

Cultural Resources Inventory of Rock Imagery

at Big Spring State Park, Howard County, Texas



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Final Report submitted to:

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Abstract

This conservation and management report describes the results of the 4th to the 12th of June, 2009 and the 20th to 26th July, 2009 rock imagery recording fieldwork in the Big Spring State Park in Howard County, Texas, as well as the results of the environmental and historical background research at the Big Spring Park Headquarters, the Howard County Library, Heritage Museum in Big Spring, the Texas Parks and Wildlife Archaeology Laboratory and the Texas Archaeological Research Laboratory in Austin. During fieldwork 11 separate loci (A-K) were located and 376 panels were GPS plotted and photographed. A selection of 23 panels with figurative motifs and/or dates at were traced at eight of the 11 loci within the park. Condition assessment forms for the loci were also completed. Background research suggests that prior to 1881 what happened on Scenic Mountain was most likely tied to the nearby natural Big Spring to the southeast, whereas after that date the history and rock imagery on the mountain were intricately tied to the nearby city of Big Spring community to the northeast. Of all the panels examined, cupules and the excised and striated horned head of Panel G04 are probably Native American in origin and pre-date 1881. The earliest names possibly associated with a dated incision are Stephen Stripling (Serifs), 1-4-81 in Panel J11, A M? WILSON 1882 on Panel G27, and Clay and Lillie G ead? done in a fine script next-to a date of Feb 20, 1883 (1888?) within Panel G70. The next oldest date is 1888 carved within the same rectangular outline as the name Alf Anderson of Panel G22. Roughly between 1900 and 1929 the majority of the dated engraved names seem to have been done on Scenic Mountain, mostly by visitors from the city of Big Spring, but also by the spelunking celebrity Floyd Collins. This is the time period that the mountain apex with its exposed limestone capping was on privately owned land. Meticulously carved names in Gothic by Big Spring residents Leonard Fisher and Barney Russell in Panels J08 and J09, which date to 1916, are good examples of the high quality craftsmanship during this period.

Since 1923 the local citizenry lobbied and labored feverishly to have infrastructural improvements made within the state park on Scenic Mountain. When CCC construction crews worked on the state acquired apex of Scenic Mountain between 1934 and 1936, a few skillfully carved images appeared, of which the “Spanish eagle” of Panel J01 and the sailor cartoon with the juxtaposed name Jimmie Garza of Panel A03 are outstanding examples. Whereas road construction activities in the 1930s have truncated and even obliterated certain panels, repeated road paving activities since the CCC era have covered or partly covered others. After the CCC troopers departed from the Big Spring State Park in 1936, the incidence of incised names and dates appear to have declined. In the 1940s some incised names, dates, and motifs re-appear, but these are comparatively lightly incised and hard to see. The more recent graffiti, which post-dates the 1950s, are generally very lightly incised with expedient limestone tool, leaving behind a powdery white residue and occasional traces of small incisions. Dates recorded suggest that the earliest engravings were done in Loci F, G and J, the portion of the Scenic Mountain rim rock that faces north-northeast. By 1907 names occur in the southwest at Panel A, which is farthest removed from the northeastern mountain edge.

The following management and conservation actions are recommended: consultation with the city of Big Spring community about the recommendations concerning the rock imagery emphasizing that post-1950 graffiti removal will help preserve finely executed early twentieth century inscriptions and CCC era imagery; the installation of removable barriers around Panels J01 and I44 (alternatively re-route road around Panel J01); Create a barrier to protect Panel J14 from additional erosion; the installation of interpretive pedestals in front of/down slope from Panels G48 and I44; the removal of asphalt from Panel G04 by a conservator; the re-integration of graffiti younger than 1950; the removal of soil from Panel H02; keeping Panel H01 soil-free; the regular blowing away of gravel from significant panels; the publication of a rock imagery booklet for self-guided walking tours; the ongoing monitoring and maintenance by park steward volunteers; additional nighttime photography to refine baseline data; and create educational outreach programs. Interpretive themes may include Native American Indians camping at Big Spring to the southeast who visited Scenic Mountain prior to 1881, Euro-Americans who started visiting the same mountain from the direction of the railway line to the north around 1881, extensive and high quality inscriptions during the time that the mountain apex was on the private Edwards property after 1916, the brief burst of CCC era artwork from 1934 to 1936, and the Early State Park era between 1937 and 1950.

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I. Background to the Current Recording Project

Introduction and Report Layout

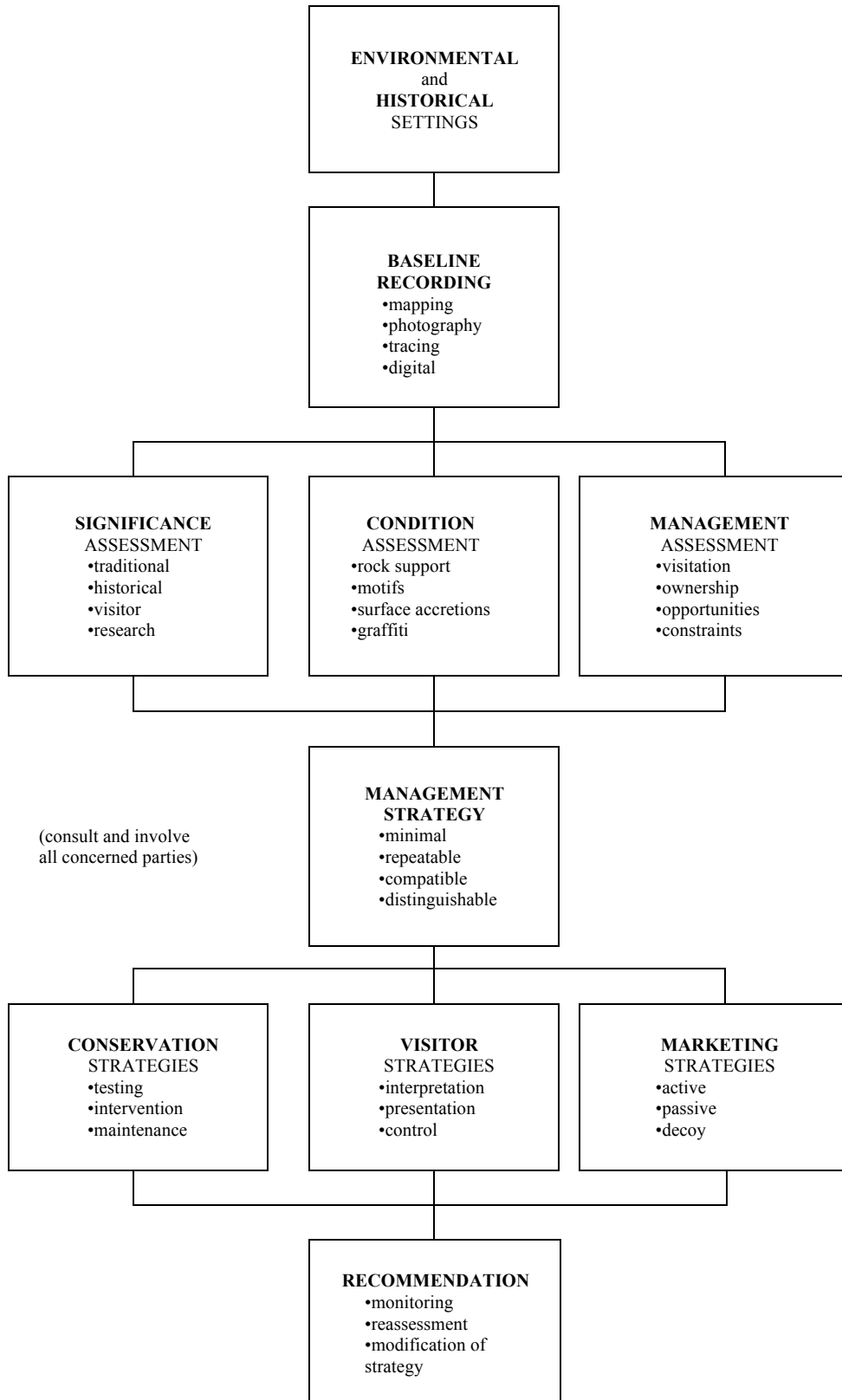
This final report is written in response to a request issued by Texas Parks and Wildlife Department (TPWD) to conduct an inventory of rock art imagery at the Big Spring State Park, Howard County, Texas, using high resolution photographic, photogrammetric, and/or comparable techniques with digital enhancement capabilities. TPWD also need to know the location and condition of all known rock art (also referred to as petroglyphs in this report) images within the park. The work moreover includes suggestions how the rock art images fit into the history and designed landscape at the Big Spring State Park and recommendations to best conserve the integrity of both the rock art images and their setting. Overall the information collected in the study will be used in future landscape studies, as well as conservation and interpretation initiatives. The TPWD furthermore intends using the information to address long-term stewardship and conservation management of the rock art images and to develop a detailed management plan for all cultural resources within Big Spring State Park.

The emphasis of this project falls on baseline recording. Basic graphic recording, which includes a map of the site, photographs of all and tracings of some of the petroglyphs, is an integral part of the conservation management process. A graphic record of the petroglyphs serves many purposes, chief of these being a baseline record of the petroglyphs and their condition prior to the implementation of proactive management interventions and as a visual tool for research, interpretation, and display.

During his time in Texas between the 4th and 12th of June, 2009, Jannie Loubser traced 23 panels with figurative motifs and/or dates at eight loci. Jannie also completed condition assessment forms at these major panels. He conducted literature background research at the Big Spring Park Headquarters, the Howard County Library, and at the Texas Parks and Wildlife Archaeology Laboratory in Austin. The Texas Archaeological Research Laboratory in Austin and the Heritage Museum in Big Spring kindly furnished Jannie with additional background material. From the 7th to the 10th of June, 2009, Robert Mark and Evelyn Billo identified 11 separate loci (A-K) and mapped via GPS 328 panels at 10 of these loci. Robert photographed most of these panels, while Evelyn photographed some under different lighting conditions, and took notes on the panels and associated recently scratched graffiti. Robert and Evelyn completed photo-documentation and mapping of Loci I to K between July the 20th and 26th, 2009. Their additional fieldwork, in collaboration with Tony Lyle, resulted in the recording of 376 panels and additional post-1950 graffiti.

Following the steps as laid out in a typical conservation management plan this report presents information in the following sequence (Figure 1): environmental and historical settings (Chapter II); baseline recording (Chapter III); and assessments of significance (Chapter IV); condition (Chapter V); and management/visitation (Chapter VI). Relevant management principles (Chapter VII) and management recommendations conclude the report (Chapter VIII).

Figure 1. Diagrammatic Representation of the Conservation Management Process.



II. Environmental and Historical Setting of Scenic Mountain

The petroglyph complex is located on exposed horizontal Edwards Limestone surfaces above the 2,770 foot contour on Scenic Mountain within the 381.99-acre Big Spring State Park, immediately southwest of the City of Big Spring, Howard County, Texas. The maximum elevation of Scenic Mountain above the adjacent city is roughly 210 feet. The exposed limestone in the State Park is of mixed sedimentary origin dating back to the Lower Cretaceous (Comanchean) (e.g., Livingston and Bennett 1944:10). The Fredericksburg group within this limestone contains marine fossils.

The eroded but yet resistant limestone remnant that defines the higher elevations of the mesa-like Scenic Mountain forms the northern rim of the Edwards Plateau. This plateau is a broad tableland that extends southward and southeastward for almost 300 miles. To the north and east of this plateau is the Rolling Plains (also known as the Osage Plains) and to the west is the High Plains (also known as the Staked Plains or Llano Estacado).

Beals Creek, also known as Sulphur Draw, that empties into the Colorado River roughly 38 miles to the east, flows from west to east one mile north of Scenic Mountain's low cliff face. Roughly half a mile south-east-of-south from the Big Spring State Park is the source of another tributary creek, known as Big Spring. Prior to the 1900s this spring used to be fed through a fracture in the limestone and conglomerate layer (Pickle 1980:4), creating an oasis-like locale within an otherwise semi-arid area.

The generally hot and dry climate of the Big Spring area makes for a relatively arid-looking environment compared to the lower-lying country of eastern Texas. The average precipitation at Big Spring is 18.5 inches a year, with summer day-time temperatures exceeding 100 degrees Fahrenheit for between 40 and 50 days per year (Pickle 1980:6). Most rain falls between May and October, with occasional light snowfalls between November and March. It is not known how the slightly elevated location of Scenic Mountain affects its micro-climatology, except that the prevailing winds from the south and southeast appear to have a slight cooling effect in summer.

Scenic Mountain and Big Spring are at the interface of the following three physiographic regions: the Edwards Plateau; the Osage Plains, and the Llano Estacado. The interface of ecological regions results in plant and animal life from each region being found together in this relatively small area. For instance, patches of grass occur among juniper, oak, and mesquite. Prior to the 1880s bison occurred in the area, whereas antelope persisted until the late 1910's (Pickle 1980:37). In addition to being an ecologically diverse area, the oasis-like Big Spring with its reliable source of water has attracted animals and people for millennia. Moreover, the slightly elevated bands of light gray cliff faces along the crests of Scenic Mountain and South Mountain to the east of the Big Spring are visible for miles, particularly from the north and east.

Considering that the ecologically diverse and comparatively luxuriant area around the spring occurred within a low gap between two lines of cliffs to the east and west, it is perhaps not surprising that numerous large, well-beaten Indian trails lead to it from

different directions (Haley 1952:41), especially from the northeast and the southwest (see maps in Hollon 1955:131; Pickle 1980:24). Tellingly, while approaching the area from the southwest in October of 1849 on a return journey from Santa Fe, the military company under Captain Marcy could see from a distance the low bluffs framing the shallow valley in which the spring is located (see quotes in Hollon 1955:79; Pickle 1980:10). Once at the Big Spring, Marcy reported seeing bleached bison bones and the remains of Comanche Indian lodges in every direction (Pickle 1980:10), bearing silent witness of this locale's appeal to animals and people.

Marcy marked Big Spring as a campsite on the Overland Trail to California and so the locale became a stopping point for westward bound travelers. Early cattle ranchers, among them the well-known A. Miller and C. Slaughter, reached the area in the late 1870s. By the end of the 1870s, a concentration of hide huts and saloons for buffalo hunters has mushroomed near the Big Spring.

Archaeological evidence gleaned from exposed surfaces around the southern edges of the actual Big Spring suggests that people have visited this place for millennia. The multi-component Site 41HW1 has yielded diagnostic artifacts ranging in age from a Paleo-Indian period reworked Clovis point to historic period soldered tin cans (e.g., see Texas site form information supplied by Adams 1970; Jelks n.d.; and Jensen and Rich n.d.). Documented materials included a small mammoth mandible and numerous bison bones.

Three other archaeological sites have been reported near the Big Spring. The first is a concentration of fire cracked rock with chert debitage at 41HW2 on the northern side of Cosden Lake (Texas site form supplied by Jensen 1970), the second includes a punctuated sherd at 41HW3 (Texas site form supplied by Adams 1970) on the eastern bank of the Cosden Lake and north of 41HW1, and the third is a stratified site with unspecified cultural components at 41HW74 immediately north of the Big Spring (Texas site form supplied by Johnson 1997). Cosden Lake is the northern dammed extension of the Big Spring.

At the base of the low limestone cliff line not far to the east of the Big Spring are at least two rock shelters with archaeological remains. The cliff line demarcates the northern edge of South Mountain (Scenic Mountain's eastern neighbor). The first site, 41HW6, has yielded chert flakes (Texas site form supplied by Adams 1970). The second site, 41HW7, has yielded a hearth, a Bonham point, cordage, and fiber knots (Texas site form supplied by Adams 1970). Along the cliff face where South Mountain's northern rim turns southwards is an extensive chert quarry, 41HW8, complete with cores and flakes (Texas site forms supplied by Adams 1970; Tomka 1997). Scatters of chert debitage have also been identified east of 41HW8, at Sites 41HW71 and 41HW72 (Walter 1997).

In contrast to the fairly dense archaeological remains in the vicinity of Big Spring and along the northern rim of South Mountain, only two archaeological sites, both of them historic, are listed for Scenic Mountain in the Texas state site files. Curiously, the three prehistoric sites mentioned by Stickney (1984) in Big Spring State Park have never been listed in the state site files, both at the Texas Archaeological Research Laboratory and at the Texas Park and Wildlife Department Archaeology Laboratory. Moreover,

unpublished correspondence on file at the Big Spring State Park manager's office mentions a prehistoric burial near the apex of Scenic Mountain (e.g., Wayne Roberson 1975 citing personal communication with the former park manager, Orion Knox). Atwell (1982:28) and Mays (1982:24) furthermore recall finding beads, chert points, and bifacial chert knives on the northern slopes of Scenic Mountain. Nonetheless, no evidence exists to suggest that prehistoric camps occurred on Scenic Mountain. Prior to 1881 habitation appears to center on the Big Spring.

In 1881 the center of occupation moved several miles north of the Big Spring, with the completion of the Texas and Pacific Railway roughly parallel to Sulphur Draw. As the former community around the Big Spring moved north to the tracks, the railroad shops and station became the center of the Big Spring community. When Howard County was organized in 1882, Big Spring became the county seat. It is during this time that Scenic Mountain and the Big Spring for which the town was named, passed into the hands of the Texas and Pacific Railway as compensation for bringing the railroad west (Hutto 1932). In 1882 a post office and general store were first opened within the incipient town. According to Atwell (1982:28), Big Spring's first courthouse was built in 1883 with stone from Scenic Mountain.

By 1884 the town of Big Spring had an estimated population of 1,200 people, six saloons, four general stores, and a weekly newspaper (the *Pantagraph*) (Hazlewood and Odintz 2008). Results from the most recent recording of incised names and dates on Scenic Mountain suggest that it is during the early 1880s that the earliest known Euro-American incisions occurred on the horizontal limestone surfaces.

By 1900 the population of Big Spring has slowly grown to 1,255 people. The Big Spring *Herald* replaced the *Pantagraph* as weekly newspaper and became a daily in 1928. By 1914 the city already had an opera house, three banks, a hotel, and various churches. The population jumped to 4,273 in 1920 and to 13,375 in 1930 (Hazlewood and Odintz 2008).

Prior to the landscape on Scenic Mountain being modified by the CCC in 1934, the mountain was successively on the property of the Texas and Pacific Railroad, E. Prichard, and W. Edwards. In late 1916 Prichard sold 598 acres of land, including the apex of Scenic Mountain, to Edwards. In 1924 Edwards sold 200 acres to the City Federation of Women's Clubs, except for 20 acres on the summit. The State Parks Board accepted the donated land from the Women's Clubs in 1927 and briefly named it Edwards Monument Park and Big Spring Mountain Park. On the 11th of December 1934 Edwards finally sold the summit of Scenic Mountain to the city of Big Spring, the same day that the city in turn deeded the land to the Texas State Parks Board (Mays 1982). On that day Big Spring Mountain Park was re-named Big Spring State Park.

Both the listed historic sites within the park, 41HW79 and 41HW82, date to the Civilian Conservation Corps (CCC) infrastructural improvement activities between 1934 and 1936 (Figure 2). Site 41HW79, which was quarried by CCC Company 1857 for stone used in the construction of a mountaintop pavilion, a park headquarter building, a public latrine, a caretaker's house, road abutments, culverts (Steely 1999:201), picnic tables, and grills, is characterized by linear fractures, bored holes, and waste stone piles. Artifacts from the

quarry include iron spikes and bolts imbedded in the rock and tin cans. Site 41HW82, which was the camp for CCC Company 1857 in 1934 and for Company 3811 in 1936, contained a mess hall, kitchen, bath house, recreation hall, infirmary, six barracks, and support structures (Hicks 2003). Although the structures were removed once the park was completed, concentrations of tin cans, bottle caps, broken glass, porcelain, round nails, and embedded posts suggest where the kitchen and other structures once stood near the southern base of Scenic Mountain.

The nearby city of Big Spring suffered population loss in the late 1930s, with numbers falling to 12,604 in 1940. Important in the history of the city of Big Spring and surrounding area was the discovery of oil in the region during the 1920s. The oil industry in Big Spring reached its peak during the oil boom of the 1950s and the population expanded from 17,258 to 31,230 inhabitants (Hazlewood and Odintz 2008). Another major part of Big Spring's economy and life from the 1950s to the 1970s was Webb Air Force Base, which is immediately west of Scenic Mountain. The city's population declined to 28,735 in 1970 and to 23,093 in 1990. In 2007 numbers were slightly up at 24,075 people.

In the last decade or so Big Spring's economy has revolved around agriculture (with cotton as the primary crop) and the refining of petroleum. Public-service institutions such as Howard College, various prisons, a Veteran's Hospital, and wind farms are currently major employers in the area.

Baseline recording of incised names and dates in the exposed horizontal limestone surfaces of Scenic Mountain within Big Spring State Park allows for an interesting comparison with socio-economic and demographic trends in the adjacent city of Big Springs. The selection of surfaces for placing names, dates, and imagery is also of interest, as revealed through mapping of individual panels and their concentrations within loci. Furthermore, the overall distribution of loci in relation to the altered landscape within and surrounding the Big Spring State Park is of potential significance.

Figure 2. Map of the Big Spring State Park. **Map removed at TPWD request.**

III. Baseline Recording and Documentation

Introduction

For the purposes of keeping track with recording, a panel delineates spatially contiguous names and spatially associated dates and motifs. A locus is a concentration of panels within a particular area. The division of names, dates, and motifs into panels and loci is somewhat arbitrary and was done mainly for the purposes of documentation and cross-referencing. A single panel or locus does not necessarily imply any chronological, functional, or symbolic entity, although juxtaposed names with similar fonts and associated dates and motifs do suggest a unity in terms of time and meaning. Likewise, similar names and/or dates in spatially separate panels suggest similar identities and/or time frames. All-in-all, it is resemblance instead of spatial association that help interpret culture historical associations, whereas spatial association might help inform interpretations on landscape selection.

Basic graphic recording, which includes maps of the Big Spring State Park and the various loci, photographs of individual rock imagery panels, and tracings of selected rock panels, is an integral part of the conservation management and interpretive process. A graphic record of rock imagery serves many purposes, chief of these being a baseline record of the imagery and their condition prior to the implementation of proactive management interventions and as a visual tool for research, interpretation, and display.

To date a total of 376 panels in 11 different loci (Figure 2) have been documented and recorded (Table 1). Of these, 23 panels with figurative motifs and/or dates were traced at eight loci. Not all panels with figurative motifs were traced.

Table 1. Rock imagery loci summary descriptions and numbers of panels.

Summary description	Loci	Panels (n)
Limestone corridor in southwest portion of park, east of road	A	29
Limestone rim rock in northwest portion of park, east and west of road	B	29
Limestone rim rock near northwest portion of park, north of road	C	7
Limestone rim rock in north central portion of park, northwest of road	D	12
Limestone rim rock in north central portion of park, northwest of road	E	48
Limestone rim rock in north portion of park, north of road	F	55
Limestone rim rock in northeast portion of park, north of road	G	89
Limestone boulders in north portion of park, south of road	H	13
Limestone rim rock in northeast portion of park, northeast of road	I	67
Limestone corridor in northeastern portion of park, south of road	J	16
Limestone corridor in central portion of park, west of public latrines	K	11
Total:	11	376

Additionally, post 1950 graffiti was photographed and/or sketched in the field notes to attempt a thorough baseline recording of the many disturbances to the limestone surfaces at Big Spring State Park as of July 26, 2009. This baseline data will help park staff and conservators with eventual reintegration of the disrupted natural surface.

Recording Techniques

In order to find subtle details on the rock surface raking light was needed, such as obtained from the sun in the early morning and late afternoon. Most of the field recording was accordingly done between seven o' clock in the morning and two 'o clock in the afternoon and again from six to sunset. Artificial side-lighting at night-time with hand held flashlights and halogen lamps on stands were effective to accentuate normally invisible details.

Photographs were acquired with a Nikon D-300™, with supplemental photography using Nikon D-80, D-5000™, and Canon Power-Shot A70 IS™ digital cameras. The D-300 images are 38 MB TIFF files (4288 by 2848 pixels). Other cameras used best-quality JPG format. A Nikkor™ 18-200mm vibration-reduction lens was used on the D-300. Specific settings are stored in the image file metadata and available in the Extensis Portfolio™ image database, named BigSpring.fdb.

The general procedure in the field was to photograph panels with a mug board and compass or north arrow oriented toward magnetic north. Additional photographs were taken with PhotoModeler™ targets to permit future generation of rectified images (orthophotos) as necessary. A subset of the images was subsequently rectified using PhotoModeler 6™. They are in the Rectified gallery of the Portfolio image database (the field named Type contains R). In two cases, stereo-pairs were acquired to permit generation of anaglyphs (Type S in database) that appear as 3-D when viewed with red/blue glasses. In some cases, panels were photographed with overlapping images, taken from a single location. They were stitched with Autodesk Stitcher Unlimited 2009™ to generate panoramic images (Type contains P). The mug board photographs were processed using DxOOpticsPro 5™ (DxO added to file name), which removes the lens distortion (Type contains DxO).

Additional photographs of panels were taken whenever the lighting conditions favored inscription visibility, so that some panels were photographed many times. All images were retained in the database so as to give the user a range of what can be seen under different lighting conditions (from practically invisible to, in some cases, easy to see). In addition, we experimented with nighttime side illumination using halogen lamps. This permitted some additional photography and the deciphering of a few images and text in the field. Most descriptive information was added into the database fields after careful inspection of multiple high-resolution images. This is a time-consuming, difficult, and should be an ongoing process. The database in its current form is not completely accurate, but serves as a useful starting point for future work. Because the TIFF files are quite large, a database with screen-size images was created that is adequate for many needs, and was placed on a separate DVD.

Panel locations were acquired with a Trimble sub-meter GeoXT 2005 Series™ GPS using TerraSync 3.30™ software. Differential corrections were made using Trimble GPS Pathfinder Office 4.10™. The raw and the corrected GPS files are provided, but note that some subsequent changes were made in panel designations.

GIS compilation was done in ESRI ArcMap 9.3.1™, using base data provided by TPWD (NAD 1983, Zone 14N). The panel data is provided as a shape file, and the entire project as a Geodatabase file. A spreadsheet of panel coordinates is also provided.

An overview map was exported as a layered PDF, which forms the bases for an interactive Acrobat file. Layers, such as the base orthophoto, can be selectively toggled off. Clicking on a locus brings up a locus map with panel data points. Selected points are marked and clicking opens an image of the panel.

In addition to photographic recording, tracing of selected panels was conducted. Panels were selected for tracing if they contained iconographic design elements and/or early dates. Careful tracing of motifs that occur on stable rock surfaces has certain advantages for a variety of reasons. First, every detail can be examined close-up as the experienced tracer moves systematically across the panel, trying to record all significant features covering the rock. Secondly, the eye is unique in being able to rapidly adjust depth of field and observing features from the top and sides, thus perceiving subtle real-time three-dimensional differences in texture, depth, and color. Thirdly, line re-drawings from field tracings can be done in digital format, such as Freehand™ or Adobe Illustrator™, thus making it easy to represent lines or to correct errors and make updates. Line re-drawings are also very suitable for identification and interpretive purposes, especially when including them in brochures or attaching them to interpretive pedestals in front of rock imagery panels.

In the field each square section of a transparent plastic drop-cloth tracing surface was attached to the horizontal rock by applying blue painters tape to the corners. Details were inspected by simply lifting the square plastic section and looking directly at the rock surface underneath. Black Sharpie™ pens were used to trace the outlines of any natural edges, pecked, scraped, incised, cracked, or weathered surfaces, using relevant symbols and descriptions for each feature. A three-centimeter scale, locale name, panel number, an “up”/north arrow, and annotated remarks about the rock, natural features, and petroglyphs were added to each sheet. Two register marks per edge were applied in pen to indicate where neighboring plastic sheets abut and overlap. Typically, each panel was traced from right to left and from top to bottom.

The completed field tracings were then conjoined and placed on a light-colored table for re-drawing onto strips of transparent Mylar™ sheets. Re-drawing onto the Mylar™ very much emulated the field tracing procedure. Upon completion of the transfer of the field tracings onto the Mylar™ sheets, the sheets were taken for reduction through an industrial-sized machine. Reduced PDF copies were downloaded into Adobe Illustrator™ for final re-tracing.

Tracing Results

A total of 23 panels were traced and re-drawn at eight loci (Table 2). What follows is a brief description of each traced panel, including interpretation based on the names and dates and what could be gleaned from a cursory background literature survey. For additional information on locus and panel condition assessments see Chapter IV.

Table 2. Summary of traced and re-drawn panels.

<u>Panel</u>	<u>Description</u>
A03	Sailor drawing, Jimmie Garza
B06	ROB. B. 12/11/10, M. HARWELL II
B07	Leonard Fisher, 12/11/10
B22	AV or AN or chevron design
C05	Bottle-like motif
D05	Star motif, W M MAJOR 7-1 26
D09	House-shape with square base and triangular top containing letters
E25	J. M. MORGAN, M. HOAR, 2-22-07, arrows, P. K. W.
E27	FEB 18, 0?, 3-2, VSTAL, J.F., C.E.M, L.M., D5, UP, M, CM, house-shape with “ears”
G04	Horned head
G22	ALF ANDESRON 1888 framed by rectangle
G44	J. J. O' Connor, intersecting geological hammers, JWF, six-sided motif
G48	Carved 3-D female motif
G68	G. H. BROWN and Feb within circle, J. H. SUTLTVAN within diamond
G70	Clay and Lillie Coloa, HA, M. W. Turall
H01	Scroll
J01	"Spanish" Eagle design
J07	HARRY RUDLOFF 1-1-17, Tobin, MARK HARWELL 17', AALONG, A NEWBHL
J08	Leonard Fisher 12-6-16 within outline
J09	Barney Lee Russell 19??
J10	WLH, REED
J14	Rifle design, 11.3.01, J. E. MERRIT. JR within rectangle

Subsequent office work with high-resolution photography in good lighting conditions allowed us to gain additional information about some of the panels traced. For instance, C05 (rotated 90 degrees clockwise) appears to be a profile head facing right, neck, and upper arm. These details came out at night when panel was viewed with halogen lights. Therefore, descriptions in this table may differ from the descriptions in the Portfolio image database.

Panel A03 contains the name JIMMY GARZA (only the first letters of the name and of the last name are serif) in capitals next-to a finely executed pecked and incised cartoon-like depiction of a sailor (Figure 3). The head and cap are enlarged in proportion to the body. Based on the absence of the figure's left hand and legs it's safe to infer that it was never completed. The name Jimmy Garza is listed on the roster of CCC Company 1857. This company quarried limestone blocks nearby for construction of rustic features on the park from 1934 to 1935.

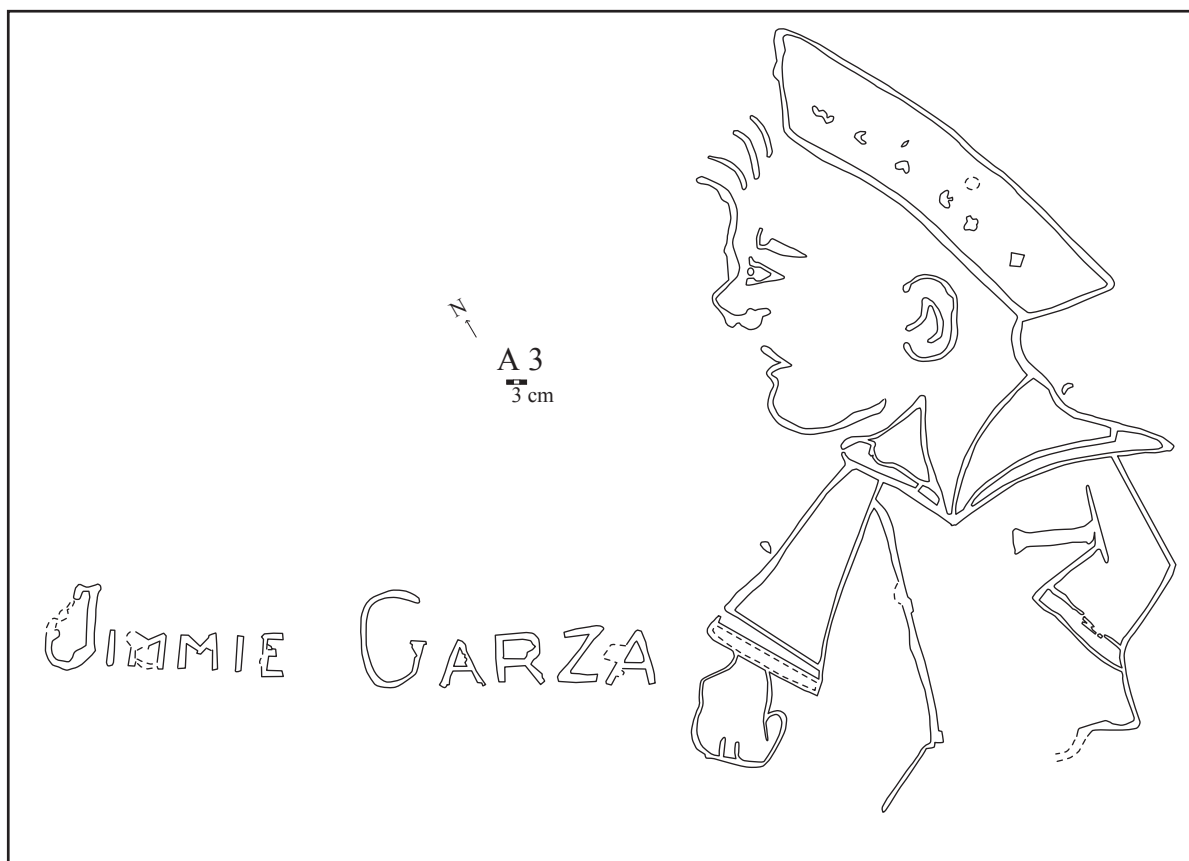


Figure 3. Panel A3.

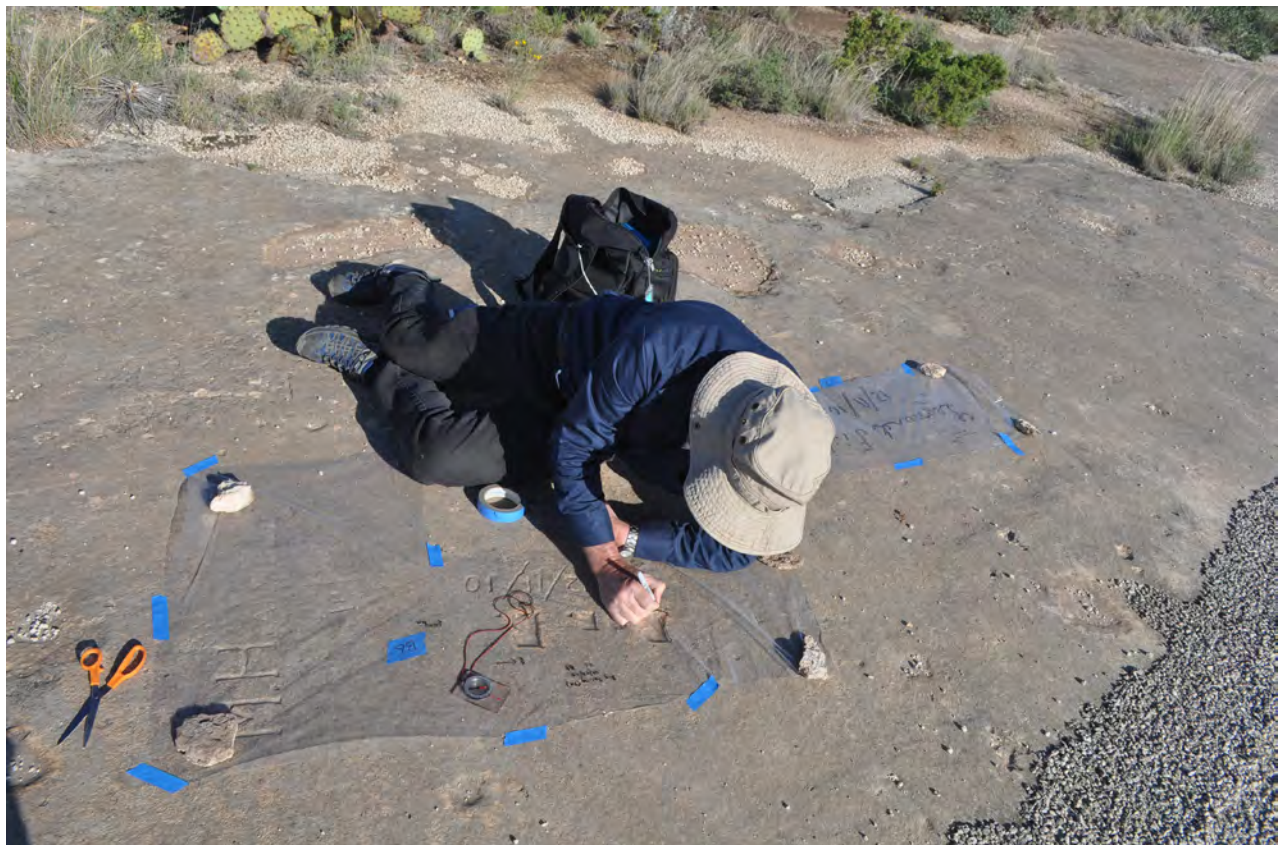
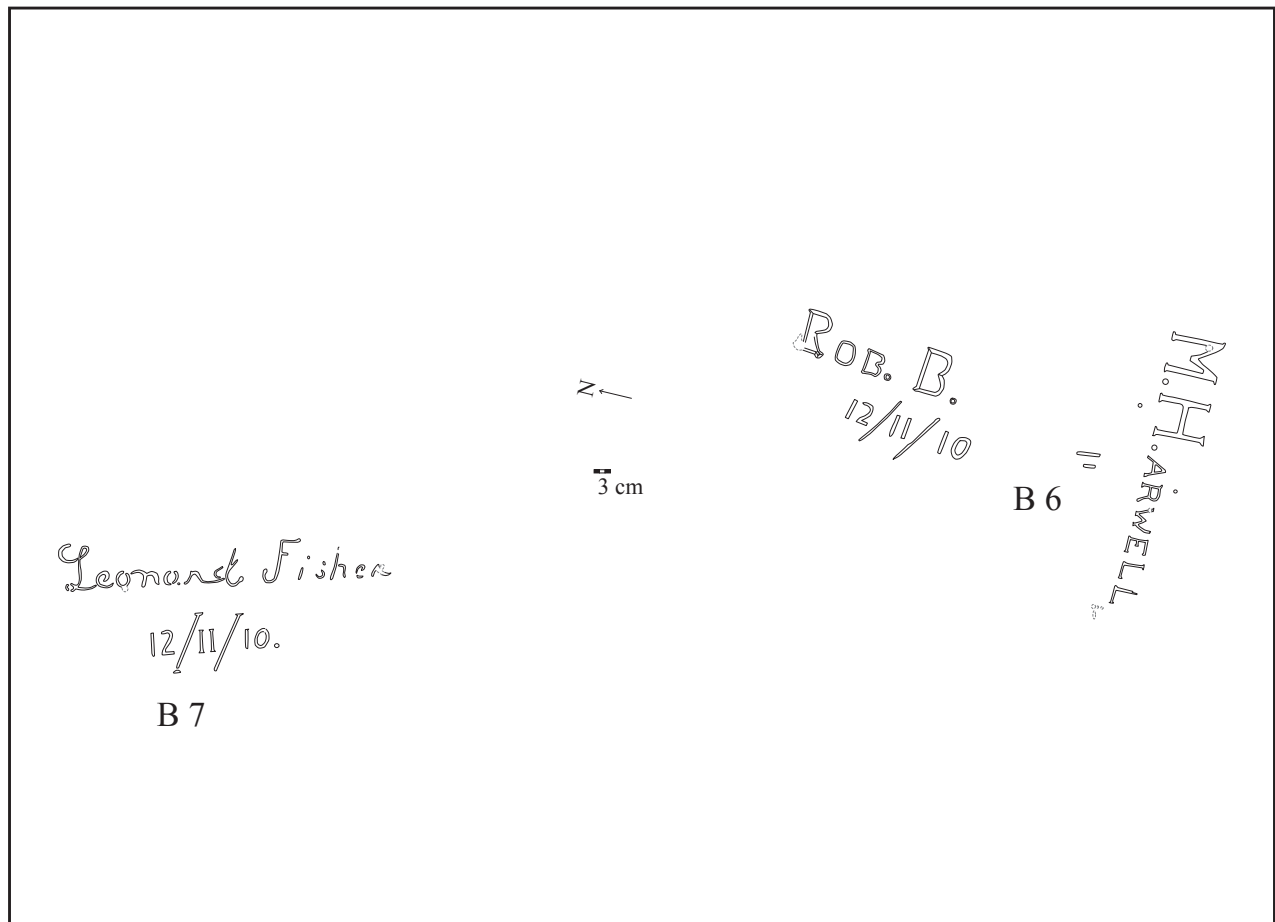


Figure 4. Panels B6 and B7.



Figure 5. Panel B22.

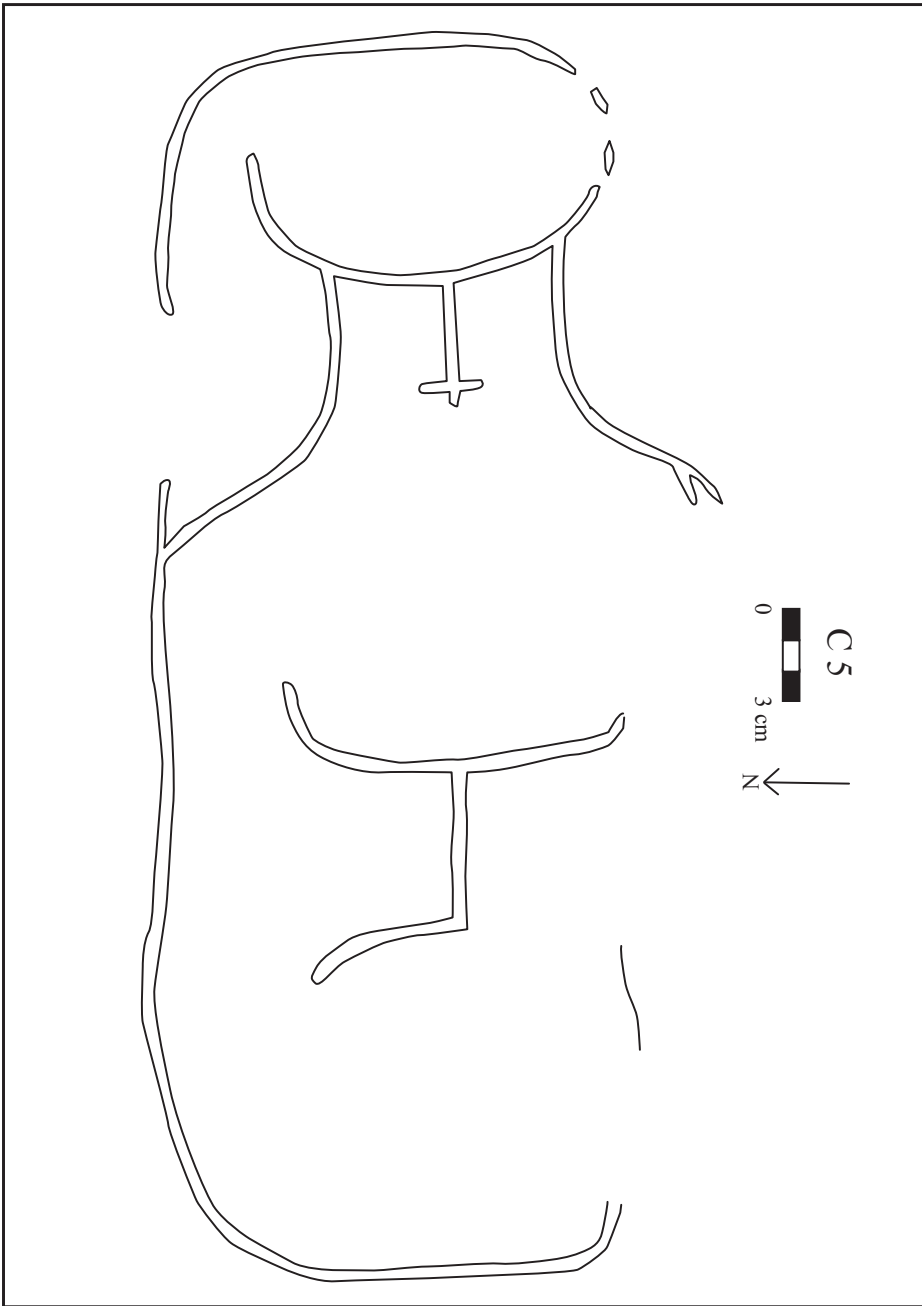


Figure 6. Panel C5.

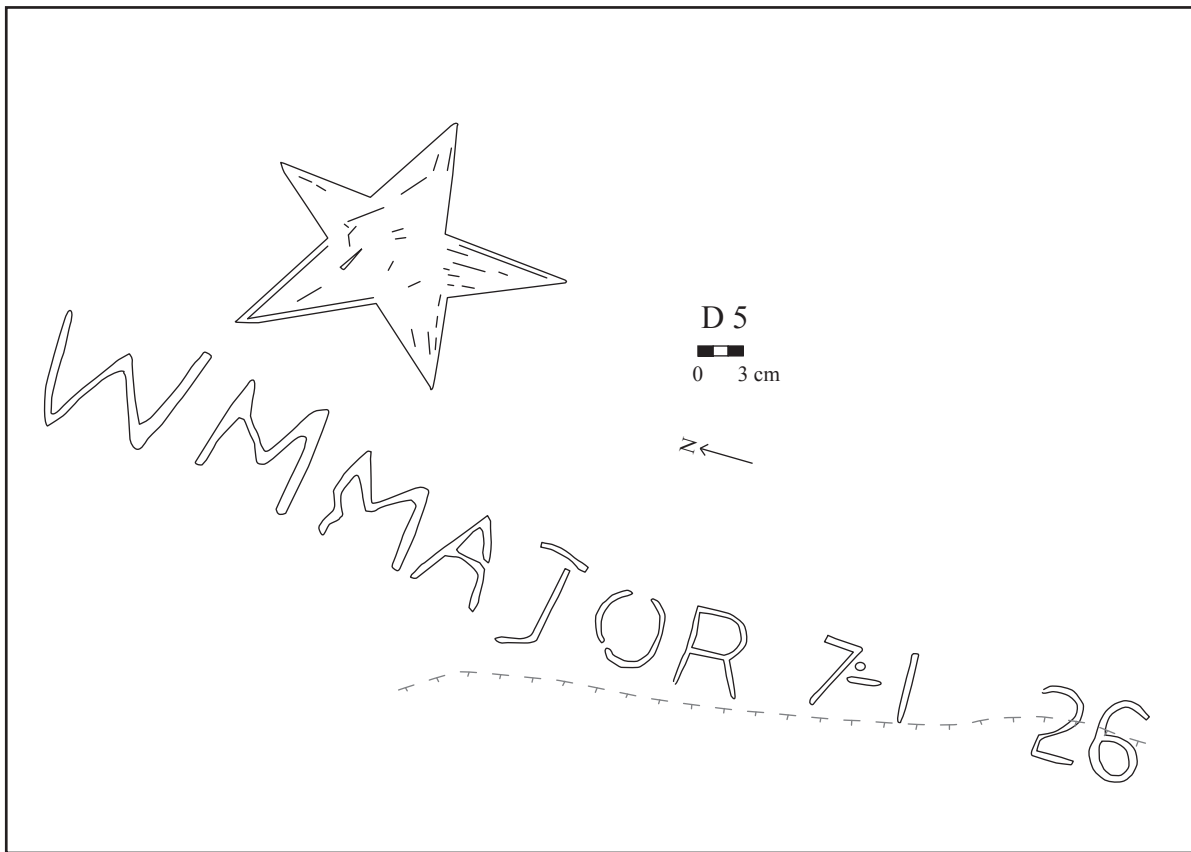


Figure 7. Panel D5.

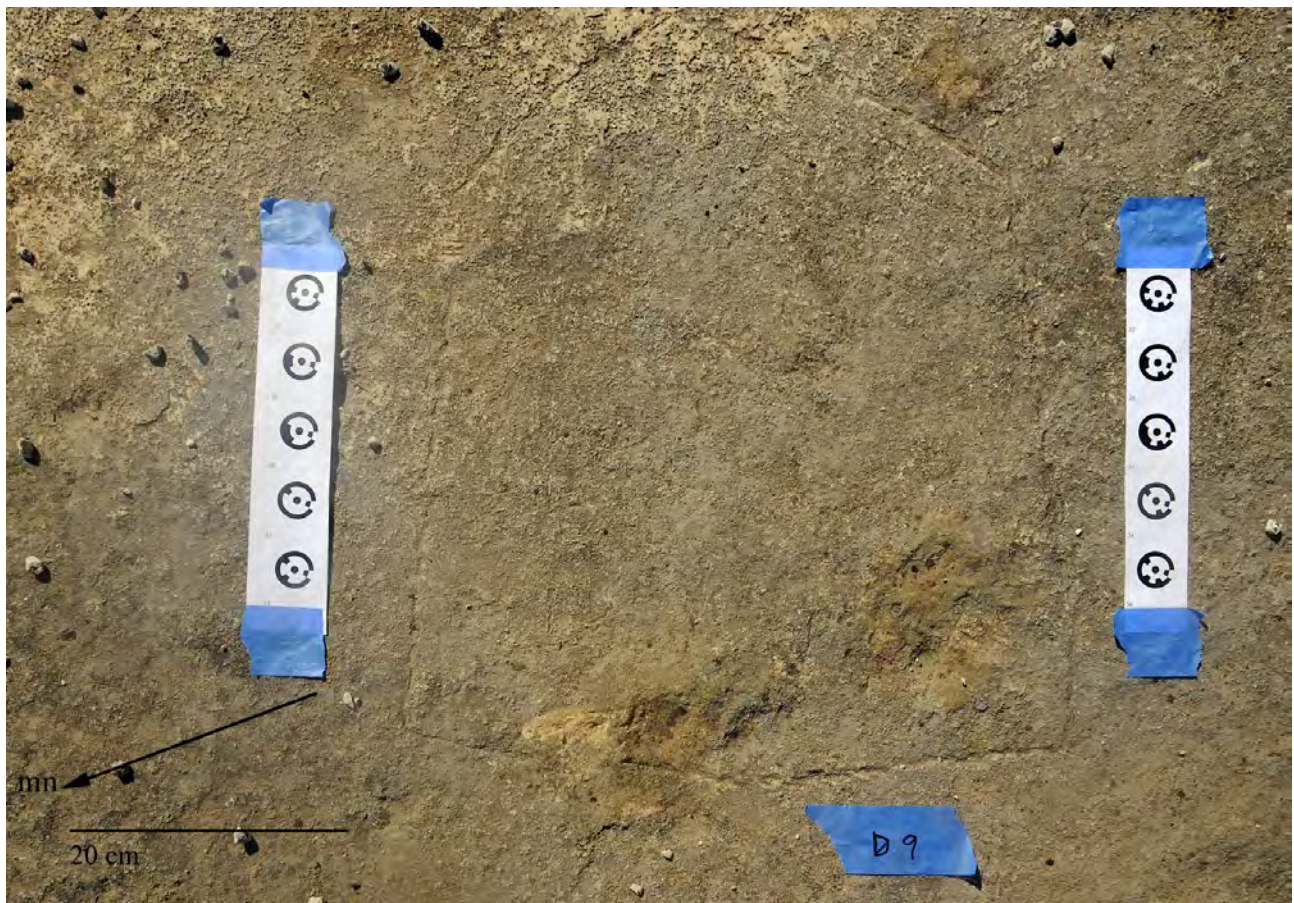


Figure 8. Panel D9.

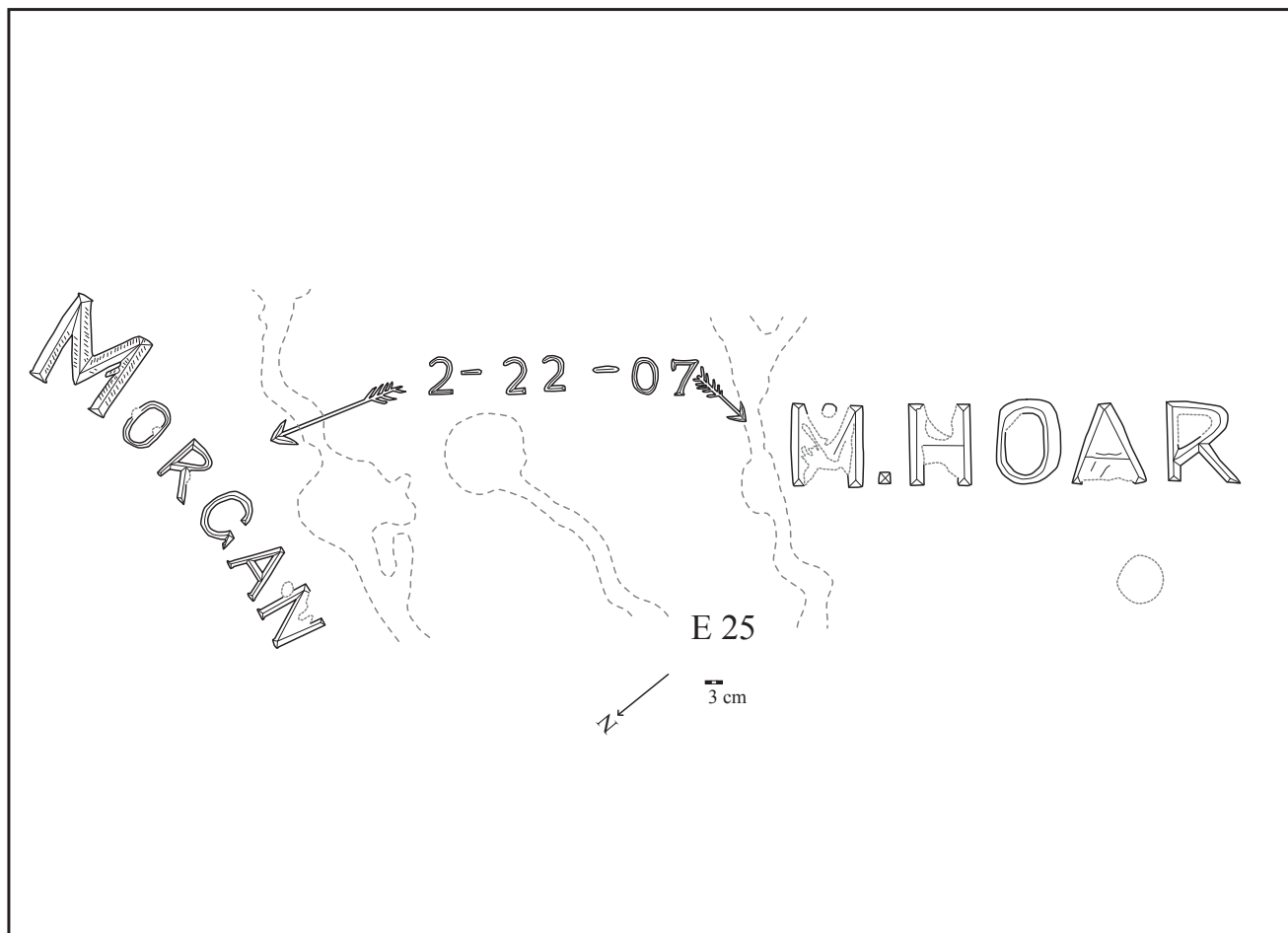


Figure 9. Panel E25.

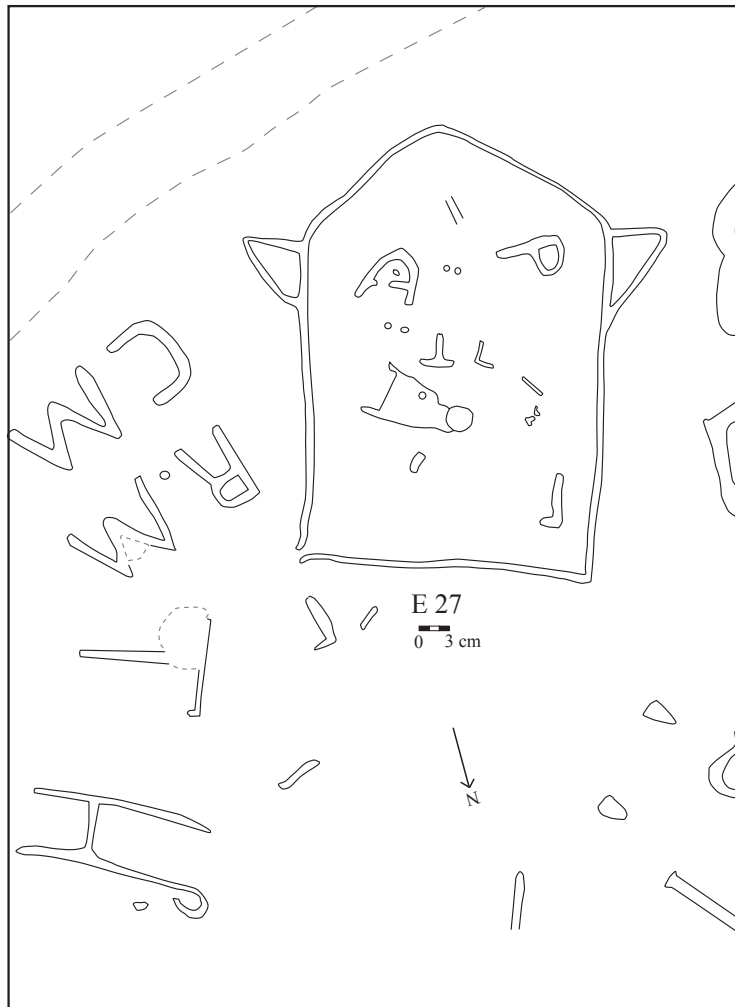


Figure 10. Panel E27.

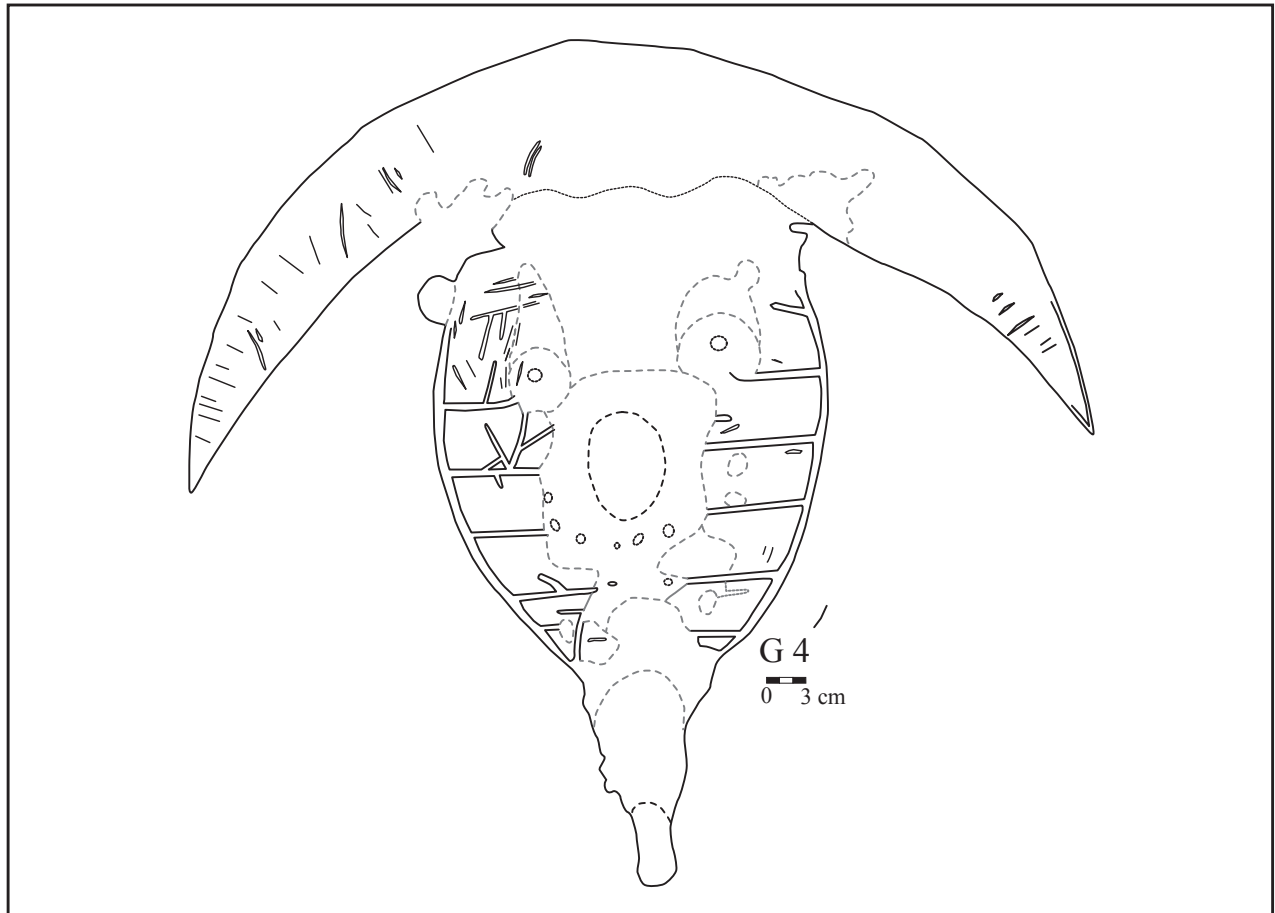


Figure 11. Panel G4.

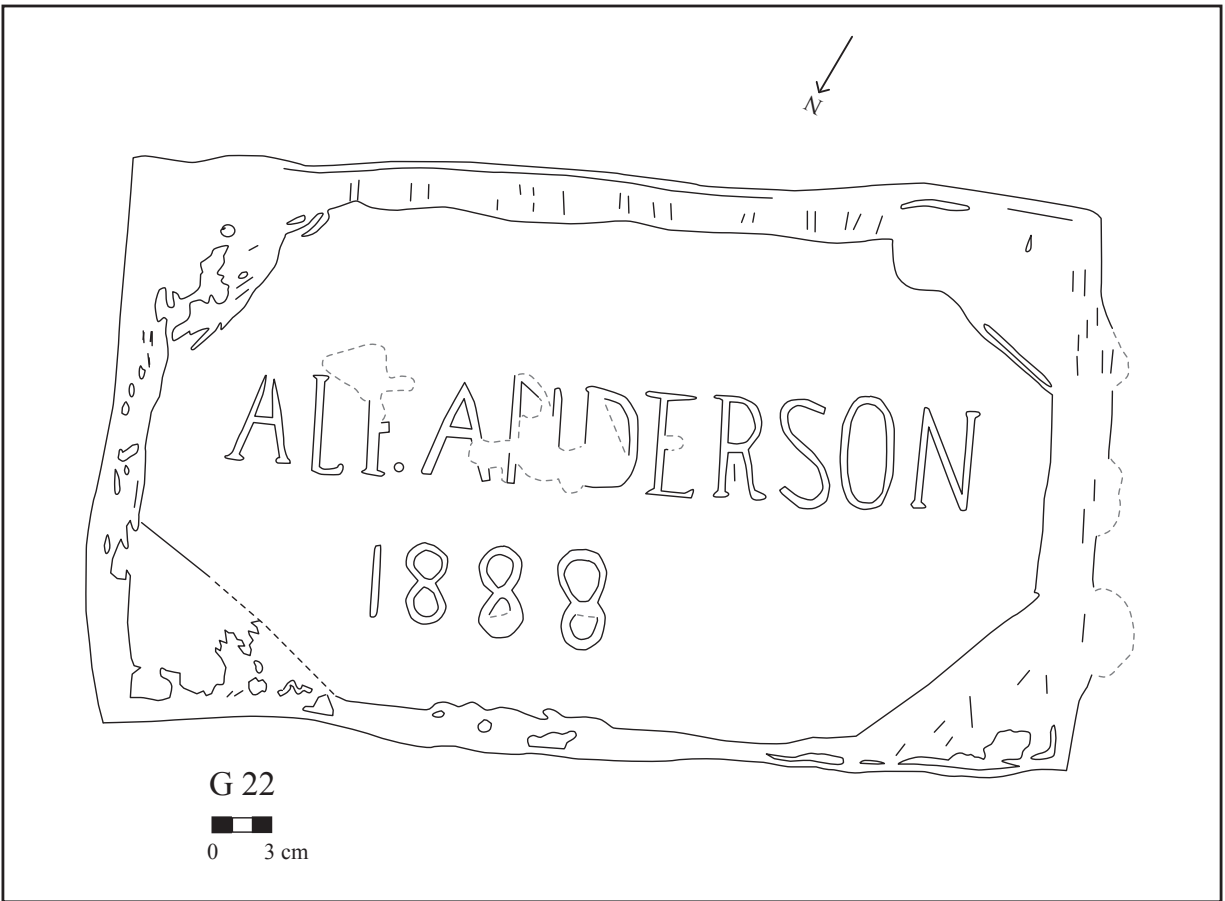


Figure 12. Panel G22.

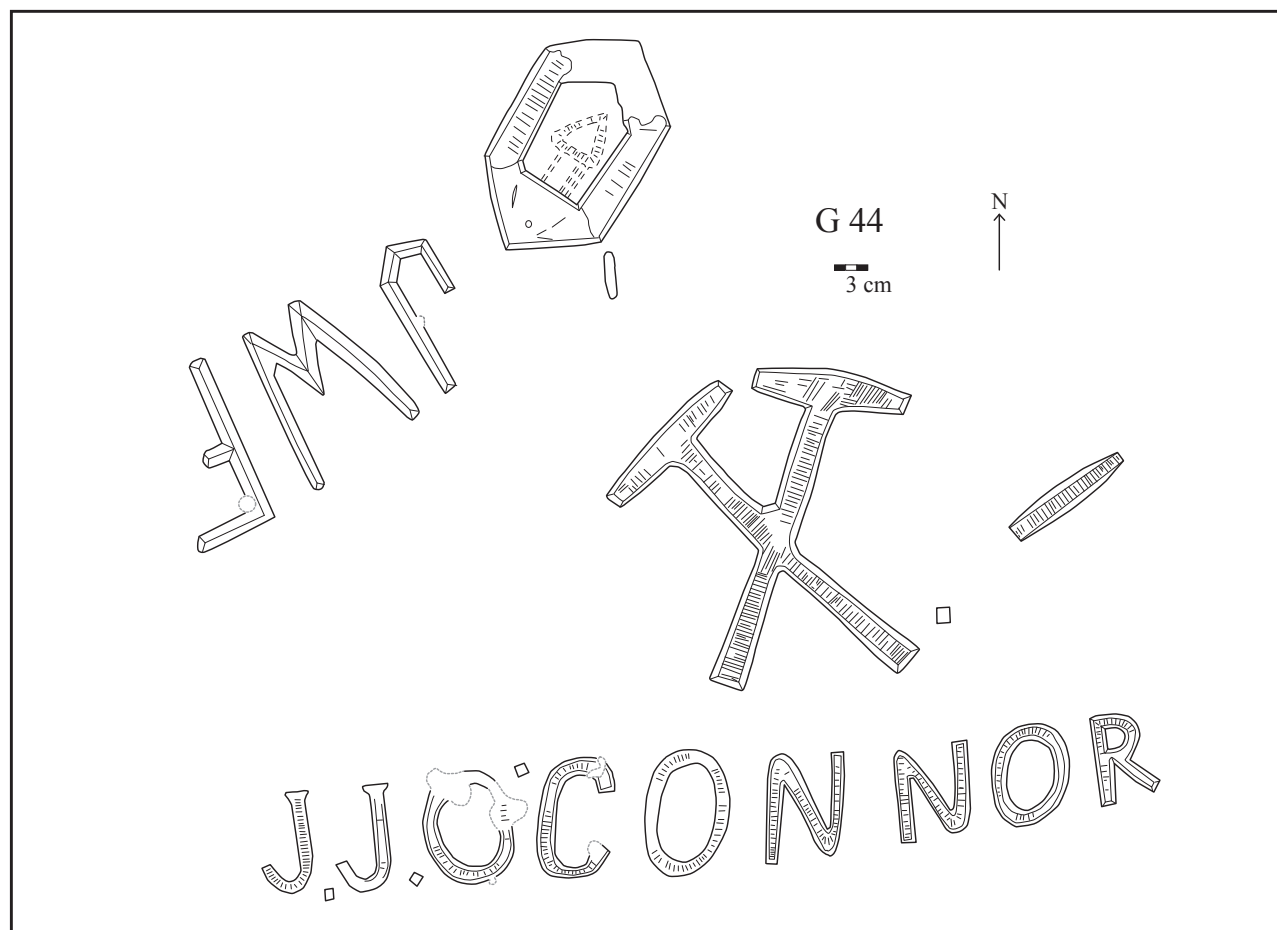


Figure 13. Panel G44.

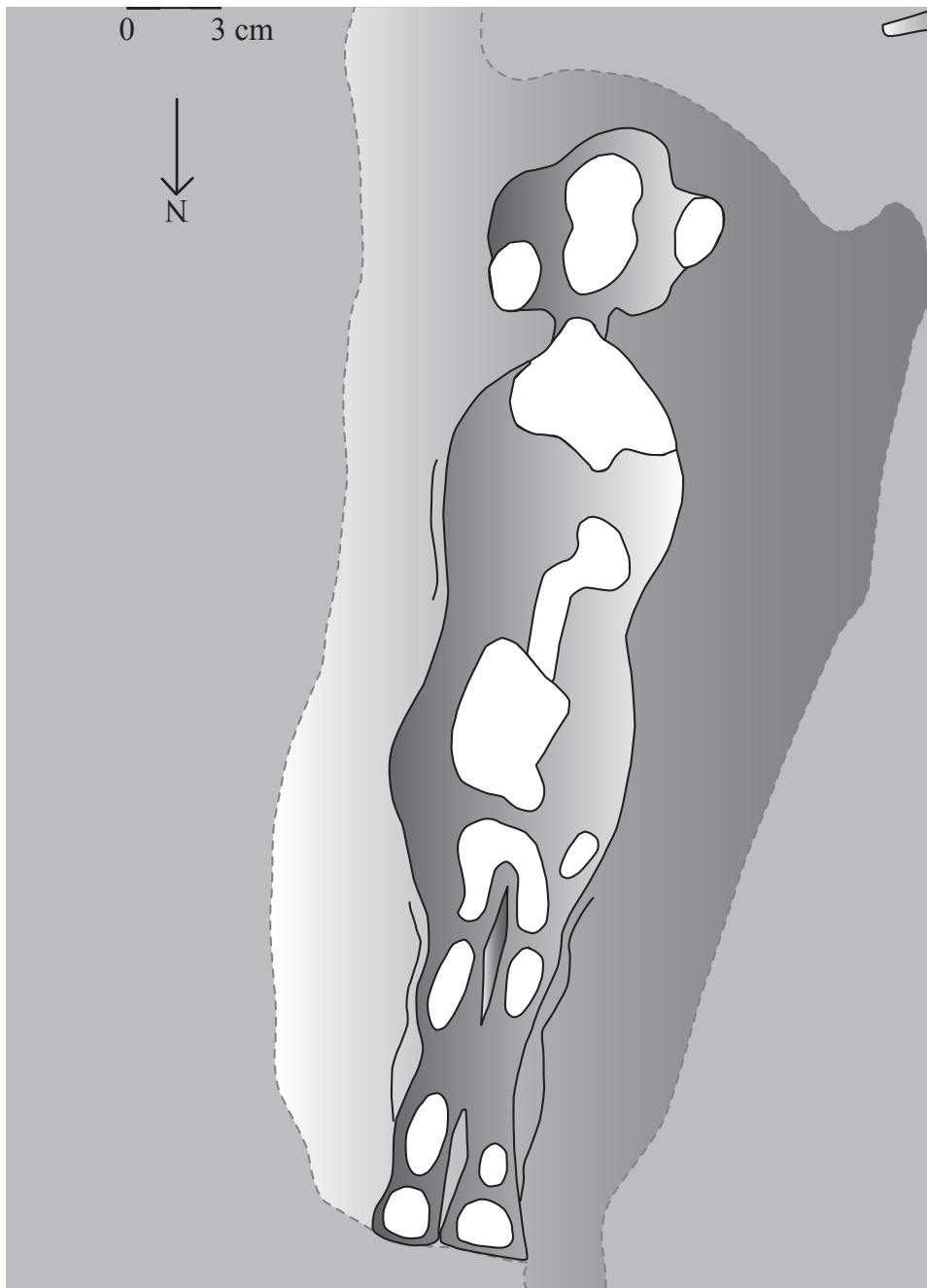


Figure 14. Panel G48.

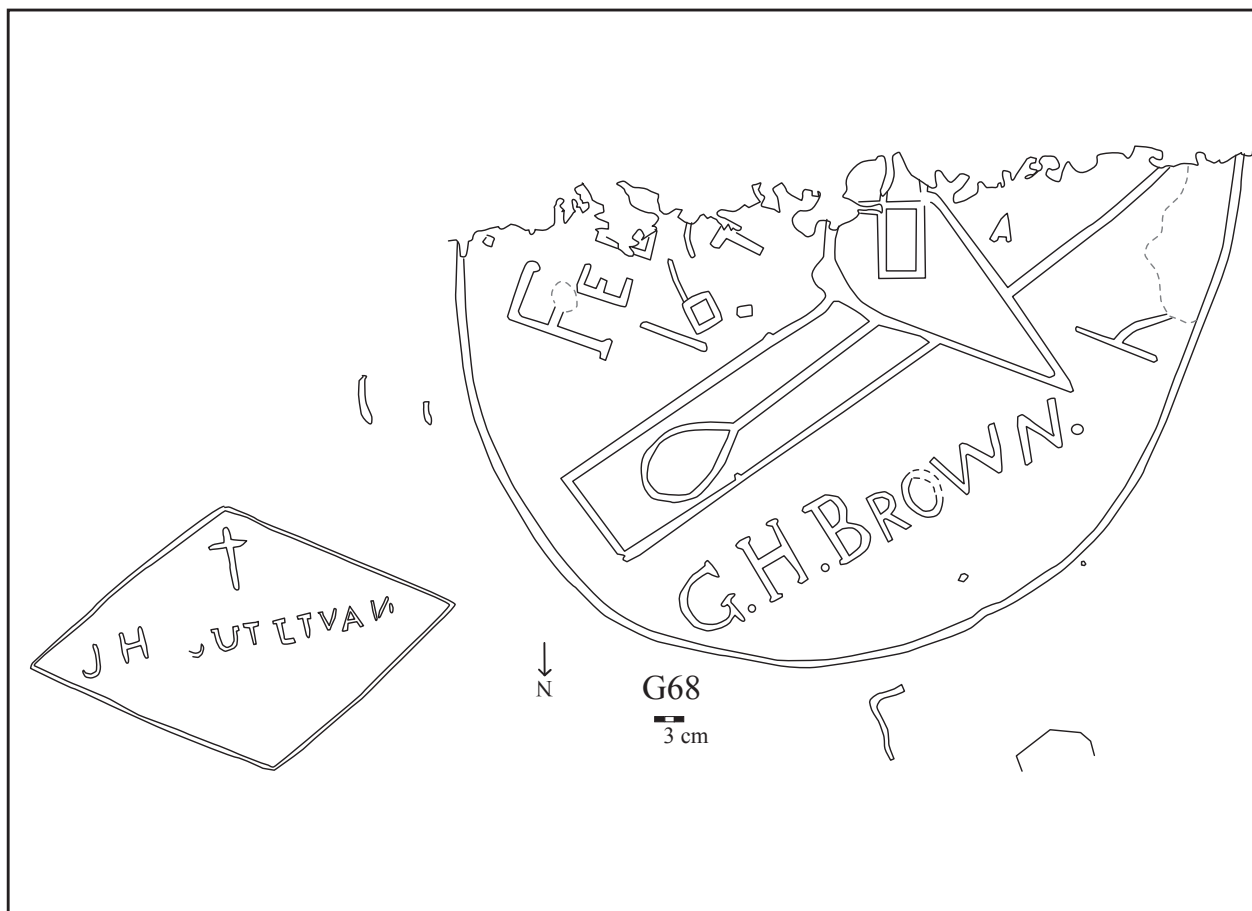


Figure 15. Panel G68.

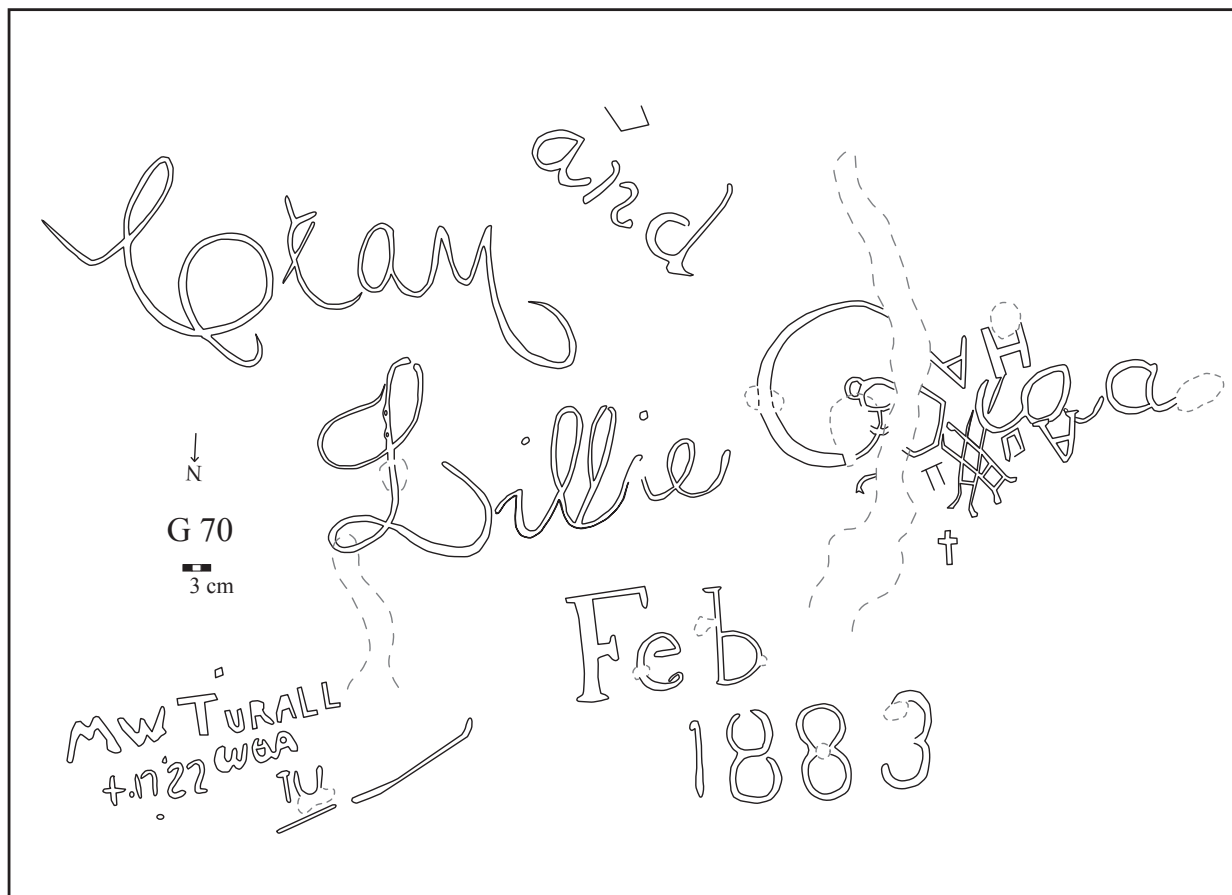


Figure 16. Panel G70.

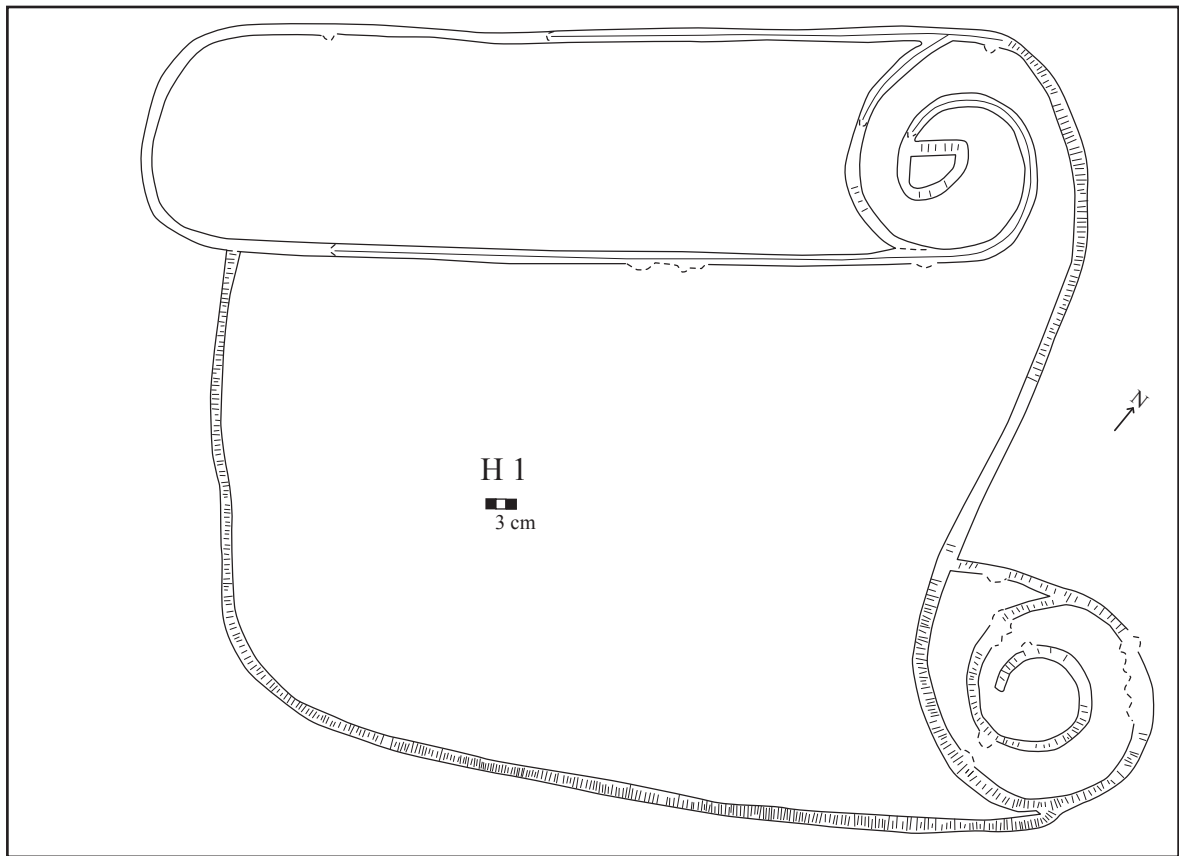


Figure 17. Panel H1.

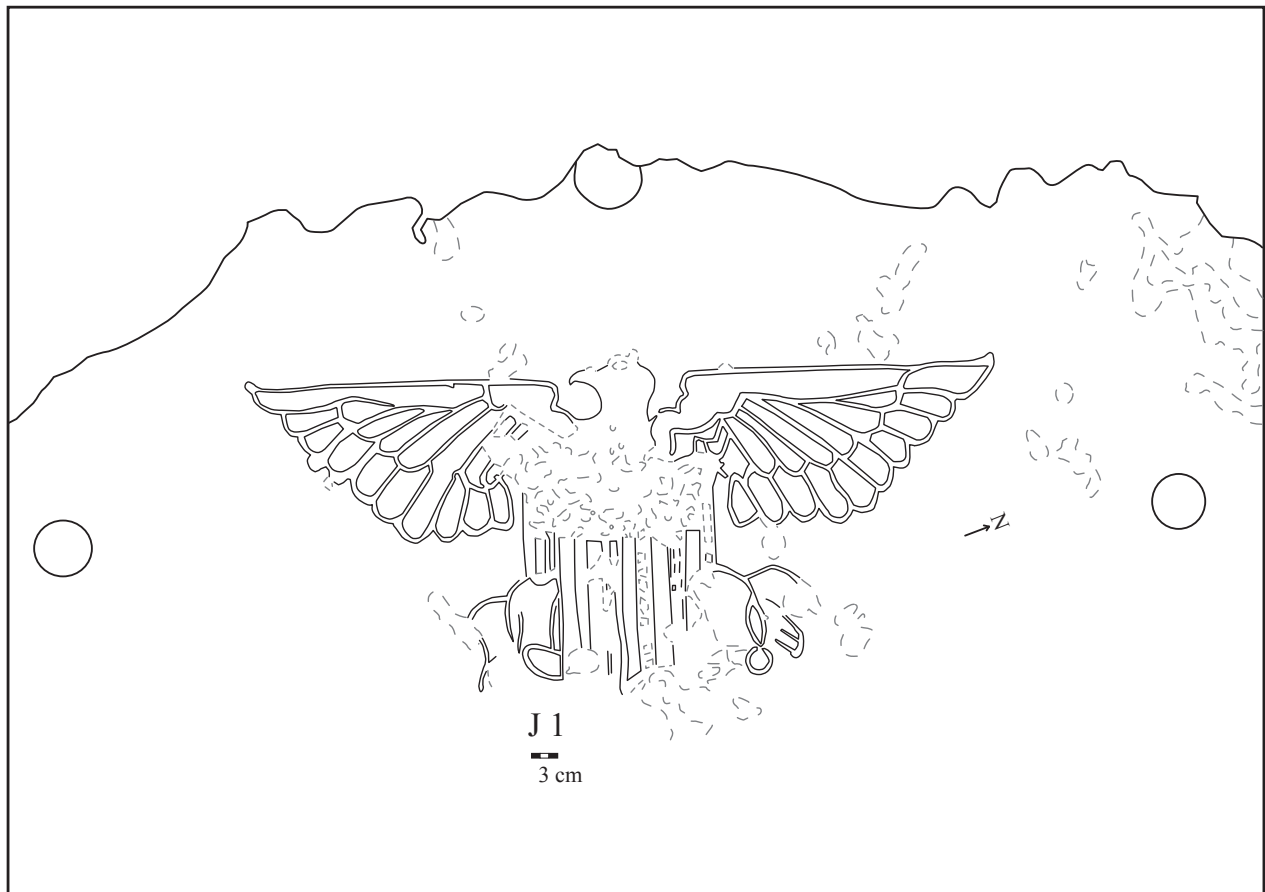


Figure 18. Panel J1.

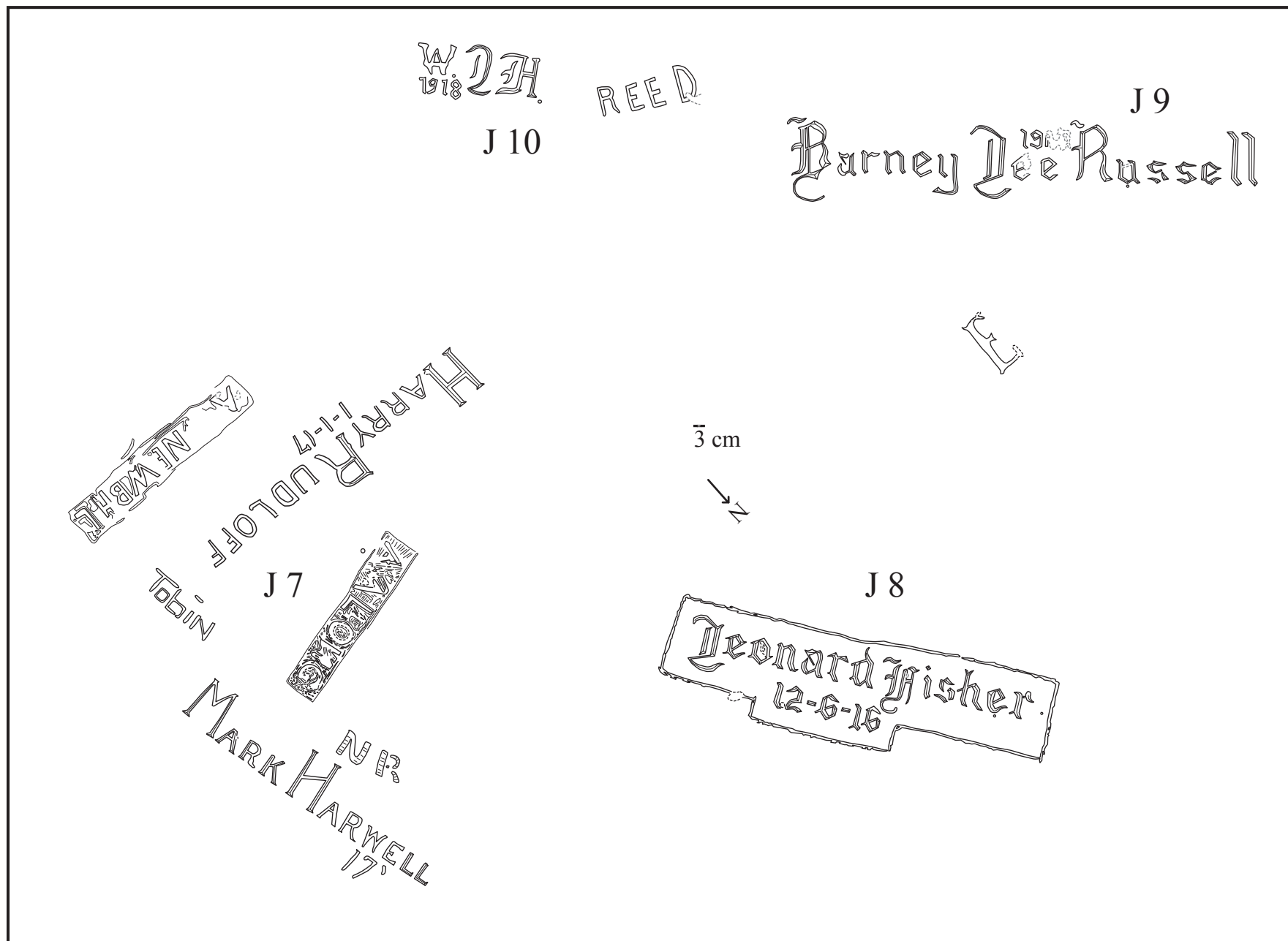


Figure 19a. Panels J7 to J10.



Figure 19b. Panel J7.

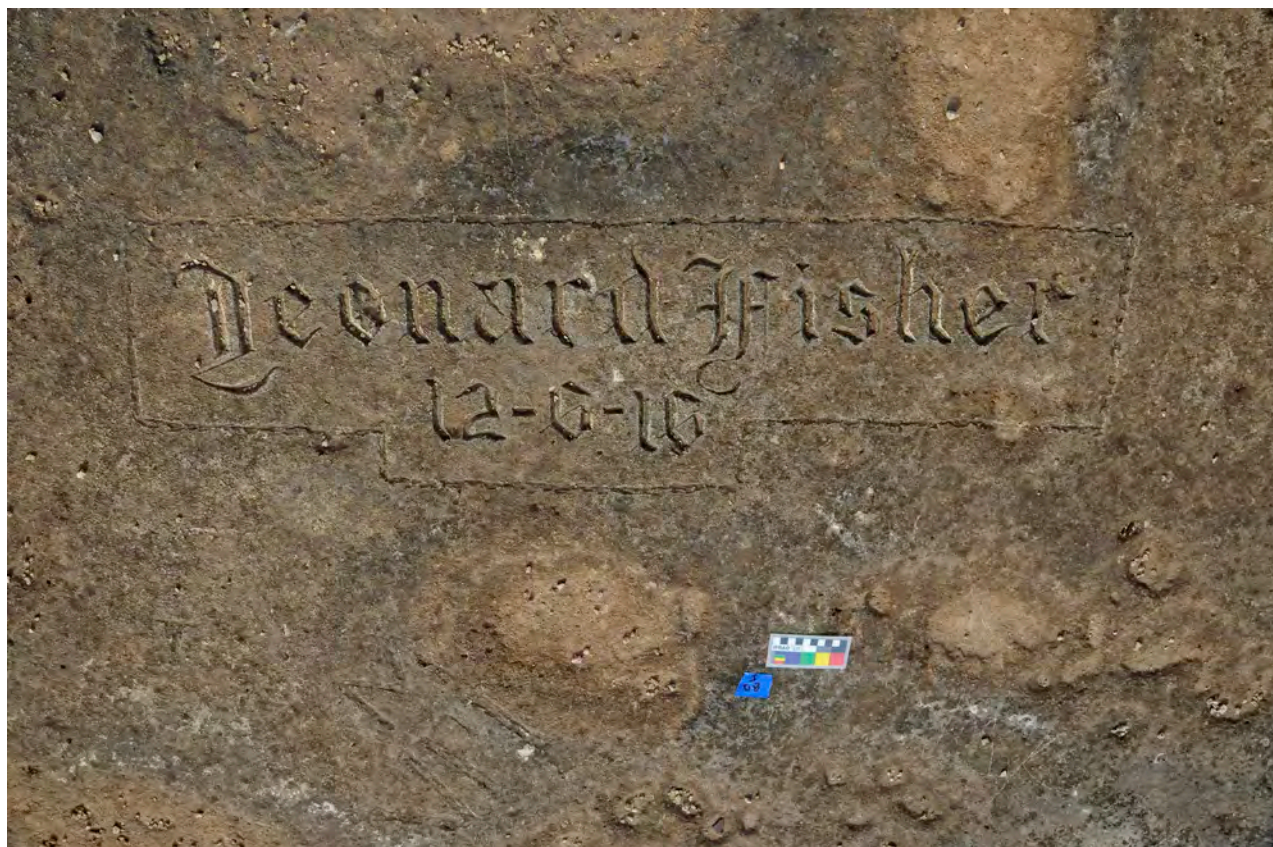


Figure 19c. Panel J8.

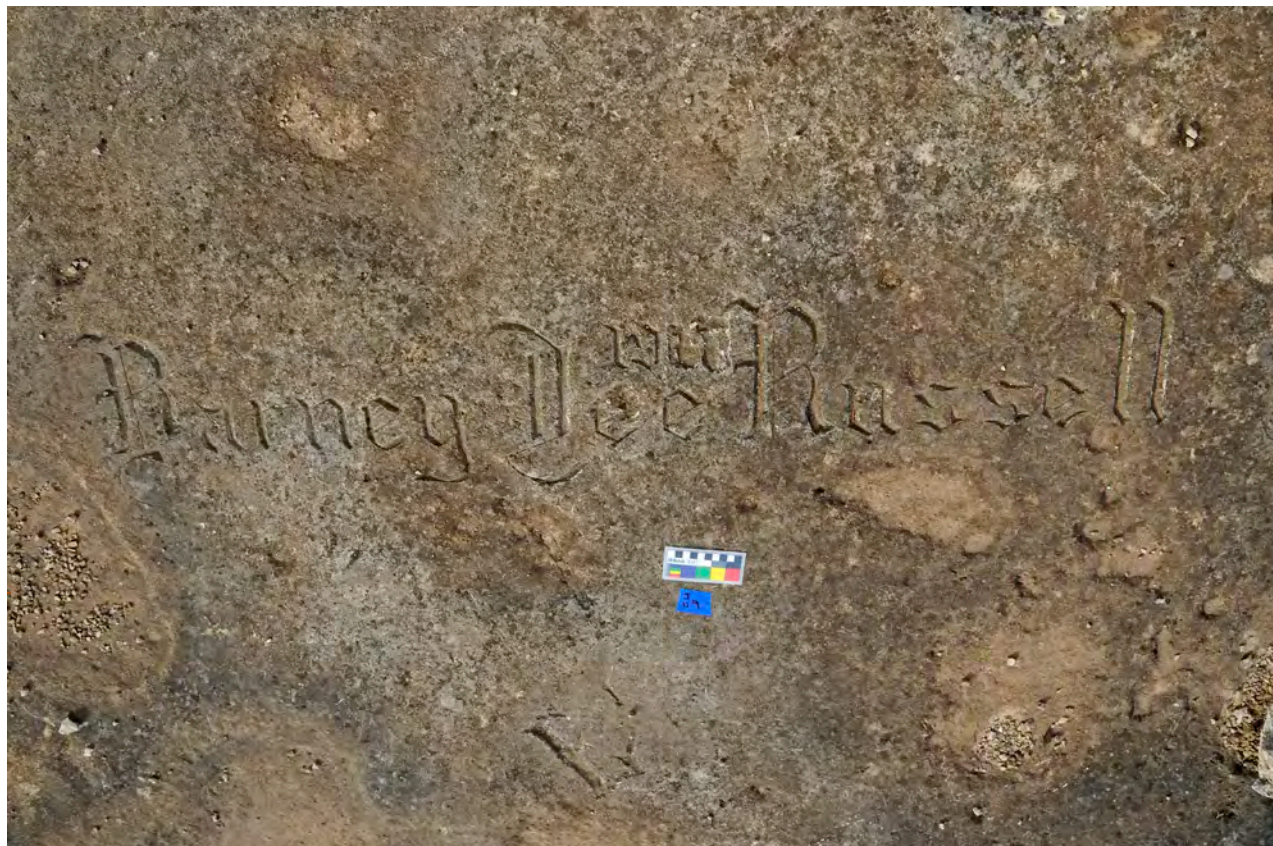


Figure 19d. Panel J9.



Figure 19e. Panel J10.

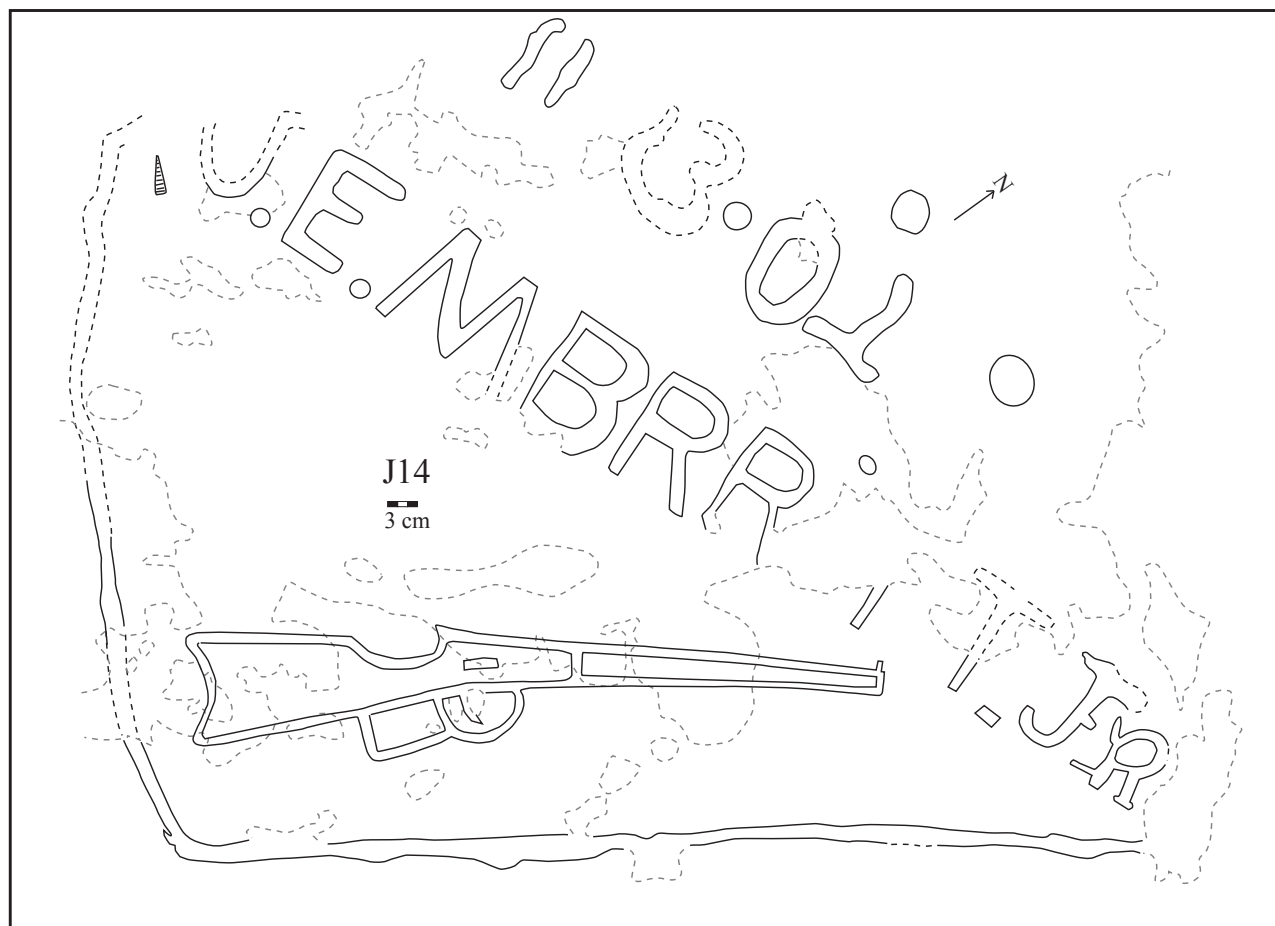


Figure 20. Panel J14.

Panels B06 and B07 contain the names Leonard Fisher (cursive) and M. HARWELL (serif), with the letters ROB. B. in-between (Figure 4). Both the dates below Fisher and ROB. B. are 12/11/10. The incomplete 11 below HARWELL could indicate that it was done on the same day. The juxtaposition of the names Leonard Fisher and MARK HARWELL could be significant, as the names also occur together in Locus J, on the opposite side of the Big Spring State Park. In Locus J the names respectively date to 12-6-16 and 17', suggesting that they were incised there at a later date. The Fisher in Leonard Fisher of Panel B07 is very faint and can only be seen in raking light. ROB. B. has apparently been left incomplete and/or damaged as the interiors of the R and B are missing. The top tip of the last L in HARTWELL is also left somewhat incomplete and/or has weathered.

Panel B22 is an example of a sunken-relief motif, also known as an intaglio or hollow-relief (i.e., a sunken-relief motif is where the image is made by carving into a flat surface) (Figure 5). In many cases raking sunlight is needed to make sunken-reliefs more visible. The exact identification of Panel B22 is not clear and could be incomplete; the incisions could be the beginning of letters such as A or W or an abstract zigzag design. High resolution photography in good side light reveals a clever pattern which may well have been a complete name EVAN where all letters share some lines. Virtually all the other sunken-relief motifs found on Scenic Mountain are letters, usually left incomplete. Evidence for abandonment of sunken-relief motifs in a variety of other panels could be due to the additional time and effort needed to carve such images; relatively big volumes of limestone have to be removed around the letters to give them an elevated appearance.

Panel C05 is a very lightly incised fine-lined depiction that resembles the outline of a bottle or head (Figure 6). Surface erosion from water flow and/or physical abrasion destroyed many of the finer lines, leaving an incomplete and inconclusive image. The intact lines are protected by a thin shiny crust-like skin, which can be seen properly in raking light.

Panel D05 contains an excised star motif, the letters W M MAJOR (sans serif), and the numbers 7-1 26 (the last is presumably a date) (Figure 7). The panel occurs on a natural step-like edge within Locus D, with the badly weathered number 26 excised on the edge. The excised star is slightly sunken below the level of the surrounding rock and partly delineated with an incised line.

Panel D09 is a very lightly incised fine-lined rectilinear outline with triangular top that has the overall appearance of a tombstone or a house (Figure 8). Surface erosion from water flow and/or physical abrasion destroyed sections of the finer lines within, leaving incomplete and inconclusive remnants of letters and/or numbers within the outline. As in the case of Panel C5, the intact lines are protected by a thin shiny crust-like skin, which can be seen properly in raking light.

Panel E25 has relatively big letters, MORGAN and M. HOAR (both sans serif), placed on either side of the date 2-22-07 (Figure 9). The M H and A in M. HOAR show signs of production errors, as chisel marks occur next-to the letters and edges appear to have been

knocked off accidentally. The neatly incised arrows pointing to both MORGAN and HOAR imply that they are contemporary.

Panel E27 is one on the flat and level bottom surface of a natural depression in the rock (Figure 10). Near the vertical edge of the depression there is an incised design with a rectilinear outline and triangular top. Reminiscent of the design in Panel D09, the Panel E27 motif has the overall appearance of a tombstone or a house. Ear or fin-like appendages have been incised on either side of the motif. Weathered and incomplete letters within the motif do not appear to make any sense. The red-colored rock matrix that occurs within the incised lines most likely represents natural iron leaching from the limestone. After heavy downpours the basin fills with water which then empties through a small gap over a low cliff in the form of a mini-waterfall. High resolution images in low angle light bring out detail of WN and possible 1844 and 1900 dates, which might be logical for a memorial tombstone.

Panel G4 is a horned face carefully arranged on both sides of a vertical rill and line of holes in the limestone (Figure 11). The oval-shaped face has been excised slightly deeper (i.e., $\pm 2\text{mm}$) than the down turning pointy horns (i.e., $\pm 1\text{mm}$) on either side, giving the overall motif a sunken appearance in relation to the surrounding rock. A series of parallel horizontal lines occurs across the left and right sides of the face, with remnants of cross-hatched incisions in-between. The sunken face and the tip of the right horn are outlined with a fine-lined incision. The center of the face and the eyes on either side are somewhat weathered. The preferential weathering of the central portion of the face can be ascribed to it being close to the natural vertical rill and line of holes. The incorporation in the design of a pre-existing natural rock feature is characteristic of Native American rock art. This careful inclusion of a natural feature and the detailed incisions within the face suggest that the motif is more than a clever imitation. The motif does remain idiosyncratic, however, even though it broadly resembles painted mask-like motifs at Hueco Tanks in far western Texas.

Panel G22 was traced due to the relatively early date of 1888 (Figure 12). This date is associated with the name ALF. ANDERSON (serif font). The incomplete and weathered box outline for the name and date suggests that it was never finished off properly, as is the case with many other panels on Scenic Mountain.

Panel G44 contains a deeply chiseled name, J. J. O' CONNOR (sans serif), which is associated with a deeply chiseled depiction of a pair of diagonally crossed geological hammers (Figure 13). Slightly northwest of the hammers is an enigmatic hexagonal-shaped design with the faint remains of an arrow in its center. Remnants of chisel marks can clearly be seen at the bottom of the letters and the motifs. The last three letters in CONNOR trail off somewhat, suggesting that the concentration and effort of the engraver declined as the task progressed. There is another panel of engraved crossed geological hammers in Locus I, panel 67 with a date of 1893 and single ball hammer (or axe) in Panel J06 with dates of 1907 and 1910 nearby, and two picks or hammers in Panel G02 (one straight head, one curved).

Panel G48 is unique within the Big Spring State Park as it is a partly sculpted, or bas relief, motif of a female body that has been shaped from a carved hollow in the limestone (Figure 14). Above the weathered female outline is what looks like the letters HD. The protruding portions of the face, hair, chest, stomach, legs, and feet have broken off, probably due to car and foot traffic on the limestone surface. Stereo pair photography was done and an anaglyph created (filename G48Anaglyph1.tiff) that, when viewed with red/blue glasses, is seen in 3-D.

Panel G68 includes a circular and a diamond-shaped motif (Figure 15). The circular motif contains an unknown rectilinear design, the name G. H. BROWN. (the first letters are serif), and various other letters and a partial date Feb 189_. At least a third of the circle has been covered by asphalt from the road. The diamond-shaped motif contains a cross and the letter J H SULLIVAN (with the N incised the wrong way around).

Panel G70 has one of the oldest known inscribed dates within the Big Spring State Park, which is Feb. 20? (serif) 1883 (Figure 16). Juxtaposed with this date are the names Clay and Lillie G_ead(?) carefully incised in cursive, but superimposed with other faint and weathered inscriptions that interfere with decipherment. It is not sure if these names are actually contemporary with the date. To the left of these incisions are the words M W TURAN, CUBA, ILL. and associated date 1-1927.

Panel H01 is a scroll that has been carefully chiseled on a slab of limestone on a high ridge of Scenic Mountain, near the CCC built pavilion (Figure 17). The lack of lettering within the scroll suggests that its completion was terminated. Great care was nonetheless taken with the chiseling as attested by the even lines, sharp edges, and tightly spaced chisel scars within the lines.

Panel J01, which is separate from the main Locus J, occurs in the southeastern corner of the intersection between the two-way road and the park superintendant's driveway. Meticulously carved by an artistic CCC trooper, omissions of feather outlines in the left wing of the eagle motif suggest that finishing touches were never completed (Figure 18). Circular holes on three sides of the eagle probably once supported upright pipes that protected the carving from road traffic.

Closely juxtaposed Panels J07, J08, J09, and J10 form a panel complex (Figure 19). This complex occurs on a level surface that is southwest of where the two-way diagonal road and the one-way ring road meet.

Panel J07 includes names such as MARK HARWELL (serif) with associated date '17, HARRY RUDLOFF (some letters are serif) with associated date 1-1-17, and TobIN (sans serif). The last two Fs in Rudloff trail off, suggesting that the inscriber lost concentration and precision towards the end of the effort. The panel also includes two incomplete names done in the sunken-relief technique.

Panel J08 has the name Leonard Fisher with the date 12-6-16 done meticulously in Gothic script. Technically, the carefully and evenly carved letters of this panel are the best executed in the Big Spring State Park. The name and date are roughly outlined by a

rectilinear box, presumably at a later date. Leonard Fisher is very likely a member of the well-known Fisher family of dry-good merchants in nearby Big Spring (e.g., Pickle 1980:241, 423).

Another Big Spring resident, Barney Russell, had his name engraved in a similar tidy Gothic font in Panel J09. The carefully chiseled name actually reads Barney Lee Russell with an associated date of 19?? (for an unknown reason somebody chiseled out the last two digits). According to Tammy Schrecengost (personal communication), Russell was in the same photograph as his brother-in-law, Agnell, when the latter chiseled his initials into the rock of Scenic Mountain in 1902 (Figure 21).

Panel J10 contains the initials L H. in Gothic script. These letters are less well-executed than those in the nearby Fisher and Russell panels. Associated with L H. is the date 1918 and an ingeniously merged W and A. The unevenly incised name REED (sans serif) occurs nearby.

Panel J14 is on possibly partially detached bedrock south of the two-way road that runs diagonally through the park. It contains the depiction of a lever-action rifle and the weathered letters J. E. MERRIT. JR. (the weathered E in MERRIT now looks like a B) (Figure 20). The faint remnants of a date, most likely 11 13 01, can be seen near the top of the slightly slanting panel. A roughly incised and highly weathered rectangle outlines the panel.

Photography Results

Robert Mark and Evelyn Billo photographed a total of 376 panels in the field. The digital images were cataloged using Extensis Portfolio 8.5™ image database software. This permitted the storing of image metadata, as well as locus and panel designations, content descriptions (e.g., names and dates), and other fields such as Photographer and Type. The database contains 4,800 images occupying over 112GB. For this reason, the database and full-resolution images are provided on a hard drive, with the database and screen-resolution images on DVD's. The image-database information is also provided as a spreadsheet, as is the panel data.

IV. Significance Assessment

Introduction

An assessment of significance values helps decide what management and conservation strategies to adopt. Various significance values can be ascribed to places with rock imagery, some of which may not relate directly to the imagery. Significance values ascribed to sites can change through time, depending on what is considered relevant or fashionable during any particular period. Different significance values at any given time can also be incompatible, such as the need for a pristine site for interpretive purposes versus recreational interaction with the rock face, a situation that makes it necessary to carefully decide what management strategy to prioritize. Moreover, site significance can be incompatible with site condition or the current management context, a situation that necessitates possible compromises in site conservation and management strategies.

Traditional Significance

Native American Indian rock imagery is one of the most visible records of past human thought. Petroglyphs potentially give a unique understanding of the worldview and culture of those who created it. By preserving petroglyphs, land managers help educate the general public about their likely significance among Indians who once lived in the area.

Various Indian groups once lived within the project area, including the Jumano, the Apache, and the Comanche. Of these, the somewhat enigmatic Plains Jumano hunters and traders were probably the oldest group living in the area, while the well-known Comanche horse-raiders were certainly the most recent.

Sixteenth century Spanish chroniclers mention so-called Jumano Indian traders on the southern plains as having facial striations (Hickerson 1994). As late as 1855 their descendants were seen still living in Texas, not far from the Comanches, with the characteristic disfiguration of their faces through incisions (Bandelier 1890:246). The Jumano Indians presumably travelled between Pueblo-dwelling agriculturalists in New Mexico and teepee-dwelling hunters and gatherers of the Texas plains. Due to their virtually extinct language, the linguistic affiliation of the Jumano Indians cannot be determined with certainty; Uto-Aztecan, Athabascan, and Caddoan are likely candidates. In more recent times descendants of the Jumano Indians lived in the El Paso area of far western Texas and in neighboring New Mexico.

The Mescalero and Lipan Apache Indians are southern branches of the Athabascan-speaking groups that have lived in western Texas probably since somewhere between AD 1000 and 1500 (e.g., Hyde 1959). Presumably Comanche Indians pushed Apaches farther south and west. These two groups seem to have shared many aspects of social organization, economic and political strategies, religious beliefs, and material culture.

Some time around AD 1700 the Comanche Indians have moved into west central Texas from the northwest (the Comanche speak a dialect of the Uto-Aztecan language shared by Shoshone Indians in Wyoming), apparently in search of additional horses (Meredith 2001:10). By AD 1790, Comanche Indians of the southern Plains have allied with Kiowa and Apache Indians. Raiding and trading of horses were major parts of Comanche life, and by the mid-1800s they had acquired sufficient surplus horses to barter with Euro-American traders and settlers. Loosely structured in bands that operated under the leadership of selected chieftains, the Comanche were highly mobile, living in temporary camps comprising buffalo-hide teepees that were strung along the few streams of the arid country (Newcomb 1972:165-166). A prominent branch of the Comanche War Trail followed Sulphur Draw to Big Spring (Haley 1952:5).

After Marcy marked the first Euro-American settler trail via Big Spring in 1849, the United States government instructed him to select a reservation for the Comanche in 1853. Marcy did not choose the Big Spring, but instead the better watered and wooded area around Fort Belknap (Pickle 1980:31). However, sections of the Comanche refused to settle down in what they considered too restricted an area for bison hunting and horse raiding. In 1876, for instance, Comanche left the reservation and killed several horses on the Holloman Ranch southeast of Big Spring. Following the so-called Buffalo Hunters' War of 1877, the Comanche were for the most part restricted to their reservation in Oklahoma.

It is not known if current Native American Indians ascribe any significance to Scenic Mountain. The lined and horned face motif that is excised from the slanted limestone surface on the northern side of the mountain (see detailed description of Panel G04) resembles the painted lined and horned faces on the rock surfaces of Hueco Tanks in far western Texas (see Sutherland 2002:11-22). Sutherland assigns the Hueco mask-like faces to Pueblo-related people who lived in the El Paso area some time prior to AD 1400. A tantalizing possibility could be that the Indians who made incised face motifs were Jumano.

The one or more Indian burials discovered by Cramer in the 1960s near the apex of Scenic Mountain (Roberson 1975) recalls Comanche custom of burying their deceased relatives on hill tops, not far from their camps (e.g., Parker 1990:236). Taken together with the paucity of other Indian remains on Scenic Mountain, the possible Jumano mask-like horned face motif and the possible Comanche burial(s) on this high point suggests that it was perhaps a special locale among the Indians who once lived at the nearby Big Spring.

The horned head depiction in Panel G04 is arguably the only recorded panel on Scenic Mountain that may have traditional significance to Native Americans; although, there is also a possibility of several locations with cupules.

HISTORICAL SIGNIFICANCE

According to scholars such as Hallenbeck (1939:169), Álvar Núñez, also known as Cabeza de Vaca (head of the cow), was the first known person of European descent to set eyes on Big Spring. This Spanish shipwreck survivor of the early sixteenth-century is remembered as a chronicler of indigenous Indian tribes of the Texas coast and interior (e.g., Howard 1996). Traveling mostly in a small group of two to four shipwreck survivors, de Vaca explored what is now known as the Rio Grande catchment. Considering that de Vaca himself was uncertain of the route he traversed, it is not surprising that historians have struggled to trace his route; a difference of 50 leagues to the south or to the west probably would not have concerned de Vaca, who did not begin writing his chronicle until after he was back in Spain. There is currently no known independent evidence that de Vaca did indeed visit the project area. The same objections can be raised against claims that later Spanish explorers, such as Coronado, Espiño, and Salas might have visited the Big Spring (Pickle 1980:22).

There is no uncertainty concerning Marcy's visit to the Big Spring on October 3, 1849, however, knowing that his detailed journals and maps with co-ordinates allowed others to re-locate the place. Captain Randolph Marcy has been described as one of the most important soldier-explorers of the nineteenth century (e.g., Hollon 1955). Marcy's discovery of the Big Spring on behalf of the United States Army tied it down as a key point on the transcontinental route and eventually led to the locale to become a division point on the Texas and Pacific railroad when it was constructed westward in 1881 (Pickle 1980:44).

Up until 1881 the history of Scenic Mountain was essentially tied to that of the actual Big Spring to the southeast, whereas after the 1881 appearance of the Texas and Pacific Railway service the citizens of the new city of Big Spring on the railway to the northeast very much influenced how the mountain was to be used. Prior to the 1920's the citizens viewed Scenic Mountain as a retreat for weekend hikes, site seeing, picnics, and carving of the exposed limestone near the apex. However, this use of the mountain began to change as statewide interest in a park system began to develop in 1921 (Treanor 1994:1).

In 1923 state legislation pushed by the then Governor Neff, directed the Texas State Park Board to develop a strategy of soliciting land with highway frontage, donated by tourism-conscious communities (Steely 1999:55). The city of Big Spring had such a community. When the Texas state legislature failed to provide funding for a park, the Big Spring Women's City Federation raised money in 1924 to purchase land on Scenic Mountain.

With the state officials failing to fund a proper infrastructure for the park on Scenic Mountain, the Chairman of the Civic Committee of the Big Spring Chamber of Commerce persuaded local men to volunteer their labor or money in constructing a road to the summit in 1930. After six weeks of work the road was complete. Photographs of the road prompted the president of the State Park Board, D. Colp, to visit Big Spring and select it as one for the Civilian Conservation Corps (CCC) to develop.

When President F. D. Roosevelt signed the CCC into law in 1933, jobless single men were put to work in developing and conserving land and forest on national and state parks. Instead of men from Big Spring working on the Scenic Mountain, youths from nearby surrounding towns were transported there by the Eight Corps of the United States Army (*Big Spring Herald*, June 24, 1934). Scenic Mountain was selected due to its proximity to a railway, a highway, food and water, and a supportive community.

A superintendent with the National Park Service, T. Richardson, apparently had grand designs for the park atop Scenic Mountain, including a planted forest, a tennis court, a giant swimming pool, and an amphitheater carved into the mountain slope (*Big Spring Herald*, September 28, 1934). However, following National Park Service guidelines, CCC Company 1857 was instructed to cut and shape local limestone with cross cut saws and other hand tools, a labor-intensive process that slowed down work considerably. To complicate progress even further were the steep and eroded roads on the mountain, the search for funds to acquire the summit from the owner Edwards, and fire damage to the mess hall (Treanor 1994:7). When work stopped in October of 1935 and the CCC camp was abandoned, only 15 percent of Richardson's plans were complete. The 50 men from CCC Company 3811 who arrived from Lubbock in January of 1936 completed existing constructions so that by March 12 the park was dedicated and in April the CCC camp finally dismantled (Treanor 1994:8).

The community of Big Spring benefitted economically from the CCC activities within the Big Spring State Park, in that it supplied the CCC with food and materials. The activities of the CCC also created an enduring landscape (e.g., Steely 1999) on Scenic Mountain, one that is essentially a monument to a proactive undertaking during a time of economic downturn. The CCC era structures that have been completed within the park are still being used to the advantage of the park staff and visitors, some of the visitors being tourists from other states and countries. The concession building is now the park headquarters with a small museum. The caretaker's cottage, which has been expanded, houses the park superintendent. The latrines are popular among hikers and joggers, whereas the rustic pavilion provides much needed shade in the summer for picnickers. The impressive mortar-less "Roman Wall" and numerous limestone culverts stop sheet erosion from damaging the steeper roads within the park.

Although the aborted and abandoned swimming pool, tennis court, and amphitheatre are closed to public visitation, a few iconographic petroglyphs incised by artistic CCC troopers are still there for everybody to see and enjoy. In at least two instances the CCC panels are some distance away from the camp. Whereas one panel is near the center of the state park and the other closer to the southwestern corner, the barracks were located near the southeastern corner of the state park.

A well-known example of CCC era rock art is the so-called "Spanish Eagle" (Panel J01) near the center of the park. The eagle motif was carefully incised in the southeastern corner of the intersection between the two-way road (built later by the state) and the park superintendent's driveway (*Big Spring Herald*, September 28, 1934). As this panel is close to where CCC troopers built the caretaker's cottage, it could have been done in-between construction sessions. Jim Garza, whose name appears on the roster of CCC

Company 1857, conceivably incised the name Jimmie Garza next-to a cartoon-like sailor drawing (Panel A03). As Panel A03 is not far from where Company 1857 quarried for limestone, it could be that it was done while troopers took a break from quarrying.

That local people view the engraved names, dates, and motifs within the Big Spring State Park as integral of its history can be seen in various correspondences. For example, in a 1970 letter to the Texas State Historical Survey Committee, Gladys Harding calls for funds “to discover the age and meaning of these markings” and their protection. Atwell (1982:28) laments that the “historical map of names and dates...on Scenic Mountain” has been compromised or even destroyed when the paved road covered many of them.

Of all the inscriptions and images within the project area, the CCC era ones have historical significance on a national, state, and local level. As will be shown in the next section, the rest of the pre-1950 ones are significant to local visitors.

Visitor Significance

Local citizens have for a considerable time visited the Big Spring State Park for the panoramic view offered by the elevated Scenic Mountain (Atwell 1982). Even prior to the development of the state park, when Scenic Mountain had no roads leading up to it, the mountaintop was the favorite destination of Sunday afternoon hikers. A *Big Spring Herald*, April 26, 1936 article cited by Atwell (1982:27) states “After they [hikers from the city of Big Spring] had climbed, they left their names cut into the limestone ledges and read other names cut there. Some dates were in the 80’s.” This quote is critical in the understanding of pre-CCC era initials and dates on Scenic Mountain as it strongly suggests that the carving of new names and the viewing of existing carvings became a tradition of sorts among weekend visitors from the nearby city of Big Spring. Atwell (1982:28) recalls that his “Mom and Dad would walk around reading the names.” He also writes that whereas his father’s initials are still visible, his grandfather’s have been destroyed.

That hikers brought hammers and chisels with them with the intended purpose of carefully carving their names or initials into the rock is evidenced by a rather poignant 1902 photo of a Labor Day picnic (Figure 21). On the photo P. W. Agnell is shown carving the initials “DKR and PWA” (probably Panel I14 (Figure 22)) into the rock (DKR being the initials of Agnell’s wife to be, Della K. Russell, whom he married a year later) (Tammy Schrecengost, personal communication). To the right of Agnell is probably Barney Russell, his future brother-in-law, whose name is neatly carved in Gothic font in Panel J09. Not far behind Agnell and Russell can be seen the limestone cliff edge, with the Sulphur Draw plains stretching off in the distance.



Figure 21. A Labor Day 1902 photograph of P. W. Agnell carving the initials “DKR and PWA” into a rock on Scenic Mountain (probably Panel I14), with Barney Russell to his right (Tammy Schrecengost, personal communication on the photo on file in the Agnell-Hornaday collection, Big Spring Heritage Museum).



Figure 22. Probable initials DKR and PWA in Panel I14 (modern graffiti and erosion due to road traffic have obscured portions of the letters).

Whereas hiking up the mountain, enjoying the vista of the city of Big Spring from the top, and carving and looking at names and dates in the rock appear to have been a regular past-time among local visitors, the cave on the mountain has also attracted attention, sometimes from afar. A famous spelunker from Kentucky, Floyd Collins, must have had visited Scenic Mountain in search of the cave prior to his untimely death in 1925, bearing in mind that his name is neatly carved in Locus I (i.e., Panel I44). At least two cave entrances are known to exist within the boundaries of Big Spring State Park. One, discovered by Frank Garcia and his friends during the CCC era, has been filled to avoid accidents. The entrance of the other was capped with iron by the park manager Cramer in 1968 (Roberson 1975).

This 14-meter deep cave system, located in the lower portion of the Edwards limestone in the Big Spring State Park, is listed in the Texas Speleological Survey as “Cramer’s Scenic Mountain Cave” (Knox 1975). According to information supplied to Knox, the cave has inconspicuous sinkhole-like entrances and several “chimneys” extending towards the surface. Instead of being a typical solution cavern formed by weathering, the cave closely follows pre-existing joints in the rock and was most likely formed by rainwater runoff erosion (Roberson 1975). Due to numerous safety concerns, substantial cost of re-opening the entrances and narrow passages, and the lack of visually-appealing calcite formations within the cave, Roberson (1975) recommended that the cave not be opened with public visitation in mind.

According to Roberson (1975), hiking and observing native vegetation have precedence over commercial-type tourist attractions, such as spelunking. Considering that the surrounding terrain has not been grazed since about 1924, the native vegetation on Scenic Mountain is fairly intact and a good example to park visitors of flora in the surrounding regions. Compared to other Texas state parks (e.g., Steely 1999), the recreational opportunity spectrum of the Big Spring State Park is comparatively limited in range, focusing mainly on nature watching, hiking, jogging, and picnicking.

As people working in the city of Big Spring are currently the most regular visitors to Scenic Mountain, demographic information gathered in 2007 is relevant (Onboard Informatics 2008). Of the 24,075 people living in Big Spring, those of European descent (48.4%) outnumber Hispanics (44.6%), African Americans (5.3%), American Indians (1.2%), and those of uncertain ancestry (16.8%). During the recording fieldwork in June and July of 2009, visiting motorists, joggers, and hikers remarked to us that they appreciate the efforts of the TPWD to record, study, interpret, and conserve the rock imagery on Scenic Mountain.

Research Significance

The stylistically varied rock art imagery of the central Texas region for the most part appears isolated from well-known rock art traditions to the south, west, and north (Kirkland and Newcomb 1996). Whereas many motifs and panels are unique to central Texas, panels at a handful of sites tantalizingly resemble distant traditions in the Pecos River area, the northern Plains, and far western Texas. These rare instances of stylistic

similarity between central Texas rock art and divergent traditions in far-flung regions could have resulted from Indians who have migrated and/or traded over long distances.

In Nolan, Coke, and Taylor counties, at least 70 miles east of Big Springs, are a number of sites with uniquely carved petroglyphs. Pictograph paintings, also seemingly unique to central Texas, are less common in the area and occur mostly in rock shelters with protective ceilings. A notable petroglyph site is located on the bank of Champion Creek, in south-central Nolan County. Here figures have been ground, incised, and pecked into a vertical sandstone outcrop on the valley floor, almost level with the ground. Thin-lined incised motifs include a human figure holding a spear-like object and a turtle. Other more thickly engraved designs include turkey track-like motifs, parallel horizontal lines, and elongated stick figures. Some of the dot motifs in the rock were probably made with a lithic drill, while others appear chiseled.

In the eastern part of Nolan County, within a small rock shelter under a limestone bluff, are thinly incised and scratched depictions of human figures impaled by atlatl-like darts, reminiscent of much larger pictograph paintings found 200 miles to the south in the limestone shelters of the Pecos River area. If the darts indeed represent atlatls, then the thinly incised motifs could pre-date the AD 600 appearance of the bow and arrow.

The walls of shallow rock shelters below the south rim of a small mesa near Fort Chadbourne in Coke County contain parallel series of vertical grooves connected by horizontal, herringbone, and cross-hatched lines. Panels with similar motifs have also been recorded in Taylor County to the northeast. Similar groove-like motifs occur in Siouan-speaking areas extending diagonally from North Carolina westward through Texas, Missouri, and into the Dakotas (e.g., Grant 1967).

As already mentioned, the excised Panel G04 horned face with its internal striations resembles the painted horned faces at Hueco Tanks in far western Texas. Many of the Hueco Tanks mask-like faces are painted on natural curves in the rock (Sutherland 2002:17), similar to the central placement of the G4 horned face on a vertical rill in the limestone.

To obtain a reliable direct date from the Panel G04 motif is theoretically possible with the Accelerator Mass Spectrometry (AMS) technique of radiocarbon dating, but unlikely considering the extreme contamination, particularly from adjacent road-working activities, that has occurred to the panel through the years. The sealed micro-layers within the motif are nonetheless worth additional investigation, perhaps through sampling of a small flaked area for electron microscopic cross-section recording and X-ray emission determination of trace elemental composition.

V. Condition Assessment

Introduction

A site's condition very much helps determine what future conservation and management strategies should be implemented. If the rock support of a site is found to be unstable, for the sake of argument, then it would probably be prudent to consider barring the public from visiting the site, both for conserving the site and for possible safety considerations. In addition to assessing the rock support, it is also the terrain in which the rock is located that influences conservation and management decisions. Assessment of the surrounding terrain includes a consideration of slope, soils, plant cover, and history of land use. A change in the history of land use and/or visitation patterns and behavior can affect the conservation condition adversely.

Rock Support

The underlying limestone matrix is 10YR 7/2 light gray. In portions where resistant calcium carbonate crusts have formed on the outer surface, the rock varies from stable shiny 10YR 7/4 pale brown to flakey matt 10 YR4/2 dark gray. Overall, limestone surfaces on the northern and northeastern edges of Scenic Mountain appear to have more visible fossils than the limestone to the south and west. The presence of fossils does not appear to make any difference to the conservation integrity of the rock.

Rills, or narrow and shallow incisions into the limestone surface resulting from thin thread water erosion, are present in Loci A, E, F, and G. These rills may either continue to grow, as they are widened and/or deepened by the runoff which flows through them or they may stabilize through case-hardening of the surfaces within. It is not inconceivable that a hydrologically efficient rill network eventually stabilizes and so helps protect the surface integrity of the limestone. Whatever the case might be, the rills have slightly eroded some of the imagery in Loci E, F, and G.

Examination of different rock surfaces after late afternoon thunderstorms shows that less well-drained level surfaces tend to have better developed crusts than those slightly sloping surfaces from which rainwater drains more quickly. The likely reason for this is that calcium carbonate crystals have more time to develop on level surfaces where water tends to puddle than on sloping surfaces that dry fast.

Hardly visible small patches of spotty crustaceous lichen, colored dark gray, occur on most horizontal rock surfaces. Bigger foliose lichens, with leafy lobes that are colored light green gray to dark gray brown, occur on vertical surfaces that face north, away from direct sunlight. Dense colonies of lichens weather rock surfaces through the expansion and contraction (with humidity) of root-like structures that penetrate rock pores and anchor the lichens to the surface. In addition, enzymes and acids released by the lichens in search of nutrients can chemically break down the rock (Seaward et al. 1989). Lichens also create a favorable environment for colonization by other organisms, such as moss. Shade, created by trees or rock overhangs, favors dense growths of lichen. As far as

could be ascertained in the field, the lichens within the Big Spring State Park are not sufficiently dense to pose any conservation threat to the engraved rock imagery. The lack of shade and fairly quick evaporation of surface water are likely factors that help inhibit lichen growth.

All 29 of the Locus A panels occur on a horizontal limestone surface, which dips down slightly towards the west. Of these, 28 are on the limestone pavement. Only Panel A13 occurs on a loose rectangular-shaped boulder that has been quarried, based on the drill mark in its center and along its sides. Rills occur in a sloping portion of the rock surface near the southern end of the extensive corridor-like Locus A limestone pavement. Except for Panel A13, spotty crustaceous lichen covers most of the rock's surface in Locus A, giving the surface a comparatively dark appearance. Lichen tends to concentrate within some of the more deeply incised letters, probably due to prolonged evaporation of water within these sunken surfaces. Even though the locus has been sealed from the ring road by a row of boulders, tire marks are visible on the surface, running directly across the pecked letters of Panel A08, for example. Flaking along the edges of some letters within this locus appears to derive from pressure and abrasion exerted by vehicles and foot traffic. Loose gravel from weathered limestone most probably helps accelerate abrasion of the rock imagery. Various forms of light colored graffiti are abraded, scratched, or incised in different portions of Locus A.

The majority of the 31 Locus B panels occur on a level limestone surface, which for the most part dips down slightly towards the west (the separate Panels B24, B26, and B28 being exceptions as they are boulders that dip down slightly to the northeast). The northern end of Locus B currently serves as a popular scenic outlook for those visiting the park in vehicles. Twenty-five panels occur west of the road and six on the eastern side. Panels B08 and B27 are partly covered by the paved road. Spotty crustaceous lichen covers substantial portions of the rock's surface in Locus B. As the locus is immediately next-to and underneath the road, abrasion caused by cars driving over and parking on the limestone must have caused some damage. Loose gravel from weathered limestone most probably accelerates abrasion of the rock imagery. Additionally, some of the faint and shallow letters and numbers within Locus B most probably resulted from sheet erosion as rainwater flows across the sloping limestone surface.

All seven of the Locus C panels occur on a level limestone surface, which for the most part dips down slightly towards the north. Spotty crustaceous lichen covers substantial portions of the rock's surface in Locus C, perhaps because the rock surface faces slightly away from direct sunlight. As the locus is immediately next-to the road, abrasion caused by cars that occasionally drive across the limestone must have caused some damage, such as to Panel C05 where detail of the faint lines is best viewed with sidelight. Loose gravel from weathered limestone most probably exacerbates abrasion of the rock imagery. Rainwater flowing across the sloping limestone surface has probably also caused some incised lines to become faint.

All dozen of the Locus D panels occur on a level limestone surface, which for the most dips down slightly towards the northwest. Panel D05 occurs on a natural step-like transition between a slightly sloping surface and a steeply sloping surface. The density of

spotty crustaceous lichen is variable across the rock's surface in Locus D. Patches of foliose lichen are present on vertical surfaces. As some of the panels within the locus are immediately next-to the road, abrasion caused by cars driving over and parking on the limestone must have caused some damage, along with loose gravel under tires and feet. Rainwater flowing across the sloping limestone surface has probably also caused some incised lines to become faint.

Forty-four of the 48 Locus E panels occur on a level limestone surface (Panels E12, E14, E19, and E50 are on vertical surfaces). Seemingly stable case-hardened rills and solution hollows are prevalent within Locus E. Panel E27 occurs on the bottom level surface of a solution hollow, which fills with water after very heavy downpours and then overflows as a mini-waterfall over the adjacent cliff. The density of spotty crustaceous lichen is variable across the rock's surface in Locus E. Patches of foliose lichen are present on vertical surfaces. As with many of the loci, abrasion caused by cars driving over and parking on the limestone must have caused some damage. Road chiseling activities dating back to the CCC era truncated and obliterated some of the older lettering (the truncated Panel E24 being a good example). Asphalt from subsequent road surfacing covers other panels (e.g., Panel E23). Loose gravel from weathered limestone most probably increases abrasion of the rock imagery.

The majority of the 55 Locus F panels occur on a level limestone surface and at some distance away from the road's edge. Panels such as F01 and F04 occur on nearly vertical surfaces. Seemingly stable case-hardened rills and solution hollows are prevalent within Locus F. The density of spotty crustaceous lichen is variable across the rock's surface in Locus F. Patches of foliose lichen are present on vertical surfaces. As some of the panels within the locus are close to the road, abrasion caused by cars driving over and parking on the limestone must have caused some damage. Asphalt from road construction activities covers part of Panels F34, F38, and F39. Loose gravel most probably helps accelerate abrasion of the rock imagery.

The great majority of the 89 panels within Locus G occur on a level limestone surface. However, Panels G01, G02, G03, and G05, all in the vicinity of G04, are on near vertical surfaces. Seemingly stable case-hardened rills and solution hollows are present within Locus G, but they are less pronounced than those in the neighboring Locus F. Nonetheless, where the rills do cross-cut incised motifs, the motifs have often eroded away (e.g., see Panel G70). The density of spotty crustaceous lichen is variable across the rock's surface in Locus G. Patches of foliose lichen are present on vertical surfaces. As some of the panels within the locus are immediately next-to the road, abrasion caused by cars driving over and parking on the limestone must have caused some damage. Asphalt and tar flow from road construction activities covers part of Panels G04, G14, G21, and G79. Loose gravel from weathered limestone most probably exacerbates abrasion of the rock imagery.

Panels H01 and H02 occur on loose boulders in the vicinity of the CCC era constructed pavilion. Panel H01 is a slab whereas H02 is a rectangular block. The remainder of the 11 panels in Locus H are located on or near the limestone steps leading between the pavilion and the northeast views from Locus I. At the time of recording H01 and H02

panels were partly covered by soil. At the request of Tony Lyle, TPWD Cultural Resource Coordinator for Region 6, cactus plant leaves and soil that covered Panel H01 were carefully removed by Ron Alton, the Superintendant of the Big Spring State Park. The surface of Panel H01 not covered by soil is in a better condition than the surrounding buried surfaces (i.e., the chiseled motif has more defined edges and internal striations where it was exposed to the atmosphere compared to where it was covered by soil). The northwestern corner of the scroll motif, which was covered by roots from the nearby cactus plant, is particularly faint. Spotty dark gray brown lichen is visible on the panel's exposed surface, particularly within the incisions.

The majority of the 67 Locus I panels occur on a level limestone surface. Shallow solution hollows in the flat surface of the limestone create puddles for water during rains and traps for loose granular soil. Spotty crustaceous lichen is variable in density across the rock's surface in Locus I. Historically and currently Locus I is a popular scenic outlook for those wanting to have a vista of the city of Big Spring, so abrasion caused by cars driving over and parking on the limestone must have caused damage to some of the rock imagery (Figure 23). Loose gravel from weathered limestone most probably increases abrasion significantly. Lightly incised graffiti and also charcoal or marker-pen graffiti can be seen scattered across the surface of Locus I.



Figure 23. Vehicles on Locus I.

The 16 panels identified within Locus J occur on a level surface that is southwest of where the two-way diagonal road and the one-way ring road meet. Of the panels, three are immediately south of the diagonal two-way road, the rest being somewhat hidden

from the road behind a line of shrubs. Like Locus A, Locus J is far away from the outer limestone rim, or cliff edge. Spotty dark gray brown lichen tends to concentrate within some of the more deeply incised letters, probably due to prolonged evaporation of water within these sunken surfaces. Flaking along the edges of some letters within this locus, albeit comparatively limited, appears to derive from pressure and abrasion exerted by foot traffic. Loose gravel from weathered limestone most probably helps accelerate abrasion of the rock imagery. Of all the loci examined, the limestone pavement portion of Locus J that is hidden behind the shrubs is perhaps the best preserved.

The carefully chiseled Leonard Fisher and Barney Lee Russell are particularly well-preserved compared to nearby names. The sharp and crisp edges created by skilful chiseling have resisted weathering through the years. In fact, protective ridges have formed along the outer edges of some Gothic letters. These ridges might have developed as a result of calcium carbonate build-up along the edges where water evaporates slower.

Compared to these well-preserved panels, at Locus J, Panel J14's depiction of a lever-action rifle, carved on slightly sloping bedrock near the road is in a particularly bad condition. The northern half of the panel's surface is particularly badly eroded, showing signs of flaking and granular disintegration. The most likely culprit for the erosion is prevailing winds that blow perpendicularly across the southward sloping boulder from the south. Also water runoff from the road seems to affect neighboring bedrock and boulders.

Panel J01, which is separate from the main Locus J, occurs in the southeastern corner of the intersection between the two-way road and the park superintendent's driveway. The upper, or western, portion of Panel J01, closest to the road, has a more case hardened crust than the lower, or eastern, portion. Yet some of this crust has flaked off, almost certainly due to the heavy vehicle traffic directly over this portion of the panel many times a day. The crust covering the chest of the eagle design has flaked away almost completely, leaving the exposed interior susceptible to granular disintegration. Dark gray brown spotty lichen is denser on the lower eastern half of the panel.

Locus K, which is located southwest of the public latrines, is spread across an exposed corridor-like portion of limestone, and divided into several levels separated by vegetation. Spotty crustaceous lichen covers most of the locus, giving the surface a comparatively dark appearance. Lichen tends to concentrate within some of the more deeply incised letters, probably due to prolonged evaporation of water within these sunken surfaces. In addition to the eleven panels, four with 1917 dates, and one with 1919, lightly incised graffiti names and dates are prevalent across the Locus K pavement, which also has several recent deeply carved initials, one with a 04 date. Prominent vehicle tracks impact some panels even though the locus has been sealed from the road by a row of boulders. Age of tracks is unknown, but it is possible that they are remnants of heavy machinery tracks rather than the occasional car.

Table 3. Summary of lichens and gravel on rock surface by locus.

Loci	Lichen	Gravel
A	crustaceous all over	present
B	crustaceous spotty	present
C	crustaceous spotty	present
D	crustaceous on horizontal and foliose on vertical	present (not on vertical)
E	crustaceous on horizontal and foliose on vertical	present (not on vertical)
F	crustaceous on horizontal and foliose on vertical	present (not on vertical)
G	crustaceous on horizontal and foliose on vertical	present (not on vertical)
H	within incisions	absent (soil and roots)
I	crustaceous spotty	present
J01	crustaceous spotty	present
J	crustaceous spotty	present
K	crustaceous spotty	present

Table 4. Summary of rock image stability, percentage loss, and main threat by locus.

Loci	Stability	% Loss (type)	Main threat
A	good	10 (flaking)	foot and car traffic
B	good	10 (sheet erosion)	foot and car traffic
C	good	15 (sheet erosion)	foot and car traffic
D	average	20 (sheet erosion)	re-surfacing road
E	good	15 (rills)	re-surfacing road
F	good	10 (rills)	foot and car traffic
G	good	5 (rills)	re-surfacing road
H	good	5 (roots)	soil and root covering
I	good	10 (flaking)	car and foot traffic
J01	good	20 (flaking)	car traffic and re-surfacing road
J14	varying	5-45 (wind erosion)	foot traffic and wind erosion
K	good	10 (sheet erosion)	foot traffic

Graffiti

Unlike the carefully planned and executed names, dates, and drawings of earlier periods, those made by more recent visitors are done in a sloppy and hurried fashion. Whereas a substantial portion of the pre-1940 imagery shows commitment towards doing a good job, those younger than 50 years appear for the most part to have been done as an after thought. Fortunately from a conservation point of view, the lightly incised modern graffiti are unlikely to damage the earlier neatly executed writings and imagery. However, left unchecked, the graffiti can proliferate and indeed start damaging existing petroglyphs as well as create an unsightly and distractive context (Figure 24).



Figure 24. Recent graffiti examples from Loci A, K, and I.

Fine powder left by the quickly executed rock scratching occurs on most of the graffiti letters and numbers that were examined in the field. When viewed through 20x magnification, small “mounds” of powdery residue can be seen attached to sections of the underlying scratched lines. Where more forceful scratching has actually penetrated, or breached, the rock surface, the breached surfaces appeared lighter than the surrounding rock. Fortunately, with the passing of time the comparatively light-colored powdery residue weather and erode away. The light-colored breached sections, however, take longer to turn dark again, usually through a comparatively long process of case-hardening. Bearing in mind that graffiti begets more graffiti, it is highly recommended that graffiti be removed before it proliferates and distracts from or covers the nicely executed rock imagery within the park.

Evelyn Billo did a detailed documentation of graffiti in Loci A and K; both being places where graffiti was particularly prevalent (Loci F, G, J and I also have some scratched graffiti). Both Loci A and K are on limestone corridors that are lined by tall shrubs and small trees (i.e., they are not as publicly visible as the loci immediately adjacent to the rim road). Since at least the CCC era, the public restrooms have been immediately northeast of Locus K. Both Loci A and K are moreover far away from the overlook edges of Scenic Mountain. Overall then, the prevalence of post-1950 graffiti in these comparatively private and unspectacular locales contrasts with the concentration of late nineteenth and early twentieth century rock engravings near or on the busy and scenic northern edge of the mountain.

Evelyn located 32 areas on the Locus A pavement that contained fairly recent graffiti writing and imagery, most of which were scratched lightly into the limestone surface. Several were dated with five dates in the 21st century appearing. Other post 2000 years appeared at other locations in the park indicating an ongoing problem. In at least two instances crude and inappropriate phrases and associated imagery have been scratched into the rock of Locus A (these are certainly not family friendly and are best removed). Seemingly hurried and sloppy drawings of a rabbit-like cartoon character and a flying kite can also be seen in Locus A.

At least 18 areas within Locus K contained post-1950 graffiti. Two of the recently scratched areas superimpose on the earlier panels, and are a major eyesore. Four of these are outline actual human bodies; youngsters judging from the size, lying flat on the rock, reminiscent of a snow angel. Other graffiti include names and dates, the ubiquitous heart shape, and a football player.

Even though most of the lightly scratched graffiti letters, numbers, and images in Panels A, F, G, J, I, and K will probably not survive the onslaught of wind and rain for a long time, their mere presence and content may very likely encourage other visitors to do likewise. For this reason alone it is recommended they be removed and that signage and brochures should contain positive messages that will help discourage graffiti in the future.

VI. Management and Visitation Assessment

History of Visitation, Ownership, and Management

Along with the alterations, requirements, and controls set by managers of the land on which petroglyph sites are located, visitor numbers and behaviors at those sites normally influence the managers' decisions concerning access and appropriate conduct. A history of land use and public visitation accordingly helps current managers better understand the management context of the petroglyphs.

Based on the known background history of Scenic Mountain as outlined above, the following five phases of visitation can be defined:

- 1.) Indian era (Paleo-Indian to 1881) when people intermittently visited Scenic Mountain from the direction of Big Spring to the southeast;
- 2.) Texas and Pacific Railroad era (1881 to 1916) when people regularly visited Scenic Mountain from the city of Big Spring to the northeast;
- 3.) Edwards era (1916 to 1934) characterized by the mountain apex being used as privately owned pasture, but extensively visited by people from the city of Big Spring;
- 4.) CCC era (1934 to 1936) when built structures and roads significantly altered the Scenic Mountain landscape; and
- 5.) Early State Park era (1936 to 1950) when the land, with engraved surfaces older than 50 years, was actively managed by the TPWD for public recreational purposes, including nature watching, hiking, jogging, and picnicking.

Assuming that the dates engraved are accurate representations of actual years, it is possible to infer frequency of engraving activity per year by summing the number of dates from that year. Even when this assumption is justified, the many names that have no associated dates could come from years that may differ from the existing date counts and so diverge from the graph in Figure 25. Whatever the alternative results may be, looking at the peaks of yearly date counts as plotted in Figure 25, there is no clear relationship between the number of panels completed per year and the growing population of Big Spring (i.e., as based on population totals cited in Hazlewood and Odintz 2008). Based on the peaks of engraved date frequency, the years between 1910 and 1917 appear to be comparatively active. The isolated burst of activity from 1934 to 1936 represents CCC troopers within the park. Overall the graph suggests that intensity of engraving on Scenic Mountain is probably a result of fashionable trends rather than mere population numbers. Judging from those dates that indicate months, most of the engravings appear to have been done during the winter (Figure 26), when the cooler weather favored labor intensive chiseling. The spike in July may relate to Independence Day activities.

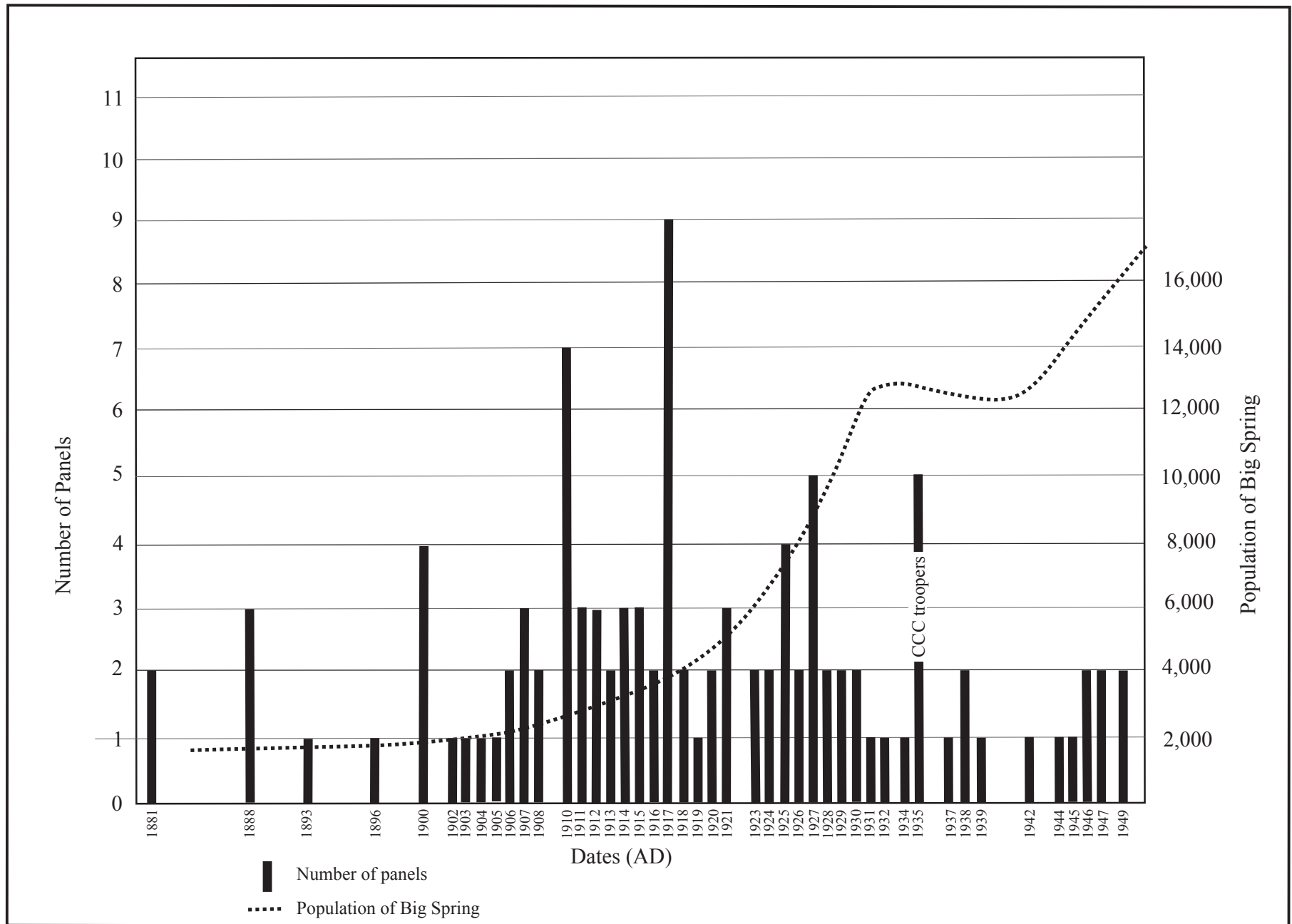


Figure 25. Graph of yearly panel counts and Big Spring population from 1881 to 1949.

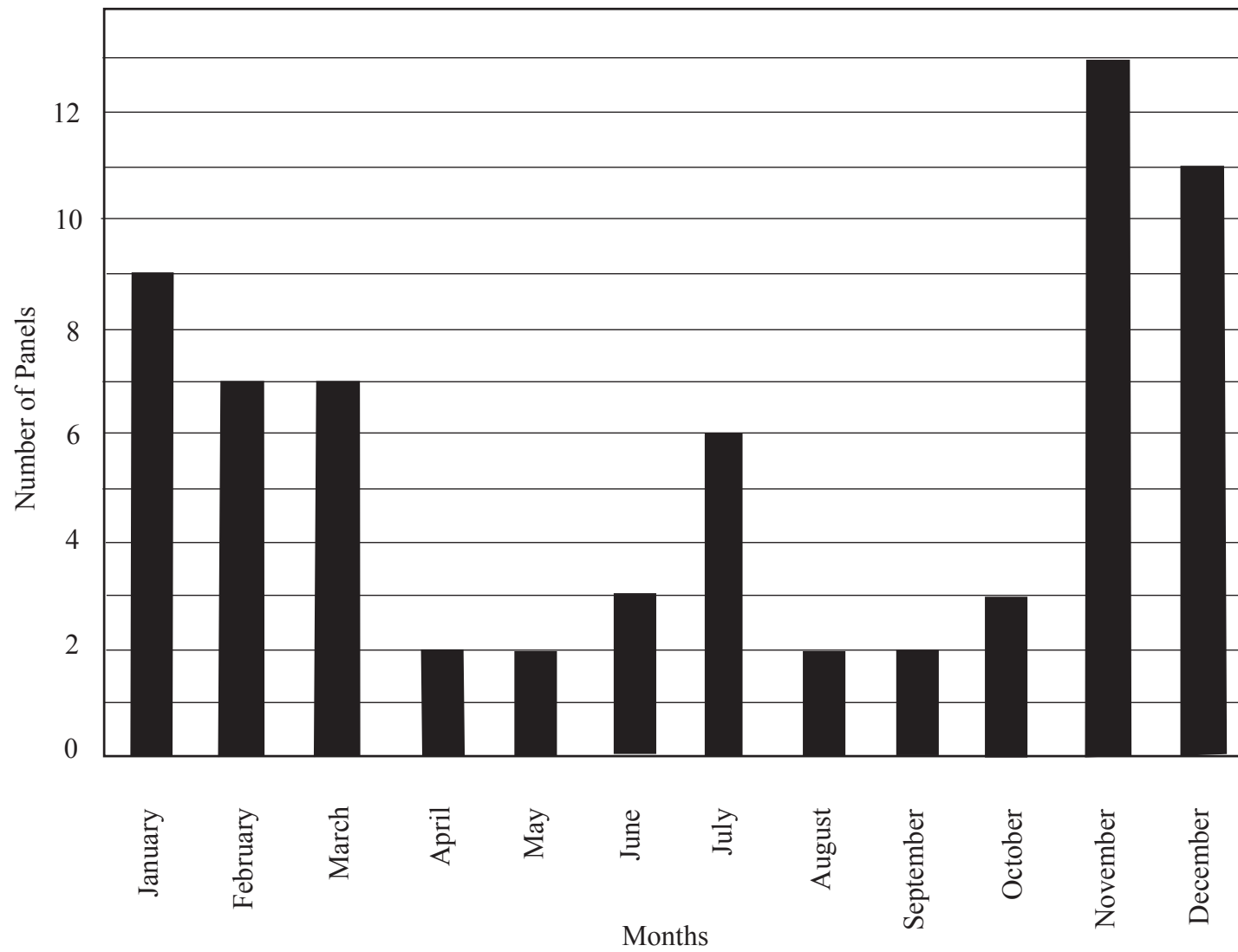


Figure 26. Graph showing panel counts per month.

When a proper management infrastructure is lacking, such as the absence of well-marked trails and interpretive signage during the first half of the twentieth century on Scenic Mountain, the visiting public sets the management standards, at times to the detriment of existing resources. Incompatible management strategies, based on an improper knowledge and understanding of the resources and visitor needs, can also lead to resources being compromised or even destroyed. Even though Scenic Mountain has been on Texas state land since 1924, management philosophies and strategies appear to have shifted through time.

A cursory glance at the background history of the Big Spring State Park shows that through time, management priorities shifted from grandiose to modest. The fairly elaborate infrastructure envisioned for the park in the mid-1930s never came to fruition. Nonetheless, in the 1960s renewed plans proposed by the then Superintendant Cramer was to expand the park's infrastructure for commercial purposes. It is only since the 1970s the TPWD appear to have explicitly earmarked Big Spring State Park for more modest local municipal use (e.g., Roberson 1975). This emphasis on local use could be one reason why in 1992 the TPWD threatened to close the Big Spring State Park, along with 10 other parks in the state (*San Angelo Standard Times*, July 31, 1992). Only a concerted effort in 1992 by local Big Spring city officials and citizens prevented the TPWD's proposed closure of the Big Spring State Park (*Big Spring Herald*, August 23, 1992).

The earliest evidence of road construction that adversely affected at least some of the rock imagery on Scenic Mountain dates back to 1930 (Atwell 1982:28). At the time the primarily volunteer crew tended to follow the most gradual natural contours on the mountain, selecting the flat limestone ledges as a road bed whenever possible (some sections of the road up the mountain conceivably followed earlier footpaths). Knowing that many of the same limestone ledges were previously selected for inscribing dates and names, particularly where the ledges overlook the city of Big Spring, many of the inscriptions must have been damaged or even destroyed in the process. During the CCC era, troopers blasted and chiseled portions of the road near the scenic northernmost portion of the limestone ledge even further (*Big Spring Herald*, September 28, 1984). In a letter from the CCC chief engineer, R. Whitaker, to the regional officer, H. Meier, mention is made of 4,600 gallons of asphalt belonging to the National Park Service to be used for surfacing the roads within the Big Spring State Park (Whitaker, 1970). State engineers have re-surfaced the roads in the park a number of times since the 1930s, in the process covering-up and/or damaging additional carved imagery.

Concern over damage caused by past road construction activities and ongoing vehicle traffic is one of the reasons why the TPWD has requested this assessment of rock imagery in the Big Spring State Park. Current management of the Big Spring State Park focuses on the maintenance and upkeep of building facilities, grounds, trails, and interpretive numbered wooden posts.

Constraints and Opportunities

Manpower and money are ever-present concerns that can make or break the sustainability of management practices at sites. Inter-agency partnerships (such as between the TPWD and the city of Big Spring) and volunteer site stewardship programs can help save costs.

It is critical to remember that caretakers have to manage rock art sites or uninformed visitors will set the management standards, often to the detriment of the sites and their rock imagery. Given that the petroglyphs on Scenic Mountain are in a comparatively good conservation condition, good site preservation is really all about good presentation to the visiting public. For example, if the panels contain messy-looking graffiti and appears untidy and uncared for with gravel covering the surface, then visitors cannot take all the blame for not taking care or for behaving inappropriately at the petroglyph loci. Clean rock surfaces devoid of gravel or scratches create a good impression. The presence of minimal signage and/or availability of associated interpretive brochures create a sense of official presence and custodial care.

Good presentation in turn is really all about good interpretation. Petroglyph motifs are not necessarily apparent to the novice, even less so are their identification and possible meaning. An interpretive graphics panel on a pedestal with detailed annotated depictions of certain motifs would go a long way to educate visitors about the petroglyphs and their role in local history. Hopefully, educated visitors would leave selected well-presented panels armed with new knowledge and a realization that the conservation of petroglyphs is important. It is not the presence of visitors at sites that are necessarily deleterious but rather their uninformed notions and resulting inappropriate behavior, such as stepping on or scratching the rock imagery. Moreover, educated people realizing the significance of petroglyphs go a long way to “police” sites against vandals in the absence of official agency personnel. Interestingly, sites opened, managed, and interpreted specifically with public visitation in mind often survive longer than those deliberately closed to visitors or those left without any management plan.

VII. Management Principles Concerning Traffic and Graffiti

Overview of Traffic, Road Surface, and Graffiti Concerns

Considering that a whole range of serious problems can actually threaten a site with rock imagery, such as severe water and wind erosion and/or chemical weathering, invasive plants and animals, excessive insect and micro-plant activity, and deliberate and multifold forms of vandalism, the condition of the rock imagery within the Big Spring State Park is relatively good. Although lichens are present on almost all the rock surfaces inspected within the park, lichen growth is too ephemeral for threatening the integrity of the rock and imagery. However, if shrubs and trees were to increase in size next-to the rock surfaces, an increase in shade and prolonged evaporation of surface water would favor increased lichen growth that could become problematic from a conservation point of view.

The main threat to petroglyphs within the park is foot and vehicle traffic along with abrasive gravel lying around. Re-surfacing of the roads with asphalt and gravel has covered an unknown number of images and truncated others. Although the asphalt layer and peripheral tar flows from the road construction do not seem to chemically damage the underlying engraved surfaces, they visually obstruct the panels, especially in the case of the horned head in Panel G04.

Graffiti in its current form has rarely damaged rock imagery but does visually detract from some older and more carefully executed panels. Ongoing graffiti will become a threat, however, especially if it intensifies. Fortunately traffic flow, gravel, asphalt, and graffiti can be addressed and rectified with innovative management strategies. As long as proactive management actions regarding traffic, pebble, and graffiti control are not only kept minimal and repeatable, but also compatible with and distinguishable from the rock, decisions regarding conservation should be on the right track.

Relevant Conservation and Management Principles

Appropriate conservation and management practice, as understood by current conservators, is to slow the clock of decay and damage in order to preserve the integrity of rock imagery for future generations to visit, enjoy, and help preserve. To this end, any management action should proceed in such a fashion as to have **minimum impact** on places with rock imagery. For instance, barriers to traffic should be low-key and asphalt and graffiti removal techniques as least invasive as possible. Strictly speaking, conservation should not be confused with restoration, where the original petroglyph is modified to recreate the original.

If allowed to proceed unchecked, then vehicle and foot traffic will eventually seriously damage and even obliterate the original rock imagery within the Big Spring State Park. The deleterious effects of daily traffic through the park are exacerbated by the loose and abrasive gravel that are scattered across the exposed limestone surfaces. The flow of traffic can be directed away from the more significant rock imagery within the park, by

fairly straightforward measures such as inserting artificial barriers (such barriers should be removable if for some reason or another it is determined that they are not effective or have introduced new and unexpected problems). The loose gravel can be removed on a regular basis by blowing them away with a gas operated portable blower.

The mixed tar and gravel layer that makes up the road pavement covering some rock imagery might be difficult to remove, very likely causing damage to the underlying imagery. Visually distracting tar flows will be easier to remove, fortunately, such as from the horned head motif of Panel G04.

Graffiti, albeit mostly in the form of light scratches, can eventually damage existing petroglyphs if not discouraged and removed. Sloppily executed graffiti scratches younger than 50 years is perhaps the most obtrusive form of vandalism at places with carefully and well-executed incised motifs. Graffiti can come in a variety of shapes, sizes, and materials, and includes spray paint, chalk, charcoal, crayon, pencil, engraving, and scratching. Fortunately, within the Big Spring State Park almost all the graffiti is scratched (in Locus I a few charcoal and black ink pen graffiti markings were noticed, and several very recent 2004-2009 deeper carved initials and names appear in Locus I and K).

Bearing in mind that graffiti not only impinges on the integrity of petroglyphs and detracts from some motifs, but also promotes further graffiti, its removal is justified. For two main reasons it is impossible, and indeed inadvisable, to remove every single bit of graffiti at places with rock imagery, however. First, any attempt at graffiti removal will leave some residue, especially at the microscopic level, and this should be minimized. Secondly, overzealous removal could physically damage the rock surface and/or leave behind traces of potentially damaging chemicals. Accordingly, "removal" should be viewed as a cosmetic exercise aimed to reduce the negative visual impact of graffiti, instead of ridding a place of every single trace of graffiti.

Recognizing the impossibility of absolute removal, conservators realistically aim at **repeatable** intervention where, for example, future attempts at graffiti removal should not be jeopardized by the choice of current materials and techniques. Another concept to bear in mind when removing graffiti is **compatibility**. The use of compatible solvents at places with petroglyphs, for example, implies that relatively inert materials, such as distilled water or chemically compatible local water, should be preferred over corrosive materials, such as chlorinated water or detergent. A fourth concept that applies to acceptable graffiti removal is **distinguishability**. At any place being conserved, it is important to distinguish between what the conservator has modified from that which existed prior to intervention. For instance, any additional material that was not on the rock before, such as newly added pigment, should contain modern chemical and physical signatures that are not only compatible with the rock, but also distinguishable from the original rock.

Liaison with all interested people is necessary before any graffiti is removed. Even recent graffiti, or the place where it occurs, may have historical, spiritual, or sentimental value to the local community, and in these instances it is better left alone. Furthermore,

before removing unusually hard graffiti or graffiti on pecked surfaces, it is advisable to obtain a second opinion from other people, such as park managers.

Rock Art, Historically Significant Inscriptions, and Graffiti

A clear distinction between *rock art*, *historically significant inscriptions*, and *graffiti* is necessary prior to graffiti removal, particularly to prevent accidental removal of significant rock art and/or historic period inscriptions. For the purposes of this project and resultant conservation recommendations, *rock art* is broadly defined as carefully executed and recognizable imagery, *significant historic inscriptions* are names associated with dates older than 50 years, and *graffiti* are lightly-colored incised names (that are indicative of a recent date) and/or darker and more boldly incised names associated with dates younger than 50 years.

Referring to National Register of Historic Places (NRHP) regulation guidelines (36CFR60), it is possible to more clearly justify the abovementioned distinctions between rock art, historically significant inscriptions, and graffiti. According to NRHP guidelines, cultural modifications on the landscape made within the past 50 years are typically not considered eligible for the National Register, unless they show exceptional characteristics. Bearing in mind that no names or images within the project area that are associated with dates more recent than 1950 exhibit exceptional characteristics, they can be regarded as graffiti and accordingly will not be eligible for the National Register.

NRHP guidelines additionally consider the significance that rock imagery has in American or state history, archaeology, and culture as seen in terms of the imagery's location integrity, design novelty, workmanship quality, aesthetic feeling, and sentimental association. Moreover, rock images will be significant in terms of NRHP criteria:

- a. That are associated with events that have made a significant contribution to the broad patterns of our history; and/or
- b. That are associated with the lives of persons significant in our past; and/or
- c. That embody the distinctive characteristics of a type, period, or that possess artistic value; and/or
- d. That has yielded or may be likely to yield, information important in prehistory or history.

In terms of criterion "a", all the CCC era rock art imagery and related names will clearly be eligible to the NRHP in that they are associated with an event that have had made a significant contribution to the broad pattern of our history; they are material testimony of American ingenuity to create enduring landscapes during a time of economic hardship.

With the possible single exception of Floyd Collins, the names inscribed on Scenic Mountain cannot be considered as a list of "Who's Who" in the history of America,

Texas, or Big Spring. In terms of criterion “b” listed above, the inscribed names within the project are not those of well-known persons in our past.

In terms of criterion “c” listed above, the CCC era rock art imagery and the Panel J inscriptions possess artistic skill that is characteristic of a type and period. The fine-lined CCC era depictions of a cartoon-like sailor (Panel A03) and a formal CCC company eagle logo (Panel J01) represent artistic convention of the 1920s and 30s. The meticulously and skillfully incised Leonard Fisher (Panel J08) and Barney Lee Russell (Panel J09) names are rare instances of Gothic script that should be preserved for future generations to admire.

It is unlikely that information important to history can be learnt from any of the incised names, dates, or historic imagery that is not already known in the documentary record. However, the horned head (Panel G04) may contain physical, technical, and stylistic clues as to its ethnic association and so accordingly have independent research potential as stipulated in criterion “d.”

Bearing in mind that even today the tradition of finding and viewing carvings is continuing among some weekend visitors from the nearby city of Big Spring, the carvings are clearly of sentimental value to members of the local community. Because people appear to be more interested in the readily visible and older carvings, the relatively faint and more recent graffiti are probably for the most part not of sentimental value.

It is proposed here that because the pre-1950 images and inscriptions were for the most part an integral part of the landscape and local history they need to be left alone. Historical periods, defined by visitation patterns already discussed in Chapter VI, include the Paleo-Indian to 1881 era, the Texas and Pacific Railroad era (1881 to 1916), the Edwards era (1916 to 1934), the CCC era (1934 to 1936), and the Early State Park era (1936 to 1950). Similar to the plant life within Big Spring State Park being preserved in its pre-1881 state, it is recommended that the inscriptions be preserved in their pre-1950 state. The proliferation of inscriptions after this date makes them hard to control, many of which have no intrinsic link to the Scenic Mountain as a potential Historic Landscape. Furthermore, viewed purely from a landscape conservation and management point of view, removal of all post-1950 inscriptions is the only practical way to stop graffiti from taking over and so eventually obliterate historically significant inscriptions and imagery. The rationale to the visiting public is that similar to the park personnel aiming to prevent foreign species from taking over the biota of Scenic Mountain, their aim is to stop incompatible graffiti from destroying historically significant rock imagery on the same mountain.

Recommended Graffiti Removal Techniques

A hand-held 20x magnification lens helps in determining the nature and make-up of graffiti. Ideally, any removal is preceded by alternative assessment tests. A review of different removal options follows the testing phase. As indicated above, the most repeatable, compatible, and distinguishable options help the conservator to make a

decision. Only once all testing have been done can there be an implementation of actual removal. During testing and actual removal it is important to avoid over-cleaning of graffiti since it leaves unsightly marks and may also destroy micro-stratigraphic clues on the rock.

Graffiti removal tests are conducted in strict order, starting with the simplest and safest techniques, and progressing to the more involved and risky ones. For this reason, dry techniques of removing graffiti should have priority over the use of solvents. When using solvents, non-toxic ones should be tried first. Also, soft utensils are preferable since they are less damaging than harder ones. The following materials are used in order of priority, but can also be used in conjunction: medium-sized paint brushes, distilled or compatible local water, rolling poultices made of cotton wool rolled around the tip of a wooden dowel, tooth brushes, and acrylic pigment applied with paint brushes.

Techniques of removing the same graffiti material often vary from place to place and even on different surfaces of the same panel. Accordingly, it is necessary to test a whole range of techniques in order to establish which is most suitable at a particular location; generally speaking, on resilient surfaces mechanical techniques are preferable to solvents, whereas on softer surfaces solvents are usually the most suitable.

Suitable mechanical techniques of removal include the following: dry brushing/flicking for the removal of powder left by shallow incisions, rolling distilled/compatible local water poultice for the removal of powder and controlled brushing for the removal of more resilient graffiti which has bonded with the rock surface.

Where it is impossible to remove graffiti by either physical or chemical means, particularly in the case of incised graffiti, it becomes necessary to disguise the scars. Toning scars with water-soluble acrylic paint is the most generally applicable technique. By way of matching the acrylic paints with the natural colors on the rock, the scars can be made to blend with the rock surface. When applying acrylic paint to the rock it is advisable to match the texture of the rock by manipulating the brush (e.g., small dots emulating a granular surface and wider strokes to emulate water wash). Once dried, acrylics will not dissolve in water but are soluble in acetone or alcohol, and these materials may help with the removal of mistakes.

Methods, techniques, and results of all the steps within the graffiti removal process should be documented. During removal notes should be made on techniques and areas treated. These notes will hopefully help future archaeologists and conservators who are looking for "pristine" areas to analyze and/or date. All recordings, be it drawn or photographed, and written documents should be curated, filed, and stored in a safe place, so that future generations can evaluate the results of current intervention. No removal is final, since the results of removal should continually be evaluated, monitored and, where necessary, modified. On the positive side, through time natural weathering and discoloration of the rock surface blend damaged areas and scars with the underlying rock. On Scenic Mountain most of the more lightly scratched and incised letters and numbers are disappearing or have already disappeared.

Recommended Asphalt Removal Techniques

It is recommended that only the asphalt flows that cover portions of the imagery in Panel G04, some with a few stones embedded, should be removed. As in the case of graffiti, removal of asphalt should proceed carefully and in a step-wise fashion. Dry removal with a sharp object, such as lifting the asphalt from the rock surface with a scalpel, should be tried first. Remaining asphalt sticking to the rock should then be treated by applying moderate amounts of solvents that dissolve asphalt. Such organic solvents are available commercially and have been proved to work on rock surfaces. Being of a neutral pH, the solvents are unlikely to react with the underlying limestone. As small areas will be treated and thoroughly rinsed in incremental steps, traces of the solvent on the rock will be kept to a minimum. The areas treated with solvents will be marked on the tracing, thereby alerting future researchers where not to sample for the purposes of physical analyses and possible dating.

VIII. Summary and Recommendations

Overview of Incision Activity on Scenic Mountain

Prior to 1881 what happened on Scenic Mountain was most likely tied to the nearby natural Big Spring to the southeast, whereas after that date the history and rock imagery on the mountain were intricately tied to the nearby city of Big Spring community to the northeast. Of all the panels examined, cupules and the excised and striated horned head of Panel G04 possibly pre-dates 1881.

The earliest names possibly associated with a dated incision are Stephen Stripling (Serifs) 1-4-81 in Panel J11, A M? WILSON 1882 on Panel G27, and Clay and Lillie Gead? done in a fine script next-to a date of Feb 20, 1883 within Panel G70. The next oldest date is 1888 carved within the same rectangular outline as the name Alf Anderson of Panel G22.

Roughly between 1900 and 1929 the majority of the dated engraved names seem to have been done on Scenic Mountain (Table 5), mostly by visitors from the city of Big Spring, but also by the spelunking celebrity Floyd Collins (considering that he died in 1925, his visit must be prior to the 1929 date that is on the same panel but with very different technique of application and patina). This is the time period that the mountain apex with its exposed limestone capping was on privately owned land. Meticulously carved names in Gothic by Big Spring residents Leonard Fisher and Barney Russell in Panels J08 and J09, which date to 1916, are good examples of the high quality craftsmanship during this period.

Since 1923 the local citizenry lobbied and labored feverishly to have infrastructural improvements made within the state park on Scenic Mountain. When CCC construction crews worked on the state acquired apex of Scenic Mountain between 1934 and 1936, a few skillfully carved images appeared, of which the “Spanish” eagle of Panel J01 and the sailor cartoon with the juxtaposed name Jimmie Garza of Panel A03 are outstanding examples.

Whereas road construction activities in the 1930s have truncated and even obliterated certain panels, repeated road-paving activities since the CCC era have covered or partly covered others. After the CCC troopers departed from the Big Spring State Park in 1936, the incidence of incised names and dates appear to have declined. In the 1940s some incised names, dates, and motifs re-appear, but these are comparatively lightly incised and hard to see. The more recent graffiti, which post-dates the 1950s, are generally very lightly incised with expedient limestone tool, leaving behind a powdery white residue and occasional traces of small incisions.

Dates recorded during fieldwork suggest that the earliest engravings, prior to 1900 were done in Loci F, G, I, and J (Table 5), the portion of the Scenic Mountain rim rock that faces due north and northeast. By 1907 names occur in the southwest

Locus A, which is farthest removed from the northeastern mountain edge, and in 1917 there was a flurry of activity in the interior, Locus K.

Table 5. Dated panels from old to young.

<u>Era-Year</u>	<u>Panel</u>	<u>Description</u>
Pre-railroad		
pre-1880?	G04	Horned Head
	B21 I38 I39	Cupules
Railroad		
1881	J11	1-4-81 STRIPLING, STEPHEN, STACY
1881?	F53	O. H. GBO, DEC, F, 81-9 W. REED, A, 81 in rectangle (train?)
1888	G70	Clay and Lillie G_ead Feb 4 1888
1888?	G10	88 REARB (88 could be stylized SS?)
1888	G22	Alf Anderson
1893	I67	crossed picks
1896	J13	Seth PIKE, ThEKLA SchoLZ MAR. 14-96 w/in scalloped frame
1900	F13	WOODS FS DEC 11 - 1900
1900	F32	JENCE & JIM 11-N-00
1900	G05	L. C. TRUe DEN OCT 21 1900
1900	J14	Rifle design, J. E. MERRIT. JR 11-23-00
1902	I14	DKR and PWA date based on historic photo
1903	I54	J.W.O, WTTK, T T K 5-9-3
1904	E21	F.W. HAYNES, C. HEBIRUTH Feb 26 1904
1905	E17	CLAUD BELL Jan 16 1905
1906	E28	Osborne (in script) W Va 06
1906	I42	BASCOM, 1908/15/4 ES, DW, MW, HL, DEC 15 06
1907	A23	KAREN 1 29-07
1907	E25	J. M. Morgan, M. Hoar 2-22-07
1907	J06	Boy? 1907, H triangle, HR, F, circle with tail, ball hammer
1908	E27	C.E.M. L.M. FEB 18 08, 3-2, G.V.STALEY head with hat? J.F., RM, CM, tombstone with dates?
1908	I42	BASCOM, 1908/15/4 ES, DW, MW, HL, DEC 15 06
1910	A08	McF 12-20-10
1910	B06	Rob. B. 12/11/10, M. Harwell 11
1910	B07	Leonard Fisher 12/11/10
1910	G40	B.H.M
1910	J06	FREEMAN MESKIMEM, Boy? 1907, Feb 22? 1910?
1910	J12	ELSIE CROW 7 - 1910
1910	H03	NEWTON 1-1-10
1911	A14	B.W.P. – C.L.R. 7-23-11
1911	E31	MESA? faint EE? T, 11 / 11
1911	J12	BOWIN, PRICHARDt 11-11-11
1912	E20	LOE, LIELLI, LFI, GF WALLACE, EMBROSIA 2-11-1912
1912	F04	TJP, A.L.SHANK 15-12-12
1912	G13	E. W. Brown. 9. 22. 12
1913	C02	13 inside "F" inside "L"
1913	I27	W A M YBIC 3-7-13?
1914	D12	J. I. 1/4/14, A B I-I4

1914	E03	WAS, MOLLY, OCT 14 14, J. O. DENNIS, MAE. EDDY, H. ROKLA
1914	J15	J J PRICHARD JR. 8-11-14
1915	B02	TR A NE N 15
1915	B03	Paul Cratik Texark, Edgar Dikes. Brownwood. Tex. Dec 9, 1915.
1915	G03	15 JE (sharing line)
Edwards		
1916	J08	Leonard Fisher 12-6-16
19??	J09	Barney Lee Russell
1917	J07	Mark Harwell 17, Tobin, M LEONG, NR
1917	K04	1/11/17 HENRY C
1917	K09	H.G.C. 3-11-17 shield outline; LF 3/17 football outline
1917	K10	W. Mc 3?/11/17 shield outline
1917	E23	C. E. H. 11 25 17
1917	I01	W. R. 17?
1917	I37	Buddy COOTS 17
1917	I26	BOBIE WILLIAMSON, JA GERMALL N. M. 7-15-17
1917	K06	L F 17
1918	F37	T? G. DAVIN 7-18, S, RM
1918	J10	WLH, Reed 1918
1919	K07	FLO (serif), V.W.P. 1919
1920	D01	L. M. Hayden, H. H. Rutherford Nov. 16-20
1920	E05	MARVIN, FROST, "un" D, M
1921	F12	ONAMAE RODD
1921	D01	B. H. BEDFORD Sept 4-21 (boxed)
1921	E40	JB PC 1921(in frame), MAUDE SMITH, E. BURTON, L
1923	E25	P. K. WILLIAMS Oct 28 23
1923	K03	Rectangle with C, CSS or CR or C8S or C23
1924	A09	H. B. 1-29-24
1924	I45	L. J. BOX 11-30-24
1925	A35	RM MR, SCSLEOCC 1-2 25, heart
1925	I15	RS-CS-MS 7-25, pick in rectangle
1925	E15	C. N. M. 11-25
1925	E35	BS MH 1925
1926	B18	THOR FARIS + WIFE MAR 26 1926, RVA
1926	D05	Star motif, W M MAJOR 7-26
1927	A11	Courtney Tunnell 2-10-27
1927	A30	RALPH S. -N- DANA K. 8-23 1927
1927	G70	MW Turan CUBA ILL 1927
1927	I08	LDA 27
1927	I16	Jacs Matthew 27
1928	H09	ALFA, WELSY, MARY 28?, MAM
1928	I32	ROY JEWELL 4-1-28
1929	I07	LV, R5, W.K.E. Jr (in parens), MIKE L. HEERLA, SEAN, 29
1929	I44	ADA, FLoyd CoLLinS, 2 – 29 Slaton, TEX, S
1930	I37	Buddy COOTS 6-15-30 17
1930	J03	CLARENCE HENRY, B.S.A, ABILENE TEX 12-8-30
1931	I04	B.B., CHARLES 1931 WANDA. JL SE

1932	G11	ZH, F, R H MONEY, 32
CCC		
1934	A05	Wood Weaver CCC 7-24-34 San Angelo
1935	A03	Jimmie Garza, Sailor Drawing
1935	E14	J.M.S. 35
1935	I16	Beatrice RS 35
1935	I27	BBA 1935, W A M B I C 3-7-13?
1935	J01	Eagle
State Park		
1937	I16	GDI 1937, CH, BEATRICE, RS,
1938	I03	38 BJR, D & small A
1938	I52	NN 11/01/38? Part under asphalt, needs side light
1939	H11	A H 39, R F
1942	I10	"J. A. LANTZ" 11-21-42
1944	A15	profile head with top hat, by Larry Dillon, JULY 1, 1944
1945	K11	CNAo45 or graffiti Shayn7
1946	A14	REBA, J.B. 3-17-46
1946	A32	"LORETTA", female head, "TOP"
1947	B11	G.S. 9-17-47, AG
1947	I18	Wm N, Nov. 20 1947 all within heart shape
1949	A36	ELLEE, ME 11-29-49 need side light
1949	H10	EdGAR SMI S, JACKSON M 3-5 49, DC
Graffiti		
1954	H08	MATT, DA VAIL, J . R,
1955	I01	W. R., BILL H. J W EWERS
1959	H04	E.R.A. Jim Sass 1959? T., Jim, J. H.
1964	I07	MIKE L. HEERLA, HOBSS TO ES, FORRSS, DEE TEX etc.
1967	I32	JOHN YVONNE 1967
1968	I14	Indian head. KEN -N- ANGELA, MARY ERMIN, BOB etc.
1971	F23	WALT
1971	A04	Gayla, C, PATSY 71, and more
1973	E30	C. J.
1973	A16	Joan + Bill G
1977	F46	BCD or BGD
1981	J11	STRIPLING, STEPHEN, STACY
1981	I04	BB, CR, W
1988	G10	REARB
1991	A17	A. A., E p
1996	J13	Seth PIKE, ThEKLA. SchoLZ
2005	A16	Jacob Dug =, JUAND, cross shape

Site Maintenance Strategies

In terms of conservation priority, the “Spanish” eagle of Panel J01 at the turn-off to the park superintendent’s residence needs the most immediate attention (Table 6). Vehicles drive directly over the motif throughout the day and so it’s remarkable that the motif is still visible (loose gravel on the panel’s surface adds to the abrasive effects of the cars’ tires). Three round holes near the incised eagle (see Figure 18) most likely once contained the bases of pipe-like posts that acted as a protective barrier from oncoming traffic. It is highly recommended that earth fill be removed from the holes and that posts be re-inserted. Alternatively, the more costly option of re-routing the two-way road is recommended.

Another threatened panel (J14) contains a neatly incised representation of a lever-action rifle next-to to the two-way road at the main panel concentration in Locus J (Table 6). This panel, which also contains the weathered name J. E. Merrit (see Figure 20), is located on bedrock that appears to be partially detached from the underlying limestone. Prevailing winds from the south that blow perpendicularly across the top surface of the panel have caused the case hardened crust to flake off, especially on its northern and higher end. If left in its present location wind and weather will eventually take its toll. A possible solution is to create a low wind-break barrier on the south side of the panel.

Table 6. Management priority of panels, from highest/most threatened to medium.

Priority	Panel	Description	Recommended action
Highest	J01	"Spanish" eagle design	Install protective posts
Highest	J14	Rifle design, 11.3.01, J. E. MERRIT. JR within rectangle	Construct barrier
High	G48	3-D female motif	Install protective posts
High	I44	Floyd Collins	Install protective posts
High	G04	Horned Head	Remove asphalt, interpret?
High	H02	JAG '11-23-??	Remove soil
High	H01	Scroll	Keep soil away
High	G68	G. H. BROWN, Feb 189? circle, J. H. SULLIVAN diamond	Discourage traffic
High	G70	Clay and Lillie Glad, M. W. Turan	Discourage traffic
Medium	A01	SMITTY TEDDIE	Discourage traffic, interpret?
Medium	A03	Jimmie Garza, sailor drawing	Discourage traffic
Medium	B06	ROB. B., 12/11/10, M. HARWELL, II	Discourage traffic
Medium	B07	Leonard Fisher, 12/11/10	Discourage traffic
Medium	D05	Star motif, W M MAJOR 7-1 26	Discourage traffic
Medium	D09	House-shaped form square base and triangular top	Discourage traffic
Medium	E25	J. M. MORGAN, P. K. W., M. HOAR (2-22-07)	Discourage traffic
Medium	E26	M. H. JONES	Discourage traffic
Medium	G22	ALF ANDESRON 1888 within rectangle	Discourage traffic, interpret?
Medium	J07	HARRY RUDLOFF 1-1-17, Tobin, MARK HARWELL 17	Guided interpretive tour
Medium	J08	Leonard Fisher 12-6-16	Guided interpretive tour
Medium	J09	Barney Lee Russell	Guided interpretive tour
Medium	J10	WLH, REED	Guided interpretive tour

Less threatened are the already damaged three-dimensional bas relief female motif in Panel G48 and the incised name of Floyd Collins in Panel I44 (Table 6). Both these panels are fairly close to the road and are impacted by vehicle and foot

traffic. Inserting removable tubes as barriers around each of these panels may help divert traffic. Alternatively, an interpretive line-drawn panel with minimal text, attached on top of a post next-to each of Panels G48 and I44 (i.e., each post being inserted down slope from each panel), could act as a psychological barrier.

Interpretive text could mention techniques of manufacture (i.e., hammer and chisel), date of manufacture (where known), and brief known histories of personage mentioned (e.g., the spelunking activities of Floyd Collins).

It is moreover recommended that the asphalt that has flowed down the center of the horned head motif of Panel G04 be removed carefully (Table 6), preferably by a qualified and experienced rock art conservator. Although this asphalt poses no known conservation threat to the rock and motif, from an aesthetic and interpretive point of view it should be removed.

Scratched graffiti, although not listed in Table 6 as a physical threat, should be removed or reintegrated by a rock art conservator too, lest it begets more potentially damaging forms of graffiti.

It may be beneficial to remove soil that covers a portion of the Panel H02 JAG initials and date (Table 6). Soil removal is recommended bearing in mind that those portions of the nearby Panel H01 slab that were covered by soil and roots showed more signs of weathering than the surface that was always open. To reduce weathering the surface of Panel H01 slab should be kept free from soil and dirt accumulation.

Vehicle and foot traffic should be discouraged from the 11 panels listed in Table 6. This can be done, for example, by erecting a low barrier next-to the road so as to discourage traffic from moving onto the limestone. After careful study, it might be possible to engineer short paths to panels of interpretive interest that do not impact other nearby panels. Or, depending on community interest, consider having occasional interpretive walks scheduled at times when lighting conditions make viewing optimal.

It is also recommended that all the panels covered with gravel, even the ones with a low conservation priority, be regularly cleaned with the aid of a gas-powered blower. Clean rocks create a good impression and are a sign of custodial care, in addition to removing potentially harmful abrasive agents. Volunteers, or “Friends of Scenic Mountain Rock Markings,” from the community can do such maintenance to lighten the tasks of park staff. Careful monitoring to evaluate whether inadvertent negative impacts have occurred is also recommended.

Guided interpretive tours, either by a knowledgeable person or with the aid of an illustrated brochure or booklet, could encourage visitation to Panel J, for example. Along with informative interpretive background text and line drawings, a brochure could impart a positive conservation message. Wording such as “please help us preserve these important historical markings by telling your friends about

them” may help empower the visitor. Also, an interpretive brochure with line drawings of the panels, can include queries such as “can you locate figure x in the drawing” or “judging from the dates, when were the names engraved?” or “during what seasons did the people engrave their names?”

Line drawings of some of the re-drawn tracings in this report can perhaps be included in a self-guided tour brochure, accompanied by short interpretive text and an overall map. In this way pedestrian visitors that tour the park may be challenged to see how many of the panels they can re-locate. Since many panels reveal additional information when illuminated with side light at night, perhaps the visiting public, or “Friends of Scenic Mountain Rock Markings,” could be requested to reexamine panels and record additional information. There may be various ways to organize this activity, such as events, or workbooks by locus.

It is indeed to the benefit of site managers to keep infrastructural changes and additions to a minimum knowing that unforeseen problems are often introduced and potential maintenance nightmares might very likely arise.

It should also be mentioned that severe heat, such as caused by fire, can flake the surface of the limestone. To minimize the chances of fire damage to the petroglyph panels, it is recommended that vegetation cover be kept low next-to panels. Also, shade from taller junipers may facilitate lichen growth. Bearing in mind that lichen can damage petroglyphs, it makes sense to manage vegetation near panels.

Visitor Strategies

When a proper management infrastructure is lacking, such as when there were no well-marked trails or interpretive signage in the first half of the twentieth century on Scenic Mountain, visitors set the management standards. Fortunately, in more recent years the TPWD has installed numbered markers along the paved roads within the park to help visitors identify plants and animals likely to be encountered. Signage and interpretive literature are important tools to guide visitors through the park and educate them at the same time, regardless of what overall visitation model is adopted.

Russ Kaldenberg (2007, personal communication), who has had done some real-life experimentation with a variety of petroglyph site visitation models, highlights three main alternatives, albeit not mutually exclusive, known as the “shut the public out model,” the “low level heritage tourism model,” and the “focal point model.” It is worth noting that where there is more than one petroglyph site within a multiple site complex, then more than one model can work. For instance, it is beneficial that not all panels are shown on park maps (i.e., a passive way to “shut the public out”). By maintaining a few select panels as focal points, they could act as decoys, drawing visitors away from fragile panels, such as G48.

The “low level heritage tourism model” is where visitors are guided by books or pamphlets that they purchase or obtain at nearby museums within the park headquarter and/or where they are accompanied by guides. This model typically works well at sites that already have a “passive” interpretive infrastructure, such as pedestals with graphic displays, walkways, and/or visitor books. Training and employing volunteers from the nearby community of Big Spring can highlight local history. Experience from across the world has indeed shown that the physical presence of a trained guide is the best prevention against vandalism. Also, there is nothing better for educational and tourist purposes than an on-site guide with a thorough knowledge of the local area and its natural and cultural history. Poorly trained guides have the reverse effect; many rock art sites have decayed rapidly due to bad examples set by ill-informed guides, such as walking on or touching the panels.

A self-guided walking tour to select rock imagery is recommended. Such a guide should be based on the existing Scenic Mountain Trail guidebook to plants, animals, and geology in the Big Spring State Park. Educational programs about the natural, cultural, and historic resources should be designed for teachers at elementary and secondary levels in an attempt to share the local history and encourage respect and possibly discourage additional graffiti.

Monitoring

Continual monitoring at the Big Spring State park petroglyph complex is highly recommended to check for signs of vandalism, natural deterioration (e.g., lichen growth), and the success of graffiti removal. Ongoing maintenance is important to remove trash, to fix signs, and even to remove any new graffiti. The success or failure of these recommendations can be assessed every year or so. In the event of some unexpected negative effects due to the new infrastructure within the site, the interpretive pedestal can be removed without harm to the deposits or petroglyphs. The role that law enforcement should play on-site is something that could be decided by governmental institutions.

Summary of Recommendations

Based on an evaluation of significance values and management context, the prime use of the Big Spring State Park is for viewing nature and the surrounding scenery by driving, hiking, or jogging through the park (also picnicking). While in the park at least some visitors are interested to learn more about its history. For these visitors, the numerous carved names, dates, and images provide a tangible window into local history, dating back to the early days of the city of Big Spring and very likely even earlier. To maintain the integrity of this historical significance value of the park, the following recommendations are proposed in the order of priority:

- **consultation** with the city of Big Spring community about the recommendations concerning the rock imagery proposed here (emphasize that removing sloppy post-1950 graffiti helps to preserve finely executed early twentieth century inscriptions and CCC era imagery);
- **installation of removable barriers** around Panels J01 (Eagle) and I44 (Floyd Collins) (alternatively **re-route road** around Panel J01);
- **installation of interpretive pedestals** in front of Panels G48 (horned head) and I44 (Floyd Collins) (mention possible Indian link of G48 and visit to Scenic Mountain by renowned spelunker named in I44);
- **installation of low wind-break** immediately south of Panel J14;
- **removal of asphalt flow** from within Panel G04 (horned head) by trained conservator;
- **re-integration of graffiti** more recent than 1950 by trained conservator (especially the lighter-colored ones);
- **removal of soil** from Panel H02;
- **keeping soil-free** Panel H01 (blank scroll motif);
- **regular blowing away of gravel** from significant panels by park steward volunteers;
- **ongoing monitoring and maintenance** by park steward volunteers, including continued documentation of panels by volunteers using low-angle night lighting;
- **additional professional tracings and nighttime side light and/or 3-D photography** of several panels of interest identified after the field work such as I14, the entire basin of E27, and the crossed picks of I67;
- **publication of rock imagery booklet/brochure** for self-guided walking tour; and
- **design educational outreach programs** for teachers with goal of educating about local history and curbing vandalism.

All-in-all, **well-marked trails, interpretive signage, and interpretive literature will enable the TPWD to set management standards.** Currently the TPWD is setting the standards by numbered post markers along an interpretive trail. The numbers correspond to numbered sections within an illustrated interpretive brochure. A sketch map of the trail route shows the approximate locations of specific markers. The brochure currently focuses on plants, but also includes information on certain birds, mammals, geology, and surrounding landscape. **It is recommended that information on rock imagery can be added to this booklet, focusing on panels that have been traced and re-drawn.** Alternatively, a separate booklet on rock imagery can be published, as recommended above in the bulleted list. Either way, good interpretation in a textual and graphic format will help facilitate good preservation. Interpretive themes may include Native American Indians camping at Big Spring to the

southeast who visited Scenic Mountain prior to 1881, Euro-Americans who started visiting the same mountain from the direction of the railway line to the north after 1881, extensive and high quality inscriptions during the time that the mountain apex was on the private Edwards property after 1916, the brief burst of CCC era artwork from 1934 to 1936, and the Early State Park era between 1937 and 1950. These themes will give visitors a better understanding and appreciation of Scenic Mountain as a culturally significant landscape feature on the step-like plains of west-central Texas.

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