D. 800 – 950. CAP Period/Phase dates: Early to Late Pueblo Period. Four sherds of this type were found in the Tularosa Phase temporal context of A.D. 1200 – 1290 at the Victorio Site, and one sherd from the Montoya Site was in a mixed Mimbres – Socorro Phase context of A.D. 1000 – 1200. Wherever they may have been found, they are likely intrusive from an earlier period.

Basis of the Present Description. A total of five sherds with the typical neck bands of Kana'a Gray were identified in the Cañada Alamosa ceramic assemblage (Table 19). Four sherds were recovered from the Victorio Site (LA 88889) and one from the Montoya Site (LA 88891). Figures 114 and 115 display sherd locations on sites. Figure 116 provides images of representative sherds. See also Hawley (1936), Colton and Hargrave (1937), Colton (1955), Hays-Gilpin (1998), and Windes and McKenna (2009).

Table 19. Count of Kana'a Gray Sherds.

Type	1125	2292	88889	88891	Grand Total
Kana'a Gray			4	1	5

Construction. Hand coiling and scraping.

Paste. Color ranges from light gray to dark gray and carbon streaks are common; abundant fine to medium sand temper that protrudes the surfaces and renders a fine to coarse texture to the paste

Surface Color. Ranges from light gray to dark gray.

Surface Finish. Never polished and the surface tends to be rough with protruding temper and scraping marks.

Vessel Forms. Jars only.

Decoration. Unobliterated coils of manufacture are located from the rim to upper shoulder. These coils are commonly flattened but may also occur as clapboard-like

coils (an upper coil slightly overlaps the coil below it). The neck coils, or bands, are wide and range from 8mm to 15mm.

Paint. None.

Remarks. Kana'a Gray is similar to Lino Gray but later in time. Without the presence of the neck bands, body sherds of Kana'a Gray look very much like Lino Gray. It's possible that some or all of the twenty-three body sherds typed as Lino Gray are actually body sherds of Kana'a Gray.

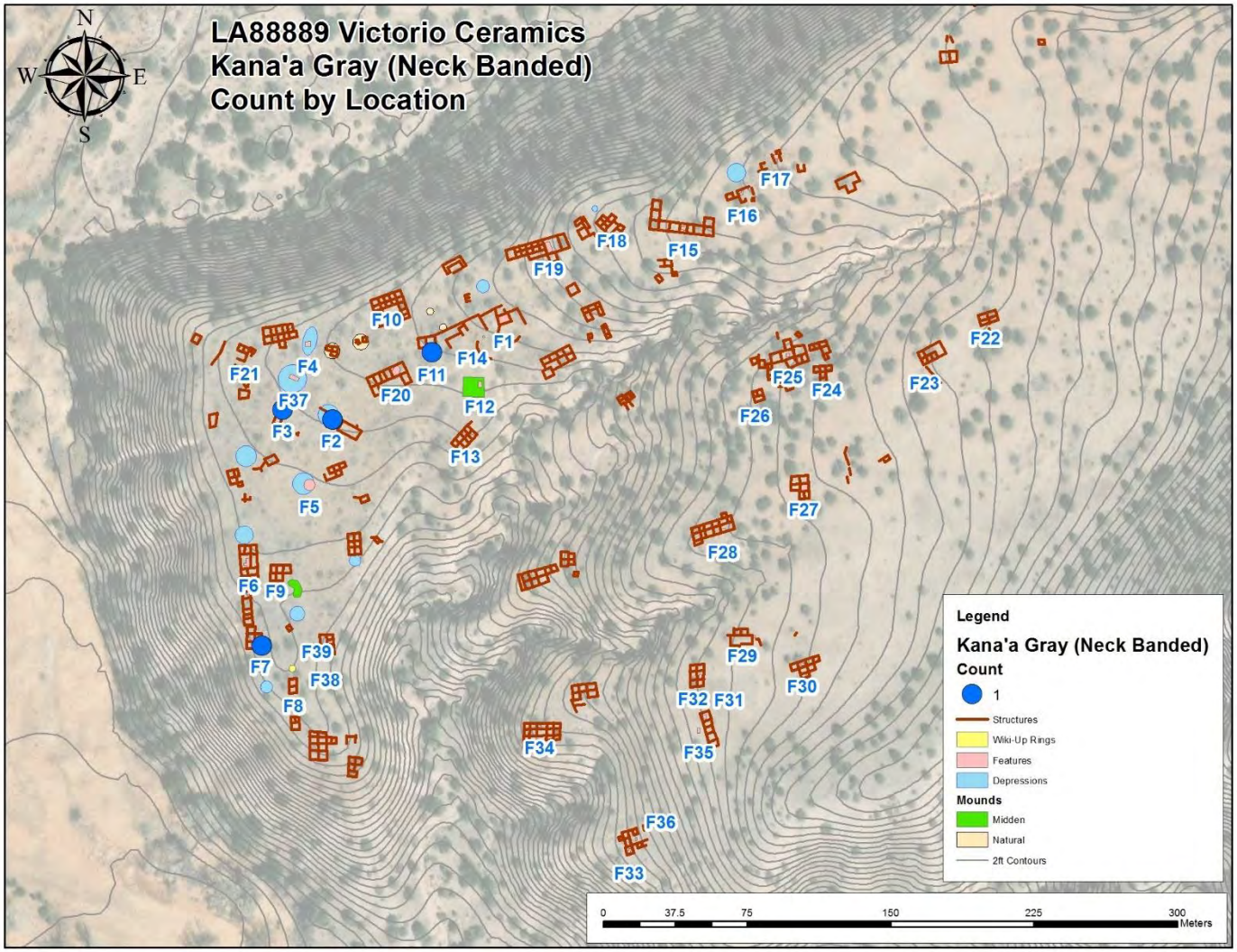

Figure 114. Distribution of Kana'a Gray Sherds on LA 88889.

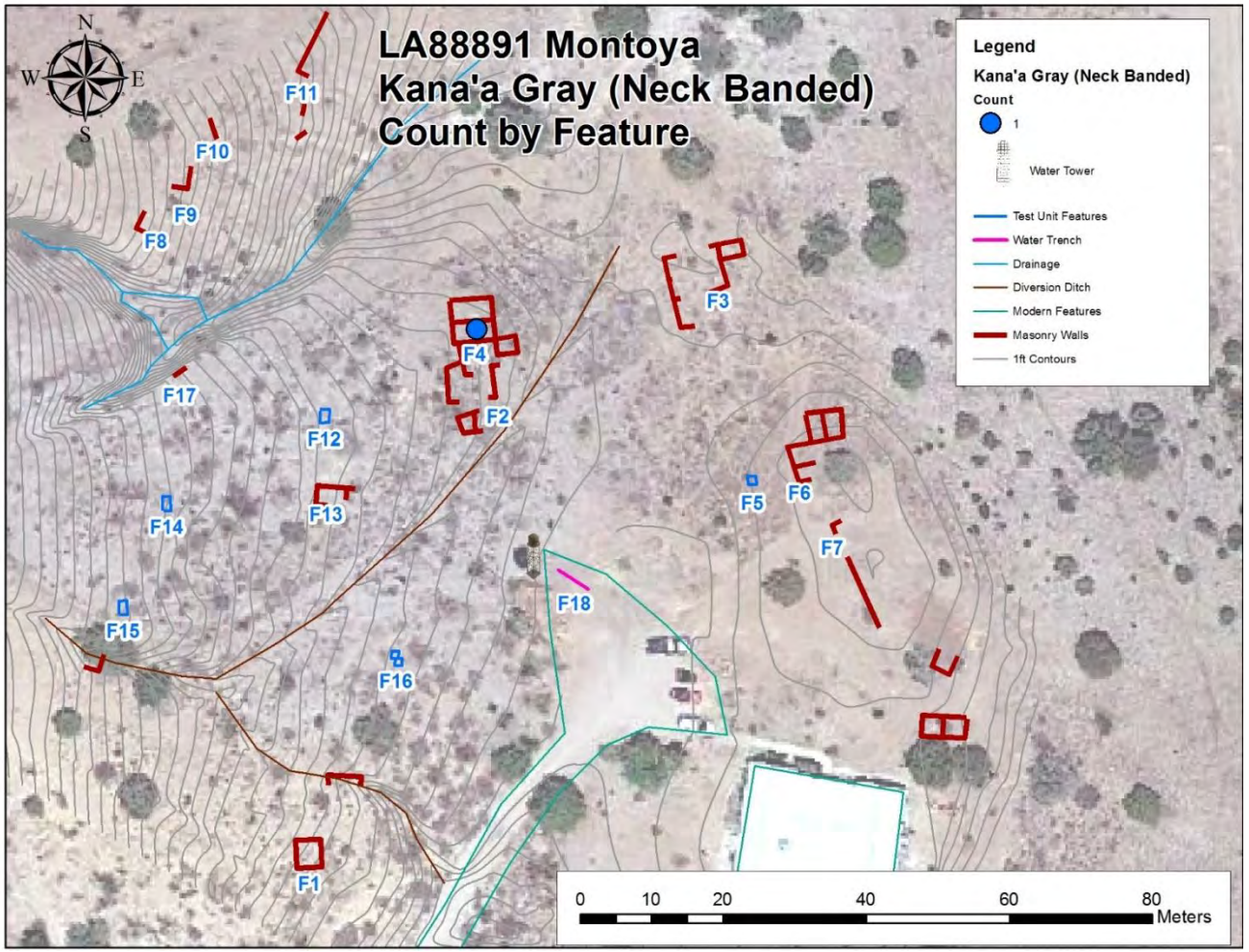

Figure 115. Distribution of Kana'a Gray Sherd on LA 88891.

Figure 116. LA88889: Kana'a Gray Jar Body Sherds (06-358, 06-09).

KIATUTHLANA BLACK-ON-WHITE

(CIBOLA WHITE WARE, CHACO SERIES)

Key Attributes. Sherd and sand temper; decorated surfaces are well smoothed, slipped, and polished; matte, mineral-based pigment; design elements include nested parallel lines, lines that border solid elements, and ticked solid elements.

Dates. Accepted: A.D.850/875 – 950. CAP Period/Phase dates: Late Pit House Period, circa A.D. 750/800 – 900 (Three Circle Phase). Recovered only from the Victorio Site, this type was found in early to very late temporal contexts; three sherds were in the Late Pit House Period/Three Circle Phase, A.D. 750/800 – 900, one in the Early Pueblo Period/Mimbres Classic Phase, A.D. 1000 – 1130 and another sherd was in the Socorro Phase context, A.D. 1130 – 1200. Sixteen sherds were recovered from the Late Pueblo Period/Tularosa Phase context of A.D. 1200 – 1290, one sherd was located in the Proto-historic Period/Apache-mixed context of A.D. 1600 plus, and the remaining thirty-two sherds of Kiatuthlana B/w were found in contexts so mixed that a temporal context could not be determined.

Basis of the Present Description. There were fifty-five sherds classified as Kiatuthlana Black-on-white (Table 20), all of which were recovered from the Victorio Site (LA 88889). Figure 117 displays the distribution of the sherds. Figures 118-122 provide images of representative sherds. See also Gladwin and Gladwin (1934), Hawley (1936), H. S. Gladwin (1945), Windes (1977), Hays-Gilpin (1998), Windes and McKenna (2009).

Table 20. Count of Kiatuthlana Black-on-white Sherds.

Type	1125	2292	88889	88891	Grand Total
Kiatuthlana Black-on-white			55		55

Construction. Hand coiling and scraping.

Paste. Relatively hard, dense paste with medium to fine texture. Color ranges from medium gray to white, carbon streaks are rare. Temper consists of prepared sherd and sand.

Surface Color. The white colored slip on bowls and jars was applied uniformly and covered the undersurface quite well. Bowls appear to be slipped on both interior and exterior surfaces while jars are slipped only on the exterior surface and the interior surface of jar necks.

Surface Finish. Usually very smooth and well-polished with a good slip on both surfaces of bowls and the exterior surface of jars. Interiors of jars are scraped smooth but may undulate slightly.

Vessel Forms. Hemispherical bowls dominate, but jars, pitchers, and effigies were produced. Rims tend to be direct with rounded to slightly tapered rim lips.

Decoration. Well executed, fine-line (1 mm width) to designs with line-widths of 2-3 mm are open, simple, and appended from the rim some of which are reminiscent of those designs seen on San Marcial or White Mound Black-on-white. Design elements include nested parallel lines and lines that border solid elements, chevrons, solid triangles, dots appendant from linear and solid designs, wavy lines and wavy line hachure, frets, and zig-zag lines. Designs tend to intersect the bowl rim at an angle.

Paint. Iron-based mineral pigment.

Remarks. At the onset of the analysis, Kiatuthlana Black-on-white was confused at times with its predecessor San Marcial Black-on-white. Designs are similar on both types, but after reanalysis of these two types it was clear that San Marcial Black-on-white does occasionally have streaky polishing as well as a thin white slip. Further, it appears that the occurrence of polishing and slipping on San Marcial (see *Remarks,* San Marcial B/w, this volume) tends to increase towards the later end of the production period as polishing becomes common on late Pithouse/early Pueblo period ceramics such as Kiatuthlana Black-on-white. Ultimately, San Marcial B/w was distinguished from Kiatuthlana B/w by the presence of unpolished, floated surfaces through which coarse sand temper protruded, while Kiatuthlana B/w was well slipped and polished and had prepared sherd and sand temper.

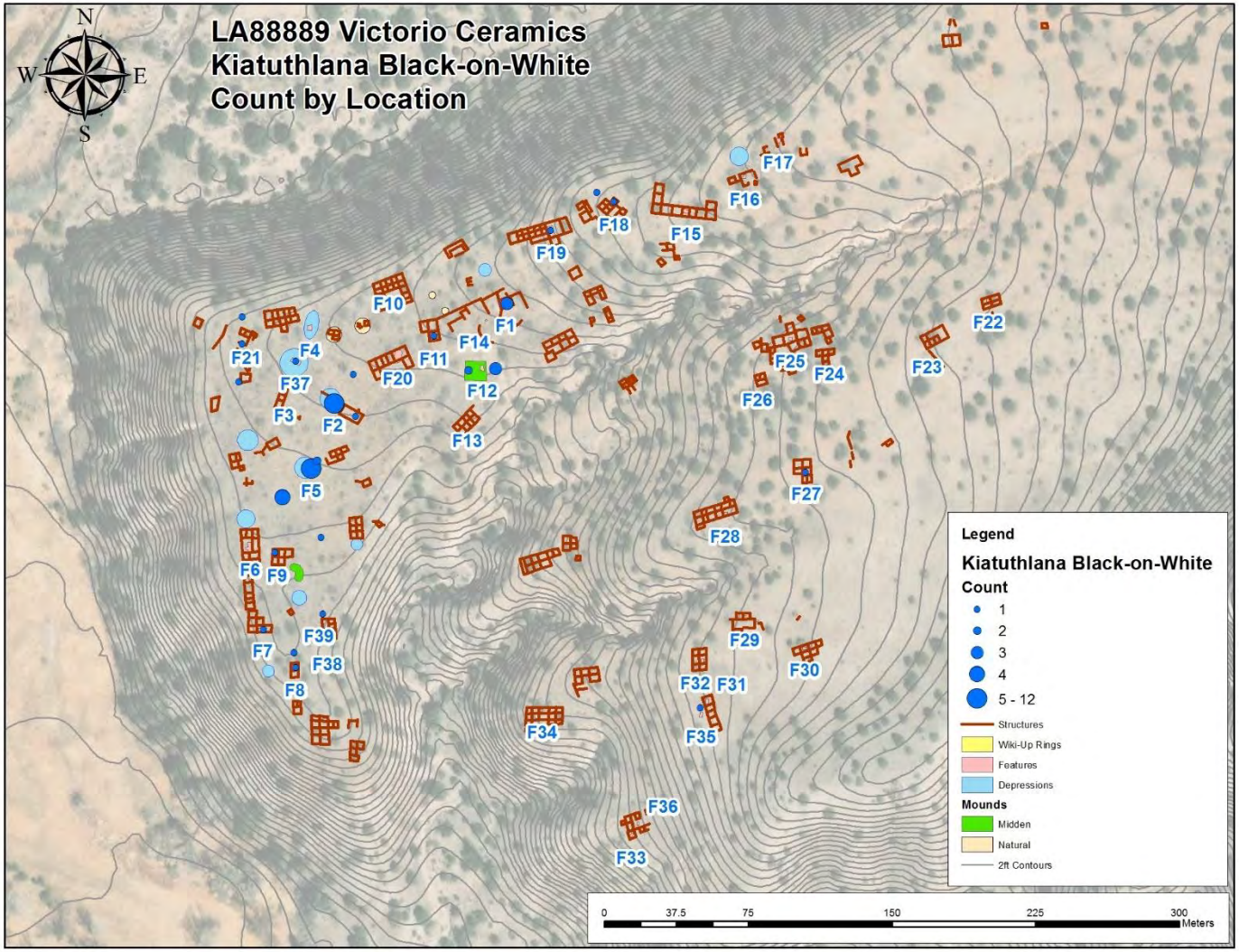

Figure 117. Distribution of Kiatuthlana Black-on-white Sherds on LA 88889.

Figure 118. LA 88889: Kiatuthlana Black-on-white Bowl Body Sherds (05-81, 05-334, 05-484, 05-591, 05-811, 05-841).

Figure 119. LA 88889: Kiatuthlana Black-on-white Jar Body Sherd (07-1194).

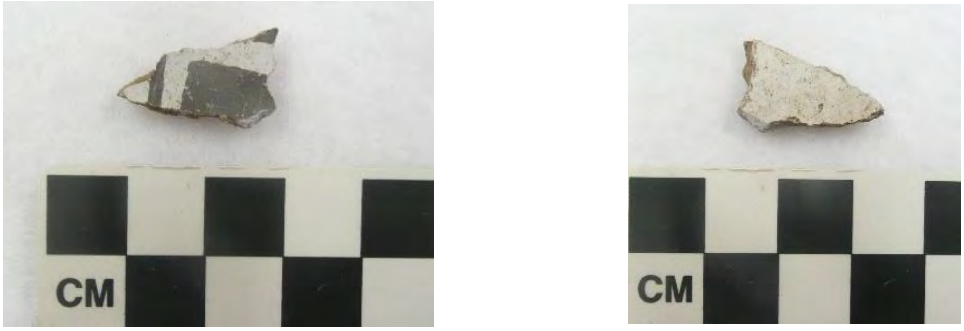

Figure 120. LA 88889: Kiatuthlana Black-on-white Bowl Body Sherd (08-762) Interior & Exterior Surfaces.

Figure 121. LA 88889: Kiatuthlana Black-on-white Bowl Body Sherds (09-31, 09-304).

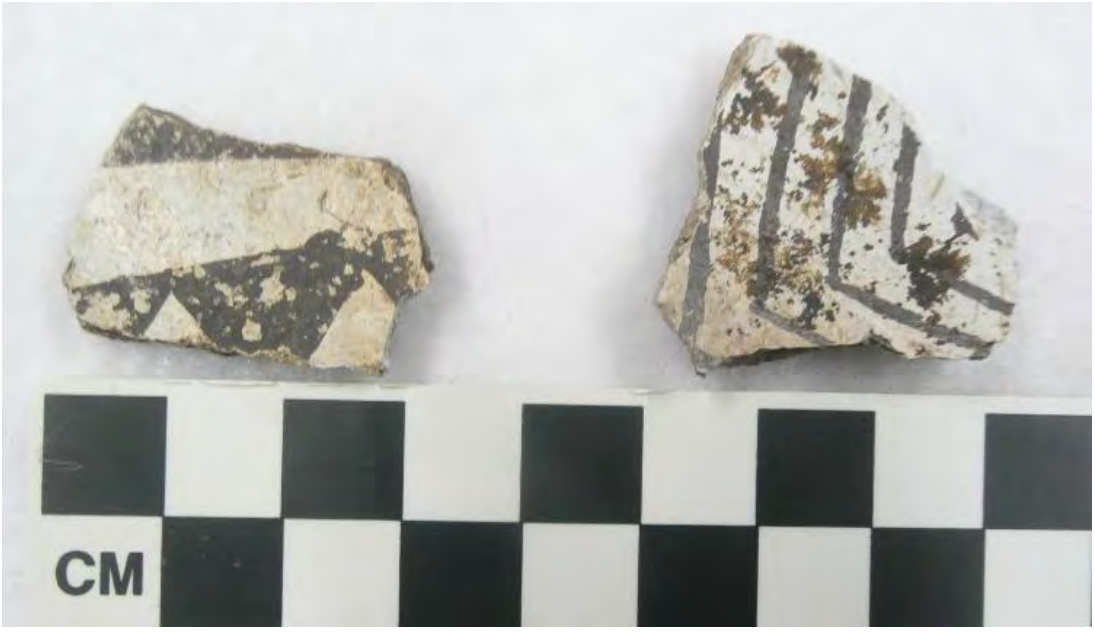

Figure 122. LA 88889: Kiatuthlana Black-on-white Bowl Body Sherds (10-691, 10-476).

KWAKINA GLAZE POLYCHROME

(ZUNI GLAZE WARE)

Key Attributes. White slip on the interiors of bowls, red to orangish-red slip on the exteriors; banded design elements in subglaze to glaze pigment that run obliquely from the rim on the interiors of bowls, and white narrow-line geometric designs in a continuous band around the exterior.

Dates. Accepted: A.D. 1275 – A.D. 1375/1400. CAP Period/Phase dates: Late Pueblo Period, A.D. 1300 – 1400; all thirty-three sherds of Kwakina Glaze Polychrome recovered from the Pinnacle were found in the Early Glaze period temporal context of A.D. 1300 – 1400. One sherd found on the Victorio Site was located in a late Tularosa Phase context (A.D. 1200 – 1290).

Basis of the Present Description. Thirty-four sherds of Kwakina Glaze Polychrome are in the Cañada Alamosa assemblage (Table 21). None were recovered from the Kelly Canyon Site (LA 1125), thirty-three were identified at the Pinnacle (LA 2292), one from the Victorio Site (LA 88889), and none from the Montoya Site (LA 88891). Figures 123 and 124 display the distribution of sherds on LA 2292 and LA 88889. Figures 125-127 present representative sherds. See also Reed (1955), Woodbury and Woodbury (1966), and Eckert (2008).

Table 21. Count of Kwakina Glaze Polychrome Sherds.

Type	1125	2292	88889	88891	Grand Total
Kwakina Glaze Polychrome		33	1		34

Construction. Hand coiling and scraping.

Paste. Color ranges from medium gray, pale gray, to white; carbon streaks are uncommon. Temper consists of fine to coarse particles of sherd. Paste texture can range from coarse to fine depending on the particle size and abundance of the prepared sherd temper.

Surface Color. Bowl interiors are uniformly slipped with a gray-white or chalky white slip. Exteriors are slipped with red to orangish-red slip. The slip is polished before decoration was applied. Jar forms are uncommon.

Surface Finish. Interior and exterior surfaces are well smoothed and typically have a uniform polish. The slip is uniformly applied.

Vessel Forms. Deep open bowls dominate; jar forms rare. Rims are slightly incurving and beveled towards the interior.

Decoration. The interior design is laid-out in a band style with upper and lower framing lines and the bottom center open and plain. Motifs are appended obliquely from the upper-most framing line that is drawn as a wide band. Typical motifs and elements include parallel hatching, sets of parallel lines, pendant dots, solid geometric elements, checkerboard with or without dots in the non-solid squares of the checkerboard, interlocking and stacked steps, and zig-zag elements. The design style is similar to that seen on Heshotauthla Glaze Polychrome and Pinedale Polychrome. Bowl exteriors are encircled with a continuous band of fine to moderate width white colored geometric elements that are sometimes outlined with black colored linear elements.

Paint. Mineral-based pigment utilized on the interiors of bowls (and occasionally outlining white elements on the exterior bowls) is a subglaze to glaze that occurs as a true black but may have green to purple undertones. White colored designs on exteriors are thought to be derived from kaolin clay.

Pigment on nine sherd samples of Kwakina Glaze Polychrome from the Pinnacle underwent lead isotope analysis to identify potential resources for the ore. Six of these sherds showed lead associated with the Hansonburg mining district east of Socorro, New Mexico, two sherds had a lead mix associated with both the Hansonburg and the Cerillos (upper Rio Grande) mining districts. Lead on one of the sherds could not be sourced. Please see Appendix A for the complete results of the analysis.

Neutron Activation Analysis. The analysis for Kwakina Glaze Polychrome and Heshotauthla Glaze Polychrome had similar results and are discussed together. Like Pinedale Polychrome, none of the eight sherds of Heshotauthla Glaze Polychrome and none of the eight sherds of Kwakina Glaze Polychrome submitted from Pinnacle were a match for identified groups in the Zuni area as defined by Peeples (2018) or Safi (2015). However, there is a strong match for both types with Tijeras Group 1 as defined by Habicht-Mauche and Eckert (2021). Their analysis suggests that Tijeras Group 1 is produced in the Lower Zuni River/Little Colorado and/or areas east of Zuni. The working hypothesis developed from this project is that these sherds may have been produced even farther east in the area that includes Gallinas Mountains and the lower Rio Salado. This hypothesis is supported by a positive comparison with the Socorro/San Marcial groups from that same region. However, unlike Pinedale Polychrome, none of the

Heshotauthla G/poly and Kwakina G/poly samples were a match with Group 10, which is believed to have been produced at Gallinas Springs Pueblo in that same area. (Ferguson et al. 2024).

Remarks. Kwakina Glaze Polychrome is among the first types within the Cibola region to utilize white slip on a red pottery ware. Developments paralleling this color combination at about the same time period include the early Roosevelt Red Ware types of Pinto and Gila Polychrome and San Clemente Glaze Polychrome which is a Rio Grande Glaze A type. All of these types can be easily confused with one another without close examination of the pigment type and the tempering material.

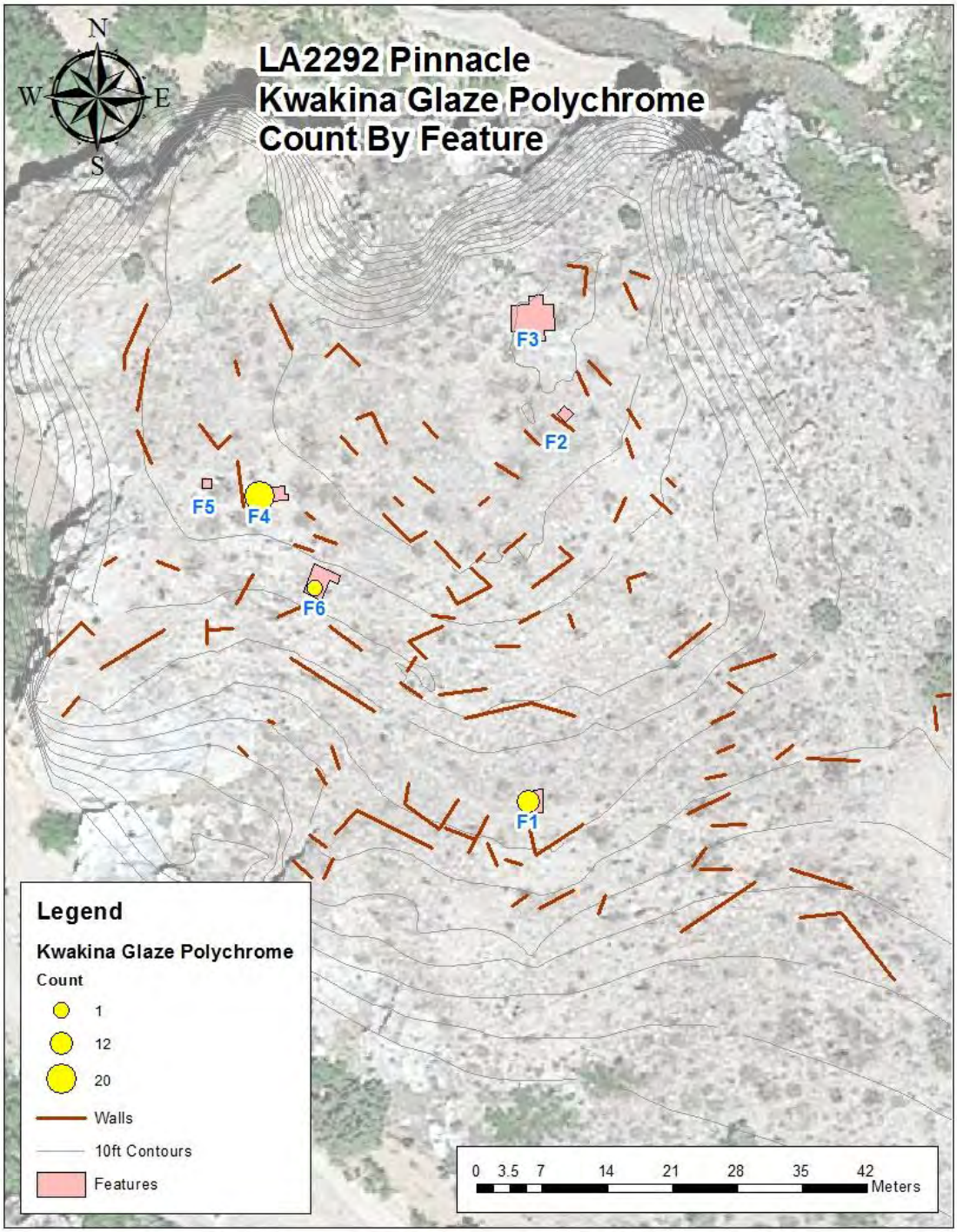

Figure 123. Distribution of Kwakina Glaze Polychrome Sherds on LA 2292.

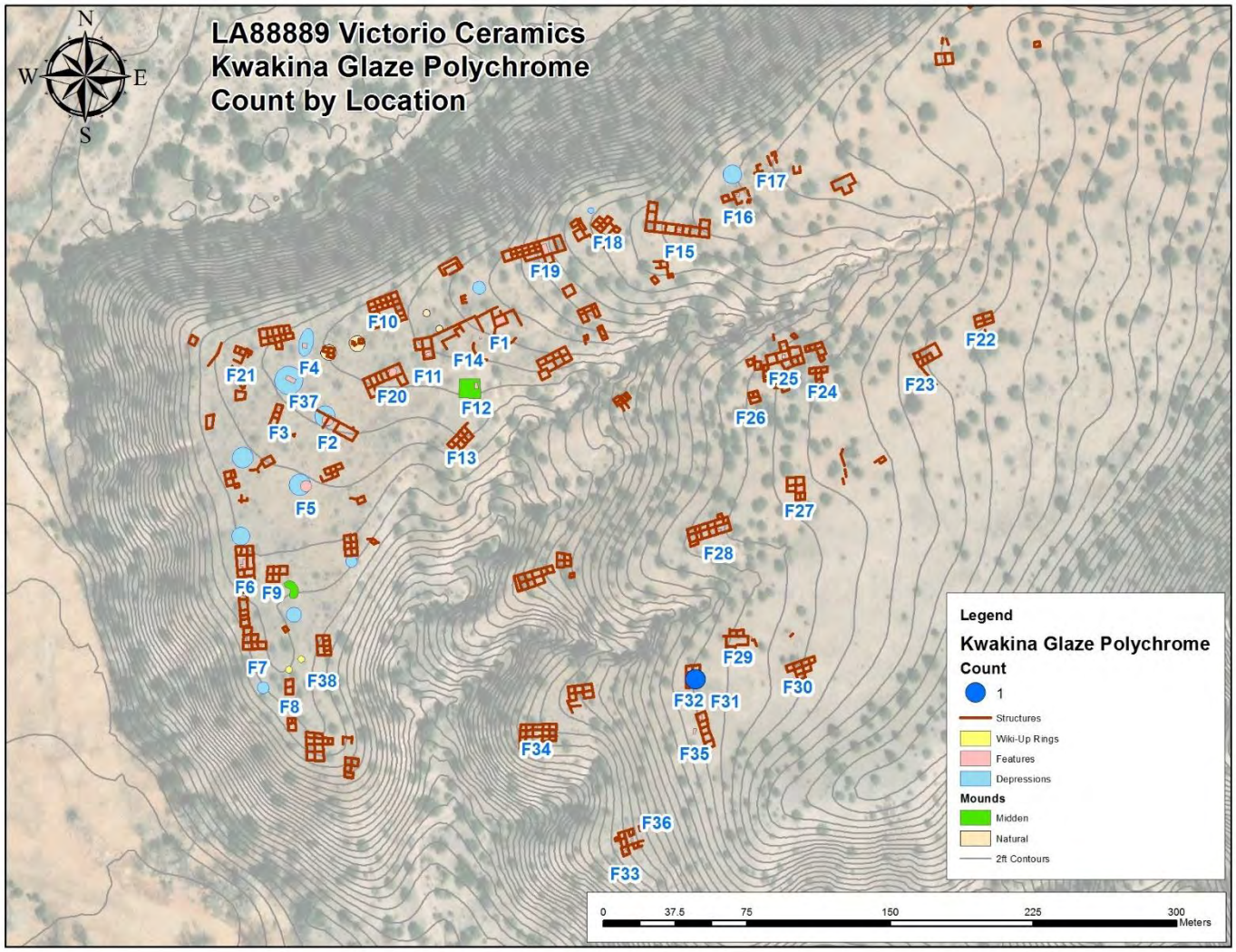

Figure 124. Distribution of the Kwakina Glaze Polychrome Sherd on LA 88889.

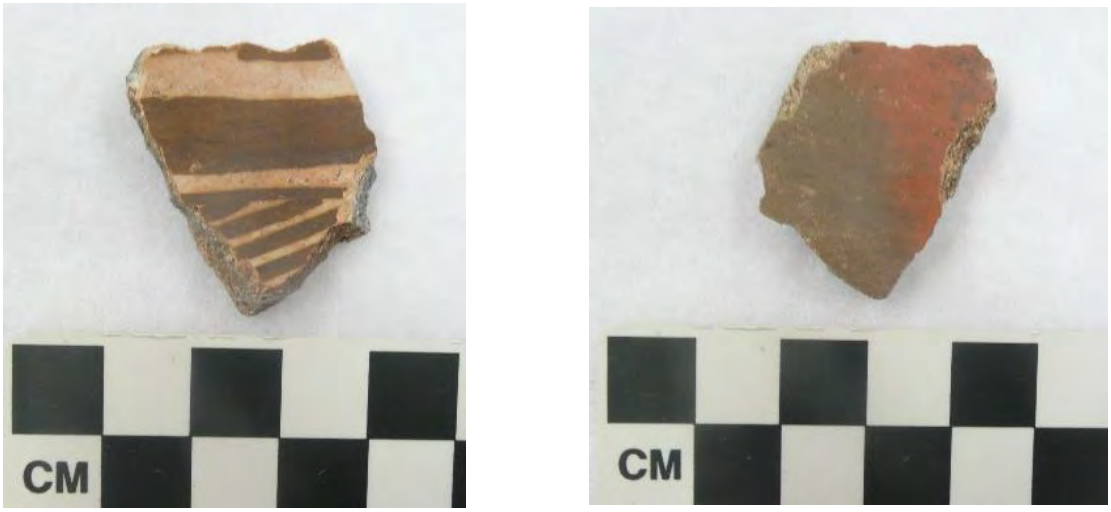

Figure 125. LA 88889: Kwakina Glaze Polychrome Bowl Body Sherd (08-1135) Interior and Exterior Surfaces.

Figure 126. LA 2292: Kwakina Glaze Polychrome Bowl Body Sherds and Dipper Fragment in Center (02-555, 02-331) Interiors and Exteriors.

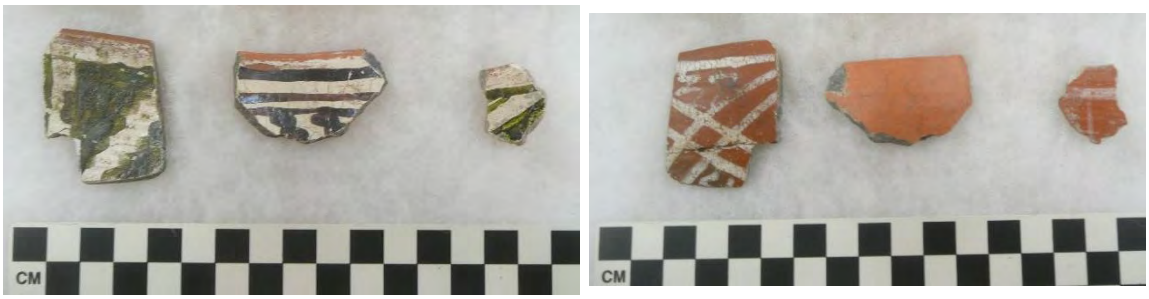

Figure 127. LA 2292: Kwakina Glaze Polychrome Bowl Rim Sherds (02-567, 02-413, 02-362).

LINCOLN BLACK-ON-RED

(THREE RIVERS RED WARE)

Key Attributes. Smooth, brownish-red, to maroon red surfaces that are floated and designs rendered in a black, mineral-based pigment that subglazes or appears as a full glaze.

Dates. Based on tree-ring evidence, Breternitz (1966:82) places this type in the mid-1300s. Smiley, Stubbs, and Banister (1953:58) provide the date of A.D. 1300 – 1400 for Lincoln Black-on-red. Regarding the few sherds of Lincoln B/r recovered at the Cañada Alamosa Project, they were located in the Late Pueblo Period/Early Glaze period context (A.D. 1300 – 1400) which associates the Lincoln sherds with Zuni and Rio Grande glaze wares. No Lincoln B/r sherds were found in the Tularosa Phase contexts of the Victorio Site or the Magdalena contexts of the Pinnacle. This strongly indicates a post-1300 date for the type at the Cañada Alamosa Project.

Basis of the Present Description. Only seven sherds recovered from two features (five in Feature 1 and 2 were in Feature 4) of Lincoln Black-on-red were found at the Pinnacle (Table 22). Figure 128 presents the distribution of sherds. Figure 129 provides images of representative sherds. See also Mera and Stallings (1931), Smiley, Stubbs, and Bannister (1953), Kelly (1966), and Wiseman (2004 and 2014).

Table 22. Count of Lincoln Black-on-red Sherds.

Type	1125	2292	88889	88891	Grand Total
Lincoln Black-on-red		7			7

Construction. Hand coiling and scraping.

Paste. Medium-hard to softer and crumbly. Color ranges from dark reddish-brown to medium brown; carbon streaks occur occasionally. The temper is fine-grained and consists of mixed particles of gray and white feldspar and sand.

Surface Color. A deep and rich brownish-red color ranging to an orangish-red is typical for the type, but the surface color can also range to a light reddish-orange color which overlaps with that found on Three Rivers Red-on-terracotta.

Surface Finish. The decorated surface, namely bowl interiors, are well smoothed and floated and may exhibit intermittent polishing before the painted designs were laid on the surface. The exteriors of bowls are smoothed but may occasionally appear rough and poorly finished.

Vessel Forms. Hemispherical bowls with direct rims and flattened to slightly rounded rim-lips.

Decoration. There are two design layouts observed on the interior surface Lincoln Black-on-red. One layout is identical to that seen on Three Rivers Red-on-terracotta with multiple fine lines, usually in groups of three to four, that follow the rim and flow into and across the interior spaces of the bowl. Wiseman remarks that linear elements become slightly wider on Lincoln B/r (2004:80). This is regardless of the design layout type on Lincoln B/r. The second design layout observed on Lincoln B/r is a banded type. Here, all design motifs and elements are rendered between the upper and lower framing line of the band. The upper framing line is situated just below the rim and the bottom framing line is painted on the vessel wall resulting in an open, undecorated bottom of a bowl interior and a design band that is usually not much wider than 8cm to 10cm. Linear and rectilinear motifs are laid-out in panels within the band. Other design elements seen within the design band include solid triangles, rectangles, and stepped solids, appended dots and solid triangles, interlocking stepped elements, serrated edges on solid elements, checkerboard-like solid and open areas.

Paint. Mineral-based pigment, possibly manganese, was utilized to render designs. The recipe for this pigment was such that it was capable of producing a subglaze pigment. Mera and Stallings (1931:8) believed that Lincoln Black-on-red transitioned into Rio Grande Glaze I (specifically Agua Fria Glaze-on-red) based on the glaze pigment. In terms of appearances, both Agua Fria and Lincoln do look similar, but Lincoln Black-on-red did not become Agua Fria Glaze-on-red, it pretty much stayed the same, unique to the area and resources used to produce it (Wiseman 2014:39). It is possible that native potters producing Lincoln B/r were attempting to reproduce what they liked on Agua Fria, but they were unable to create a product that was indistinguishable from Agua Fria. Agua Fria Glaze-on-red was made in both bowl and jar forms, both of which were well finished with thin walls and well smoothed interior and exterior surfaces that were slipped and polished. And although the paint pigment on Aqua Fria Glaze-on-red sometimes subglazed and left portions of painted designs with matt appearing paint, but when it thoroughly vitrified, designs on Agua Fria appeared as a true glaze. This didn't occur with any consistency on Lincoln Black-on-red (Wiseman 2014:39).

Remarks. Lincoln Black-on-red is the third and last type within the Three Rivers Red Ware sequence and it developed out of Three Rivers Red-on-terracotta (Wiseman 2014:38). Both Lincoln B/r and Three Rivers R/t can overlap each other in surface color particularly in the shades of orange/terracotta (Wiseman 2014:38).

However, paint color seems to hold true with pigment on Lincoln being black and that on Three Rivers being red (Wiseman 2004:80). With regard to design system, Lincoln B/r clearly has two styles of decoration (see Decoration; this discussion) whereas Three Rivers R/t always has the Three Rivers style of multiple fine lines, usually in groups of three to four, that follow the rim and flow into and across the interior spaces of the bowl. Lincoln Black-on-red is not found in the same abundance or wide distribution outside of the Sierra Blanca region as Three Rivers Red-on-terracotta even though the two types were produced throughout most of the same period of time (Wiseman 2014:38). Like Three Rivers Red-on-terracotta, Lincoln Black-on-red is most common in the Sierra Blanca region in the Ruidoso and Rio Bonito drainages and Capitan and Jicarilla Mountains (Wiseman 2004:88).

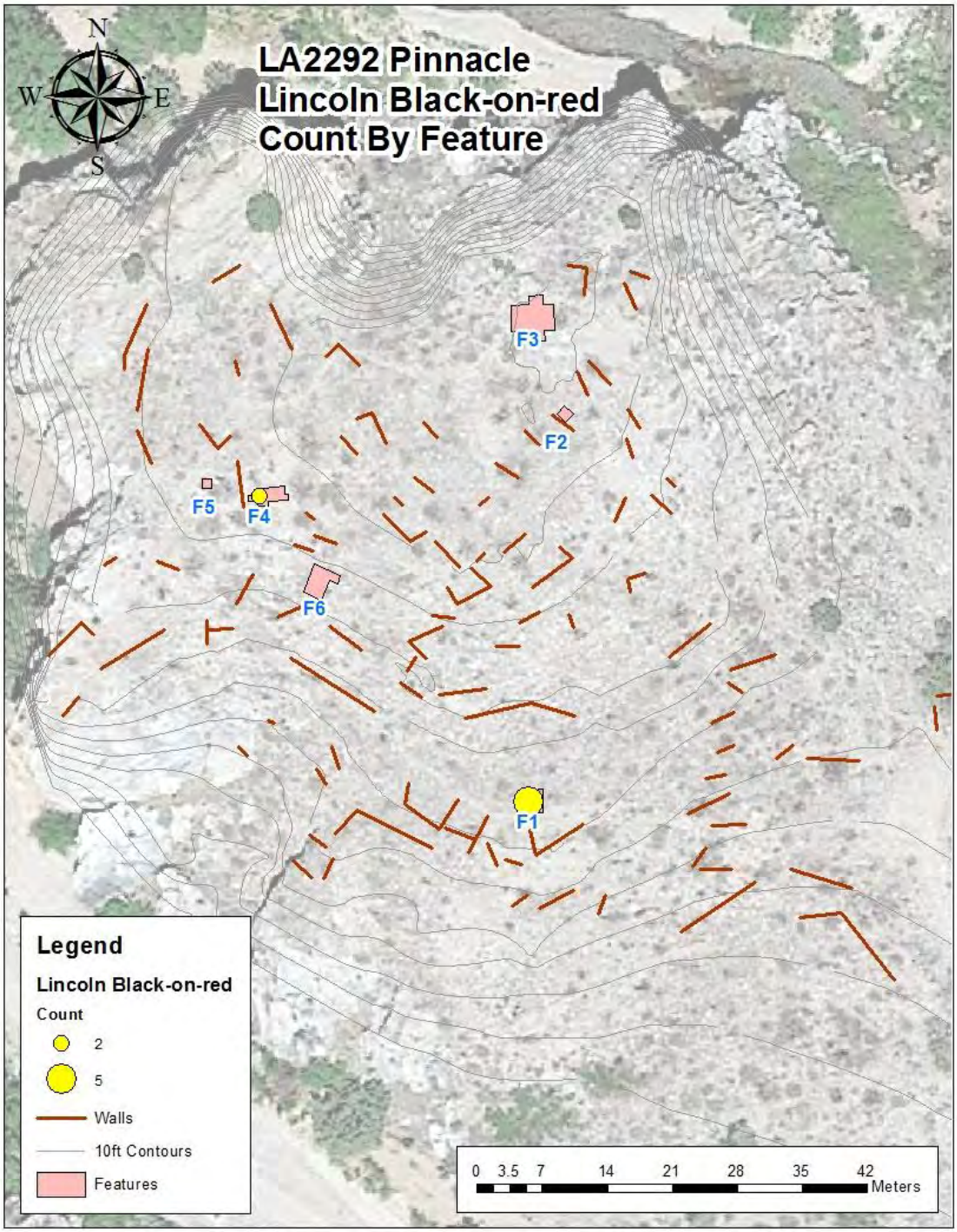

Figure 128. Distribution of Lincoln Black-on-red Sherds on LA 2292.

Figure 129. LA 2292: Lincoln Black-on-red Bowl Body Sherds (00-3, 02-467, 00-14) Interior and Exterior Surfaces.

LINO GRAY

(TUSAYAN GRAY WARE, CIBOLA GRAY WARE/CHACO SERIES)

Key Attributes. Original coils of manufacture are obliterated, but bowl and jar surfaces are rough due to protruding coarse-grained sand temper. Surface color ranges from light to dark gray and surfaces are not slipped, polished, or decorated.

Dates. Accepted: A.D.450/500 – 900. CAP Period/Phase dates: found in the Late Pit House Period to the Late Pueblo Period at the Victorio Site, seven sherds were in the San Francisco/Three Circle Phase temporal context of circa A.D. 675/750 – 900, one sherd was recovered from the Early Mimbres Phase context (A.D. 950 – 1000), and fifteen were in the Tularosa Phase temporal context of A.D. 1200 – 1290.

Basis of the Present Description. Twenty-three sherds of Lino Gray were recovered from the Victorio Site (LA88889), none were identified from the other three sites (Table 23). Figure 130 displays the distribution of sherds. Figures 131 and 132 display representative sherds. See also Hargrave (1932), Hawley (1936), Colton (1955), Hays-Gilpin (1998), and Windes and McKenna (2009).

Table 23. Count of Lino Gray Sherds.

Type	1125	2292	88889	88891	Grand Total
Lino Gray			23		23

Construction. Hand coiling and scraping.

Paste. Although the paste tends to be relatively hard, the abundance of temper in the paste tends to make it crumbly and coarse appearing. Paste color ranges from light gray to dark gray, occasionally a carbon streak may be visible in a light-colored paste. Temper material consists of coarse-grained sand temper.

Surface Color. The surface color is always some shade of gray, ranging from light gray to dark gray.

Surface Finish. All surfaces, regardless of vessel form, are scraped smooth (the original coils of manufacture are obliterated) but are not slipped, polished or decorated. Surface texture is coarse in appearance as temper typically protrudes all surfaces.

Vessel Forms. Both bowl and jar forms were produced. Side walls are direct to the rim and rim lips are rounded to those that appear slightly pinched. Rim sherds are critical to determine the presence of Lino Gray in an assemblage as body sherds

can be confused with other early gray utility types. Out of twenty-three sherds of Lino Gray identified, eleven are jar rim sherds.

Decoration. None

Paint. None

Remarks. Also known as Post Basket Maker Pottery (Kidder 1924:76), Post Basket Maker Ware (Morris 1927:161), Plain Gray Ware (Colton 1955: Ware 8A, Ware 8A-Type 2), Lino Gray is ancestral to the gray utility ware produced across the Anasazi culture area from the Kayenta/Tusayan region of northeastern Arizona to the Cibola/Chaco regions of west central and northwest New Mexico. All across this area, the early to late Puebloan gray ware share similarities in surface treatment and paste characteristics. Colton (1955:Ware 8A) defines the cultural association of Lino Gray and subsequent types produced in the area as being the utility ware of the Kayenta Branch and the Puerco-Chaco branch and the types are therefore comparable with one another.

The presence of Lino Gray in Late Pithouse (San Francisco Phase) contexts on the Victorio Site in combination with a robust assemblage of San Marcial Black-on-white reinforces the evidence of connections with groups located to the north of the project area.

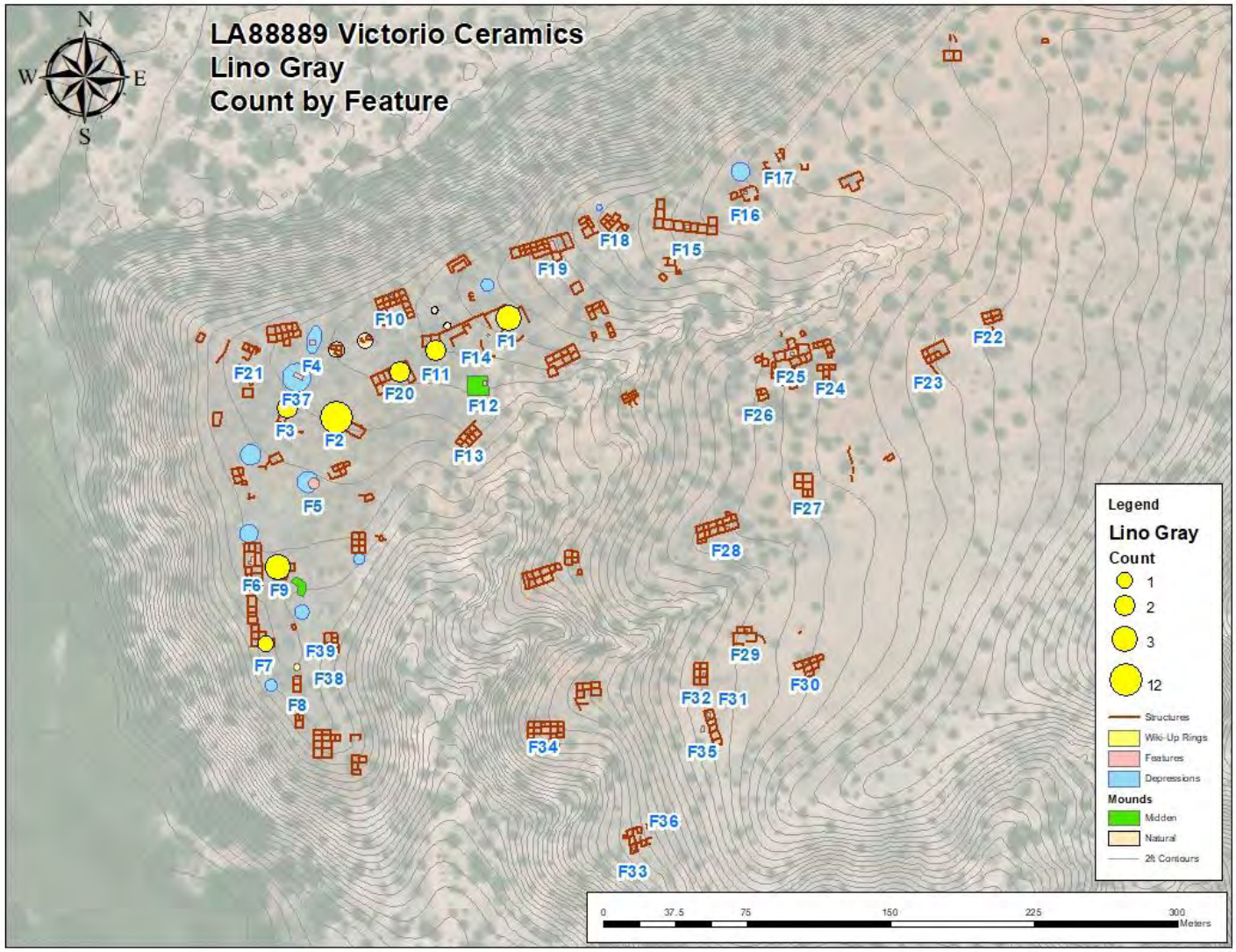

Figure 130. Distribution of Lino Gray Sherds on LA 88889.

Figure 131. LA 88889: Bowl Sherds Lino Gray; Rim on Left Body Sherd on Right (10-309).

Figure 132. LA 88889: Jar Sherd from Near the Rim, Lino Gray (06-664).

LOS LUNAS SMUDGED

(PITOCHE BROWN WARE/CIBOLA BROWN WARE)

Key Attributes. Bowl forms only; interiors are smudged and polished to a luster. Fine, slightly flattened, bands/corrugations on exterior surface averaging 2 to 3mm in width; visible polishing on-top of corrugations; fillet rim.

Dates. Dittert (1959:415) places Los Lunas Smudged in his Kowina Phase on the Cebolleta Mesa circa A.D. 1200 – 1400. Marshall and Walt (1984:98) notes that Los Lunas Smudged appears in minor quantities only in the Late Elmendorf Phase of the Rio Abajo, circa A.D. 1100 -1300. CAP Period/Phase dates: Early to Late Pueblo Period, circa A.D. 1130 – 1290; in all four of the project sites, the majority of sherds of Los Lunas Smudged were found in the Socorro Phase temporal context (N=498), A.D. 1100 – 1200, in the Socorro-Tularosa Phase context (N=707), and in the Tularosa Phase context (N=293), A.D. 1200 – 1290. The remaining 347 sherds of the type were found in temporal contexts where the type is likely intrusive, ranging from the Late Pit House Period/San Francisco and Three Circle Phases (N=2, A.D. 750 – 950), to the Early Pueblo Period/Mimbres Phase (N=14, A.D. 1000 – 1130), two sherds were in the glaze-mixed temporal context (A.D. 1300 – 1400) of Late Pueblo Period in Pinnacle, and 14 were in association with the Proto-historic/Apache context of A.D. 1500 plus.

Basis of the Present Description. There are 1,845 sherds in the Cañada Alamosa assemblage (Table 24). Nine hundred sixty-seven sherds and one restored bowl (80%) were recovered from the Kelly Canyon Site (LA 1125), two sherds from the Pinnacle (LA 2292), 628 sherds and one partially restored bowl (50%) from the Victorio Site (LA 88889), and 248 were identified from the Montoya Site (LA 88891). Figures 133-136 display the distribution of sherds. Figures 137-140 present images of representative sherds. See also Mera (1935), Hawley (1936), Dittert (1959), Human Systems Technical Manual (1973), Warren (1982), and Marshall and Walt (1984).

Table 24. Count of Los Lunas Smudged Sherds by Site.

Type	1125	2292	88889	88891	Grand Total
Los Lunas Smudged	967	2	628	248	1845

Construction. Hand coiling and scraping.

Paste. Friable/crumply/soft; texture ranges from moderately coarse to fine and is dependent upon the amount and particle size of the tempering material; color ranges from a uniform yellowish brown to light gray, and it appears jet black near

the interior surface which has been purposefully smudged. Temper particles are angular and tend to be large enough to be visible to the unaided eye. Particles range in color from white to gray and are most likely to be rhyolite detritus. Angular particles of translucent quartz are also present.

Surface Color. Bowls interiors are smudged to a deep jet black. The exterior surface color tends to be yellowish brown but fire clouds do occur.

Surface Finish. Bowl interiors are polished to a luster. The exteriors of bowls are characterized by plain, very fine corrugations averaging 2-3 mm in width. Corrugations are slightly flattened, with no overlapping or smearing between coils creating a uniform, even surface; coils appear uniformly even. Polish is visible on corrugations. Corrugations tend to be restricted to the upper vessel body and may also occur over the entire exterior surface (no samples of this style have been observed in the Cañada Alamosa assemblage). Non-corrugated surfaces are plain, smoothed and polished.

Vessel Forms. Bowl forms only with fillet rims which tend to be direct or may be slightly outwardly tapered.

Decoration. Corrugations may be embellished with elongated (5mm) shallow punctates or indentations that form geometric unit designs including squares, rectangles, triangles and stepped chevrons). Design patterns are laid vertically or diagonally across the corrugations. One specimen in the Cañada Alamosa assemblage exhibits shallow, linear indentations in the surface positioned immediately below the bottom-most corrugation on the vessel body. This indentation is continuous around the vessel body. Non-corrugated surfaces are plain, smoothed and polished.

Paint. None

Neutron Activation Analysis. This type along with Pitoche Rubbed Ribbed are commonly found with Socorro Black-on-white assemblages. The majority of the Cañada Alamosa samples appear to be produced in the Gallinas Mountains/lower Rio Salado area northwest of Magdalena, New Mexico (Ownby 2017). These samples dominated the assemblage from the Kelly Canyon Site which is considered to be the first enclave constructed by Socorro migrants from the Rio Salado and thus included copious amounts of imported utility wares. On the other hand, the Victorio and Montoya sites had Mimbres components that were eventually overlain by Socorro components and assemblages from those sites contain locally produced examples of Los Lunas Smudged and Pitoche Rubbed

Ribbed that were produced after the Socorro community had settled into the Cañada Alamosa (Ferguson et al. 2024).

Remarks. Los Lunas Smudged is part of the southern brown ware tradition originating in early Mogollon types that include Alma Plain and Alma Neck Banded. The southern brown ware tradition is characterized by soft paste pottery, tempered with sand or detritus, oxidized to a medium brown color and having smoothed and polished surfaces. By A.D. 900-A.D. 1000, plain and indented corrugated brown pottery began to dominate southern brown ware utility styles. Smudging the interior surface of bowl forms with corrugated exteriors was also practiced. Although exterior corrugated treatments varied, smudging the interior of bowl forms is observable in the southern brown ware tradition well into the 13th century and 14th century.

Los Lunas Smudged is most similar to Reserve Plain Corrugated, Smudged Interior Variety, and Reserve Indented Corrugated, Smudged Interior Variety (Martin and Bluhm 1956). However, if the criteria described above for Los Lunas Smudged is applied, particularly that distinguishing the width of the corrugations and the ridged/ribbed configuration, it is possible to distinguish Los Lunas Smudged from the smudged bowl varieties of Reserve Plain and Indented Corrugated. The latter types have corrugations that tend to be 3mm to 4mm in width with high points on corrugations somewhat pushed down as the result of polishing but are not manipulated by rubbing those results in a ribbed configuration. This is a relatively "fine line" to use but, never the less, it is viable criteria. Los Lunas Smudged is consistently very refined when compared to the Reserve Series bowls. This is particularly so under circumstances where smudged and fine-corrugated brown utility pottery is associated with Socorro Black-on-white. The area of abundance for Los Lunas Smudged is the central Rio Grande area between Albuquerque and Socorro and west into the Cebolleta Mesa country.

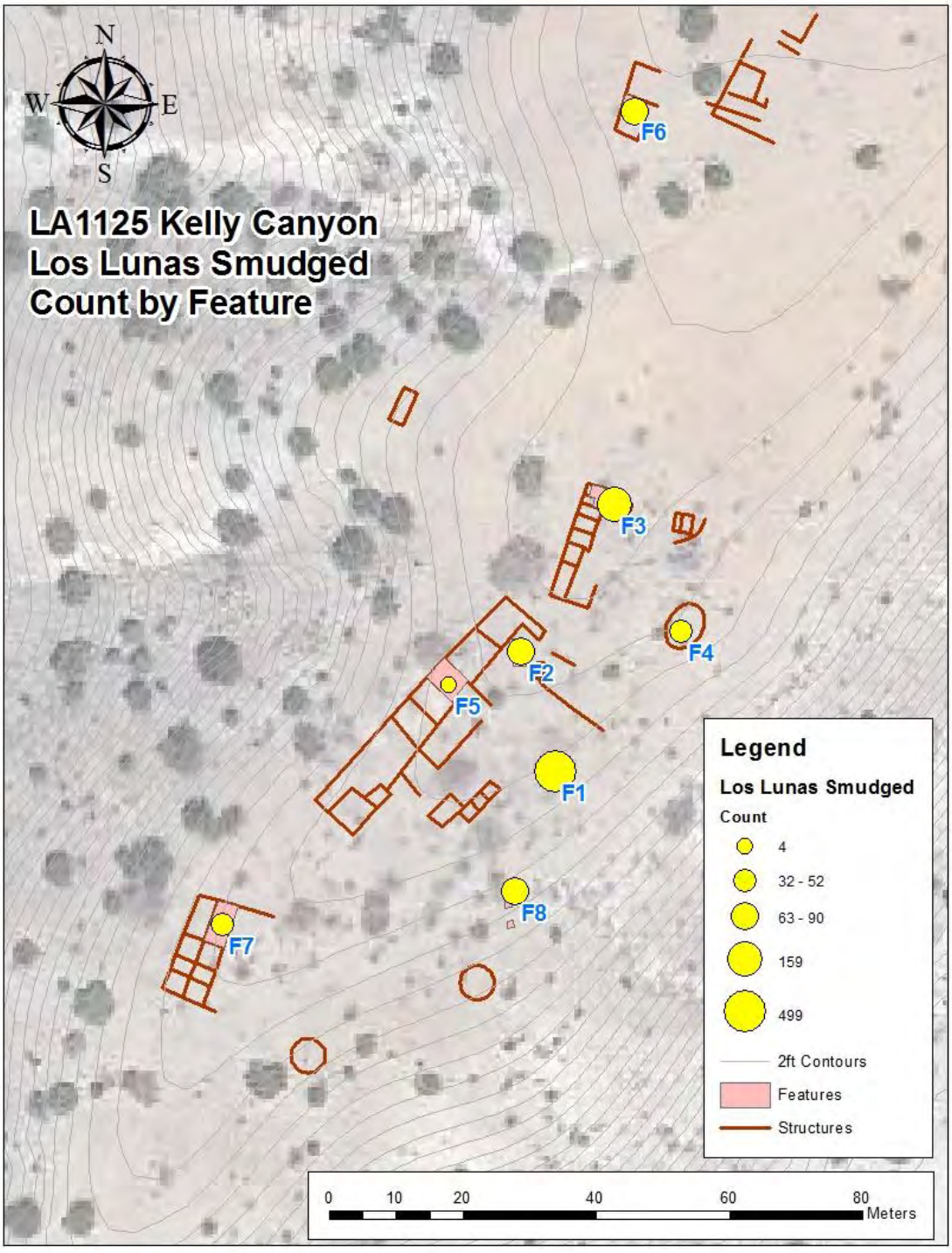

Figure 133. Distribution of Los Lunas Smudged on LA 1125.

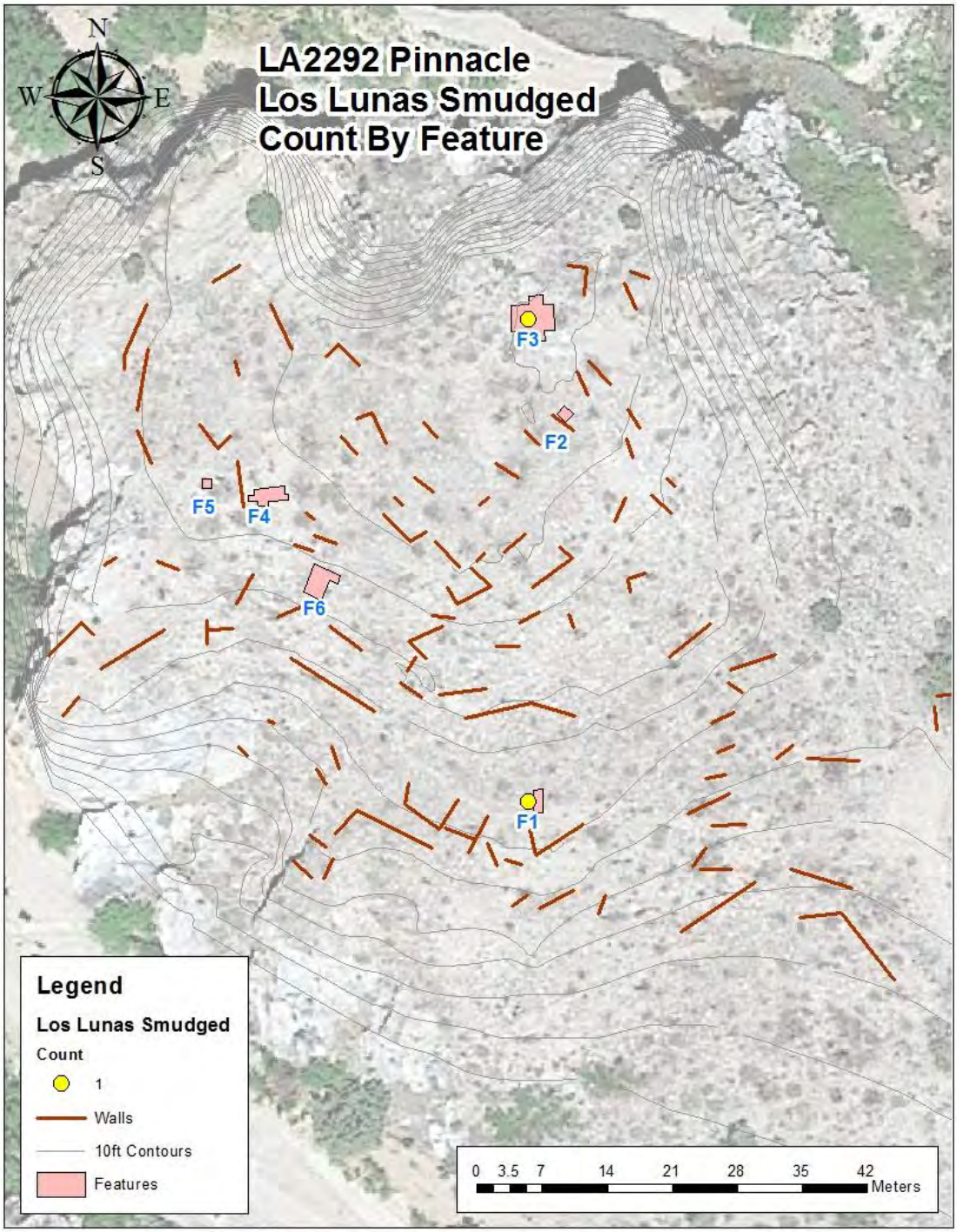

Figure 134. Distribution of Los Lunas Smudged on LA 2292.

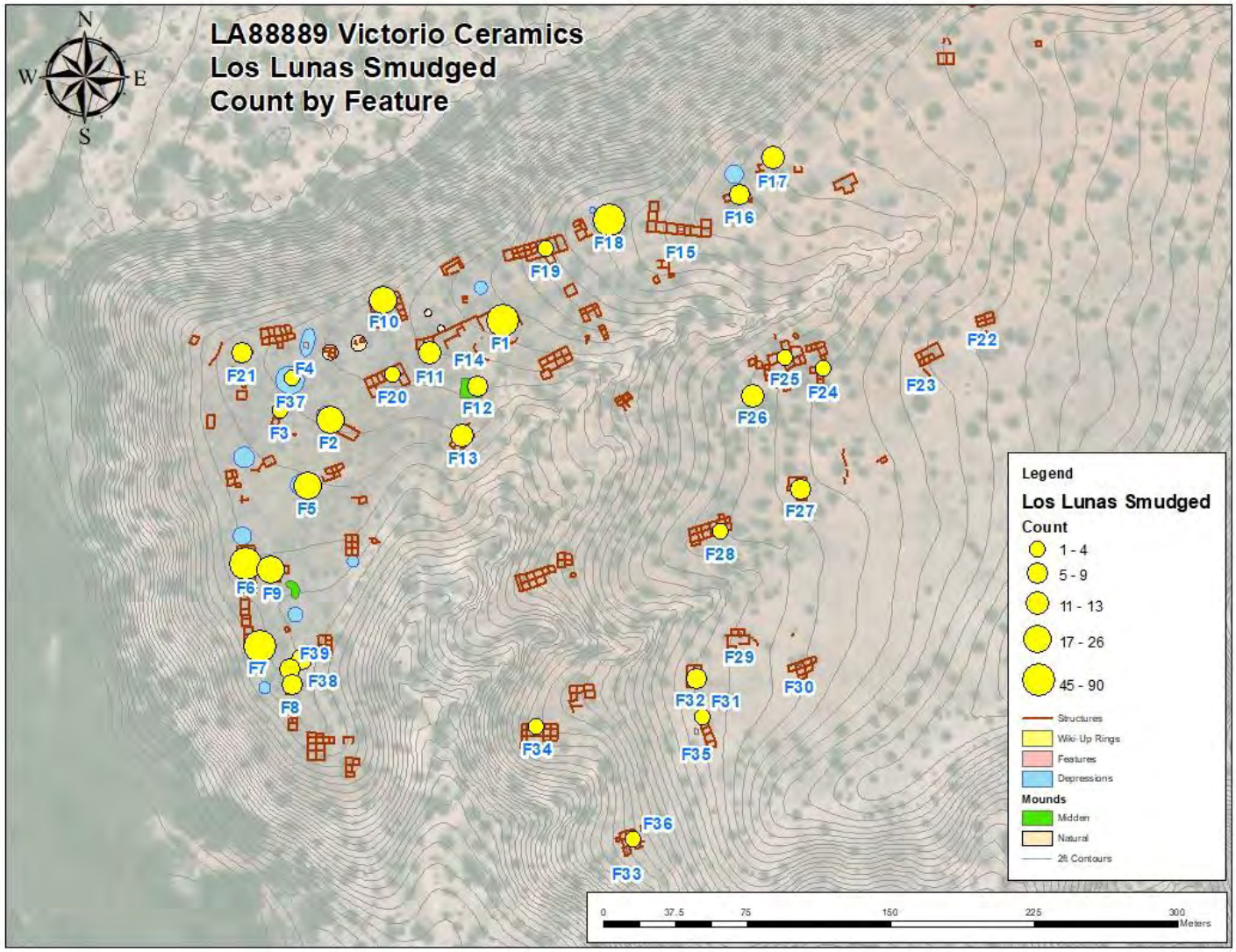

Figure 135. Distribution of Los Lunas Smudged on LA 88889.

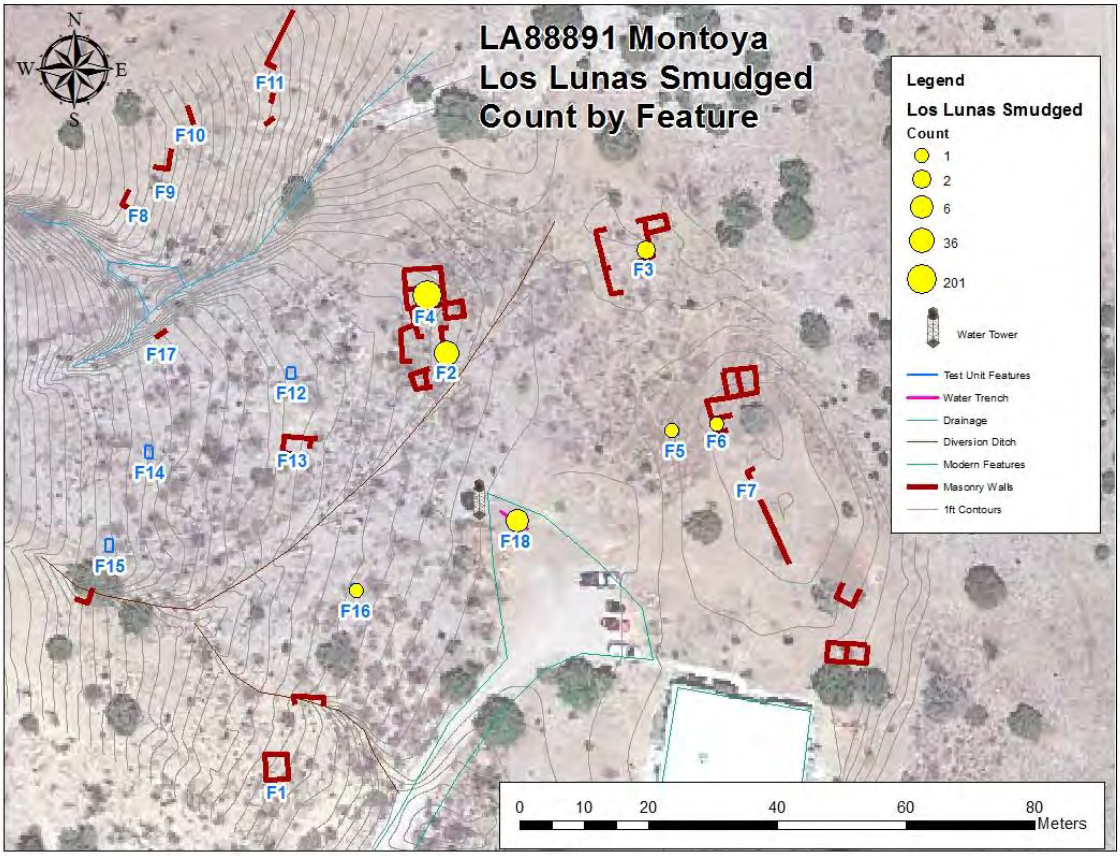

Figure 136. Distribution of Los Lunas Smudged on LA 88891.

Figure 137. LA 88891: Los Lunas Smudged Bowl Rim Sherd (01-576), View of the Corrugated Exterior and Smudged Interior.

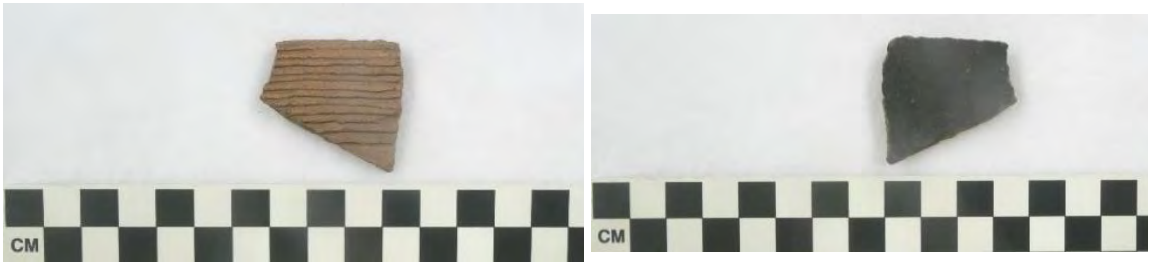

Figure 138. LA 88891: Los Lunas Smudged Bowl Rim Sherd (01-368), View of the Corrugated Exterior and Smudged Interior.

Figure 139. LA 88891: Los Lunas Smudged Bowl Rim Sherd (01-564), View of the Corrugated Exterior and Smudged Interior.

Figure 140. LA 1125: Los Lunas Smudged Bowl Sherds (03-287 Rim, 03-99 Body, 03-76 Rim and Body).

LOS PADILLAS GLAZE POLYCHROME
(RIO GRANDE GLAZE WARE/GLAZE A)

Key Attributes. Red to orangish-red slip is evenly applied to vessel surfaces and motifs are created with a sub-glaze to glaze mineral-based paint pigment. Designs on bowl interiors and exteriors are similar to those seen on Heshotauthla Glaze Polychrome including the thin-line, white colored geometric designs rendered in a continuous pattern encircling the exteriors of bowls.

Dates. Accepted: circa A.D. 1275 – 1350. CAP Period/Phase dates: all twenty-three sherds of the type were found in the Late Pueblo Period/Early Glaze period context (A.D. 1300 – 1400).

Basis of the Present Description. Twenty-three sherds of Los Padillas Glaze Polychrome were recovered from the Pinnacle (LA 2292; Table 25). Figure 141 presents the distribution of sherds on the site and Figures 142 and 143 provide images of representative sherds. See also Mera (1935), Hawley (1936), Warren and Snow (1976), Hayes et al. (1981), Hayes, Young, and Warren (1981), and Snow (1982).

Table 25. Count of Los Padillas Glaze Polychrome by Site.

Type	1125	2292	88889	88891	Grand Total
Los Padillas Glaze Polychrome		23			23

Construction. Hand coiling and scraping.

Paste. Hard; medium texture; color ranges from reddish brown to gray with reddish brown margins; occasionally a dark core. Temper in the Cañada Alamosa Los Padillas Glaze Polychrome assemblage was prepared, mixed igneous rock. Los Padillas Glaze Polychrome is considered to be a local, Rio Grande transitional type (Mera 1933:32) derived from White Mountain Red Wares such as St. Johns Polychrome and Heshotauthla Glaze Polychrome. Essentially, Los Padillas Glaze Polychrome is the intermediate between the non-local White Mountain Red Wares and local Rio Grande Glaze-A red slipped types. The earliest forms of Los Padillas Glaze Polychrome are known to have both sherd and prepared rock temper beginning around the late 1200s, then by A.D. 1400, prepared rock became the dominate temper in Rio Grande glaze ceramic sequence (Snow 1982:251; Snow 2019: personal communication).

Surface Color. Dark red to orangish red slip (thick and uniform) on both interior and exterior surfaces of bowls and the exteriors of jars.

Surface Finish. Slipped surfaces are smoothed and polished as is the exterior surface of jars. The polish ranges from intermittent to well done.

Vessel Forms. Bowl forms dominate. Only one jar sherd was identified in the Cañada Alamosa assemblage.

Decoration. At first glance, Los Padillas Glaze Polychrome looks like Heshotauthla Glaze Polychrome but one must keep in mind that Los Padillas has mixed sherd and prepared rock temper or only prepared rock temper. Heshotauthla Glaze Polychrome and other western White Mountain Red Wares have sherd temper exclusively (Snow 1982:252; Habicht-Mauche 2018: personal communication). Similar to Heshotauthla Glaze Polychrome, bowl forms of Los Padillas have a wide band that encircles the rim and is located just below the rim. Motifs are appended off of the band and drawn down into the interior where a framing-line borders the design leaving the bottom of the vessel to undecorated. The predominately rectilinear motifs and elements include parallel hatching, sets of parallel lines, pendant dots, solid geometric elements, interlocking and stacked steps, zig-zag and zipper-like lines. Like Heshotauthla Glaze Polychrome and St. Johns Polychrome, Los Padillas has a band of continuous, geometric designs on bowl exteriors that are done in a matte white pigment. However, while this continuous design is thin-lined on Heshotauthla Glaze Polychrome and wide-lined on St. Johns Poly, both thin-lined and wide-lined will occur on the exterior of Los Padillas Glaze Polychrome. There were two sherds in the Cañada Alamosa assemblage that had black pigment added to the continuous white design on bowl exteriors. In these two cases, the white design was outlined with black and the other was a black rectilinear motif that looks to be outlined in white or the black was filled into a white colored frame. The combination of white and black on the exterior of Los Padillas Glaze Polychrome indicates the presence of a variety of Los Padillas Glaze Polychrome called Arenal Glaze Polychrome (Warren and Snow 1976:C1–C3). Given the small number of sherds of this type in the assemblage and because production dates for the two types are basically the same, the decision was made to leave these sherds in the larger Los Padillas Glaze Polychrome assemblage.

Paint. Mineral-based black subglaze to glaze pigment that may appear green tinged and white pigment, presumably kaolin clay. Pigment on one sherd sample of Los Padillas Glaze Polychrome from the Pinnacle underwent lead isotope analysis conducted by Judith Habicht-Mauche to identify potential resources for the ore. Analysis indicated lead associated with the Joyita Hills mining district

located in north-central Socorro County, New Mexico. Please see Appendix A for the complete results of the analysis.

Remarks. Los Padillas Glaze Polychrome and its variety Arenal Glaze Polychrome are the earliest, purposefully glazed types in the Rio Grande Valley. Very similar to St. Johns Polychrome and Heshotauthla Glaze Polychrome, Los Padillas Glaze Polychrome became a transitional type from White Mountain Red Wares and Zuni glazes to Agua Fria Glaze-on-red. As a transitional type (Mera 1935:32), Los Padillas Glaze Polychrome has been found to have a combination of sherd temper, which dominates the White Mountain Red Wares and early Zuni glazes, and rock temper. Eventually, producers of the type moved exclusively to rock temper in Los Padillas Glaze Polychrome (like that encountered in the Cañada Alamosa assemblage) as well as in Agua Fria Glaze-on-red. The earliest evidence of Los Padillas Glaze Polychrome is not well dated in the Rio Grande Valley and it disappears with the production of Agua Fria Glaze-on-red. It's initial production in the Rio Grande Valley must be considered within the date ranges for the production of St. Johns Polychrome (A.D. 1200-1300) and Heshotauthla Glaze Polychrome (A.D. 1325-1400). Given this, a production date beginning around A.D. 1280/1300 to possibly not much later than A.D. 1325/1350 seems likely for Los Padillas Glaze Polychrome.

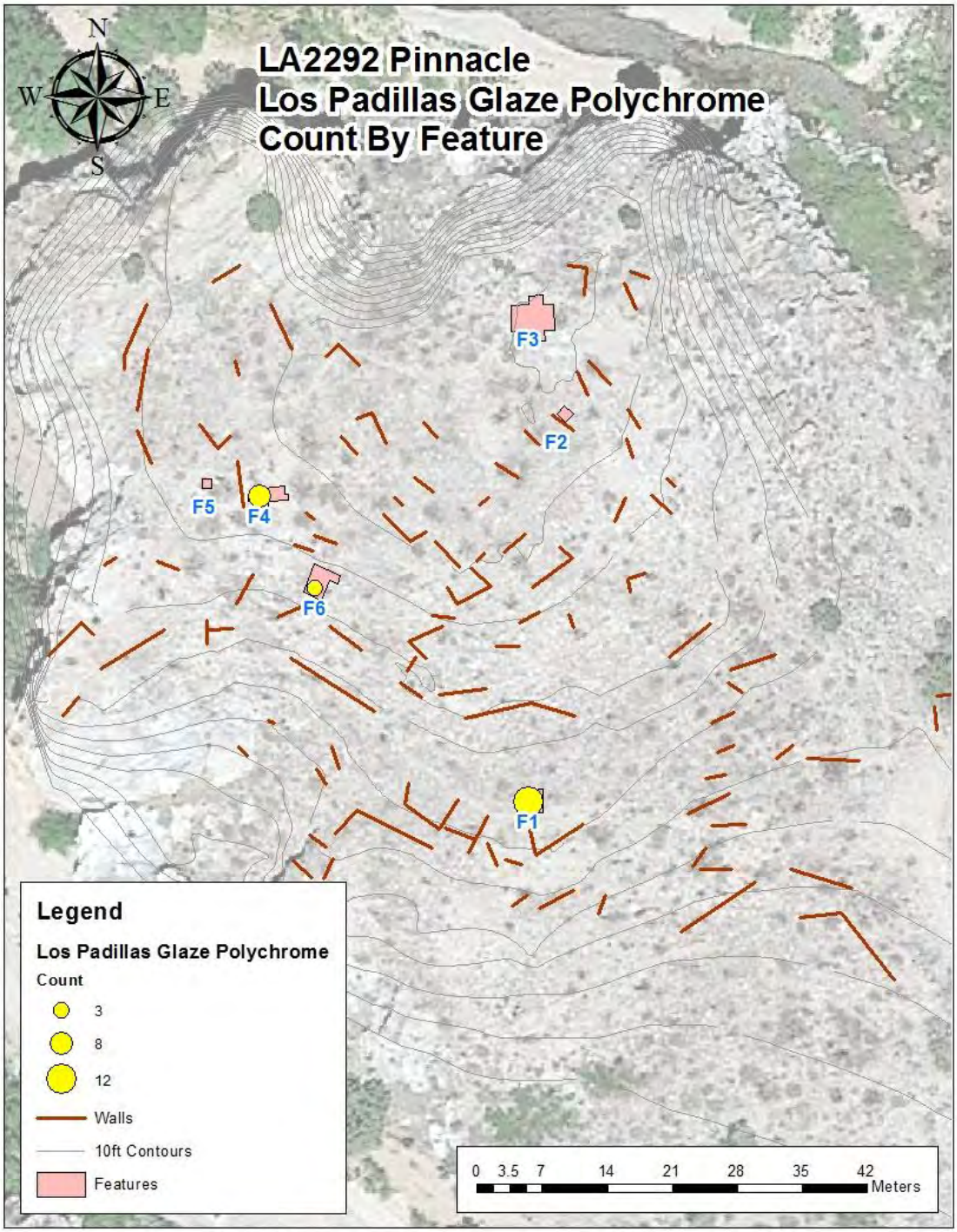

Figure 141. Distribution of Los Padillas Glaze Polychrome on LA 2292.

Figure 142. LA 2292: Los Padillas Glaze Polychrome Bowl Rim (02-283) on Left and Bowl Body Sherd (02-355) on Right; Right Image Shows Exterior Surfaces.

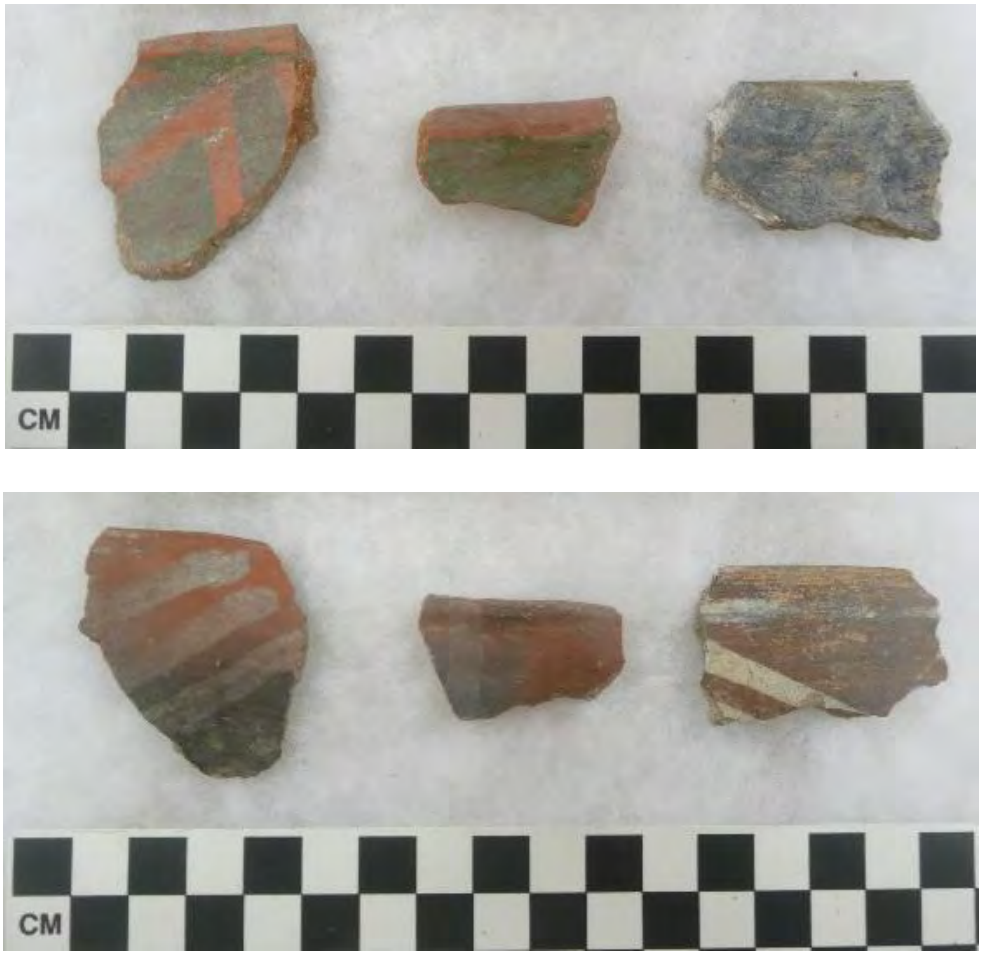

Figure 143. LA 2292: Los Padillas Glaze Polychrome Bowl Rim Sherds (02-238, 02-234, 02-334), Interior & Exterior Surfaces

MAGDALENA BLACK-ON-WHITE

(MESA VERDE WHITE WARE TRADITION)

Key Attributes. Creamy white to gray white slip that often appears crackled, organic pigment, and polishing over both slip and pigment.

Dates. Accepted: 1200 – 1350. CAP Period/Phase dates: Late Pueblo Period/ Magdalena Phase, circa A.D. 1250 – to 1290 based on radiocarbon dates from the Pinnacle. The site was later re-occupied by people who relied on pottery from the Zuni Glaze Ware tradition and Rio Grande Glaze Wares. Pinnacle was completely abandoned by the mid to late 1300s.

Basis of the Present Description. A total of 1,036 sherds of Magdalena B/w are represented in the Cañada Assemblage (Table 26). None were found at the Kelly Canyon Site (LA 1125), 1,030 sherds were recovered from the Pinnacle (LA2292) in both Magdalena and Glaze contexts, five sherds were from the Victorio Site (LA 88889) in late Tularosa Phase contexts, and one sherd from the Montoya Site (LA 88891). Figures 144-146 show the distribution of sherds on the sit es. Figures 147-149 provide images of representative sherds. Comparisons were made with Magdalena B/w sherds from the Gallinas Spring Pueblo curated at the Maxwell Museum of Anthropology (Albuquerque) and the Museum of Indian Arts and Culture (Santa Fe). See also Emma Lou Davis (n.d.; 1964), Warren (1974), Knight (1981), Gomolak and Knight (1990), Lekson et al. (2002), and Laumbach (2006), and Ferguson et al. (2016).

Table 26. Count of Magdalena Black-on-white by Site.

Type	1125	2292	88889	88891	Grand Total
Magdalena Black-on-white		1,030	5	1	1,036

Construction. Hand coiling and scraping.

Paste. Soft and friable; brown to light gray, medium coarse texture. Temper is rhyolite detritus mixed with sand.

Surface Color. Creamy white to gray white slip. The slip may also be a very pale brown or "fawn" color. Slip tends to be thick although a few examples of a thin, but adequate slip exist. Crackling of the slip occurs. Bowls are slipped on both the interior and exterior surfaces. Jars are slipped on the exterior surface with slip often located on the interior of jar necks. Sooting and fire clouds, dark black to gray surfaces, black paste or a paste colored as mixed brown and black or

"sandwiched" by black near the center and brown at the edges of the paste are all quite common.

Surface Finish. Bowl interiors and exteriors and jar exteriors are moderately to well smoothed. The unslipped portions of jar interiors are moderately smoothed and unpolished but can be nicely finished with some polishing. The slip on both vessel forms is moderately to very well polished (lustrous). Marks left by the polishing stone are visible at times. Sometimes the slip appears crackled.

Vessel Forms. No partial or intact vessels were recovered from any of the four sites excavated in the project area. Bowls are the most common vessel shape and were likely a hemispherical shape with rims that tend to be direct with a slight inward curve. In some cases, bowl sherds may be noticeably inwardly curved. Jars were likely narrow-necked with globular bodies with slightly outwardly flared rims or direct rims. Rim-lip shape on both bowls and jars are predominately rounded, or they may be square or beveled inward. All rim lips are slipped but not painted. Rim ticking occurs but very rarely.

Decoration. Designs are rendered in a bold manner and there are two, distinct layouts for designs.

Style #1 includes a broad, solid colored band below the rim (Figure 147). There is a space of 4 to 5 millimeters, and then a series of multiple parallel lines (usually four) occur or the multiple lines are absent and only a space exists between the broad band and the narrow upper framing line of the design band. Style #2, and the most common, is a narrow framing line just below the rim from which design elements are appended and the design motifs are laid down in a band which is framed at the bottom with a narrow line (Figure 148). Designs are not well drafted at times and sloppiness with drawn lines is frequently observable. The design motifs are laid-out in a framed band around the interiors of bowls and exteriors of jars and are commonly composed of multiple lines opposed by solid elements. Typical design elements include: crenulated lines (stepped lines), narrow and broad lines (singular or multiples), triangles, and appended dots. Design motifs include checkerboard, checkerboard with bullseye, cross-hatched "netting," diagonal hatching (all lines are the same width), stacked diamonds, solids with scalloped edges, linear elements with pendant dots between solids, stacked parallelograms, crenulated lines within framing lines, and solid elements outlining a singular solid element. There are no curvilinear elements or motifs.

Paint. Organic/carbon paint pigment that ranges in color from a dark black to a grayish black. Usually, a uniform color when applied. It should be noted that when broad line or solid elements were rendered, the framing lines were drawn first and the remaining space was filled in with color in a manner that allowed hints of the underlying slip color to show through.

Neutron Activation Analysis. This type was primarily produced at Gallinas Spring Pueblo in the Gallinas Mountains. Four compositional groups (3, 6, 10, and 11) were likely produced at Gallinas Springs Pueblo with the majority assigned to Group 10. There is evidence of limited production at Pinnacle in the Cañada Alamosa where a number of sherds are assigned to Group 4 and Group 9, groups that include several other ceramic types believed to have been produced at Cañada Alamosa. There is also limited data to support production at Roadmap Ruin on the Rio Palomas (Groups 15 and 16). It is our contention that Gallinas Springs Pueblo produced the majority of Magdalena B/w and from there the type was traded and/or transported south, first to satellite migrant communities and then to communities in the Jornada Mogollon region to the east (Ferguson et al. 2016; Ferguson et al. 2024).

Remarks. Magdalena Black-on-white composes over 50% (1,030 sherds) of the painted ware assemblage excavated from the Pinnacle where Magdalena B/w was found in abundance within the Glaze Mixed context (N=905), ninety-nine sherds were located in the Magdalena Phase context, and the remaining twenty-six sherds were in an undesignated mixed context. Magdalena Black-on-white was found associated with Tularosa Black-on-white but only at the bottom of the midden feature. It was also found in association with St. Johns Polychrome and mixed with the post Magdalena Phase glaze occupation. It was found in virtually every level of all excavated features and was present from the beginning of the Magdalena Phase occupation at circa A.D. 1250 to abandonment around A.D. 1290. At the Victorio Site, Magdalena Black-on-white (N=5) was located in the Tularosa Phase context of A.D. 1200 – 1300.

Magdalena Black-on-white has been controversial because its similarity to Mesa Verde/McElmo Black-on-white has led previous researchers to suggest that an emigrant population from the Mesa Verde culture area produced it. Stylistically, the Magdalena Black-on-white from Pinnacle looks like McElmo Black-on-white or Galisteo Black-on-white from the upper middle Rio Grande. Like McElmo Black-on-white, Magdalena Black-on-white is characterized by a creamy white to gray white slip that frequently appears crackled, an organic pigment, and polishing over both slip and pigment. Magdalena Black-on-white from the

Pinnacle shares elements of the McElmo design style that exhibits bold solids with opposed diagonal hatch lines. Multiple parallel lines, multiple stepped lines, appended dots from linear elements, and checkerboard patterns are common motifs. Curvilinear motifs are absent on Magdalena Black-on-white. Designs on both bowls and jars are framed within a body band that encircles the vessel. Like McElmo Black-on-white, rim ticking is rare to absent on sherds of Magdalena Black-on-white from the Pinnacle. The use of prepared rock temper is similar to McElmo Black-on-white.

In a study comparing Magdalena B/w to McElmo B/w from Mug House Ruin, Gail S. Lincoln (2007) used production technology and design element-based criteria to compare the two types. In terms of surface treatment, the two types were found to be identical with polish over both slip and paint. On the other hand, Lincoln found that Magdalena Black-on-white had a higher occurrence of diagonal hachure and checkerboard design elements. Mug House Ruin McElmo Black-on-white had a higher occurrence of stepped design elements. Lincoln suggests that these phenomena may have to do with the movement of people away from the Four Corners area into southern regions where their ceramic tradition perhaps morphed from that which was practiced originally to a tradition that integrated some local design features of their new home in order to more harmoniously fit within a foreign environment but still retain its integrity as a non-local type. There is a degree of plausibility with Lincoln's interpretation in that people did move away from the Four Corners area, however it reminds me of Bertram's (1990:3-4) suggestion that Magdalena B/w is a local version of Tularosa B/w, and I must interject at this point that the Magdalena B/w design system looks nothing like Tularosa B/w (see comments below relating to the hallmark designs for Tularosa B/w). I do not agree with Lincoln's interpretation that the makers of Magdalena B/w, on their way to the Pinnacle from the eastern San Juan region, willingly and gladly exchanged design ideas with people who produced Tularosa B/w. John Roney (1996:163) provides a scenario of the two distinct ceramic traditions that show a strong spatial separation, namely that in the eastern San Juan Basin where carbon painted ceramics of the Mesa Verde ceramic tradition dominated the ceramic production and the western portion (Acoma-Laguna region) that was dominated by mineral painted ceramics of the Tularosa Ceramic Tradition (Kowina Phase). What Roney emphasizes is that assemblages dominated by Mesa Verde tradition ceramics had only traces of Tularosa tradition ceramics. And further west, the assemblages dominated by Tularosa tradition ceramics "…usually have no contemporaneous carbon-painted ceramics (1996:163)." Roney states that the "spatial separation between the Tularosa and Mesa Verde traditions

implies the presence of a social boundary and there was next to no exchange of decorated ceramics across this boundary (1996:163)." Roney suggests that the two groups remained culturally distinct despite their proximity to one another and likely had different social structures and languages. Cibola Gray Ware seems to be the only common denominator as painted wares were not exchanged. It's likely that future research at the Gallinas Springs Pueblo, dominated by carbon painted ceramics, and the Tularosa sites on the western slopes of the Gallinas Mountains will reveal a very similar relationship (Eckert and Huntley 2022:159). Time and distance from the original production source is what morphed McElmo Black-on-white to what we now call Magdalena Black-on-white. At the Pinnacle, the producers of Magdalena B/w were an isolated group of foreign people in a foreign world. They were in a defensive location and exchanged very little with the people who were occupying the Victorio Site community. Utility pottery seems to be the only ceramic product that the new folks at the Pinnacle actually either exchanged or borrowed the technology for. They continued to produce their foreign white ware using local resources.

Although not yet named, Magdalena B/W was first recognized as a type with similarities to carbon paint ware of the "Mesa Verde Tradition" by Emma Lou Davis (n.d., 1964) from samples she examined at Gallinas Spring pueblo in the Gallinas Mountains located about 60 miles north of the Pinnacle. It was Davis who first suggested a similarity with Mesa Verde types and the possibility of "immigrants" from the Four Corners region settling at Gallinas Spring. Later, Warren (1974) described this carbon paint pottery as "southern" McElmo. Gomolak and Knight (1990) formally described Magdalena B/W. Knight's (1981:2; Tainter n.d.) initial interpretation of Magdalena B/W was that it represents "…a local tradition developed over some length of time." Later, Gomolak and Knight (1990:8-24) changed that interpretation, attributing the ceramic type to "proto-Laguna" and post Mesa Verde immigrants, referencing Laguna migration legends documented by Ellis (1974).

In support of Gomolak and Knight's early view of Magdalena B/W as representing a local tradition, Bertram (1990:3-4) suggested that Magdalena B/W could be considered to be a local version of Tularosa Black-on-white and its variants. However, the design motifs and overall design style of Magdalena Black-on-white and McElmo Black-on-white are quite dissimilar to that of Tularosa B/W, a contemporary of both types. The hallmark design motifs for Tularosa B/W are the joined hatched and solid element motif or the hatched motif with complex edges, and is interlocked with a solid unit. Interlocked motifs are most often

curvilinear and hatching is rendered parallel to the framing line. Such features are not part of either a McElmo or Magdalena Black-on-white design system.

Another comparison of Magdalena Black-on-white that needs to be made is that with Chaco McElmo Black-on-white (Toll and McKenna 1997:384-391; Franklin and Ford 1982, Windes 1985) and Late Chaco McElmo Black-on-white. It has been suggested that there may be some confusion between what has been termed "Late Chaco McElmo Black-on-white" (Bice 1994; Sundt 1972) described from sites on the Puerco of the East and what has been called "Mesa Verde" pottery that "may be affecting the interpretation of the source area for the intrusive population enclaves at Gallinas Springs and Alamosa Creek" (Wilcox, Gregory, and Hill 2007:183). Let's talk about Chaco McElmo first.

Tom Windes (1985:19–41) gives a full discussion and description with illustrations for Chaco McElmo Black-on-white. Windes emphasizes that Chaco McElmo B/w is a Chacoan Cibola White Ware and shares many attributes with other members of the Chaco White Ware tradition. These attributes include a thin white slip (a wash) predominately located on the interior surface of bowls and the exterior surface of jars. This thin slip, however is not applied to the entire exterior surface of bowls. Rather, a narrow strip of the washy slip was applied to bowl exteriors just under the rim and to the interior surfaces of jar necks. This practice is similar to that seen on the exterior of Mimbres Style III bowls but in this case the "slop-over" is usually irregular and informal as an application. Chaco McElmo Black-on-white is also described has having a variety of tempers (sand, crushed sandstone) but the dominant temper is prepared sherd. Designs on Chaco McElmo are predominately solid elements and motifs in the Sosi style (Colton 1953:46) while hatched elements are rare (Windes 1985:26-31). The high degree of polish on bowls and bowl exteriors is another feature that distinguishes Chaco McElmo B/w from Cibola whitewares. Windes states that some bowl exteriors are so highly polished that is difficult to determine the presence of slip. Given the fact that the slip applied to Chaco McElmo B/w is thin, it would be difficult to separate a slipped versus unslipped surface that has been highly polished. The most distinguishing attribute of Chaco McElmo Black-on-white separating it from Cibola whitewares is the carbon/organic paint pigment used to render the designs. Windes (1985: 31-36) does point out that it can be difficult to separate Chaco McElmo Black-on-white from McElmo Black-on-white (Mesa Verde White Ware) and the carbon painted Black Mesa Black-on-white and Sosi Black-on-white (Tusayan White Wares).

A comparison of Chaco McElmo black-on-white with Magdalena Black-on-white reveals similarity in paint type (carbon/organic) and a high/lustrous surface polish. Beyond these attributes, the two types are very dissimilar in both slip application, tempering material and design. While Chaco McElmo B/w has a thin, washy slip, that on Magdalena B/w tends to be thick although a few examples of a thin, but adequate slip exist. Magdalena bowls are slipped on both the interior and exterior surfaces. Jars are slipped on the exterior surface with slip often located on the interior of jar necks. Magdalena Black-on-white temper is prepared rhyolite detritus mixed with sand as opposed to the prepared sherd temper seen in Chaco McElmo Black-on-white. While Chaco McElmo Black-on-white is dominated by Sosi style solid linear motifs and elements such as checkerboards, sawteeth, framed parallel bands, and opposing open and negative parallelograms, Magdalena Black-on-white motifs include diagonal hatching with opposed solids, checkerboard, checkerboard with bullseye, cross-hatched "netting", stacked diamonds, solids with scalloped edges, linear elements with pendant dots between solids, stacked parallelograms, and crenulated lines within framing lines.

Lastly, the production dates of Chaco McElmo Black-on-white and those of Magdalena Black-on-white at the Cañada Alamosa are not contemporary. Windes (1985:39) places dates for Chaco McElmo black-on-white at about A.D. 1090/1100 to A.D. 1140/1150 which is considerably earlier than Magdalena Black-on-white which dates circa A.D. 1250 to 1290 based on radiocarbon dates from the Pinnacle in the Cañada Alamosa.

And then there's the convoluted story behind a ceramic type called Late Chaco McElmo Black-on-white (Bice 1994:27,29-30) and its doppelganger known as McElmo Black-on-white, Chaco Variety from Prieta Vista (Sundt 1972:100,104-120). Thank goodness Bice (1994) straightens this out. The problem lays with the fact that the pottery type called Chaco McElmo Black-on-white as defined by Windes occurs in Chaco Canyon for a short period time during the waning years of the occupation. In his report on the ceramics of Prieta Vista, Sundt describes a new type which he named McElmo Black on white, Chaco Variety from Prieta Vista. Sundt (1972:103) believed that this pottery type was "simply a late Chaco variety of McElmo B/w." And so, it came to pass that Windes' Chaco McElmo was thought of as "early" Chaco McElmo and Sundt's McElmo Black-on- white, Chaco Variety from Prieta Vista is referred to as Late Chaco McElmo Black-on-white (Sundt 1987:128-129,136). Sundt acknowledged the problems with naming his carbon painted ware McElmo Black-on-white Chaco Variety from Prieta Vista and urged that this name must be changed (1987:128) in light of Windes (1985) work on Chaco McElmo Black-on-white. Sundt suggested that the name San Ignacio

Black-on-white (1987:128-129, Table 1 p.136) replace both McElmo B/w Chaco Variety from Prieta Vista and Late Chaco McElmo B/w. The type name San Ignacio B/w has not been used consistently by researchers to date.

San Ignacio Black-on-white/Late Chaco McElmo Black-on-white (Bice 1994:29-32) is a white ware that is tempered with prepared sherd or sherd and sand. Bowl sherds are slipped on both interior and exterior surfaces which are smoothed and well-polished. Slip color ranges from white and gray white to yellowish white. Painted decoration was done with carbon/organic pigment. Painted rim ticks occur but are not common. Narrow and wide linear design elements, solid elements and open elements such as triangles, circles, and chevrons, checkerboards, and cross-hatching. Hatched motifs are filled predominately with diagonal hatching. Dates for the type (Bice 1994:38) are circa A.D. 1180 -1350. In several ways, Magdalena Black-on-white is quite similar in appearance to San Ignacio Black-on-white/Late Chaco McElmo Black-on-white. Both types utilized carbon/inorganic paint pigment for designs. Both types utilized slip, not thin, on both interior and exterior surfaces of bowls. Bowls and jars of both types were polished over the slip and with Magdalena B/w, the paint is consistently polished over while on San Ignacio Black-on-white/Late Chaco McElmo Black-on-white only occasional polish over the paint is noted (Bice 1994:31). A review of images (Sundt 1972:112-116) of McElmo Black-on-white, Chaco Variety from Prieta Vista (aka San Ignacio Black-on-white/Late Chaco McElmo Black-on-white), reveals that the elements and design motifs depicted are very similar to those observed on Magdalena Black-on-white. The major difference between the two types is in the tempering material. San Ignacio Black-on-white/Late Chaco McElmo Black-on-white (Bice 1994:29-32) is tempered with prepared sherd or sherd and sand. Magdalena Black-on-white is tempered with rhyolite detritus (prepared rock) mixed with sand.

Another necessary comparison is that of Magdalena Black-on-white with Loma Fria Black-on-white (Hurst 2003:86,90-96). Loma Fria Black-on-white is described for the southern portion of the Rio Puerco Valley Project courtesy of research begun in the 1980s by Dr. Cynthia Irwin-Williams and detailed in the volume *Prehistory of the Middle Rio Puerco Valley, Sandoval County, New Mexico*, edited by Baker and Durand (2003). Loma Fria Black-on-white was the dominant white ware in the area from A.D. 1220 to A.D. 1270 and is described as being technologically and morphologically similar to Mesa Verde White Ware (Hurst 2003:90). The type is tempered with prepared sherds and/or sand. Interior and exterior surfaces of bowls and exterior surfaces of jars are self-slipped and always polished with the exception that some bowl exteriors may lack polish. Polish also appears over the

carbon/inorganic pigment used to create designs. Designs are similar to those of McElmo Black-on-white Chaco Variety from Prieta Vista, which is located in the Raton Springs region a short distance to the southeast of the Rio Puerco Valley Project area boundary. Magdalena Black-on-white is similar to Loma Fria Black-on-white in that both types utilized carbon/organic pigment to create designs with and the choice of design elements and motifs are also similar. But the two types differ in temper type, Magdalena B/w with rhyolite detritus (prepared rock) mixed with sand and Loma Fria B/w with prepared sherds and/or sand. Magdalena B/w is slipped on both interior/exterior surfaces of bowls, and both the slip and painted surfaces are well polished.

Going back to the suggestion that there may be some confusion between what has been termed late Chaco McElmo Black-on-white (Bice 1994; Sundt 1972) described from sites on the Puerco of the East and what has been called "Mesa Verde" pottery that "may be affecting the interpretation of the source area for the intrusive population enclaves at Gallinas Springs and Alamosa Creek" (Wilcox, Gregory, and Hill 2007:183). We can categorically state that there is no confusion affecting our interpretation regarding the source of Magdalena Black-on-white in the Cañada Alamosa and regions further south. It is our impression that Wilcox, Gregory, and Hill (2007:183) are making the point that Magdalena B/w may derive from populations producing carbon paint ware that left the Chaco area ca. A.D. 1180 and NOT from populations emigrating from the central Mesa Verde area in southwestern Colorado. We have no problem with that. In fact, the seminal article on excavations at Pinnacle (Lekson et al. 2002) states clearly that makers of Magdalena B/w were from the "Mesa Verde region in the Four Corners area" and notes that the Mesa Verde region extends well into New Mexico (Lekson et al 2002:93). It is instructive that Wilcox, Gregory and Hill do not cite Lekson et al (2002). Magdalena B/w, Chaco McElmo B/w, McElmo Black-on-white, Chaco Variety from Prieta Vista, San Ignacio Black-on-white/Late Chaco McElmo Black-on-white, and Loma Fria Black-on-white all represent ceramic types that are technologically and morphologically similar to Mesa Verde White Wares and are linked in their representation of emigrants from the San Juan region.

We know that there was a significant increase in the occurrence of carbon/organic paint pigment in Chaco Canyon around A.D. 1100 – 1200 (Toll and McKenna 1997;137). The diagnostic pottery for this period was locally produced Chaco McElmo Black-on-white which resembles McElmo Black-on-white made in the northern San Juan region (Breternitz, Rohn, and Morris 1974:41-43). There were also changes in architectural styles in which the masonry is similar to that seen in the Mesa Verde area to the north (Cordell and McBrinn 2012:187). By the late 1100s

to the mid- 1200s, there was additional remodeling of structures and those people who remained in Chaco Canyon at this time were closely affiliated with the northern San Juan Basin (ibid: 189). Sundt (1972:199) states that the analysis of the Prieta Vista ceramic assemblage "extends the Chaco-McElmo horizon (from Chaco Canyon) into an area of the Rio Puerco of the east in the early 1200s." Relating to San Ignacio Black-on-white (aka Late Chaco McElmo Black-on-white/ McElmo Black-on-white, Chaco Variety from Prieta Vista), Dean Wilson remarks, under the heading for Middle Rio Grande White Ware (http://ceramics.nmarchaeology.org/typology/ware?p=71), that [*sic*] white paste pottery reflecting influences from regions in the Colorado Plateau or the use of clays derived from shale outcrops from similar formations used in the production of Northern San Juan pottery, are present in the westernmost areas of the Middle Rio Grande and have been assigned to San Ignacio Black-on-white (Hurst 2003). Interestingly, given the debate over Mesa Verde migrations into the Rio Grande (Ortman 2012; Boyer et al. 2010), Wilson goes on to say that this type "may provide a link between Chaco-McElmo Black-on-white and Galisteo Black-on-white." Hurst, reporting for the Rio Puerco Valley Project ceramic research, states "Loma Fria Black-on-white may, in fact, represent colonization of the middle Puerco Valley by immigrants from the San Juan drainage, similar to that represented by Galisteo Black-on-white in the Galisteo Basin (2003:95). Lekson (2002) and others, including this author, make the argument that Magdalena Black-on-white, as it occurred at the Pinnacle in the Cañada Alamosa and the Gallinas Springs ruin, is related to the McElmo Black-on-white and Mesa Verde White Wares of the Mesa Verde/San Juan region and represents emigrants either from the that area or emigrants who culturally processed that specific technological and morphological information. Hence it appears likely that Chaco McElmo Black-on-white, San Ignacio Black-on-white (aka McElmo Black-on-white, Chaco Variety from Prieta Vista/Late Chaco McElmo Black-on-white), Loma Fria Black-on-white, Magdalena Black-on-white, and others to the north and east (e.g., Santa Fe B/w, Galisteo B/w, Vallecitos B/w), are members of the same club. These types and probably others represent a continuum of people producing pottery with strong cultural ties and shared technology going back to McElmo Black-on-white (the San Juan variety).

Carbon painted white ware is a phenomenon of the 13th century in north-central New Mexico. McElmo B/W and Mesa Verde B/W were produced in the Four Corners region. Stylistically similar, carbon painted Santa Fe B/W and Galisteo B/W are found in the upper middle Rio Grande and Galisteo Basin (Habicht-Mauche 1993; Honea 1968). In the Rio Abajo (Marshall and Walt 1984) and on the

Chupadero Mesa, Elmendorf B/W is decidedly dissimilar in design style when compared to the northern carbon painted wares. Viewing this distribution, the Pinnacle is situated on the far southwestern fringe of the carbon paint world and, other than Gallinas Spring Ruin, is distant from those areas where Mesa Verde tradition ceramics were commonly distributed. Magdalena B/W is clearly an anomaly in the otherwise mineral paint ceramic assemblage that characterizes the Cañada Alamosa sequence. To date, Magdalena B/W has also been found further south of the Cañada Alamosa project area including the Roadmap Site (LA 45157) located on a bench southwest of Palomas Creek drainage, at Cottonwood Spring Pueblo (LA 175) located in the west-slope foothills of the San Andres Mountains northeast of Las Cruces, and at Madera Quemado Pueblo (LA 91220) located on the east side of the Organ Mountains approximately 25 miles east of Las Cruces, New Mexico (Ferguson et al. 2016). Samples of Magdalena B/W from Cottonwood Pueblo and Madera Quemado have been analyzed using NAA which revealed that Magdalena B/W from both sites was being produced at Gallina Springs Pueblo and possibly acquired via trade from the Black Range and possibly the Pinnacle in the Cañada Alamosa.

To conclude, the design style of carbon painted Magdalena Black-on-white at the Pinnacle is more similar to that of McElmo Black-on-white and not Mesa Verde Black-on-white. McElmo Black-on-white began to be made around A.D. 1100 while Mesa Verde Black-on-white began one hundred years later. McElmo Black-on-white also continued to be produced into the 1200s (Breternitz et al. 1974:41-43). By the late 13th century, sites in the Mesa Verde region have a ceramic assemblage that is dominated by Mesa Verde Black-on-white pottery, but McElmo Black-on-white also continued to be produced in diminishing quantities (Breternitz et al. 1974:41-43). The majority of the carbon-painted pottery at the Pinnacle is in the McElmo style. Based on carbon dates from the stratigraphic positions of the McElmo style Magdalena B/W, the data suggests two things. First, the immigrants arrived around A.D. 1250 at the Pinnacle, and they abandoned the site by circa A.D. 1300 if not before. Radio carbon dates support this scenario (Laumbach et al. 2018) Second, the immigrant community was isolated at the Pinnacle and was removed from those cultural trends that could have influenced the transition from a McElmo design style to a Mesa Verde design style. Given the dominance of McElmo style Magdalena Black-on-white in the Pinnacle assemblage, the presence of shaped and coursed masonry, and the presence of a well-developed midden, and the defensive location of the site, there is little doubt that populations with origins in the San Juan culture area were integral in the construction and occupation of the Pinnacle.

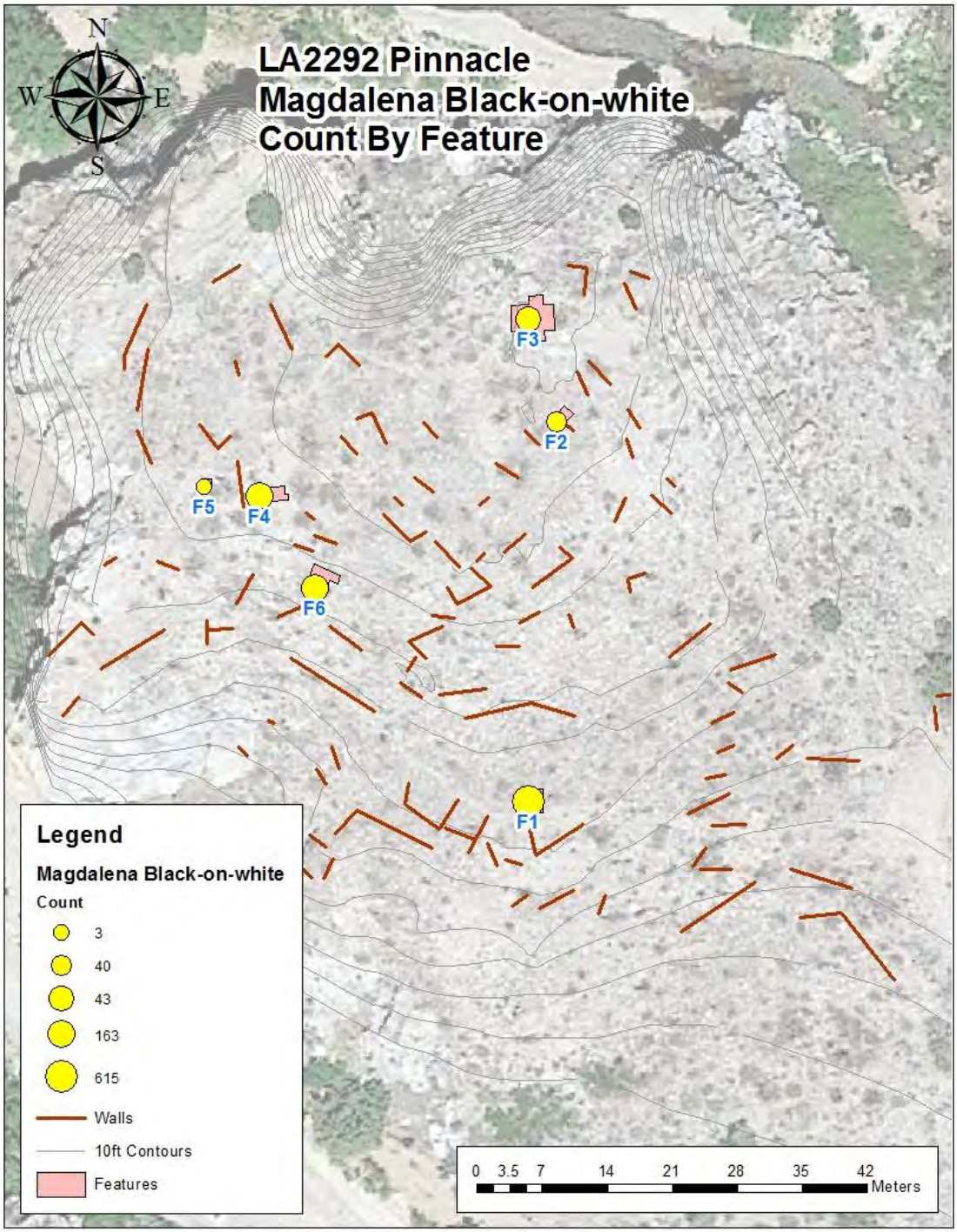

Figure 144. Distribution of Magdalena Black-on-white on LA 2292.

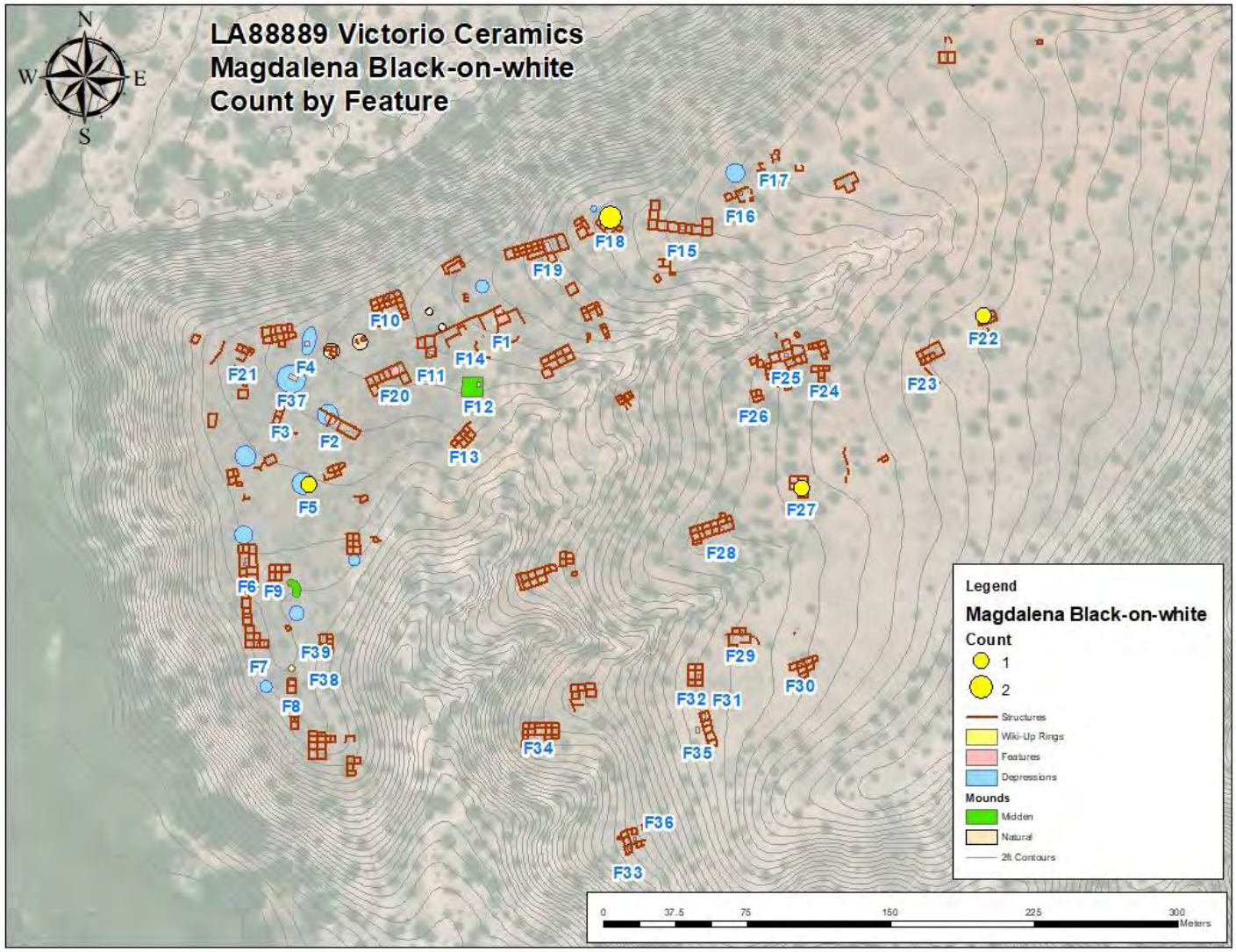

Figure 145. Distribution of Magdalena Black-on-white on LA 88889.

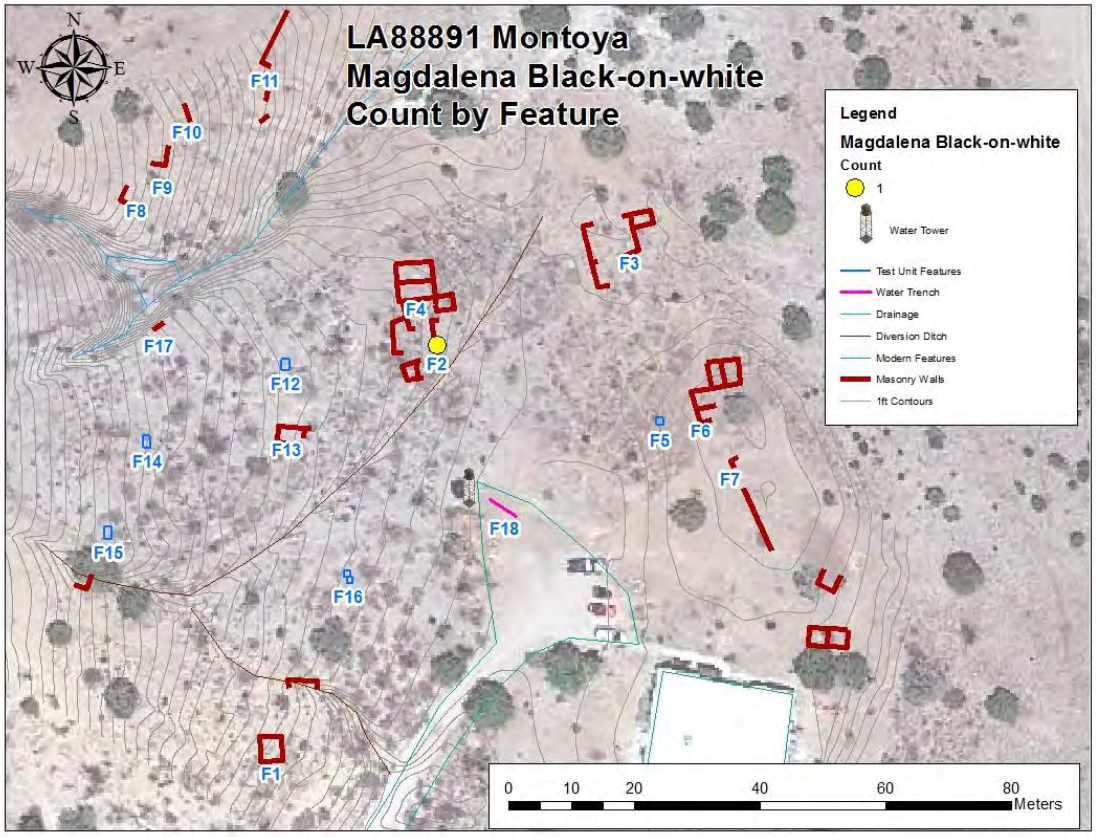

Figure 146. Distribution of Magdalena Black-on-white on LA 88891.

Figure 147. LA2292: Magdalena Black-on-white (Design Layout #1) Bowl Rim Sherds (top-02-177,02-477, 00-113, 00-349; bottom-02-393, 02-441, 02-90).

Figure 148. LA2292: Magdalena Black-on-white (Design Layout #2) Bowl Rim Sherds (top-00-151, 04-171; bottom 02-70, 00-4, 04-486, 02-660).

Figure 149. LA 2292: Magdalena Black-on-white Body Sherds (top-Jars 02-331, 02-576; bottom-Bowls 04-553, 02-489).

MATSAKI POLYCHROME

(ZUNI BUFF WARE)

Key Attributes. Polished, buff colored slip with designs done in non-glaze mineral pigments of red and black; sherd temper; asymmetrical designs in a Sikyatki style.

Dates. Accepted: early 1400s to the late 1600s (1680). CAP Period/Phase dates: Proto-historic/ Apache, circa A.D. 1400 – 1600 plus. All sherds of Matsaki Polychrome were found on the surface within a mixed temporal context.

Basis of the Present Description. Three sherds recovered from the Victorio Site (LA 88889; Table 27). Figure 150 shows the distribution of sherds. Figures 151-153 display representative sherds. See also Reed (1955), Woodbury and Woodbury (1966), and Mills (2007).

Table 27. Count of Matsaki Polychrome.

Type	1125	2292	88889	88891	Grand Total
Matsaki Polychrome			3		3

Construction. Hand coiling and scraping.

Paste. Color ranges from medium gray, light tan, and orangish-tan. The texture appears coarse resulting from chunky, moderately prepared sherd temper.

Surface Color. Buff colored slip that may range in hue from cream, yellowish-brown, brown, to orangish tan.

Surface Finish. Bowl interior and exterior surfaces are moderately smoothed, slipped, and moderately to poorly polished.

Vessel Forms. Only bowl forms occurred in the Cañada Alamosa assemblage, but jar and other forms for the type are known. Two of the sherds in the assemblage were rim sherds that appeared to be inwardly curved with flattened rim lips.

Decoration. This is difficult to interpret given the size of the three sherds in the assemblage. Designs are on the interior surface of the sherds. Red to brownish-red solid elements outlined with black are noted below the rim on the two rim sherds, while the same combination of color appears on the body sherd which has a yellow-cream colored slip. Mills (2007:232) describes the designs seen on Matsaki Polychrome as being asymmetrical in a Sikyatki style like that seen on Jeddito Yellow Ware of the late 1300s/early 1400s from the Hopi area. Additionally,

recognizable masked figures first appear on Matsaki while parrot imagery, as seen on White Mountain Red Wares and early Zuni Glazes, no longer occurs on Matsaki Buff Ware (Mills 2007:232). Emphasis on decoration of bowl exteriors commonly seen on White Mountain Red Wares and early Zuni Glazes shifts to emphasis of decoration of Matsaki Buff Ware bowl interiors with either plain exteriors or minimally decorated with simple parallel lines (Mills 2007:232).

Paint. Mineral-based, non-glaze pigments in black and red colors.

Remarks. The sherds of Matsaki Polychrome and one sherd of San Lazaro Glaze Polychrome are interpreted as representative of an early Apache presence on the Victorio Site (LA 88889). It has been well established that the raiding and trading relationship between the Apache and pueblo communities resulted in late pueblo ceramics being brought to Apache camps (Seymour 2010:165-167). As these sherds were most likely manufactured during the 16th century, they are chronologically linked to the period of initial Spanish contact which is represented by a Clarksdale style hawk bell (Deagan 2002:145-146; Connaway 2015: Fig. 1 p.13, Table 1a, p.17, pp.18-19) and, a perforated copper plate. While the metal artifacts might have been curated and left on the site during the succeeding centuries, it is likely that the sherds were deposited during the production years for those ceramic types. These artifacts underscore the value of searching for and recognizing inconspicuous occupational events as called for by Seymour (2010) and highlight how difficult it is to recognize the very earliest Apache occupations due to a dearth of recognizably affiliated artifacts (Seymour 2004; 2017).

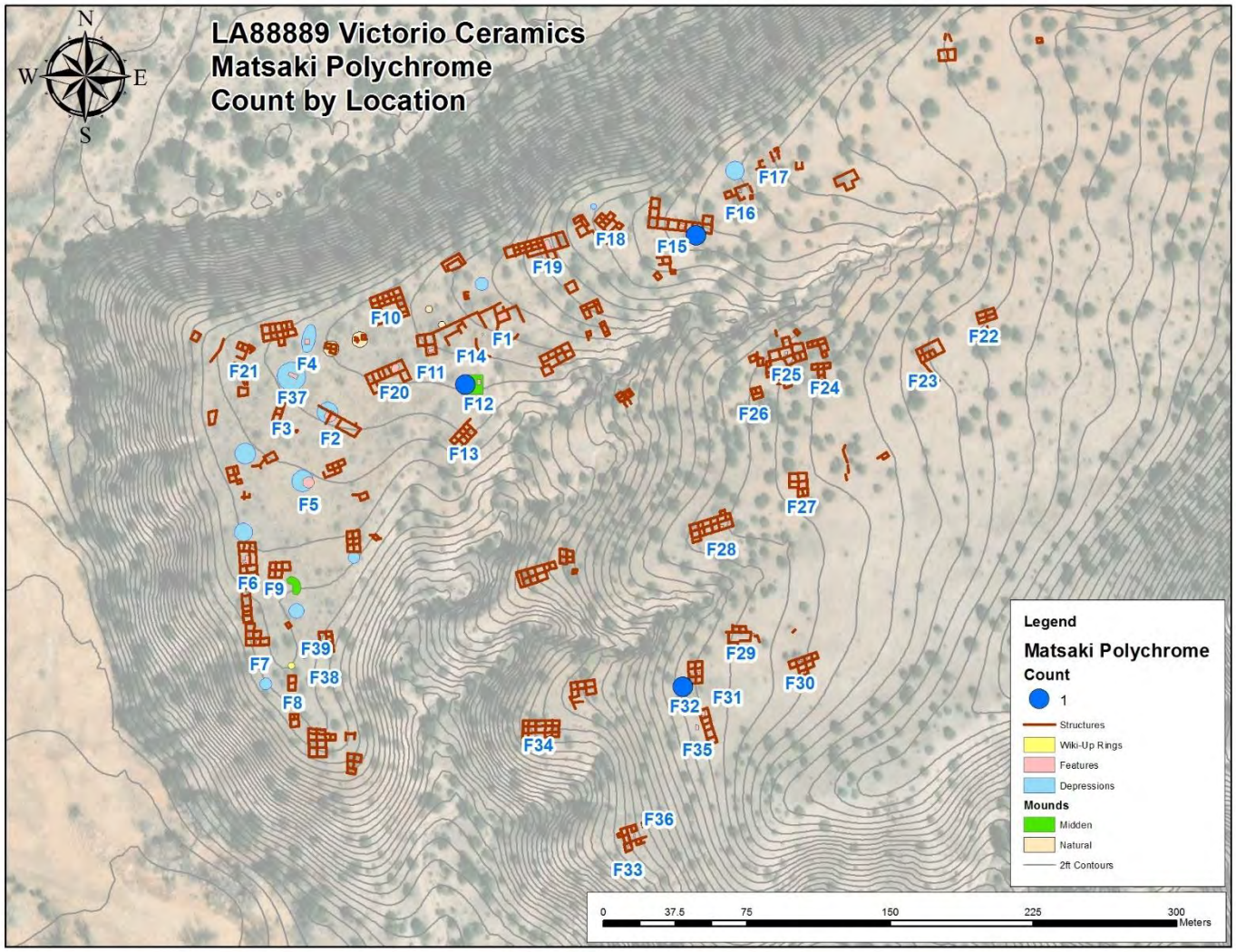

Figure 150. Distribution of Matsaki Polychrome on LA 88889.

Figure 151. LA88889: Matsaki Polychrome Bowl Rim Sherd (05-484), Interior and Exterior Surfaces.

Figure 152. LA88889: Matsaki Polychrome Bowl Rim Sherd (05-588), Interior and Exterior Surfaces.

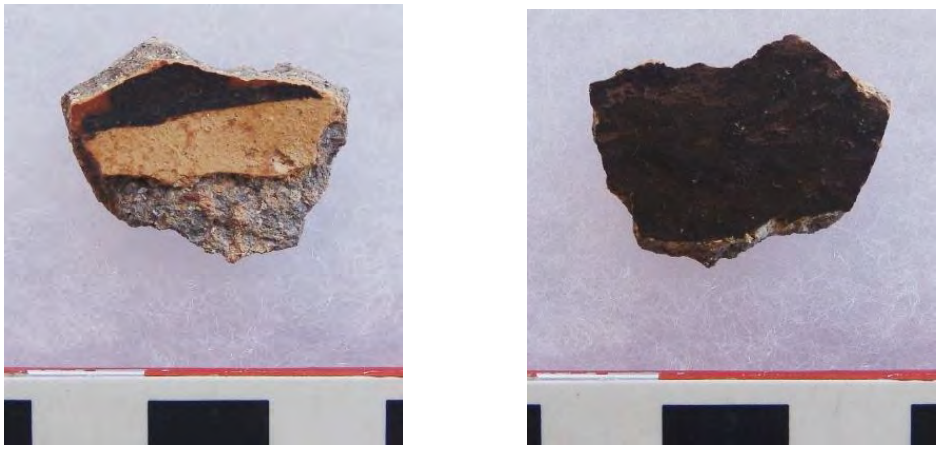

Figure 153. LA88889: Matsaki Polychrome Bowl Rim Sherd (05-786), Interior and Exterior Surfaces.

MAVERICK MOUNTAIN POLYCHROME

(MAVERICK MOUNTAIN SERIES)

Key Attributes. Polished red slip, wide linear elements in combination with rectilinear solid motifs and hatched motifs, all of which are usually outlined in white pigment; designs applied to bowl interiors in contrast with similar Tucson Polychrome (Lindsay 1992), which has designs on bowl exteriors.

Dates. Accepted: A.D. 1275-1325. CAP Period/Phase dates: Late Pueblo Period, upper levels of the Early Glaze period temporal context.

Basis of the Present Description. Three jar sherds were present in the Pinnacle (LA2292) assemblage (Table 28). Figure 154 displays sherd distribution on Pinnacle. Figure 155 provides images of representative sherds. See also Haury (1958), Lindsay (1987), Neuzil and Lyons (2005), and Lyons (2012).

Table 28. Count of Maverick Mountain Polychrome.

Type	1125	2292	88889	88891	Grand Total
Maverick Mountain Polychrome		3			3

Construction. Hand coiling and scraping.

Paste. Paste color ranges from light brown, reddish-brown, to dark brown. Temper consists of mixed particle sand.

Surface Color. Both interior and exterior surfaces of bowl are slipped red; jar exteriors and the interiors of rim necks are slipped red.

Surface Finish. Slipped and painted surfaces are generally well smoothed but surfaces will occasionally have minor undulations. Slipped surfaces typically have a uniform polish. Unslipped/unpolished jar interiors are scraped smooth but may undulate slightly.

Vessel Forms. Bowl forms tend to be hemispherical with inwardly curved sidewalls and rounded rims. Jars are shouldered with a full rounded mid-section that is wider than the orifice of the vessel as well as the base. Jar necks are short with slightly out-flared and rounded rims.

Decoration. Decoration is predominately applied to the interior surface of bowls. Black pigment was used to create wide linear elements in combination with rectilinear solid motifs and hatched motifs, all of which are usually outlined in

white pigment. Bowl exteriors are commonly slipped red but are undecorated. Some bowl exteriors may exhibit white colored continuous geometric patterns similar to that seen on St. Johns Polychrome (Neuzil and Lyons 2005:36). Decoration on jars is applied on the exterior surface from just below the rim to below the vessel shoulder with the bottom portion left undecorated.

Paint. Mineral-based black pigment. White pigment is presumed to be derived from kaolin clay.

Remarks. Maverick Mountain Polychrome and other types (e.g. Maverick B/r, Tucson B/r and Polychrome, Prieto Polychrome and Nantack Polychrome) belonging to the Maverick Mountain Series represent an immigrant population using local resources to produce Kayenta/Tsegi orange wares that were once indigenous to the Tusayan area of northeastern Arizona. This phenomenon was first recognized at Point of Pines Pueblo (Haury 1958), located in east-central Arizona. Here, Haury noted that the decorated pottery wares were distinguished by "vessels made of local clays… painted in patterns foreign to the local traditions" (Haury 1958:2-3). The relationship between local potters and immigrant potters from the Tusayan area is seen in the distinct similarities between non-local Tsegi (Kayenta) Orange Ware and the types within the Maverick Mountain Series. Maverick Mountain Polychrome shares some of the essential decorative elements of Tsegi Orange Ware—namely bold linear elements in combination with rectilinear solid motifs and hatched motifs, all of which are outlined in white pigment. On the other hand, while Tsegi Orange Wares produced in the Kayenta area were tempered with sherd and sand, Maverick Mountain Polychrome is tempered only with sand.

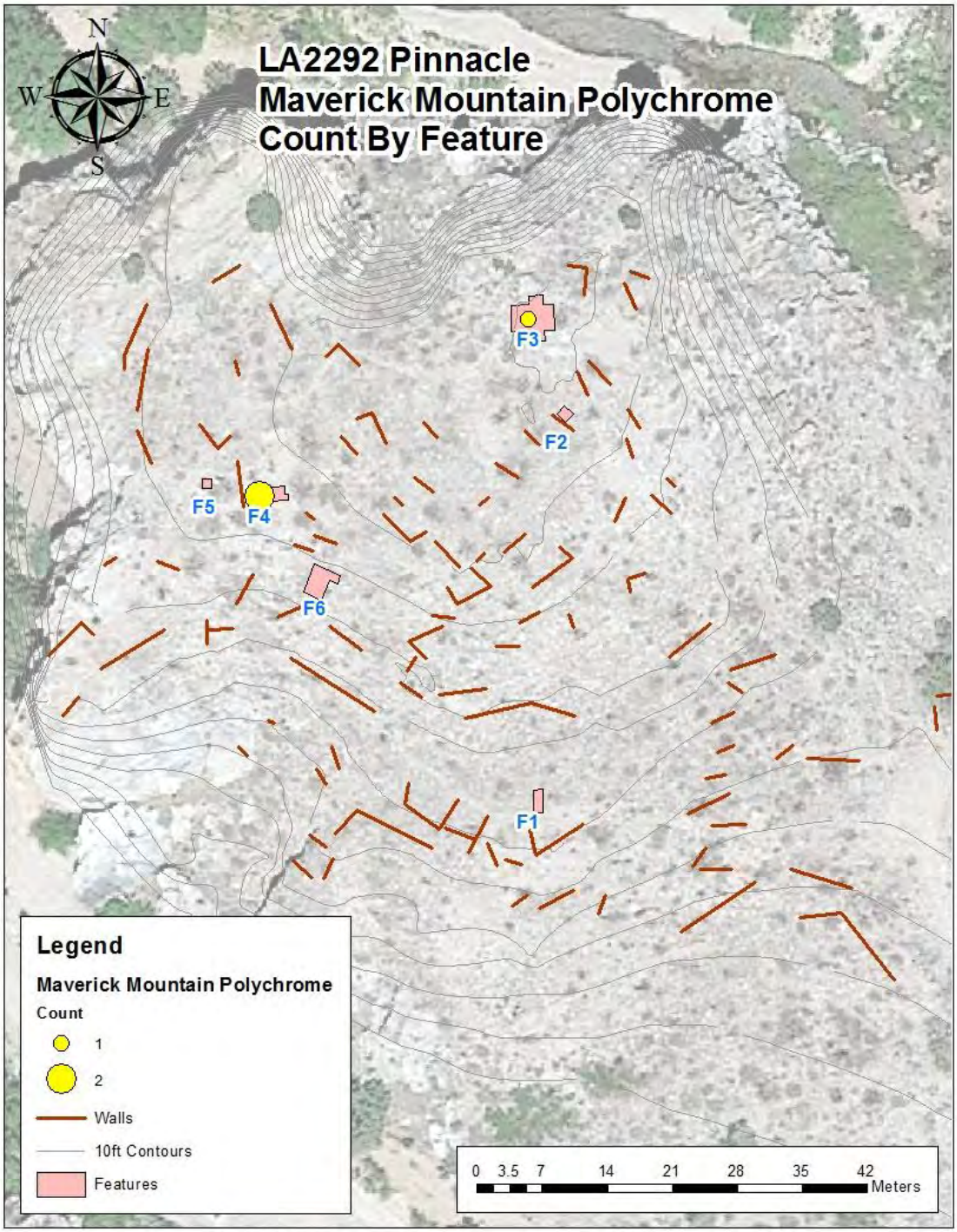

Figure 154. Distribution of Maverick Mountain Polychrome on LA 2292.

Figure 155. LA 2292: Maverick Mountain Polychrome Jar Body Sherds (02-555, 03-58, 02-365).