The Greater Chaco Landscape

Ruth M. Van Dyke, Carrie C. Heitman

Published by University Press of Colorado


For additional information about this book
https://muse.jhu.edu/book/83549

For content related to this chapter
https://muse.jhu.edu/related_content?type=book&id=2861055
Across the Chaco landscape, enigmatic rock features mark mesa tops, trails, and topographic breaks. Some are adjacent to Chaco roads, and others huddle under junipers. Some stand starkly against the sky, and others blend seamlessly into sandstone or lava. Scholars have used a wide range of labels for these features, describing them as shrines, cairns, stone circles, herraduras, crescents, atalayas, avanzadas, and zambullidas. The features frequently lack associated artifacts. They are difficult to date, and some may be in active use by Indigenous peoples. To further complicate matters, archaeologists have assigned a wide range of labels to these features, often conflating shapes, locations, and assumed feature functions. My 2017 attempt to summarize our knowledge regarding these features garnered a great deal of constructive feedback, particularly from Indigenous colleagues. The chapter you are reading is an updated version of the discussion. In the pages that follow, I attempt to sort out the nomenclature and the interpretations, with the goal of providing a more coherent framework for the study of enigmatic rock features in the Chaco world. Along the way, I try to clarify and unpack the word shrine in southwest archaeological parlance.

Colorado Plateau archaeologists often have used the word shrine for enigmatic rock features because they...
are aware that Indigenous peoples sometimes mark meaningful places with similar stacked stone features (Anschuetz 2005; Duwe 2011, 2016; F. Ellis 1969; Fowles 2009; Jeançon 1923:70–73; Ortiz 1969, 1972; Ortman 2008; Parsons 1939; Snead 2008). For Indigenous peoples, shrines may denote meaningful directions, ancestral routes, storied or mythic events, and cosmographies. They are not always marked by stacked stones; they might involve rock art, water sources, trees, cupules, and oddly shaped boulders. Often these are places that merit (or require) repeated visits, prayer, and contemplation.

The archaeological use of the word shrine, however, becomes problematic on at least three fronts. First, it suggests that activities that take place in and around these features are categorically religious—a connotation that is overly simplistic and in some cases probably wrong. Inspired by Bruno Latour (1993), Severin Fowles (2013) points out that categorical divisions grounded in Western philosophy lead us to classify Indigenous practices as “religious,” “political,” or “economic.” By contrast, within a traditional Indigenous worldview, these elements of life are inseparable and better understood as “doings.”

Second, shrine can be a catchall term for a diverse array of features, with the implication that they must have had a common function. For example, on the Chaco Additions survey, Robert Powers defined shrines as “ceremonial or other apparently esoteric sites including Anasazi [sic] C or fishhook shaped enclosures formed by a masonry wall, stone circles, and possible signaling sites at locations of high topographic prominence or visibility” (Powers and Van Dyke 2015:31, table 1.1). The common thread among Powers’s “shrines” seems to be the lack of an obvious functional interpretation, such as “hearth,” or “habitation.” While some features archaeologists have called “shrines” are situated in places of high visibility atop prominent peaks, others are associated with Chacoan road segments, topographic breaks, or trails. Alden Hayes and Thomas Windes (1975) describe J or box-shaped “communication shrines,” conflating form and function, and suggesting that shrines primarily functioned to facilitate signaling. Intervisibility does seem to be a prominent feature of some shrines, but “seeing” is not synonymous with “being seen.” High-visibility features could have been marking points from which to observe others on the landscape, or distant peaks, or solar and lunar events. To see and to be seen, while coterminous and complementary concepts, connote practices that might range from surveillance and navigation to boundary marking, commemoration, and identity (Van Dyke et al. 2016).

Third and most important, Indigenous colleagues can be understandably distressed to hear that their ancestors’ “shrines” are a focus of (predominately Euro-American) archaeological study. This can sound like archaeologists are
flagrantly trespassing upon sensitive areas of Indigenous knowledge or practices. Of course, it would be inappropriate and disrespectful for archaeologists to study active elements of Indigenous religious practices without Indigenous permission, assistance, and collaboration. However, it can be difficult today for archaeologists to recognize when we are dealing with active or sensitive shrines. In the pre-NAGPRA era, our colleagues lamentably rarely thought about this issue at all. If features are not clearly in active use, the issue may seem more straightforward, but the only sure way to avoid inadvertent trespass or offense is to undertake research in close collaboration with Indigenous colleagues. Even then, archaeologists may need to navigate among a host of diverse and possibly contradictory Indigenous views.

In sum, not all features labeled shrines are, or were, sacred places, and not all sacred places are, or were, marked with unusual configurations of stones. Furthermore, the very term sacred is itself problematic, often functioning as a black box for a range of practices and ideas. Nonetheless, as archaeologists, we recognize that enigmatic rock features are worthy of our consideration, and we recognize the need to attempt to engage with them clearly and systematically. We cannot simply avoid all enigmatic rock features on the assumption that they might be shrines or sacred places in active use. Hundreds are already documented. If archaeologists do not record visible features within newly surveyed areas, the features effectively do not exist within site databases and thus will not be factored into management considerations. The features have bearing on important questions about Chaco, such as the role of visibility and travel across the Chacoan world. Perhaps most significant, simply avoiding all enigmatic rock features will not help Indigenous peoples toward a goal that many of them share with archaeologists—creating respect for the landscape in all its dimensions, including its less tangible, more sensory, and experiential aspects.

Archaeologists need a way forward that is systematic, coherent, and respectful, allowing us to consider the wide range of possible shapes, sizes, meanings, and functions of these features whenever it is appropriate to do so. Therefore, despite my general distaste for adding more acronyms to archaeological parlance, in this chapter, I introduce the acronym ERF (enigmatic rock feature) for this broad class of features. Under the broad and nonspecific classification of ERF, archaeologists can fit a wide range of specific features. Use of this term can help all of us avoid a priori assumptions about these compelling collections of stones. In the first part of this chapter, I review the features and the nomenclature subsumed into the ERF designation. In the second part I describe a range of possible functions and meanings for ERFs across the Chaco landscape.
ERFS: PREVIOUS CLASSIFICATIONS AND INTERPRETATIONS

The ERF (enigmatic rock feature) designation includes features that previous scholars have labeled J or box-shaped masonry-walled Windes’ shrines, stone crescents, stone circles, stone basins, herraduras, zambullidas, atalayas, gateway shrines, cairns, and slab boxes. I include a comparison of the shapes, sizes, and settings of stone enclosures in table 6.1. My review and discussion owe primary debts to many scholars, particularly the pioneering work of Tom Windes (e.g., Hayes and Windes 1975; Windes 1978), the Bureau of Land Management Chaco Roads Project (Kincaid 1983; Nials et al. 1987; Roney 1992; Vivian 1997a, 1997b), and the Solstice Project (Marshall and Sofaer 1988). My descriptions below provide examples of each classification. For a catalog of all known ERFs in the greater Chaco landscape as well as counts of each previously recorded type, I refer the reader to Leja (2019:app. A).

J-Shaped or Windes’ Shrines

The first feature designated as a “shrine” by the Chaco Project was a Classic Bonito phase J-shaped feature erected atop 29SJ 423, the Basketmaker III village above Peñasco Blanco (Hayes and Windes 1975; Windes 2018:95–100, 692). In 1973, Tom Windes excavated the J-shaped wall in the course of excavating the underlying Basketmaker III site (figure 6.1). Built on trash deposits partially overlying a Basketmaker III pitstructure, the wall appeared to have been constructed of slabs robbed from the earlier, slab-lined pitstructures. Beneath the curve of the J, excavated into earlier trash, Windes found a pecked stone bowl capped with a flat slab. The modified sandstone cover contained a smaller, removable sandstone door or aperture. Inside the bowl excavators found 146 turquoise beads and 3 turquoise chips, and in the surrounding matrix they found more exotic items, including additional beads of turquoise, shale, and shell; pieces of azurite and malachite; a glycymeris shell bracelet; and a McElmo Black-on-white bowl. The excavators recognized the feature as the site of ritual activity, and they noticed the spectacular view this spot affords toward the west down the Chaco River toward the Chuska Mountains (figure 6.2). When Windes and Al Hayes observed two similar (unexcavated) features along the south rim of Chaco Canyon, they surmised that these features were positioned to facilitate intervisibility—in particular, links between the J-shaped features meant “visual communication was possible between . . . all of the major pueblos in the area” (Hayes and Windes 1975:143).
<table>
<thead>
<tr>
<th>Construction Material</th>
<th>Dimensions</th>
<th>Shape</th>
<th>Setting</th>
<th>Additional Information</th>
<th>Primary References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windes' Shrine</td>
<td>Massive compound or core and veneer masonry</td>
<td>3.5+ m long, ≤1 m high</td>
<td>L, J, arc, or comet-shaped</td>
<td>High places, views of great houses</td>
<td>Hayes and Windes (1975); Windes (2018)</td>
</tr>
<tr>
<td>Crescent</td>
<td>Upright slabs, simple, compound, or core-and-veneer masonry</td>
<td>3.5–18 m across, up to 1 m high</td>
<td>Crescent, opening to E or SE</td>
<td>High places</td>
<td>Marshall and Sofaer (1988)</td>
</tr>
<tr>
<td>Stone Circle</td>
<td>Upright slabs, simple or compound coursed masonry</td>
<td>7–20 m diameter, up to 1 m high</td>
<td>Circle or oval</td>
<td>Slickrock, canyon rims, views of great kivas</td>
<td>Windes (1978)</td>
</tr>
<tr>
<td>Herradura</td>
<td>Upright slabs, simple or compound coursed masonry</td>
<td>5–7 m long axis × 3.5–6 m short axis, up to 1 m high</td>
<td>C, D, horseshoe</td>
<td>Adjacent to roads at topographic breaks</td>
<td>Kincaid et al. (1983)</td>
</tr>
<tr>
<td>Avanzada</td>
<td>Simple coursed masonry</td>
<td>2 × 2 m</td>
<td>Square or rectangular</td>
<td>Adjacent to roads, higher than road</td>
<td>From 1–4 rooms</td>
</tr>
<tr>
<td>Zambullida</td>
<td>Massive compound or core-and-veneer masonry</td>
<td>3.5–9 m across, up to 1.5 m high</td>
<td>Highly variable—defined by not fitting other categories</td>
<td>Adjacent to roads</td>
<td>An “odd duck,” or cross between a small great house and a herradura</td>
</tr>
<tr>
<td>Atalaya</td>
<td>Simple or compound masonry</td>
<td>Variable, usually unroofed</td>
<td>Irregular, usually follows pinnacle edge</td>
<td>Pinnacle top</td>
<td>Marshall and Sofaer (1988)</td>
</tr>
<tr>
<td>Gateway Shrine</td>
<td>Massive, Bonito-style compound masonry</td>
<td>5–7 m diameter</td>
<td>Circular, opens to south or east</td>
<td>Highly visible escarpment edges along Chaco Wash</td>
<td>2 known, no road associations</td>
</tr>
</tbody>
</table>
Figure 6.1. "Windes' shrine" atop the Basketmaker III site of 29SJ 423. CCNHP Catalog #CHCU 55511, first published in Windes 2018:96, fig I.3.11, courtesy of Chaco Culture National Historical Park and the Arizona State Museum.
Hayes and Windes’s J-shaped shrines are all low, masonry-walled, curved enclosures (figure 6.3). Chris Kincaid et al. (1983:9/20) includes Windes’ shrines in their discussion of features associated with roads. The Bureau of Land Management (BLM) Roads Report glossary defines a Windes’ shrine as a “low L, J, arc, or comet-shaped masonry enclosure exhibiting massive compound or rubble-core construction and located on a topographic high point which maximizes visibility, especially line-of-sight to great houses” (Roney 1983). Kincaid et al. point out that some Windes’ shrines are associated with exotic materials such as turquoise beads or chips, azurite, malachite, and shell. Windes (1991:118) discusses several finds of animal figurines that may have functioned as markers or have been associated with shrines along roads in the vicinity of Pueblo Alto. Although these features are always in elevated locations, they contain no evidence for signal fires. To date, Windes and colleagues have documented over forty similar features designed as “shrines” on high places across the greater Chacoan world (see, e.g., Windes 1978, 1991:118; 2015:692; Windes et al. 2000:43).

**Figure 6.2.** “Windes’ shrine” atop 29SJ 423, looking west down the Chaco Wash. Photograph by Ruth Van Dyke, October 2017.
Figure 6.3. Plans of "Windes' shrines." By Dan Leja, based on Hayes and Windes 1975:51, fig. 22.
Crescents

In 1984 and 1985 Mike Marshall and Anna Sofaer visited and recorded many outliers and other Chacoan landscape features that were not included or were underdocumented by the large-scale outlier surveys of Marshall et al. (1979) and Powers et al. (1983). In 1988 Marshall and Sofaer completed a draft report on this material (Marshall and Sofaer 1988). The “Solstice Project” draft report has never been published, but it is accessible at the Laboratory of Anthropology in Santa Fe. It contains a wealth of data both in its body and in figures, tables, and appendices. The draft report is very difficult to cite with any specificity, because there are no page numbers. However, researchers can scan the document and create a searchable pdf file to ameliorate the process of tracking down particular facts and data within the report.

In the Solstice Project report, Marshall and Sofaer (1988) introduced the term crescent. They recorded forty-two features they labeled stone crescents.
(figure 6.4). Crescents are low-walled stone features; walls may consist of simple masonry, compound masonry, or upright slabs and may be up to 1 m high. Crescents are always open to the east or southeast; long axes may range between 3.5 and 18 m. Marshall and Sofaer consider these features to be a form of “ceremonial architecture.” They identified crescents on elevated landforms near Chaco Canyon, adjacent to Chaco roads, and in association with some outliers. They found no crescents along the Chuskan slopes. Marshall and Sofaer occasionally observed turquoise fragments and ceramic artifacts in association with the crescents, and they ceramically dated the crescents to AD 950–1150.

It is not immediately clear how Marshall and Sofaer’s “crescents” differ from Hayes and Windes’ (1975) “J-shaped shrines.” For example, 29SJ 710 appears in Marshall and Sofaer as “Weritos Crescent” (see figure 6.4). Windes (1978) calls this same feature a “shrine,” and in 2017, Sofaer et al. further muddy the waters by labeling 29SJ 710 a “crescentic shrine.” Both Windes (1978) and Sofaer et al. (2017) consider 29SJ 710 to be part of a larger assemblage of intervisible features, but for Windes these features are for signaling, whereas for Sofaer et al. they mark a lunar standstill alignment (see further discussions about these interpretations below).

**Stone Circles**

Tom Windes introduced the term *stone circle* in a dedicated Chaco Center report in 1978. During the Chaco Project, Windes identified sixteen stone circles on the north rim and four on the south mesas of Chaco Canyon. Windes and other researchers subsequently have located additional stone circles at outliers across the San Juan Basin, including Andrews, Kin Bineola, and Twin Angels (Kincaid et al. 1983; Marshall and Sofaer 1988; Van Dyke 2001; Windes 1978).

By contrast with J-shaped shrines and crescents, Chacoan stone circles are completely enclosed stone rings (figure 6.5). Like crescents, they consist of compound, core-and-veneer, or upright slab masonry. Stone circles range in size from 9 to 32 m (long axis) to 7 to 20 m (short axis). Most stone circles contain one or more circular or rectangular basins pecked or ground into the interior slickrock. Although associated ceramics are scarce, sandstone abraders are common. Windes speculates that these abraders might have been used to smooth wood, hides, or the sandstone surfaces of the circles themselves. On the basis of sparsely associated ceramics, the stone circles are dated AD 1100–1150. Stone circles are almost always constructed on slickrock, on high points or benches above canyons, providing excellent vantage points.
As with J-shaped shrines and crescents, researchers have interpreted stone circles’ functions in terms of visibility. Van Dyke (2007:fig. 6.6) noted that a stone circle on the north rim of Chaco Canyon (29SJ 1572) frames Hosta Butte in the center of South Gap (figure 6.6). In fact, from this point a viewer sees
Pueblo del Arroyo, South Gap, and Hosta Butte in perfect alignment along the trajectory of the South Road. Windes (1978) noted that viewsheds from stone circles always include one or more great kivas, but the closest great houses are usually hidden beneath the canyon rim. If the circles were moved only a few meters, these dual attributes of visibility and invisibility would be lost. Windes (1978:68–69) suggests the dual visible/invisible quality of circles might have made them ideal places for the manufacture of ritual items or preparation for ceremonies. During filming with members of the Zuni Cultural Resources Advisory Council as part of this project, we revisited 29SJ 1572 (see chapter 10, Part 2, this volume). Zuni cultural expert Octavius Seowtewa attached great significance to this stone circle on Chaco’s north rim. He indicated that when Zuni people come back from a pilgrimage, “they come to an area like this, and get themselves ready to greet the people and bless the people as they are coming in” (Seowtewa 2020, this volume).

Although termed circles, these features often tend to be ellipses, and they are not always closed (figure 6.7). As one example, in 2000 I recorded a stone
circle in the Andrews community near Thoreau, New Mexico. LA 130801 consisted of two facing arcs of compound sandstone masonry (figure 6.8). The arcs contained 1–6 courses of unshaped sandstone cobbles, situated on slickrock at the edge of a cliff overlooking the Andrews community. The remnant walls were 50 cm–1 m high and enclosed an area 26 m N/S × 15 m E/W. Although the area within the arcs was partially obscured by a juniper tree and associated duff, we tallied 9 associated sherds and 10 associated lithics (one Gallup Black-on-white jar body sherd dated the feature to the Pueblo II period). We
saw no pecked basins, but we did note that an individual standing within the circle could see two great kivas in the Andrews community as well as a road alignment between Andrews and Casamero documented by Kincaid (1983).

**Pecked and Ground Basins**

During the course of Windes's stone circle investigations on high places overlooking Chaco Canyon, he observed the frequent presence of associated pecked and/or ground stone basins (Windes 1978:11, 16–34) (figure 6.9a). Windes recorded a total of 59 of these basins—46 in association with stone circles and 17 “isolated” basins. People had carved the basins into the sandstone bedrock using pecking, grinding, or a combination of the two. Bottoms are usually curving rather than flat, although Windes did note a few flat-bottomed examples. Most basins are round, or roundish, though Windes describes three rectangular cases. The basins range in size from 18 to 48.5 cm in diameter and from 2.5 to 15 cm deep. Windes statistically investigated this group of 46 features and realized that they fall neatly into two size classes: a set of large basins with diameters 37.8–48.5 cm; and a set of small basins with diameters between 18–31 cm. Windes was unable to associate his two size classes with any other variable, but he did find a relationship between numbers of basins and the sizes of stone circles. Most stone circles are associated with 1 or 2 basins, though a few have as many as 7, and 1 outlier stone circle has 14 associated basins. Windes used Spearman’s rank-order coefficient and Fisher’s exact test to determine a statistically significant association between stone circle size and number of basins. Stone circles covering areas < 200 sq m usually have one associated stone basin, whereas those stone circles covering areas > 200 sq m usually have multiple stone basins. And the larger the circle, the higher the number of associated basins.

In addition to the basins associated with circles, Windes recorded seventeen “isolated” stone basins in Chaco Canyon. Many are partially filled with aeolian sand, so Windes speculated that more basins likely exist in sand-covered, bedrock areas. Windes’s isolated basins are small, with a mean diameter of 23.3 cm and a mean depth of 7 cm, and they lack associated artifacts. Some are situated in bedrock water runoff channels, leading Windes to speculate about possible associations with water control. A group of four basins are located above and southeast of Shabikeshchee Village within view of a great kiva, leading Windes to surmise that these basins were important in terms of visibility. Inspired by others’ archaeoastronomical work, Windes explored the possibility of alignments among the seventeen isolated basins, but this
Figure 6.9. (a) Stone basin on the north rim of Chaco Canyon. (b). Stone basin near the great kiva at Chimney Rock, 5AA 88. Photos by Ruth Van Dyke.
investigation “revealed only a mass of lines running in every direction, with no discernible meaning” (Windes 1978:34).

Pecked or ground stone basins are not limited to the immediate environs of Chaco Canyon. Like the other ERFs described here, they are known from outlier contexts. For example, there is a well-known example in the Chimney Rock community within the Parking Lot Site, 5AA 88 (figure 6.9b). J. McKim Malville (2004:133–135) notes that from this spot, the north wall of the Chimney Rock great house is illuminated by the first light of summer solstice sunrise. During stabilization work in Room 5 of the Chimney Rock great house, Brenda Todd (2011:49) encountered a similar basin pecked into the underlying bedrock; she surmises it may have originally been an extramural feature related to astronomical alignments. It is likely that many similar basins exist across the greater Chaco landscape, but these subtle, often partially buried features may frequently go unnoticed on survey.

**Herraduras and Other Road-Related Features**

In the early 1980s, in advance of several major energy extraction projects, the Albuquerque office of the BLM undertook a major study focused on Chaco roads in the San Juan Basin. The Chaco Roads Project (Kincaid 1983; Nials et al. 1987) was directed specifically toward the management needs of the BLM. The BLM recognized that Chaco roads and associated features were widespread but poorly understood and difficult to study. In Phase I of the Chaco Roads Project (Kincaid 1983), archaeologists sought to collate and evaluate existing research, to streamline classification of roads and road-related features, and to detail methods for studying roads that included aerial imagery, surface survey, and excavation. Phase I was a geographically restrictive, “intensive” study focused on areas where roads were known to exist. In Phase II (Nials et al. 1987), archaeologists applied the methods from Phase I to locate and evaluate new road segments across the San Juan Basin. In the context of these projects, researchers created a classificatory scheme for road-associated ERFs of variable shapes and sizes. In the Phase I report, John Roney (1983) provided a glossary of terms, but this gray literature report advanced some labels that never entered common usage. Gwinn Vivian, who participated in the BLM roads projects, later condensed and refined Kincaid’s classifications in a set of *Kiva* articles describing road function and morphology (Vivian 1997a, 1997b). Most notably, the Chaco Roads Projects coined the term *herradura* (horseshoe) to denote a stone circularike feature associated with roads. Another term—*atalaya*—has gained some currency, while other terms—*avanzada* and *zambullida*—have been little used by subsequent researchers.
Herraduras (Spanish for “horseshoes”) are horseshoe-shaped structures defined by their association with Chacoan roads (Kincaid et al. 1983:9/14–9/16, glossary; Lekson 1999:117–118; Marshall and Sofaer 1988; Nials et al. 1987:11–14; Vivian 1997a, 1997b). These features are found near Chacoan roads on major topographic breaks with good visibility in both directions (figure 6.10). These
C-, U-, or D-shaped structures are constructed of simple or compound masonry walls up to 1 m high. Researchers have recorded at least twenty-eight herraduras across the greater Chaco landscape (Nials et al. 1987). About half of all known herraduras open to the east. Most herraduras range from 5 to 7 m in diameter, although some are as small as 3.5 m or as large as 12 m in diameter. In some locations, road segments are deeply inscribed near herraduras. Light surface ceramic scatters are sometimes present. Researchers have dated herraduras between AD 800 and AD 1300 based on associated features and associated ceramics.

Herraduras are associated with Chaco road alignments, as they are frequently situated on high places or topographic breaks where road segments change direction. They “often mark the location of a subtle bearing change of a roadway... usually discernible from the ground perspective only by using a compass” (Nials et al. 1987:13). Recognizing the patterned associations between herraduras and Chacoan roads, Fred Nials et al. (1987) “connected the dots” between visible herraduras to find less visible road segments. Nials et al. also successfully predicted the presence of herraduras on two ridgetops along the Coyote Canyon Road.

**Avanzadas**

Avanzada (Spanish for “outpost”) is a term created by the BLM Chaco Roads Projects (Kincaid et al. 1983:9/19–20; Nials et al. 1987:14) to describe architectural features located near roads that (unlike herraduras and zambullidas) do not articulate with the road surface. Roney (1983:1) defines the avanzada as “a squared rectangular building which includes one to four rooms made of simple coursed masonry and/or jacal, situated on an elevated low butte or badland pinnacle adjacent to and elevated somewhat above the road alignment.” An example is the feature at Gallegos Crossing (LA 34303), which also has an associated crescent (figure 6.11). Features described as avanzadas exhibit variable configurations and orientations, in keeping with Nials et al.’s (1987:14) description of avanzadas as a “catchall category for minor architectural perturbations in the vicinity of prehistoric roads.” Nials et al. (1987:14) go on to state, “There is a strong possibility that these are variations of the herradura type.” Given all of this variability, the term avanzada seems unlikely to correspond to any coherent set of Chacoan ideas or practices.

**Zambullidas**

Zambullidas (Spanish for “ducks,” presumably as in “odd ducks”) are described as structures that are something more than a herradura but something
Figure 6.11. Avanzada at Gallegos Crossing, LA 34303. By Dan Leja, based on unnumbered figure from Marshall and Sofaer’s (1988) draft report.
less than a great house (Kincaid et al. 1983:9–14, glossary; Vivian 1997b:22). Zambullidas have massive compound or core-and-veneer sandstone masonry walls and multiple rooms, but they have variable shapes. Some may have been roofed, though none seem to exceed 1.5 m in height; all lack enclosed kivas. Kincaid et al. describe a zambullida as “a low masonry enclosure up to 1.5 in primary height, rectangular to circular in shape, 3.5 to 9.0 m in interior diameter, and exhibiting massive compound or core-and-veneer masonry . . . less complex than the great house . . . but . . . more architecturally complex than herraduras.” Nials et al. suggest that these road-related features are “fancy herraduras” (Nials et al. 1987:14) because, like herraduras, they are located in elevations of high visibility near roads. Kincaid et al. (1983:9/12) considers Halfway House (LA 15191) along the North Road to be a good example (figure 6.12), though beginning with John Kantner and Nancy Mahoney (2000:2), researchers have usually included Halfway House in tallies of outlier great houses.
Atalayas

Marshall and Sofaer (1988) introduced the term *atalaya* (Spanish for watchtower) to describe a low-walled structure atop a pinnacle, sometimes associated with a platform, staircase, or ramp. Like avanzadas and zambullidas, atalayas can have extremely variable architectural configurations, and they are usually unroofed. The primary distinguishing characteristic of the atalaya seems to be its topographic position atop a spire. Roads may or may not be in the vicinity. The Escalon atalaya sits atop a pinnacle accessible via a large, constructed ramp (figure 6.13).

Gateway Shrines

Two massive, circular ERF structures at the west end of Chaco Canyon have earned special designation as “gateway shrines,” according to Kincaid et al. (1983:9/21–22, C/63–64). Both are in prominent, difficult-to-access locations with spectacular views westward along the Chaco River. Both consist of circular structures 5–7 m in diameter with vents or doorways to the east and south.

“Tse Nizhoni” (LA 37676) sits atop Pretty Rock, a dramatic, isolated sandstone butte elevated 20 m above the north side of the Chaco River. In 1981 Richard Loose and John Stein recorded a coursed sandstone masonry stone circle approximately 5 m in diameter, with a standing wall height of 0.4 m (figure 6.14). On the south side of the circle, there is a small ventlike feature consisting of upright slabs. The Solstice Project revisited the site in 1985 (Marshall and Sofaer 1988:224–226). Both groups considered the masonry to be Chacoan in style; neither observed any associated artifacts.
Approximately 8.5 km to the southeast, the west face of West Mesa looms 150 m above the south side of the Chaco River. At the extreme western edge of this landform, a similar structure dubbed the “Medicine Hogan” (LA 41088) straddles a crack in the caprock (Kincaid et al. 1983:9/21, C/63–64; Marshall and Sofaer 1988:241–242). Here, the sandstone caprock is crazed with deep cracks. Across one of these, there is a low-walled, circular enclosure of tabular brown sandstone with an opening to the southeast. This massive circular structure appears to have had an original diameter of approximately 7 m, though it has been split in half by the shifting caprock (figure 6.15). Unbanded, sandstone slab-masonry walls up to 1.25 m high are four slabs wide, reaching a thickness of nearly 1 m. The feature does not appear to have been roofed, but there is a 1-m-wide doorway opening to the east-southeast. Builders erected the structure atop sandstone slickrock, but Chaco Center archaeologists observed shallow fill consisting of aeolian sand 8–10 cm deep. Peter McKenna and Tom Windes (1975) conducted test excavations in this fill—they found no evidence of a prepared floor, no floor features, no evidence of roof fall, and a scant assemblage of lithic artifacts. Despite the feature’s superficial similarity to a Navajo hogan, McKenna and Windes, Kincaid et al. (1983), and
Sofaer and Marshall (1988) all consider the feature to be Chacoan. They base this interpretation on several lines of evidence, including the massive, Chaco-looking sandstone walls and the lack of historic artifacts; they also note that local Navajo families deny any knowledge, use of, or association with the feature (Marshall and Sofaer 1988:243). The “Medicine Hogan” feature is part of a site known as the Chaco West Cairn Complex, 29SJ 1088, which I discuss in more detail in the “cairns” section below.

Cairns

Cairns, “the ubiquitous piles of stones of the Navajo country” (Hayes et al. 1981:17), are a particularly troublesome, yet potentially important, class of ERF. These features are found atop many high places across the San Juan Basin (figure 6.16). Features recorded as cairns range from a subtle stack of three rocks near Kin Klizhin (figure 6.17) to the set of twelve formally constructed pillars in association with the “Medicine Hogan” at 29SJ 1088 (figure 6.15). Cairns frequently lack associated artifacts, making them difficult to date. Archaeologists have assumed that many cairns in association with Chacoan construction date from Chacoan periods; however, scholars also know that Navajo inhabitants of the San Juan Basin construct cairns for a wide range of reasons and that they have done so for centuries. A pile of rock marks a place, but the reasons and the timing of that marking are often difficult, if not impossible, to
determine. To further complicate matters, once a cairn is erected, it may well be used across centuries for a wide range of purposes. In Hayes’s survey of Chaco Canyon National Monument (as Chaco Culture National Historic Park was known prior to 1980), he recorded cairns that “ranged from low piles of carelessly piled stones to carefully constructed, truncated, cone-like pylons up to 1.8 m high” (Hayes et al. 1981:34). Hayes et al. (1981:34) recorded 68 cairns in close association with Navajo dwellings, plus 82 more that they considered to be Navajo in origins. Furthermore, Hayes et al. recorded 14 cairns in close association with Ancient Pueblo sites and 51 sites consisting of isolated cairns or sets of cairns, with a grand total of 297 cairns at 165 sites within the 1971 park boundaries (1981:40). Hayes et al. noted that this collection included recent survey monuments, stockpiles of building material near quarries, trail markers at the heads of cliff access routes, cairns associated with stone circles, and cairns associated with petroglyphs.

Clearly not all cairns are relevant for Chacoan archaeology, but frequently there is not enough material or ethnographic information available to reliably and correctly assign cairns to a specific time period or function. Archaeologists usually must base temporal and cultural affiliation on masonry style, the presence of fill, or associations with nearby features. Where possible, archaeologists should consult with local populations for additional information about cairns that seem to be associated with Chacoan archaeology. In the Whirlwind House area, for example, highly visible cairns and upright slabs are found atop many high places and rock formations. Through ethnohistoric research, it became clear that most if not all of the Whirlwind area markers

![Figure 6.17. Cairn 29SJ 2429, in the Kin Klizhin community. Photo by Ruth Van Dyke.](image)
were set up over the past century by Navajo shepherds (Tim Kearns, personal communication, August 2013).

The most clearly Chacoan set of cairns within the CCNHP is found at 29SJ 1088 in association with the “Medicine Hogan” described above. The west end of West Mesa is demarcated by thirteen large, barrel-shaped cairns up to 1.5 m in diameter and 1.8 m high that sit atop the mesa edge to the north and south of the circular structure. From below, the cairns are silhouetted against the sky and, depending on the viewer’s imagination, they give the mesa edge a “crenellated appearance” (Kincaid 1983:C-64), appearing as a set of jagged teeth, or distant human figures (see the cover of this volume). The Navajo name for the west end of West Mesa is Na’nishzhin (black spotted), which references this effect (Fransted and Werner 1974:77–78). The cairns were first noted in about 1901 by Wetherill and the Tozzer Expedition (Windes 2018:692). The site subsequently has been recorded by Hayes et al. (1981:42–43), Kincaid et al. 1983 (9/21–23), and the Solstice Project (Marshall and Sofaer 1988:238–244). Two cairns are located north and eleven are to the south of the “Medicine Hogan,” spaced fairly evenly along the mesa edge approximately 10 m apart. In 1983 Kincaid et al. noted thirteen cairns ranging from 0.4 m in diameter and 0.5 m high to 1.0 m in diameter and 1.8 m high, while in 1988, Marshall and Sofaer recorded twelve cairns ranging in diameter 0.8–1.5 m and 0.75–1.5 m in height. The best-constructed of these cairns are made of the same massive stacked sandstone masonry as the “Medicine Hogan,” with interiors filled with stacked rubble. However, not all of the cairns are in the best of shape. At a site visit in 2003, I noted that most of the cairns were collapsed piles of stone. At the westernmost extremity of the mesa point, south of the “Medicine Hogan,” I observed five standing barrel-shaped cairns that can be clearly seen from the Chaco Wash, 150 m below. The westernmost of these was one of the best preserved. In 2003 this solidly circular mass of stacked tabular brown sandstone was approximately 1.3 m in diameter and 1.2 m high, though limited rubble attested to a slightly taller original height. Very few artifacts are associated with any of these features, but Chaco Center as well as Solstice Project scholars are convinced that they represent Bonito-style masonry (Hayes et al. 1981:43; Marshall and Sofaer 1988:240).

**Slab Boxes**

Pueblo people traditionally may construct small boxes of upright sandstone slabs to contain offerings such as prayer sticks (Stevenson 1904). Hayes et al. (1981:17) recorded ten of these within Chaco Canyon National Monument.
These were approximately 1 × 1 m in size; two were in high places, and one was near a spring. Kincaid et al. (1983:9/23) report two slab boxes in association with the Great North Road and the Ah-Shi-Sle-Pah-Road, respectively.

**Modified Stones**

Like contemporary Pueblo peoples, the Chacoans may have marked important places with subtle material indicators that could be difficult for archaeologists to recognize, such as boulders with ground cupules or slick areas, elongated upright rocks, and large depressions (Duwe 2016; F. Ellis 1974:105; Fowles 2009:457, table 1; Ortiz 1969:18–25; Parsons 1939:218, 243). While investigating 12 ancestral Tewa sites in the Rio Chama watershed, Samuel Duwe (2016) identified 70 kayé, or pounded cupule shrines, comprising 675 pecked stone cupules. Historically, Tewa created kayé as they pounded on boulders to communicate with other worlds. People visited and tended these important nodes in Tewa sacred geography (Duwe 2016). Archaeologists interested in thinking about possible markers of past pilgrimage, community boundaries, or religious activity thus might be mindful not only of ERFs but also of modified rocks possibly recorded as cupules or petroglyphs (see also Gilpin, chapter 5 in this volume). Some stones that were significant places for Chacoans are likely not marked by anything readily recognizable by an archaeologist today.

**POSSIBLE FUNCTIONS AND MEANINGS**

Above, I have attempted to systematically review the kinds of enigmatic rock features archaeologists encounter across the San Juan Basin in association with Chacoan sites. Chacoans created stone rings, stone piles, and other kinds of stone configurations to mark places . . . but to what ends? There are many possibilities, and they are not mutually exclusive. In this section of the chapter, I offer a brief review and discussion of some of the most frequently discussed explanations for ERFs: marking community boundaries, cosmographies, and prayer spots; denoting roads, waypoints, and alignments; establishing locations where people could see people or places or be seen by one another; and activities such as trapping eagles. Although many ERFs are in elevated, highly visible locations, this is not true of all of them. In the discussion that follows, I attempt to sequester and organize discussions of visibility, though it is not strictly possible to do so. Clearly, for Indigenous people living at altitude on a horizontal landscape with clear, bright skies, long-distance visibility was and
continues to be important. I shall begin with functions and meanings that are less entangled with visibility, and proceed outward from there.

**Cosmographies and Community Boundaries**

Some Chacoan ERFs may indeed be shrines, in the Pueblo sense of marking cosmographies, community boundaries, or cardinal directions. At specific times Pueblo people visit these special, marked locations as part of ritual practices or “doings”—once there, they might need to pray, sing, or take or leave particular objects.

Alfonso Ortiz (1969:18–25) described the nested, hierarchical shrine system that surrounds a Tewa village. An upright slab in the plaza represents the center of the world. Moving outward from the Tewa village in four cardinal directions, there are two additional sets of shrines: (1) keyhole-shaped directional shrines on hillslopes face downward toward the village; and (2) world-quarter shrines open to the east, which sit atop highly visible high places in four directions within a km or two of the village. Scott Ortman (2012:312–319) identifies these complex shrine configurations at thirteenth-century Tewa sites in the Rio Grande area (Anschuetz 1998; Curtis 1926; Douglass 1915; Hewett 1938:35; Jeançon 1923:70–73; Marshall and Walt 2007:C–2; Nelson 1914:70–471; Wendorf 1953:53), and he contends that this nested, hierarchical shrine system represents place-making practices specific to Tewa speakers.

The Tewa directional and world-quarter shrine system is part of Ortman's (2008, 2012) argument for migration of Tewa speakers from the Mesa Verde region to the Rio Grande in the thirteenth century. Enigmatic rock features are common in the Mesa Verde region (e.g., Bernhart and Ortman 2013; Ferguson and Rohn 1986:129; Fetterman and Honeycutt 1987:107; Rohn 1977:113). Ian Thompson et al. (1997), in a move similar to the one I am making here, began designating miscellaneous Mesa Verde region features as Architecture With Unknown Function (AWUFs), although AWUF was a broader designation than ERF, and the term did not catch on. Ortman (2012:312–319; Bernhart and Ortman 2013) builds a case for the presence of early world-quarter shrines at several prominent Pueblo III period sites in the Mesa Verde region, and he identifies a complete Tewa-style directional shrine system at the early thirteenth-century site of Castle Rock Pueblo (Ortman 2008).

Other researchers also have used Pueblo cosmology as the basis for investigating ancient Pueblo landscapes in the northern Rio Grande. For example, Fowles (2009) located directional shrines surrounding the ancient Tiwa site of

Extending these ideas back into the ninth–twelfth centuries, we might expect that Chacoan ERFs found on high places or slopes in cardinal or intercardinal directions from a major “center place” might be marking cosmography, or the interstitial boundaries of a nested, hierarchical cosmography. Likely candidates, for example, include the two J-shaped “Windes’ shrines” on Chacra Mesa and South Mesa. These features bracket Fajada Butte, iconic symbol of central Chaco, and home of the Sun Dagger petroglyph.

Such ERFs as these were probably important places to visit and pray in the past, and they may still be in active use today. These ERFs may commemorate the locations of remembered or mythic events. Some of these ERFs might be in highly visible high places, but others might not. To evaluate these possibilities on the Chacoan landscape, and to avoid inadvertent trespass, archaeologists should work closely with Indigenous collaborators.

Roads and Waypoints

Boundary markers, prayer places, and waypoints are not mutually exclusive functions for ERFs, particularly within a context of Pueblo “doings.” Keresan place-making practices involve the creation of C-shaped shrines open to the east, situated along a north-south line, and associated with paths of movement (White 1942:80–94, 1960, 1962:110–115). Similarly, some ERFs—particularly herraduras—seem clearly related to Chaco roads. Kincaid et al. (1983) found that they could reliably locate Chaco roads by “connecting the dots” between herraduras. A comprehensive discussion of possible road functions, and the role of herraduras in relation to road engineering, is beyond the scope of this chapter (but see Vivian 1997b, and Friedman et al., chapter 13 this volume).

If we assume that people traveled from outlying areas to Chaco Canyon, they must have walked on roads, trails, or both. Even the best-established walking routes can require waypoints, particularly at topographic breaks or trail intersections (Darling 2009; Ingold 2011). Some cairns seem to be trail markers (figure 6.18). It can be difficult to find a good pedestrian route up or down the 100+ m escarpments of the Chaco mesas. Contemporary tourists pile stacks of rocks along the proscribed hiking trails of Chaco—some of these serve as useful markers when the hiker must navigate a sudden change in topography, but many seem primarily to illustrate the human walker’s universal practice of piling stones or other small objects in passing (Darling 2009:79; Frey 1998:fig. 5).
For outlier residents walking into Chaco Canyon, there are several major, obvious entry points: the North Road, the east canyon, Fajada Gap, South Gap, and the west canyon. Roads, ramps, and staircases indicate that several tributary canyons on the north side of Chaco Canyon were also entries. As pedestrian travelers moved into or out of Chaco Canyon, we might expect that boundaries would have been crossed, and these boundaries might have been marked by ERFs. This is the reasoning behind Kincaid et al.’s discussion of LA 51167 and 29SJ 1088 as “gateway shrines.” It is notable that both features are situated at the west end of Chaco Canyon, along the Chaco River—presumably the major route of travel for ancient Pueblos moving to and from Chaco Canyon and the Chuska Valley. There are many outlier communities west of Chaco. However, there are also many outlier communities north and south of Chaco, and archaeologists have not, as yet, located similar “gateway shrines” along routes of travel in those directions.

**Astronomical Alignments**

Thus far I have been discussing possible functions of ERFs from the perspective of a human subject moving across a rugged landscape. The sun, moon, and stars also move—across the sky—and we know that Chacoans
were following these movements attentively (e.g., Malville 2004; Sofaer et al. 1979; Sofaer 2007). Sofaer and colleagues recently have pointed out that twelve of the features classified here as ERFs cluster along the ± 53.5° azimuths of the rising and setting moon at the major lunar standstill (Sofaer et al. 2017). Sofaer’s study involves twelve features recorded as crescents, J-shaped “Windes’ shrines,” cairn clusters, and one zambullida. All twelve of the ERF features were selected for inclusion because they were situated in locations of high visibility in or near Chaco Canyon. Sofaer et al. excluded ERFs situated on lower terrain, and they excluded herraduras on the grounds that these features are “road-related.” Interestingly, Chaco Canyon itself trends along the ± 53.5° azimuth, so it is not surprising that ERFs on high places (though not all of them are on rims) would adhere to this alignment. Sofaer and colleagues note that the twelve ERFs included in their study are not intervisible, nor do they consider this to have been important. Nonetheless, the study is intriguing, and it is certainly possible that ancient Chacoans constructed some ERFs to mark particular solar, lunar, or other celestial events.

Visibility: To See and Be Seen

In the Chacoan world of a millennium ago, there are clear archaeological indicators that Chacoans emphasized visibility for a range of purposes. People in the ancient as well as the contemporary Pueblo world would have been looking out across the open horizon toward prominent landforms, distant peaks, or archaeological sites. People could have been marking points from which to observe others on the landscape, or distant peaks, or solar and lunar events. At the same time, they could have been marking locations or high places that they wanted others to be able to see. It is important to think analytically about the different (if at times overlapping) ways that visibility might have been relevant for Chacoans. To see and to be seen, while coterminous and complementary concepts, nonetheless imply diverse practices that might range from surveillance and wayfaring to communication and identity construction. These practices have different kinds of implications for our understanding of Chaco.

At present, Chacoan studies of sensory landscape dimensions such as viewscapes and soundscapes are in their infancy. Energy development threatens the destruction of Chacoan viewscapes just as archaeologists are beginning to systematically explore them. In this chapter I focus on ERFs, but I direct the reader to chapter 11 (Van Dyke et al., this volume) for detailed investigations into Chacoan community viewscapes and soundscapes at the outliers of Bis sa’ani and Pierre’s.
Within Local Communities: Surveillance and Identity

For Western capitalist societies, *to see*—to look at another person or place—is bound up with knowledge of and power over (Thomas 1993). Jeremy Bentham’s perfect prison—the panopticon—is the quintessential Foucauldian example of the power of surveillance in the modern era (Foucault 1977). In a panoptic situation, subjects who cannot see a central watcher (or each other) discipline their own behavior because they are conscious that they may be being watched. Although Bentham’s 1787 panoptic gaze is generally discussed within the context of modern, capitalist states, some archaeologists have documented similar kinds of unidirectional surveillance in the ancient past (Yekutieli 2006).

Chacoan topography juxtaposes high escarpments with deep adjacent canyons and valleys, providing ample opportunities for people on high places to watch those below while remaining themselves unobserved. Windes (1978) noted that stone circles are nearly always positioned on high slickrock benches where they can see one or more great kivas. It is interesting to think about this relationship in the context of possible surveillance. From the stone circles on the rims of Chaco Canyon, people could watch others moving around great houses, or outside of great kivas, in Chaco Canyon far below. It is unlikely, however, that people inside the canyon (or inside great kivas) would be aware of the watchers.

The cairns at 29SJ 1088 are an interesting possible case of panoptic surveillance. From the Padilla Wash Chacoan community in the valley below and west of West Mesa, the cairns on the mesa rim appear as dark, indistinguishable figures (*Na’nishzhin*) (figure 6.19; see also book cover). It is not possible to make out the human figure beyond distances of approximately 400 m or so (Hamilton and Whitehouse 2006:47). Thus, from the Padilla Wash community, it is very difficult to tell whether the dark figures are cairns, juniper trees, or human watchers. It is conceivable that for the Chacoan residents of Padilla Wash community, the cairns of 1088 would invoke self-discipline, a sense of potentially being watched by Chaco.

And the converse of *to see* is *to be seen*. If there is no evidence to indicate watchers were hidden or ambiguous (as in the case of panoptic surveillance), intervisible connections might just as easily be fostering a sense of community among the part of the people who can all see a landmark, topographic feature, or building that symbolizes shared identity. Investigations into visibility within Chacoan outlier communities have yielded contradictory and complicated results. Some outlier great houses have visual connections with their communities, but others seem specifically situated not to have such connections. For example, John Kantner and Ronald Hobgood (2003) conducted a Geographic Information System (GIS) analysis at Kin Ya’a and
demonstrated that the tower kiva’s extra height increased visibility within the immediate Kin Ya’a community, suggesting that the Kin Ya’a tower kiva’s likely audience was local. Similarly, in the Kin Bineola outlier community, Katherine Dungan (2009) found that the massive great house was positioned to be seen within the surrounding community. However, Katharine Ellenberger (2012) found that the Kin Klizhin tower kiva did not facilitate intervisibility with the surrounding community sites, which already could see one another quite well. And, at Whirlwind Lake, a great house perched on a high mesa overlooking a valley containing some twenty contemporaneous small sites is invisible from nearly all of its associated community sites. The Whirlwind great house does have line-of-sight connections to prominent landmarks such as Shiprock, White Rock, and Huerfano Mesa, and the structure is visible to approaching pedestrians at the edge of the valley 2–3 km away, suggesting its visible audience was nonlocal (Robinson et al. 2007). Most recently, Dungan et al. (2018) harnessed the power of GIS visibility modeling to conduct a total viewshed analysis for 430 great houses and great kivas. They found that builders consistently used topography to position great houses where the structures would be highly visible from a distance, concluding that “great houses were intended to be seen by individuals across the wider landscape, rather than only by viewers in the immediate vicinity of the building” (Dungan et al. 2018:916).

Figure 6.19. The cairns of 29SJ 1088, as seen from the Padilla Wash Chacoan community. Photo by Ruth Van Dyke.
Looking at Landforms over Long Distances

To stand atop West Mesa, South Mesa, or Chacra Mesa is to look out at a world punctuated and surrounded by iconic volcanic and sedimentary landforms such as Hosta Butte, Shiprock, Huérfano Mesa, Mount Taylor, and the Chuska and San Juan Mountains. In the ethnographic past and present, buttes and mountain peaks are storied places for Pueblo and Navajo peoples, integrated into nested, layered cosmologies, bounding the world (e.g., Duwe 2011; Fowles 2009; Kelley and Francis 1994; Linford 2000; Malotki 1993; McPherson 1992, 2001; Ortman 2012:312–319; Ortiz 1969, 1972). To be a Navajo person is to live within the area defined by four sacred mountain peaks. I have argued that in the tenth century, many early Chacoan communities were positioned to see Sleeping Ute Mountain—perhaps a reminder of a ninth-century homeland (Van Dyke 2011). Wesley Bernardini and Matthew Peeples (2015) have demonstrated how prominent mountain peaks and landmarks could have helped with wayfaring and contributed to the creation of a sense of community during post-Chacoan times.

Given the spectacular range of peaks and landforms visible in and around the circumference of the San Juan Basin, it is highly likely that Chacoans, too, felt a sense of community or identity when in sight of certain distant topographic places. It may be coincidence that some ERFs mark places on the Chaco landscape where a viewer, looking outward, could see for long distances—see, for example, Mount Taylor on the horizon behind 29SJ 184 in figure 6.18. From the west end of West Mesa, marked by 29SJ 1088, a viewer looks down the Chaco River toward the Chuska Mountains, across major landmarks such as Pretty Rock and White Rock. It is difficult to know if these visual relationships were meaningful or merely coincidental, but such an interpretation is strengthened when ERFs seem carefully aligned to create relationships with distant landforms. For example, earlier I noted that a viewer standing in the stone circle 29SJ 1572 on the north rim of Chaco Canyon looks south/southeast through South Gap directly down the South Road at Hosta Butte (Van Dyke 2007:fig. 6.6).

Kincaid et al. (1983) note that herraduras, found along road segments, are often atop major topographic breaks with good visibility. Perhaps herraduras in high places were situated in part to facilitate the construction of long, straight Chacoan roads. See Van Dyke et al. (chapter 11, this volume) for a discussion of the role of herraduras and road construction in the Pierre’s Chacoan community.

As I mentioned earlier, a viewer on West Mesa at 29SJ 1088 can see most of the western half of the San Juan Basin—a region that contained nearly sixty Classic Bonito phase outlier communities. The West Mesa escarpment, 150 m above the Chaco River, is a prominent high place in the middle of the basin.
that can be seen from as far away as Skunk Springs on the Chuskan slopes 75 km to the west. Although the cairns on the mesa rim are not distinguishable with the naked eye beyond a distance of approximately 1 km, the ERFs may be flagging this prominent spot as a marker for Chaco Canyon. Just as someone standing at this point can see most of the Chacoan world, the inhabitants of some sixty outlier communities in the western San Juan Basin could also see West Mesa, their visual link to Chaco. As Bernardini and Peeples (2015) postulated for northern Arizona, to see 29SJ 1088 could have been important for wayfaring as well as for a sense of shared Chacoan identity.

**Signaling (Communication)**

Windes and his associates have argued that J-shaped shrines on high places constituted a line-of-sight signaling system within Chaco Canyon (Hayes and Windes 1975; Windes et al. 2000). Hayes and Windes’s (1975) investigations indicated that line-of-sight connections were critical factors in the locations of features such as 29SJ 1207 and 29SJ 706 along South Mesa. Across the greater San Juan Basin, researchers have anecdotally observed that ERFs associated with outlier great houses often create line-of-sight connections with Chaco Canyon. For example, the “giant head” of Cabezon Peak near the outlier of Guadalupe is topped by an ERF; although Cabezon Peak is not visible from Chaco Canyon, it is within sight of ERFs adjacent to and east of Fajada Butte. An ERF atop Huerfano Mesa links Pueblo Alto to the outlier great house of Chimney Rock, 140 km to the northeast (Freeman et al. 1996, 1997). A person atop Huerfano Mesa can see an ERF location atop the Knickerbocker Peaks east of Aztec Ruins, thereby connecting Chaco Canyon with the Aztec outlier. Intervisibility between the Kin Ya’a tower kiva and shrine 29SJ 706 on South Mesa is contingent on the tower kiva’s precise alignment with a notch in an intervening ridge; this “impressive bit of engineering” seems good evidence for intentional line-of-sight communication between the two areas (Hayes and Windes 1975:154–155).

Chacoans certainly possessed the technology to signal over many kilometers. The Chaco Project used flares at night to demonstrate that signaling among shrines and great houses in high places is possible (Van Dyke et al. 2016:supplemental materials). Archaeologists have identified the presence of large hearths or fire pits associated with the canyon great houses of Pueblo Bonito/Chetro Ketl, Tsin Kletsin, and Pueblo Alto, and with the outlier great houses of Chimney Rock, Pierre’s, Bis sa’ani, the Poco Site, and Guadalupe (Breternitz et al. 1982; Chaco Research Archive 2018; Drager and Lyons 1979; Eddy 1977; Harper et al. 1988; Pippin 1987; Powers et al. 1983). The translucent
mineral selenite, widespread in the local Menefee Formation, is another possibility for flashing over long distances. Selenite is found in abundance in the rock formations below 29SJ 1088 at the west end of West Mesa, and it has been recorded in association with some Chaco outlier great houses (Mathien and Windes 1989:27). Florence Ellis was shown a selenite mirror purportedly for signaling among Rio Grande pueblos; she and Andrea Ellis successfully used selenite to signal between Gallina towers (A. Ellis 1991). Windes noted a “mirror”—now unfortunately lost—listed in a Be 59 excavation field catalog (Chaco Research Archive 2018). In lieu of selenite, Gwinn Vivian and Doug Palmer used modern mirrors to establish line-of-sight connections between the outlier of Pierre’s and the great houses of Pueblo Alto and Tsin Kletsin.

Chacoans had both means and motives to create a communication network that drew together the greater Chacoan world. This network may have involved both architecture and ERFs, and it probably changed over time. Recently, colleagues and I conducted a GIS analysis evaluating intervisibility (cumulative viewsheds and viewscapes) among 258 great houses and 87 ERFs (features recorded as shrines, stone circles, crescents, and herraduras) across the greater San Juan Basin and beyond (Van Dyke et al. 2016). We wished to know whether the canyon signaling network documented by Hayes and Windes (1975) extended outward into the San Juan Basin and, if so, when, and for how far. We found that great houses on high places are frequently intervisible in the absence of ERFs. The addition of ERFs to the landscape greatly enhanced intervisible connections, particularly across the central San Juan basin, north toward the Upper San Juan area, west to the Chuskan slopes, and south to the eastern Cibola area. This was particularly apparent in the Classic Chaco period, post AD 1050. We concluded that the Chaco phenomenon was held together, in part, by a network of intervisibility that could have facilitated communication across the Chacoan world. Because we did not want to prejudice our findings by using only ERFs in high (and therefore highly visible) places, we included all the Chaco-era ERFs we could find, of every shape and size ($n = 83$). Studies segregating ERFs into smaller subgroups (such as herraduras or stone circles) did not produce statistically significant results due to the small numbers of cases. There are undoubtedly many more ERFs out there to be recorded, which may well change our results in future.

_Eagle Traps_

There are other reasons to be in high places, along cliff edges, that have little to do with visibility. Pueblo and Navajo peoples have special dispensation from
the US Department of Game and Fish to trap and to use and exchange feathers from protected raptors, such as golden and bald eagles, for religious and ceremonial reasons. These practices stretch back at least into historic times. I was with a team of Navajo Nation Heritage and Historic Preservation Department archaeologists in the western San Juan Basin when the team encountered a large stone cairn high on an escarpment overlooking the Chaco River. One of the team members identified the feature as an eagle trap, similar to ones he had used as a child with his grandfather (figure 6.20). According to the team
member, a rabbit or other small game would be tied atop the cairn, and the
eagle hunter would crouch down inside the cairn’s empty center. When an eagle
or other raptor approached the game, the hunter would spring up and grab the
eagle by its talons. There were no visible artifacts, though there were scattered
historic and contemporary Navajo homesteads in the vicinity. Without benefit
of this Indigenous knowledge, a Euro-American Chaco scholar might have
easily considered this feature to be a marker for Chacoan signaling or visibility.
And, indeed, the feature might well be an ancient signaling station repurposed
in historic times as an eagle trap. This encounter illustrates well the problems
with attempting to monolithically ascribe function to an ERF, and it under-
scores the imperative for working in collaboration with Indigenous peoples.

**DISCUSSION AND CONCLUSION**

In this chapter I have offered a review of the many configurations of enig-
matic stone features found across the greater Chaco landscape, followed by
a systematic discussion of these features’ possible functions within past and
present Indigenous society. I have attempted to bring some clarity to the
thicket of existing terminology. However, it is impossible to be exhaustive
here, just as it is impossible to completely disentangle form from function or,
indeed, to separate multiple overlapping meanings and purposes from one
another. My primary goal here has been to demonstrate that ERFs are ubiq-
uitous, yet poorly documented and even more poorly understood. I advocate
for the ERF tag to be applied to all such features in existing databases, and
on newly recorded future sites, so that researchers can more easily locate and
evaluate these features in all their diversity.

My attempt here to replace the term *shrine* with the acronym ERF may
strike some readers as whitewashing or as a scientific appropriation of some-
thing Indigenous and sacred. Given that archaeological investigations focused
on *shrines* might understandably create Native American discomfort, is this
something archaeologists should be studying at all? An emotional discussion
of this issue took place at our August 2017 conference. With the benefit of
some time for reflection, I would answer the question this way:

Euro-American archaeologists always should tread sensitively and lightly;
we are guests walking in a past landscape that is not our own. This approach
is especially true for ERFs, where it is likely that these features mark special
beliefs, events, memories, or practices. If prayer sticks, sage bundles, turquoise
chips, or other signs of recent visitation are on view, archaeologists should
assume an ERF is a shrine in active use, and they should avoid interacting
with it unless accompanied by an Indigenous person who gives them explicit permission to do so. If these kinds of signs are not obviously present, it may be impossible for Euro-American archaeologists to know for certain whether recording the feature would violate a sacred place. But ancestral shrines, like all Indigenous archaeological sites, do not come with expiration dates for their importance to descendant communities. For this author, the solution is to record with respect. As a Euro-American archaeologist, I have no wish to violate or interfere with Indigenous “doings” on the greater Chaco landscape. I do contend, however, that it is responsible archaeological practice to record ERFs (just as we record all archaeological sites), in the absence of signs of active use, and unless explicitly instructed not to do so by members of the descendant communities. It is also responsible practice for land managers to conduct substantive ethnographic research well in advance of any planned or potential impacts. When energy development advocates fail to see any intrinsic value to the landscape beyond its potential for mineral extraction, it is in our shared best interests to demonstrate to the best of our abilities that even small piles of rocks can potentially signal big ideas on the Chaco landscape.

ACKNOWLEDGMENTS

This chapter is, at its core, a summary and reinterpretation of the work of many venerable Chaco scholars, including Al Hayes, Chris Kincaid, Mike Marshall, Fred Nials, Bob Powers, John Roney, Anna Sofaer, John Stein, Gwinn Vivian, and Tom Windes. I am deeply grateful for their scholarship and inspiration. I thank Tom Windes, in particular, for sharing unpublished data and many enthusiastic conversations with me about the enigmatic rock features found in and around greater Chaco. I developed parts of this chapter in the context of a 2016 American Antiquity article on “shrines” and intervisibility, and I am grateful for the contributions of GIS wizard and thoughtful scholar Kyle Bocinsky on that undertaking. Early drafts of this chapter benefited from close reads and helpful comments offered by Carrie Heitman and three anonymous reviewers. Binghamton University MA student Daniel Leja helped assemble an ERF database for the Chacoan world. I alone, however, assume responsibility for any errors or oversights contained in this chapter.

REFERENCES

PhD dissertation, Department of Anthropology, University of Michigan, Ann Arbor.


McPherson, Robert S. 1992. *Sacred Land, Sacred View: Navajo Perceptions of the Four Corners Region*. Charles Redd Center for Western Studies, Brigham Young University, Salt Lake City, UT.


