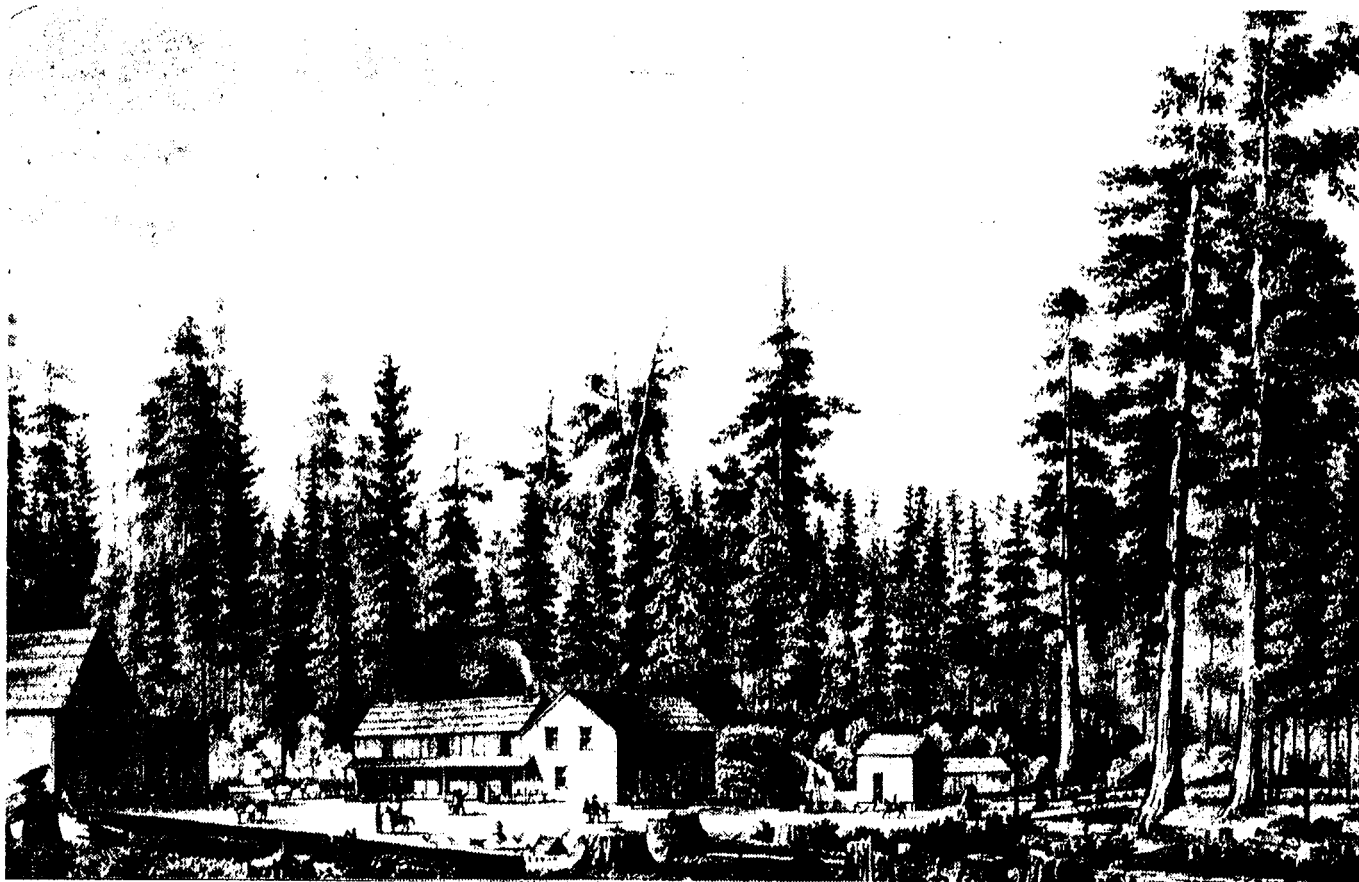


Historical and Archaeological Research at the Calaveras Big Tree Cottage Area



Edited by Julia G. Costello



California Department of
Parks and Recreation

HISTORICAL AND ARCHAEOLOGICAL RESEARCH
AT THE
CALAVERAS BIG TREE COTTAGE AREA

Edited by Julia G. Costello

Papers Contributed by:

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Betty Jean Ciccio
Star Hempstead
Wayne Harrison

March 1988

Report prepared by Foothill Resource Associates for
Calaveras Big Trees Association and the California
Department of Parks and Recreation.

This Report is Dedicated to the Memory of

FRANCES EVELYN BISHOP

July 21, 1918 - April 12, 1988

Frances Bishop, a descendant of Calaveras County pioneers, was a dedicated historian, researcher, and writer. She devoted over three decades of her life to studying the history of Calaveras Big Trees State Park. Frances gleaned information from books, newspaper clippings, archives, and accounts of early-day residents until her meticulous files were crowded with details about the park, the Ebbetts Pass area, and related county and state topics. Her library became a wonderful storehouse of knowledge that she willingly shared with the many who sought information.

She contributed numerous articles and anecdotes to local publications, co-authored the illustrated history Big Trees-Carson Valley Turnpike, Ebbetts Pass and Highway 4, and authored the pamphlet "A Brief History of the Big Tree and the Big Stump."

Frances was a charter member of the Calaveras Big Trees Association and its first historian. She was awarded the California Department of Parks and Recreation's Certificate of Special Commendation and Calaveras Big Trees Association's Recognition Award in appreciation of her significant service to the park. Her remarkable efforts are her legacy to us all and will place her for all time among the giant trees she loved so well.



SYNOPSIS

During the summer and fall of 1987, historical archaeological investigations were conducted at Calaveras Big Trees (CBT) State Park under the direction of Julia G. Costello. The project resulted in more accurately identifying locations of structures associated with the original Big Tree Cottage (1853-1860) and reconstructing the historic landscape of this early time period. The study was partially funded by the Calaveras Big Trees Association and excavations were conducted through Columbia Community College classes. Archaeology students Star Hempstead and Betty Jean Ciccio from California State University, Sacramento served as Laboratory and Field Directors respectively. Documentary information from the extensive research conducted by local historian Frances Bishop was compiled by Judith Cunningham and historic photographs and sketches from the Park archives were studied.

In order to assist in identifying potential structure sites, concentrations of cut ("square") nails were sought through a systematic survey by experienced metal detector operators. Irwin Lee organized the volunteer team from northern-California clubs. "Targets" were located and collected along predetermined transect lines laid out over probable building locations. Nail distributions refined the location of the Big Tree Cottage (1853) although heavy foot traffic had moved nails over 75 feet from the original structure site. For unknown reasons, the Haynes Addition (1858) was not as clearly visible from the nail distributions.

Excavations were conducted at the site of the Haynes Addition. A total of 141 cubic feet of soil was removed from the site by natural stratigraphic levels. Four front wooden foundation footings were found identifying the width of the building as 20 feet. The original ground level present during the occupation of the building was located about 7 inches below the present surface. Several features consisting of piles of boards embedded with cut nails were found on this level suggesting that the building was dismantled.

The three southern foundation posts were rounds of timber ca. 12 inches in diameter and 25 to 32 inches in length; one post showed ax beveling on its lower end. The posts were buried with their upper 12 inches exposed above the original ground level; this 12 inches is the probable height of the building's crawl space. The northern footing was not a post but instead consisted of 3 alternating layers of crossed boards. The lowest and largest board measured 3 feet in length and, with its overlying layer, was laid beneath the historic ground surface. It is suggested that this unusual footing stabilized a soft spot in the soil.

Nearly 2,000 artifacts were recovered from the site. Eighty-two percent were classified under the functional group Architecture and 79 percent of these were cut nails. Considerable vertical movement was observed in the site soils where nearly half of the cut nails had migrated into upper, more modern strata in the ca. 100 years since site abandonment. The proportions of different sizes of cut nails from the site were compared to what would be comparable on a similar modern structure. The virtual absence of spikes among the recovered nails, and their predominance in modern construction is due primarily to the absence of extensive framing in the nineteenth century and to modern use of plywood.

A dendrochronological study showed that when the early Cottage complex was built, trees were felled for a radius of between 40 and 63 yards north, east, and west of the Big Stump. The Cottage (hotel) and Bar Room and Ten Pin Alley building were located within the clearing while the Barn and Haynes Addition were on the edge, extending into the forest. When the hotel was moved out of this area in 1861, the trees were allowed to reforest the clearing and additional trees were planted to accelerate this process. Ponderosa pines distinctively dominated this new forest growth. Core borings in 1987 did not reach the centers of most of the trees and the number of inner rings was computed by formulas. It was found that the tree ring computations had overestimated the ages of the trees which grew up in the clearing. The unusually fast growth produced by abundant sunlight in the clearing during the first few decades of the trees' lives resulted in unusually large inner rings when compared to normal tree growth in shaded environments.

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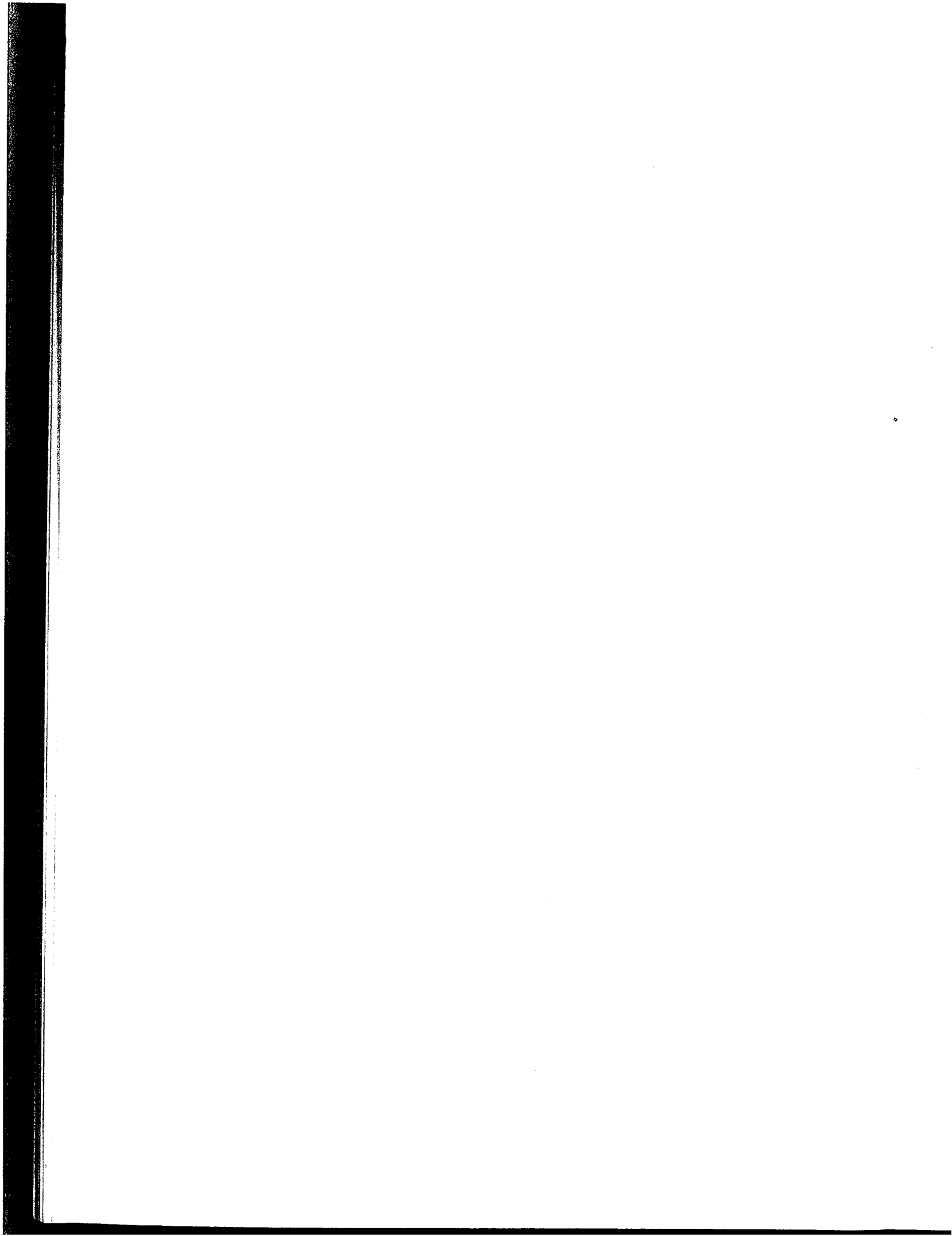
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CHAPTER 1

INTRODUCTION

by Julia G. Costello

Project Description

Calaveras Big Trees State Park is located in the Sierra Nevada at an elevation of about 4,700 feet ASL (Figure 1). In southern Calaveras County, it is three miles northeast of Arnold on Highway 4. Encompassing two groves of Sequoiadendron giganteum, it first received fame in 1852 and rapidly became a popular tourist attraction. A log cabin constructed in 1852 was replaced the next year by a small hostelry - the "Big Tree Cottage" and other associated buildings near the famous Big Stump. The Cottage was replaced in 1861 by a larger hotel further to the northwest which, with additions, remained the focal point of Big Trees hospitality until it burned in 1943. In 1931, the area was purchased by the State of California and became Calaveras Big Trees (CBT) State Park. Subsequent archaeological surveys of the Park identified the historic resources associated with the old hotel sites as CA-CAL-282H.

Historical and archaeological investigation into the 1853-1860 Cottage area (part of CA-CAL-282H) at Calaveras Big Trees was conceived during the fall of 1986 by the Calaveras Big Trees Association (CBTA), the active organization of volunteers that supports the State Park. They approached Julia G. Costello with the proposal that she direct an archaeological excavation at the park, particularly to locate the original site of the its early historic buildings. The resulting project incorporated the contributions of over four institutions and 32 individual volunteers.

The goals of the project were several:

1. Locate the specific sites of the 1853-1860 buildings at Calaveras Big Trees and reconstruct the associated historic landscape;
2. Compile a summary of the early history of these buildings;
3. Provide an interpretive program for site visitors during the excavation;
4. Involve CBTA members and other people of the community in the project;

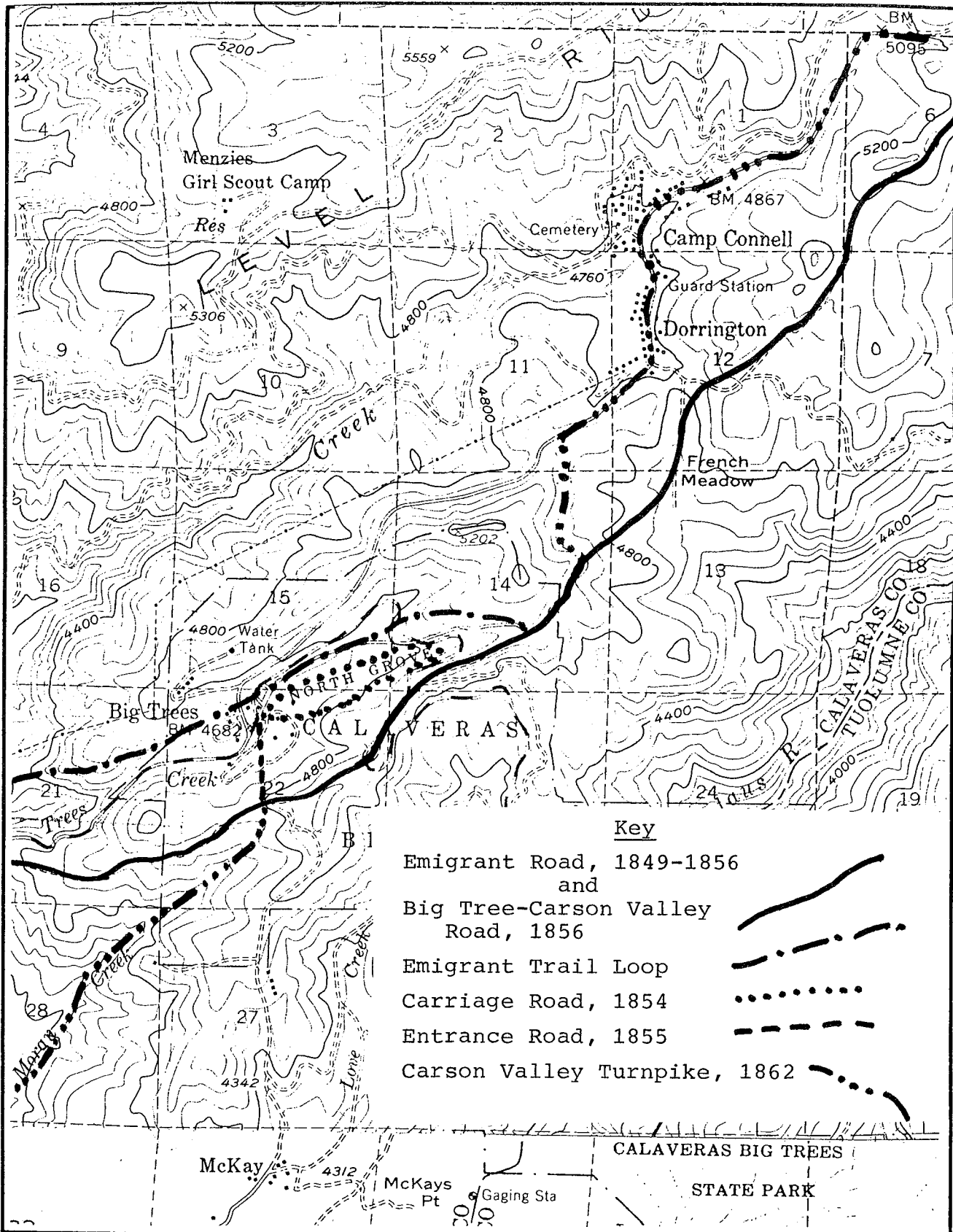


Figure 1. Area map with historic roads.

5. Produce a professional report on the results of the investigations; and

6. Plan for a follow-up program that will result in new interpretive displays on the project and its findings.

A proposal for the project was approved by CBTA and the Department of Parks and Recreation in the spring of 1987. Julia G. Costello was Principal Investigator, responsible for designing and carrying out all aspects of the project. Historian Judith Cunningham worked to reconstruct the history of the project area with Frances Bishop, who has extracted exhaustive data on the history of Calaveras Big Trees over several decades of work. Field excavation and artifact washing and cataloging were accomplished through a class at Columbia Community College taught by Julia Costello which involved nine, six-hour class days during September and October of 1987.

Additional assistance was provided by two advanced archaeology students from California State University, Sacramento: Star Hempstead and Betty Jean Ciccio. They received training in historical archaeology from Julia Costello as part of a special course of study set up with the University. Hempstead served as project Laboratory Director and Ciccio as Field Director. Their contributions to this report constitute the final part of their course work.

CBT State Park generously provided necessary equipment, supplies and other support services necessary for the project. Classes were held in Park facilities and a trailer was made available for Hempstead and Ciccio to stay in during field work. Wayne Harrison particularly assisted in surveying for the project base map and directed the dendrochronology study in which students in the Columbia College class participated. And, before he left his ranger position at CBT State Park, Interpretive Specialist Curt Kraft led Costello and Cunningham through the photographic collection, the archives, and the site area. Most importantly, he pointed out the protruding tip of a moss-covered chunk of wood which he and Frances Bishop thought might be a footing for the Haynes Addition.

From Inland Regional Headquarters of the Department of Parks and Recreation in Lodi, Gary Reinoehl provided technical assistance and advice. He and archaeologist Judith Tordoff also enhanced the project by participating in a day of field excavation. Historian Frank Lortie also made valuable comments on the draft of this report.

In an effort to help identify structure locations, metal-detector experts were enlisted to make a controlled survey

of the project area looking for nails and other architectural hardware. They were led by Irwin Lee, who designed and ran the metal detecting crews at the Custer Battlefield site for the National Park Service in 1985. His volunteers came from metal-detecting clubs in Turlock, Sacramento, Modesto, San Leandro and Union City and their efforts provided valuable information on the distribution of artifacts within the site area.

The location of the project, next to the Big Stump in the most visited area of park, proved ideal for interpretive programs. A "docent" book was prepared prior to fieldwork containing information on the class, historic photographs of the site area, and a chronology of historic events. All individuals working on the project were given instruction on presenting our work to the public and all interested persons who inquired about our activities were given a "tour." On the final field day, a publicized Open House was held. About 250 visitors were shown around the site and had our findings described. Some of these visitors later returned after viewing other areas of the Park to see what new discoveries had been made, and one visitor remained the entire day screening for the excavators. Laboratory work took place either in the Big Trees Hall or in the Visitors Center. Signs on the door identified work in progress and interested persons were given explanations of procedures and shown the artifacts.

A Columbia College course on Museum curation and display, taught by Calaveras County Museum Director, Judith Cunningham, was conducted in the spring of 1988. This project is also sponsored by CBTA and supported by CBT State Park. One product of this class will be an interpretive display presenting procedures and results of the historical and archaeological studies.

Acknowledgments

The authors would like to gratefully acknowledge the assistance of Frances Bishop, whose expertise and years of extensive research on the Calaveras Big Trees conducted in archival and photographic repositories throughout California, made this work possible. The amount of documentary information made available for this project would have taken years to accumulate (as indeed it did) and would have been unfeasible without Mrs. Bishop's willingness to share her research and to assist with the historical editing of the document.

The successful completion of this project was additionally due to the invaluable assistance rendered by the following individuals and institutions. The authors would like to extend their sincere thanks and appreciation for the

dedicated services rendered. Any errors or omissions in the reporting of this effort are the sole responsibility of the senior author and editor.

Individuals

Frances E. Bishop, Calaveras Big Trees historian

Columbia College class Members:

Frances E. Barnsley	Kathleen A. Katavich
Pamela Cannon	Lorraine E. Kimberlin
Almarene Cook	Frances E. Oliver
Marjorie Cook	Marge Oliver
Philip B. Engs	Nicholas A. Pinhey
Thelma Gano	Gladys Shally
Dolores L. Holman	Imogene Smith
Leonard T. Holman	Mary M. Willson

Metal-Detecting Volunteers:

John Anthony, Mid-Valley Treasure Hunters
John Ransom, Mid-Valley Treasure Hunters
Irwin Lee, Mid-Valley Treasure Hunters, Turlock
Riva Lee, Mid-Valley Treasure Hunters
Dave Parker, Mid-Valley Treasure Hunters, Modesto
Duane Shintaku, Sacramento Valley Detecting Buffs
Hal Thornbrugh, California Searchers Inc, San Leandro
Otha Lines, Mid-Valley Treasure Hunters,

Wendy Houglund, drafting

Robert Rice, historic research

Institutions

Calaveras Big Trees Association, Board of Directors

Calaveras Big Trees State Park:

Craig Engel, District Superintendent
Kurt Craft, State Park Ranger
Wayne Harrison, Resource Ecologist
Doug Rischbieter, Seasonal Aid

California Department of Parks and Recreation:

Gary Reinoehl, State Park Archaeologist
Judy Tordoff, State Park Archaeologist
Frank Lortie, State Park Historian

Columbia College, Community Education Division:

Julia G. Costello

California State University, Sacramento:

Star Hempstead
Betty Jean Ciccio

a



b



Figure 2. Haynes Addition excavation: a) overview of site area, looking north; b) some of the excavation team; left to right, back row - Judith Tordoff, Frances Oliver, Kathleen Katavich, Leonard Holman, Dolores Holman; middle row - Julia Costello, Gary Reinoehl, Mary Willson, Almarene Cook, Gladys Shally; front row - Phil Eng, Pamela Cannon, Betty Jean Ciccio, Star Hempstead.

CHAPTER 2

HISTORY OF THE BIG TREE COTTAGE COMPLEX

by Frances E. Bishop and Judith Cunningham

Historical Summary

Certainly the groves now known as the Calaveras Big Trees were known to prehistoric populations. Among the earliest Americans to claim discovery were John Bidwell, who asserted that he traveled through the grove in 1841 on his way over the Sierra Nevada. Several emigrants, including the William B. Prince party, the Flanders party, and a Missouri doctor, recorded their impressions of the North Grove as they traveled westward in 1849 (Bishop, personal papers). As several emigrant diarists recorded their travels throughout the grove prior to 1852, the early Emigrant Road must have run through, or near, the present Park. Credit for the effective discovery, however, was given to Augustus T. Dowd, an employee of the Union Water Company of Murphys, who came upon the grove while on a hunting expedition in 1852.

This discovery created tremendous excitement throughout California and many rushed to the area to view these mighty giants for themselves. It wasn't long before ways were found to make money from the public desire to experience these formidable wonders. In the spring of 1853, Captain William H. Hanford, president of the Union Water Company, viewed the Big Tree and envisioned a way to make a fortune by stripping the bark and sending it on tour to New York and Europe. The bark was exhibited first in San Francisco and then New York, where it was consumed in a fire. After stripping the bark, the tree was felled by using pump augers and chisels, as no saw was large enough for the project. The task took three weeks and an account in the San Joaquin Republican remarked that it fell on June 27, 1853. The Big Tree stump then became the focal point of the grove, roofed with a canopy of canvas and cedar boughs. A nearby well furnished ice cold water. The floor of the stump was planed smooth and dancing became a popular activity on the Big Stump, as did attending concerts, lectures, weddings and other functions.

The first mention of a structure in the grove is recorded in an account by Eliza Palache who was told by Helen Mary Whitney (a visitor to the area in 1852 with James Sperry and A.T. Dowd) that "...a rough log cabin was built and a clearing made" (Palache n.d.). No record of the builder of that cabin has been discovered but, shortly thereafter, on July 19, 1853, William W. and Joseph M. Lapham filed land claims to two 160-acre parcels in the North Grove. This

a



BIG TREES  **BIG TREES**

MAMMOTH TREE GROVE HOTEL!

THIS favorite summer retreat is opened for the season. During the winter, many improvements have been made in the grounds and buildings.



THE TABLE

will always be satisfactory. Particular attention paid to

SLEEPING APARTMENTS,

which are large and commodious. Every effort will be made to render the interior accommodations unexceptionable.

THE BIG STUMP

is enclosed by an arbor, which connects with the dining room, forming a

SPACIOUS HALL,

Separate from the house and on the

TRUNK OF THE BIG TREE

is a splendid Saloon, Bowling alleys, Billiard Table and Bar, where will always be found the

Choicest  **Liquors,**

Wines,  **Cigars, &c.**

The Stable arrangements are complete, and under charge of careful and experienced ostlers.

To fine the proprietor assures those who contemplate a visit to the

FOREST OF GIANTS,

whether in large or small parties, for a long or short stay, that every exertion will be made for their comfort and convenience.

A. S. HAYNES.

b

Figure 3. Big Tree Cottage: a) 1855 Ayres sketch showing (left to right) Barn, Cottage, Big Stump with cedar boughs and canvas covering, Chip of the Old Block, and Bar Room and Ten Pin Alley; b) 1858 advertisement for Mammoth Tree Grove Hotel.

first cabin was replaced with the "Mammoth Tree Hotel" (Big Tree Cottage), constructed by William Lapham and Samuel Smith (who had invested \$1200 in the enterprise). Although no record has as yet been found establishing the date the Cottage was actually built, it was probably shortly after the land claim was filed. A newspaper account of a trip to the Big Tree mentioned that Lapham was clearing the land in the summer of 1853 and that people were traveling to the grove on the Sperry and Strange Road (Sonora Herald, June 1 and June 11, 1853). In October 1853, William purchased Joseph's interest for \$800.

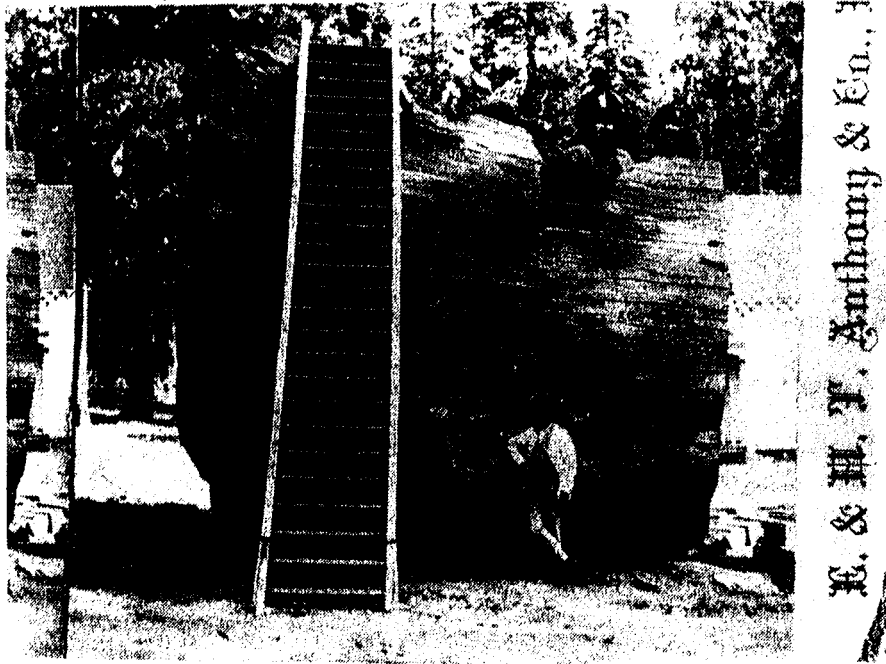
Lapham must have deeded a portion of the property to G.S. and Mary Smith, as they sold a one-third interest to John M. Brays on February 25, 1854. There is no further information on the Smiths, but possibly they loaned money to Lapham so that he could maintain control of the property. Brays was only briefly involved in the enterprise, selling his interest to Lapham on September 6, 1854.

The 1853 hotel was a two-story gable-fronted structure built within twenty feet of the Big Stump (Anable 1854) (Figure 3a). Also constructed at this time (with the financial assistance of the new partner, Samuel Brays) was a barn and a connected bar room and ten-pin bowling alley, the latter located on top of the fallen Big Tree and covered with shakes probably made from a section of that same tree. Lapham evidently ran into financial difficulties with this enterprise, as his carpenter, William M. Graves, filed a lien against the property for \$185.00 for construction of a "dwelling house, bowling alley and barn." According to a lumber lien filed in July 1854, by Richard E. Schonyo & Co., the lumber for the Cottage and Ten Pin Alley cost \$334 for 6,680 board feet and was delivered in May and June of 1854 (Book A of Mechanics Liens, pp. 45-47).

These liens were satisfied September 9, 1854 by paying off Sylvester W. and James G. King. Although the identity of the Kings is unknown, Dr. A. Smith Haynes evidently provided the money and obtained first a one-third and later a one-half interest in the property from Lapham. Business must have improved with this partnership, as a two-story addition to the original hotel was constructed in 1854. This addition was attached to the original structure in an L-shape. It had a gable roof and a veranda on the west side.

Nancy Jane Lapham, wife of William Lapham, was mentioned as being the hostess at the "Washington Mammoth Tree Grove" in the summer of 1854. Unfortunately Nancy Jane was already seriously ill with tuberculosis. On July 1, 1856, the Laphams sold their interest in the Big Trees to Simon Schaeffle and moved to Murphys.

a



b

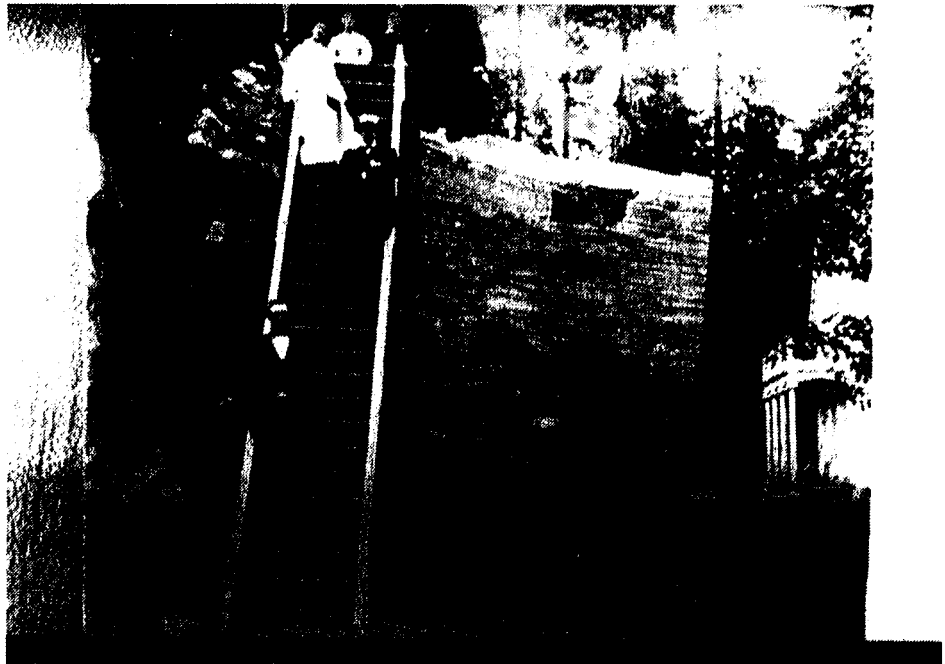


Figure 4. Chip of the Old Block with Haynes Addition in rear: a) ca. 1865; b) post-1870.

In May 1857, A. Smith Haynes held a Grand Ball at the resort. An

...excellent spring floor was laid between the hotel and the Big Stump and both the floor and stump covered by an arbor of cedar boughs beautifully arranged with many candles among the branches.... The scene was romantic and beautiful beyond description (San Andreas Independent, May 1857).

Local newspaper accounts mention that the Fourth of July was the most popular holiday at the Mammoth Tree Grove. Dances were held on the Big Stump, followed by a midnight supper. Ladies complained, however, "that there was no 'spring' to that floor!" (Hutchings 1886:222).

Haynes became the sole owner of what he now called "The Mammoth Tree Grove Hotel" on July 14, 1857, when he purchased the Schaeffle interest. He made extensive improvements to the grounds and buildings with a \$3,000 loan from James L. Sperry and John Perry (proprietors of the well known Sperry and Perry Hotel in Murphys) in August of that year. By May 1858, the improvements had been completed (Figure 3b). One of these was the Haynes' Addition; a one-story, gable-fronted dormitory with Gothic Revival trim and an imposing front portico supported by four columns. This building appears in several photographs and stereopticon views taken during the mid 1860s and early 1870s, directly behind the Chip of the Old Block (Figure 4). The Big Tree Bulletin and Murphys Advertiser, published on the Big Stump in 1858, also mentioned that the "Big Tree Stump is enclosed by an arbor extended to the hotel to make a spacious dining room" (Big Tree Bulletin and Murphys Advertiser, May 21, 1858).

An article in another local newspaper of that same year stated that:

"Mr. A.S. Haynes, proprietor of the Big Tree Grove, has re-fitted and re-furnished his Hotel for the accommodation of customers in a neat and comfortable style. As a fashionable resort, the Hotel is equal to any in the State, and parties visiting the Grove, can go, assured that everything necessary for health or recreation is provided in a liberal manner. One of the peculiar features of the place is that the best of care and attention is bestowed upon all - adding a homelike charm to the many advantages of the place (San Andreas Independent, May 22, 1858).

Haynes evidently envisioned a long-term occupation of the property as he cultivated 30 acres of land and raised 25

tons of oat and barley to feed the teams bringing visitors to the Grove, emigrants from the east, and freighters hauling loads to the Carson Valley. He also planted 75 tons of Lady Finger potatoes and a large quantity of garden vegetables. He planned to establish a botanical area to preserve and cultivate numerous native flowers and plants (San Andreas Independent, May 28, 1858).

The state of the economy, along with possible poor business management, was to kill Haynes' grandiose plans. Events leading to the financial panic of 1858, the loss of many miners to the Fraser River gold strike, and the general depression following the California Gold Rush, sounded the death knell. The Mammoth Grove property was sold at a Sheriff's sale December 26, 1857, to George Fisher for \$137.07 in unpaid taxes for the years 1856 and 1857. Fisher was granted a deed on July 28, 1858 which he sold October 6, 1858 to Smith Mitchell, James L. Sperry and John Perry for \$550.

These owners again changed the name, this time to the "Mammoth Grove Hotel." They were absentee owners and hired Messrs. Danforth and Hooper as the legal hosts (as required by the sale). A. Smith Haynes, however, continued to operate the summer hotel on the property with his bride Julia Bishop as the contest for ownership continued.

Bayard Taylor visited the Mammoth Grove in the summer of 1859, and published his reminiscences in an article in the New York Mercury. He arrived as the sun was setting and described his trip thusly:

Beneath the Sentinels ran the road. In front, a hundred yards further, stood the present white hotel, besides something dark, of nearly the same size. This something is only a piece of the trunk of another tree, which has been felled, leaving its stump as the floor of a circular ballroom, 27 feet in diameter. ... Seating ourselves on the veranda, therefore, we proceeded to study the Sentinels. ... Our quarters were all that could be desired, venison, delicious bread and butter and clean beds all made us regret that our stay was so limited (Knight n.d.:85,86)

In 1860, Sperry and Perry became the sole owners of the property, purchasing Mitchell's share and paying Haynes (who had moved to Tuolumne County) \$1,000 for his interest. In the summer of 1861, they constructed the new Mammoth Grove Hotel which could accommodate 60 lodgers. This was located up the slope, some 600 hundred yards northwest of the Big Stump and Big Tree Cottage. It is presumed that the old, original hotel was removed as this time as it does not

a



b



Figure 5. Big Tree Cottage Area: a) Vischer lithograph, 1861: Sperry's new hotel to left; Big Stump with Pavilion, Chip of the Old Block, and Bar Room and Ten Pin Alley to right; Big Tree Cottage and Barn are gone; b) Big Stump with Pavilion with Haynes Addition to far left, ca. 1880-1885.

appear in Vischer's 1861 drawing (Figure 5a). According to Edward Vischer:

A spacious structure has replaced the original Big Tree Cottage: the foreground of the hotel was to have been laid out as a park, the ornamental shrubbery of which would have formed a striking contrast to the giant proportions beyond (Vischer 1862).

Hutchings noted that "many hundreds of trees had to be cut down 'to let in a little sunlight' to the hotel site" (Hutchings 1886:219).

An emigrant family traveling through the grove in the summer of 1862 mentioned that the Bar Room and Ten Pin Alley were still standing. They were not to survive long, however, for they were crushed by snow the following winter of 1862-1863, the wreckage remaining on ground for many years (Houseworth n.d.; Palmquist 1982). Also in 1861, the cedar bough and canvas pavilion over the Big Stump was replaced with a wooden structure by Sperry and Perry as a protection against the elements. This pavilion survived until 1934 when crushed by snow.

According to informants Ken and Doris Castro of Murphys, who uncovered a reference in a Stockton newspaper, the Big Tree Cottage burned in a fire in August, 1864. This information presents something of a mystery, for the Big Tree Cottage constructed by the Laphams appears to have been gone by 1861 (Vischer 1862). One theory is that the Cottage, or part of the Cottage, had been moved in 1861 to another location where it later burned. The fate of Haynes' Addition is unknown: it was still in evidence in a photograph of the Big Stump taken ca. 1880-1885 (Figure 5b) and does not appear on the 1898 Big Trees U.S.G.S. Quadrangle map.

The other structures within the original Big Tree Cottage complex were the Barn and the Bath House. A large gable-roofed barn with flat-roofed extension on the east side appeared about 50 feet north of the Cottage in Ayres' 1855 lithograph (Figure 3a). A flat-roofed structure in this altitude of heavy winter snows does not appear practical, but perhaps the artist took his proverbial license (as he did with the orientation of the Bar Room in this same drawing). An 1871 account of a visit to the Grove mentioned a Bath House located over the creek. The exact location of this structure has not been ascertained, however Frances Bishop has located several 12 by 12-inch posts, forming a 10-foot square, north of the Haynes Addition and near the creek (Bishop 1977).

A summary of the complex history of ownership and buildings in this area is provided in Appendix A.

Key

- Emigrant Trail Loop ————
- Carriage Road, 1854 ————
- Entrance Road, 1855 ————
- Road to Hotel, 1861 ————

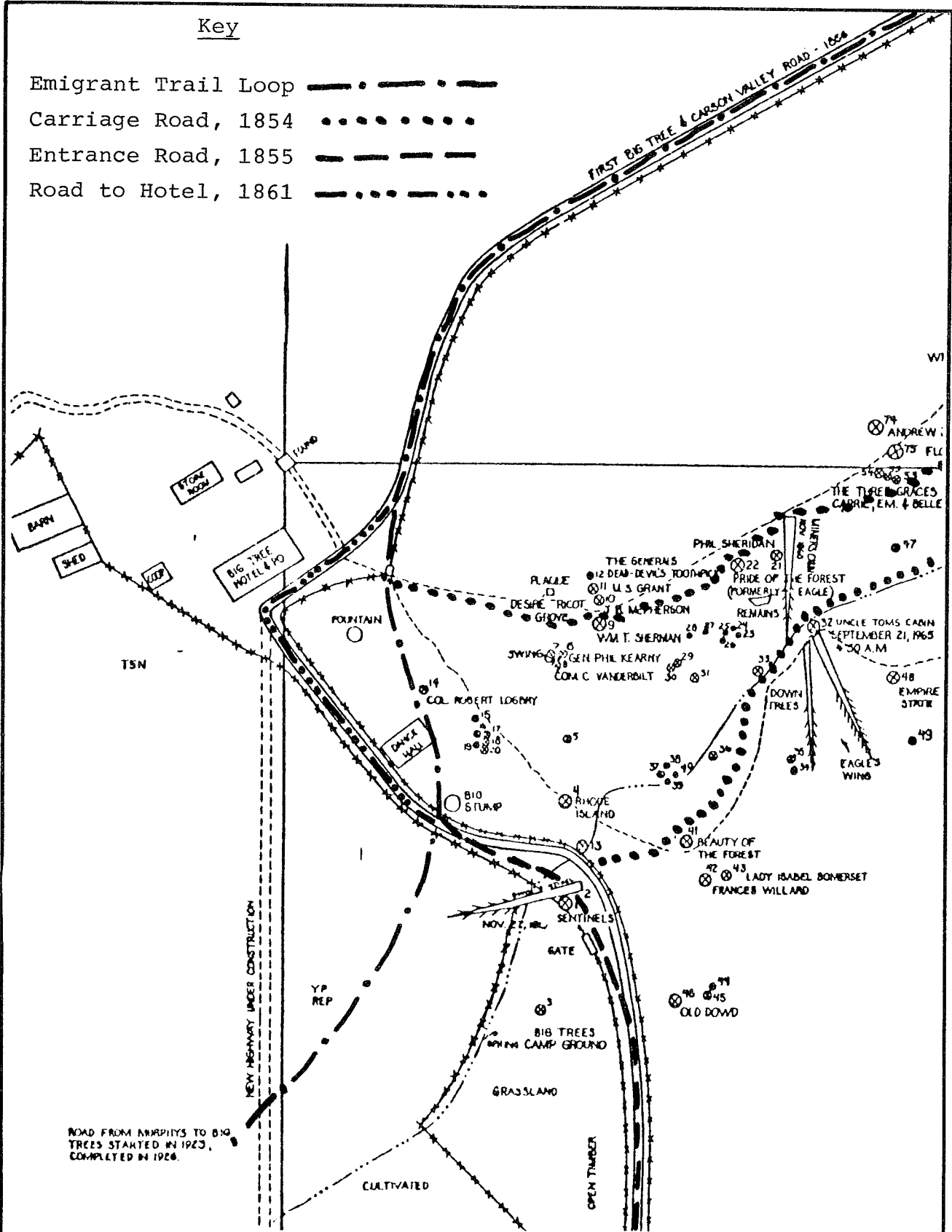


Figure 6. Map of North Grove with historic roads.

Historic Roads

Remnants of the branch of the early Emigrant Road which ran past the Big Tree Cottage appear to the west of the Big Stump and veer north towards the east side of the later 1861 hotel site (Figure 6). This route was used as a loop from the main emigrant trail, located on the ridge to the east (Figure 1) for those travelers who wished to view the Mammoth Grove. A Missouri doctor who traveled through in 1849 described placing 14 saddles around the Big Tree, with room to spare for the party to also sit. Members of the Flanders family, who also came over the trail in 1849, evidently used the Emigrant Trail Loop often. Several other emigrants camped in the grove and left accounts of their diaries (Bishop, personal papers).

In 1854, William Lapham began constructing a walking trail through the North Grove which turned right from this entrance road just east of the Sentinels, and came out at the north side of the one-story building of Sperry's Hotel; this trail was soon improved into a carriage road (Figure 6). An unknown correspondent mentioned this road during a visit in 1859: "Leaving 'The Guardsmen' (Sentinels) we turned to the left into a carriage road which had been laid out through the grove...." (Bancroft n.d.:June 21, 1859). Sperry later built a short branch along the ridge south of and overlooking the grove, a hiking trail today.

In 1855, the entrance road into the grove was built from the main Emigrant Road along the ridge down through the Sentinels. The Big Tree and Carson Valley Road was constructed in 1856, a simple clearing and straightening of the 1949 Emigrant Road.

When Sperry constructed his hotel in 1861, a new route departed from the old Emigrants Trail Loop and detoured to the front of the new hotel (Figure 6). In November, 1919, one of the Sentinels fell and the road moved to the north, where it remains today.

In 1862, a new Big Tree and Carson Valley Turnpike was constructed (Figure 1). This road was another improvement on the two earlier roads to the Carson Valley and reflected the importance of the silver discoveries in Alpine County to cross-Sierra travel. It came up Moran Creek and then joined the earlier roads just south of the Big Tree Grove, followed along the ridge to the northeast, and then cut off from the older roads down the hill east of French Meadows to Dorrington. It joined the older roads again near the present Dorrington Forest Service Station (G.L.O. 1859).

CHAPTER 3

FIELD PROCEDURES

by Betty Jean Ciccio

The purpose of the base map, prepared prior to field work, was to define the project area to be explored and to lay out a grid system within the larger site, part of CA-CAL-282H. The grid plotted on the map was used to tie in the metal detectors' findings and to establish a baseline for the excavation grid at the Haynes Addition. The map also reflected all of the historic features, such as the roads and the Big Stump, in addition to modern trails established by the park system. All the trees within the site that were to be test cored were also drawn on the map and numbered. A composite of this map, without the identified trees, is given in Figure 7. The building locations shown on this map were determined as a result of the present study.

Metal Detecting Survey

Erwin Lee utilized expertise gained at the Custer Battlefield site was instrumental in designing the method used for metal detecting at the Big Tree Cottage site. In order to locate potential sites of structures, identified by concentrations of cut nails, the search used information obtained from historic documents. A grid system was set up to establish transect lines to be used by the metal detectors. This grid was centered around the general location of the 1853 Cottage near the Big Stump, and then was expanded to include surrounding areas where other structures were thought to be located.

The lines were laid out with strings roughly on a north-south, east-west basis and were later surveyed onto the map using transit, compass, stadia rod, and measuring tape. A system was used to designate the Metal Detector (MD) lines where letters designated each line and the cardinal direction of that line. Base Metal Detector Line A (MDA) ran east and west from a zero point due south of Site Datum B. It was the primary line and all other lines were placed perpendicular to it. These north-south lines were designated MDB (N and S), MDC (N and S), MDD (N and S), and MDZ (N and S) (see Figure 7).

The metal detecting crew worked in teams of two. One experienced person operated the detector while a CBTA volunteer probed, exposed the "target" (limiting the size of the hole to three inches) and flagged each artifact (Figure 8). The flag was marked with the initials of the metal

detector operator and a code to designate the type and number of artifacts found.

After the metal detecting was completed, a tape was run along each line. The lines were then divided into two-foot segments to record the area where artifacts were located. All artifacts were then picked up and identified by type and quantity for each two-foot segment. This information was recorded on a field data sheet; duplicate information was recorded on a slip of paper and bagged with the artifact. Upon completion of artifact recovery, all flags, string, and stakes were removed from the MD lines and the dirt returned to the target holes.

TABLE 1
Metal Detector Survey: Artifact Totals

<u>Line</u>	<u>Archi- tecture</u>	<u>Per- sonal</u>	<u>Kit- chen</u>	<u>Int. Fur.</u>	<u>Bulk Stor.</u>	<u>Msc.</u>	<u>Totals</u>
MDAW	29	1	-	-	-	-	30
MDAE	142	5	7	2	-	3	159
MDBS	93	1	8	-	-	2	104
MDBN	2	-	4	-	-	3	9
MDCS	48	1	4	1	-	-	54
MDCN	15	1	1	-	-	1	18
MDDS	6	-	1	1	7	-	15
MDDN	40	-	10	9	17	1	77
MDZS	2	-	4	-	-	-	6
MDZN	7	-	5	-	-	3	15
TOTAL	384	9	44	13	24	13	487
PERCENT	79	2	9	2.5	5	2.5	100

The recovered artifacts were classified according to functional categories (Table 1). These categories are presented in Appendix D and discussed in the following chapter. Most of the artifacts recovered (79%) were associated with Architecture. The remaining 21 percent were primarily distributed among the categories of Personal Items, Kitchen, Interior Furnishings, and Bulk Storage. Of the 384 architectural artifacts recovered, 347 (79%) were nails. Eighty-eight percent of the nails were machine-cut nails, the remainder being wire ("round") nails (Table 2).

Near the completion of the metal detecting survey, Frances Bishop visited the site and pointed out the faint traces of the 1853-1861 road through the site area. This new

a



b

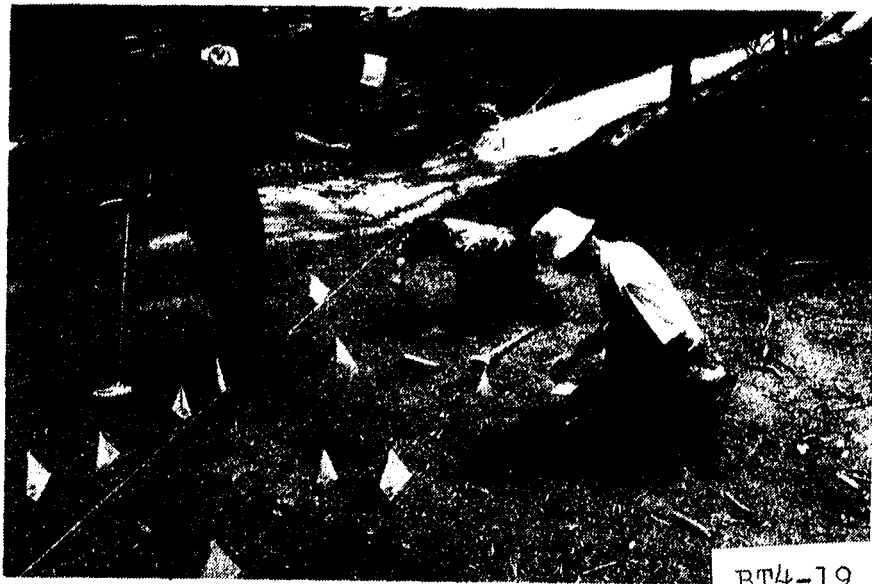


Figure 8. Metal detecting lines and target flags: a) survey director Irwin Lee on right, Hal Thornbrugh (center) with metal detector; Big Stump in rear right; looking southeast; b) locating and flagging targets (left to right) Duane Shintaku, Riva Lee, and Phil Eng.

information meant that our MDZ line did not bisect the proposed barn location, but lay some distance to the southwest (Figure 7). Some random metal detecting was done in this new area and numerous large cut spikes and some timbers were found as well as a tin-can dump dating to the 1930s.

TABLE 2
Metal Detector Survey: Distribution of Nails

Line	Cut Nails			Spikes	Cut Nail Totals	Wire Nails	Total Nails
	Small	Medium	Large				
MDAW	-	2	6	1	9	10	19
MDAE	12	49	55	1	117	15	132
MDBS	9	24	46	3	82	6	88
MDBN	-	-	-	1	1	1	2
MDCS	5	10	27	1	43	2	45
MDCN	3	6	4	-	13	2	15
MDDS	1	1	2	-	4	1	5
MDDN	6	8	15	2	31	1	32
MDZS	-	-	-	1	1	1	2
MDZN	1	3	2	-	6	1	7
TOTAL	37	103	157	10	307	40	347
PERCENT					88	12	100

Haynes Addition Excavation

Procedures

Based on information found through historical research, the previous identification of a possible footing by Curt Kraft, and a concentration of metal artifacts found by the metal detecting survey, the site of the 1858 Haynes Addition was chosen for excavation. The purpose was to identify the exact building location and to expose culturally related artifacts and features which would help define its use and length of occupation. To do this, it was necessary to set up a grid system to guide the investigators (Figure 9). A measuring tape was extended along the site baseline, 115' east from Datum A. This line was then divided into five-foot segments, beginning at 30 feet, by running lines north at five-foot intervals to a distance of 45 feet. The coordinates of the northeast (NE) corner was used to designate each five-foot segment. The grid was tied off with string, resulting in 19 five-foot square units. A datum for measuring depths was set at the NE corner of 35E10N.

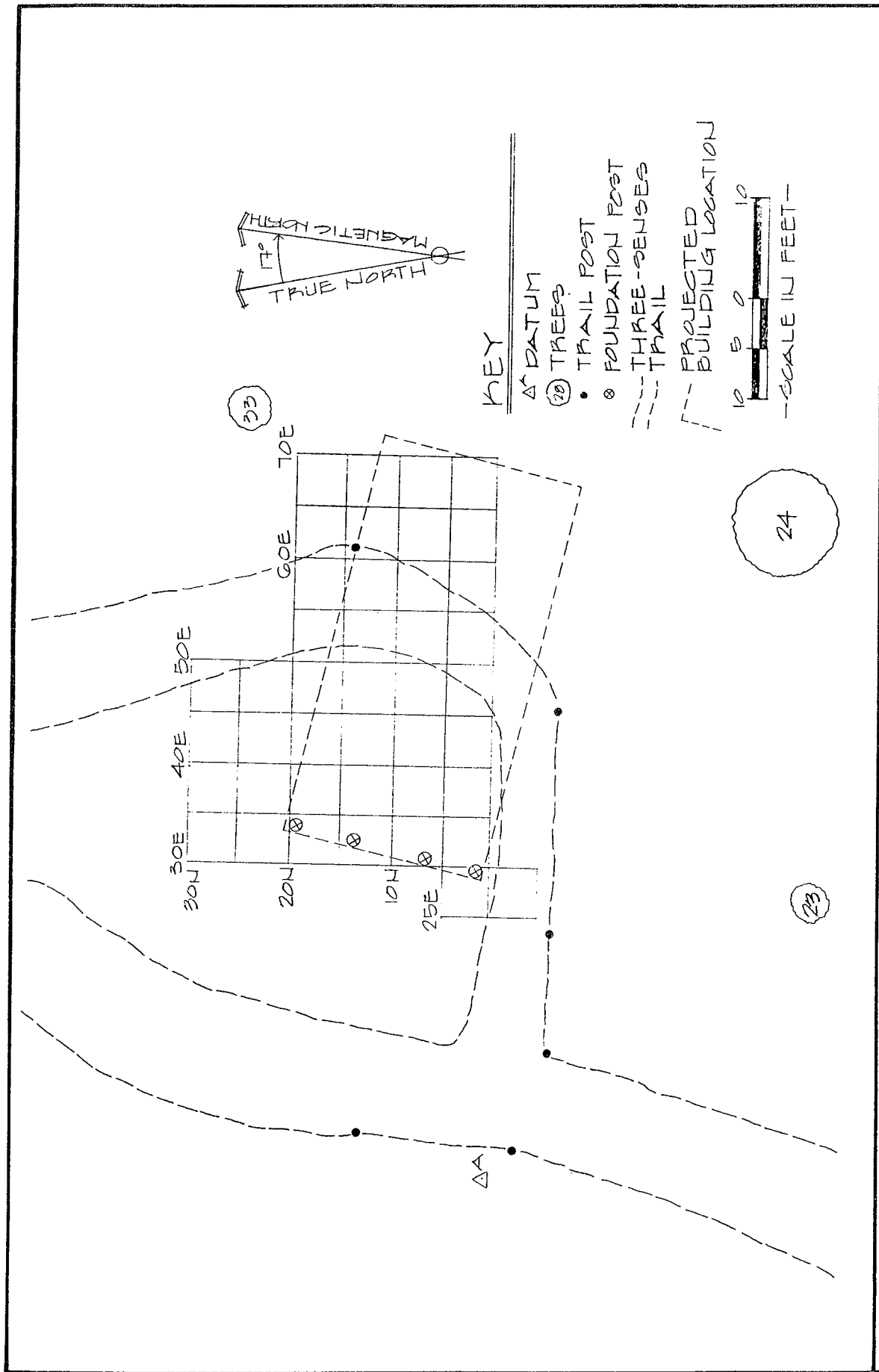


Figure 9. Haynes Addition excavation area.

Excavation was done by the CBTA volunteers divided in teams of two. Each team was assigned a unit to excavate, alternating the digging process with dry screening. They used trowels, brushes, dust pans, measuring tapes, picks, and buckets for this purpose. Both 1/4 inch and 1/8 inch screens were used (the former for the coarser, surface duff) and magnets assisted in locating small nail and other metal fragments.

Photos were taken throughout the excavation of each stratum, and of significant artifacts or features. Class member Pamela Cannon served very ably as site photographer. Plan views were also drawn of each feature. As each stratum was being excavated, team members placed all associated artifacts in a paper bag labeled with site name, unit, quadrant, stratum number, date and names of investigators.

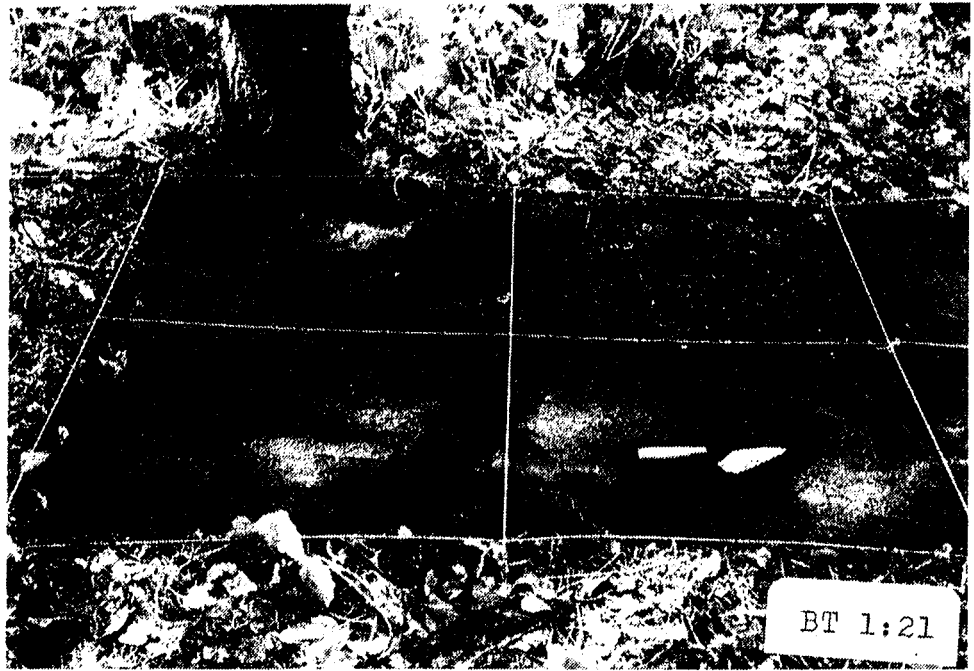
From a total of 19 units, 141 cubic feet of earth were excavated stratigraphically according to procedures specified by Harris (1979). Sequential numbers were assigned by unit to all identified strata which include soil levels, artifact concentrations, vertical features, and interfaces between features (see Appendix B). Only four units were not sampled for soil analysis since they were exploratory units not excavated past Stratum 1. For the other 15 units, samples were taken to determine variations in the soil over the site area. The four corners of each unit were measured for depth before excavation began and at the beginning of each consecutive stratum.

Excavation Summary

Initially, four units were opened in the area thought to contain footings for the Haynes Addition. A primary objective to establish an outline for the building was successfully accomplished for the front of the structure where four footings were uncovered in a straight line (Figure 9; Table 3). To assist in determining the measurements for the actual structure, similar domestic buildings from the same time period in the area were located and measured. It was determined that the length of the building was usually double the width (Judith Cunningham, personal communication). This generalized house type also agreed with what could be seen of the building in historic photographs. The four footings were spaced 6.5 feet apart on center, totaling a 20-foot width. The length of the building was therefore estimated to be about 40 feet. These measurements were used to lay lines across the site showing the projected outline of the structure.

The first unit selected for excavation was 35E10N because the top of what was thought to be a foundation post was visible above the ground (Figure 10a). During the dirt

a



b



Figure 10. Haynes Addition footings: a) top of post in Unit 35E10N, top left quadrant. Strata 1 surface duff has been removed; looking west; b) exposed section of post in Unit 35E10N, looking south.

removal process, three rocks measuring 4 by 5 inches, 3 by 3 inches, and 1 by 1 inch were found packed against the post, probably wedged in the post hole for support. Photos and measurements were taken and the post left in situ (Figure 10b).

In unit 30E5N, another footing was found protruding through the surface. This footing was 6.5 feet south of the one found in 35E10N, in line with the front of the Haynes Addition. The area around the south side of the post was excavated to the bottom looking for evidence of a sawn or cut bottom to verify this identification (undefined bottoms of roots indicate a tree stump). Two rocks, measuring 4 by 3 inches and 3 by 2 inches were found in association with the post in a fashion similar to the rocks found around the one in 35E10N. A cut four-inch spike was also found next to the post. Elevations were taken and the post was left in situ.

TABLE 3
Haynes Addition: Measurements of Footings
(in inches)

<u>Post Location</u>	<u>Type</u>	<u>Top Elevation</u>	<u>Bottom Elevation</u>	<u>Post Diameter</u>
30E5N	vertical round	-7.5	-29	13
35E10N	vertical round	-4.5	-37	15
35E15N	vertical round	-13.5	-31	10
35E20N	cross-layered boards	-14.0	-30	--

While excavating Stratum 3 of Unit 35E15N, another post was uncovered. It was a round piece of wood placed vertically in the ground with a deteriorated center. The decomposed core was removed first and the casing was measured and photographed before removing the entire post from the hole. The bottom of the hole was then examined revealing that the base of the post had a deliberately cut beveled edge.

In Unit 35E20N, while uncovering Stratum 2 in the northeast quadrant, a short horizontal board was exposed in what appeared to be a post hole. The wood was the again 6.5 feet away from and in line with the other two posts along the front of the Haynes Addition; therefore, it was believed to be another footing. The fact that it was horizontally placed or layered in the hole did not rule out the idea that it could be a post as this was also a technique used for footings. The board was cleaned, sketched, photographed

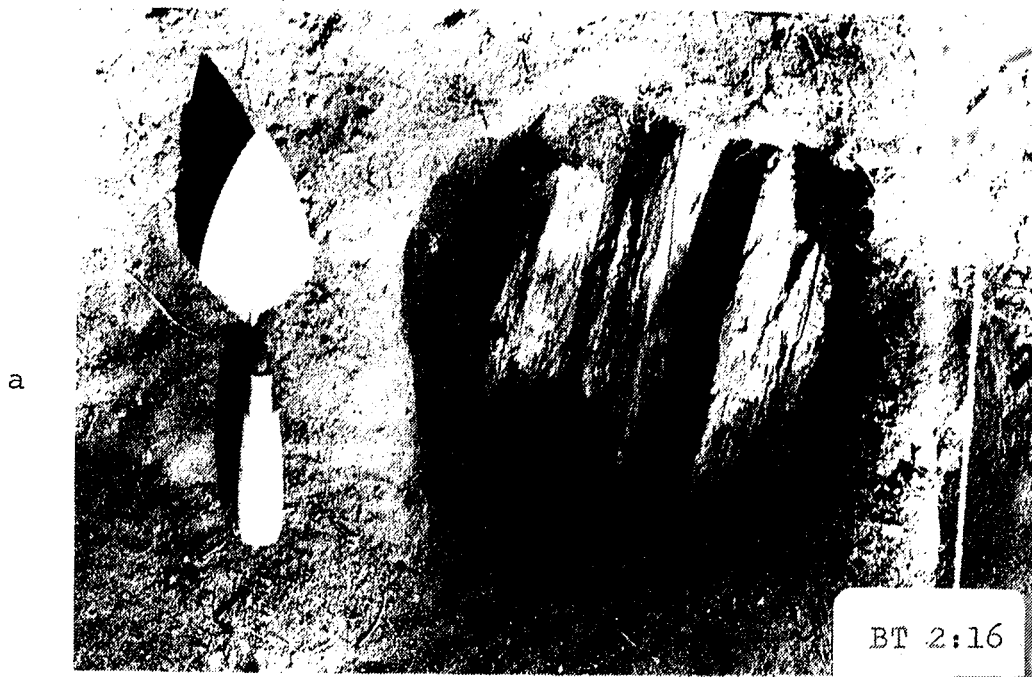


Figure 11. Layered post, Unit 35E20N, north is up: a) top board; b) second board.

(Figure 11a) and removed, revealing another board underneath, at right angles to the top one (Figure 11b). A total of three boards were removed from the hole (Table 4), each longer than the one physically over it; the bottom board was over 3 feet long (Figure 12a). Only samples of the boards were kept as they broke apart upon removal.

An area east of the Three Senses Trail, where footings for the rear of the structure were anticipated, was cleared using a rake and shovel. The exposed surface showed several ash deposits and unidentified depressions in the ground surface. No additional posts were found and no artifacts were recovered.

TABLE 4
Haynes Addition: Measurements of
Cross-Layered Footing in Unit 35E20N
(in inches)

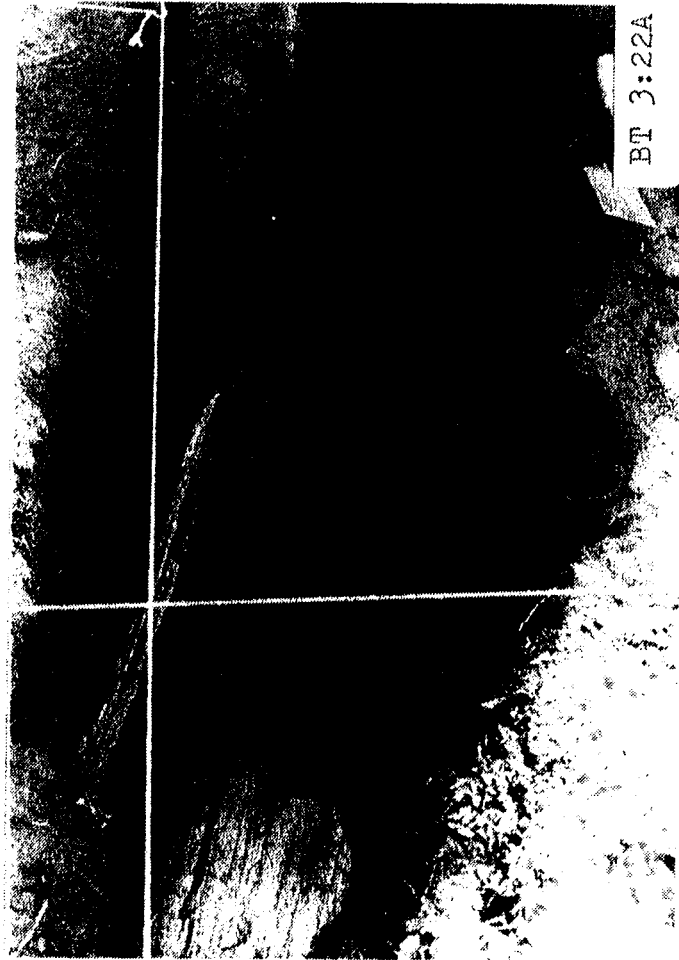
<u>Layer</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Orientation (NS or EW)</u>	<u>Top Elevation</u>
Top	12	7	2.5	NS	-14
Middle	16	10.5	2.5	EW	-20
Bottom	41	12	5	NS	-23

In Units 40E5N, 45E10N, 50E10N, and 55E15N, concentrations of piles lumber were found which are thought to be associated with the former Haynes Addition building. Typical of these features were sawn boards with cut nails, pockets of yellow clay (function unknown) with cut nails embedded in them, pieces of burnt wood, and a few pieces of scrap metal (Figure 12b). Depth measurements were taken and strata numbers assigned. These board piles are further discussed in Chapter 6 below.

Another longer board was found lying along the side of the Three Senses Trail in Unit 55E10N. It was not suspected of being part of the Haynes Addition and probably had been placed there as a trail border.

Two pieces of cast iron and a large piece of window glass were exposed in Unit 40E20N (Figure 13a). The feature was found to extend south into 40E15N and to include an additional large iron artifact (Figure 13b). Upon removal, the artifacts were tentatively identified as two stove parts and a fly wheel arm from a large piece of machinery.

a



b

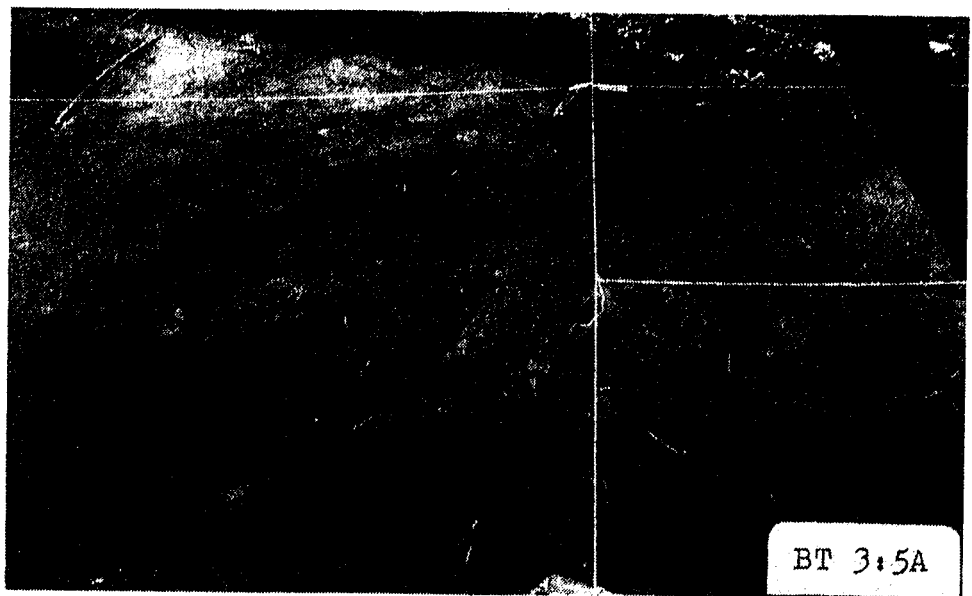
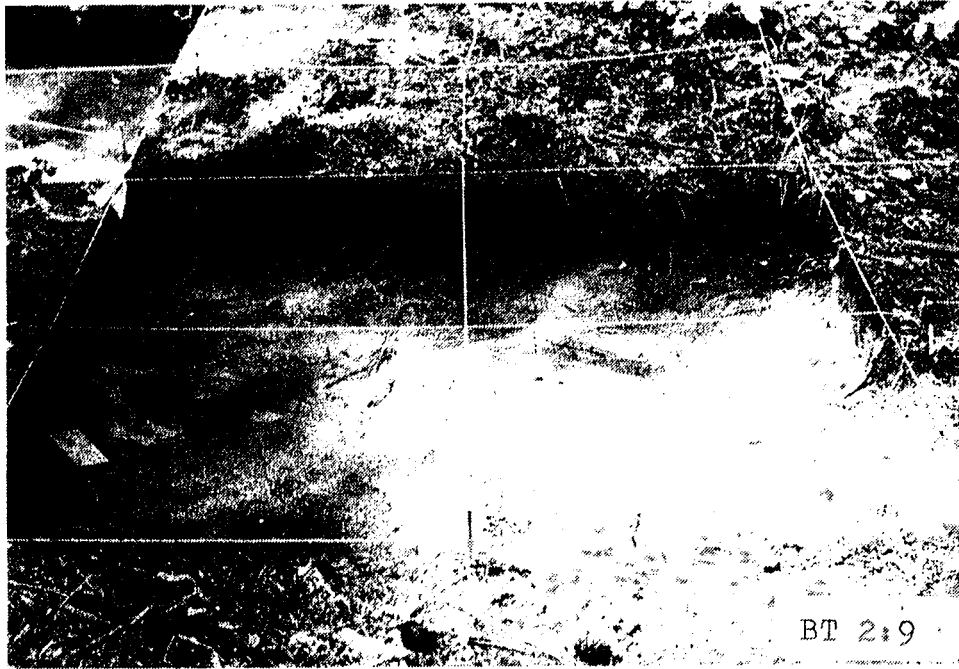


Figure 12. Haynes Addition feature: a) bottom board of layered post, Unit 35E20N. Decayed area in center is location of overlying board; south is up; b) feature of boards with cut nails, Units 45E10N and 50E10N; looking north.

a



b



Figure 13. Metal artifact feature: a) cast iron stove parts and window glass, Unit 40E20N; Looking west; b) exposed stove parts and fly wheel, Units 40E15N and 40E20N. Looking west.

In order to locate additional footings, Units 40E25N, 45E20N, 50E15N, and 60E10N were excavated through the surface debris of Stratum 1. However, no significant structural features were found. Associated artifacts were essentially the same as those found throughout the rest of the site.

At the completion of excavation for the Haynes Addition, the task of backfilling the site was necessary. A penny was placed in the bottom of each of the post holes, so that in the future anyone excavating at the site would know the level of excavation finished by this team. Plastic sheeting was then cut to fit and placed in each unit. The following day, Park personnel backfilled the site. The excavated dirt had been sorted into surface duff and underlying soils as it was being removed and was replaced in the same order, thereby restoring the original appearance of the forest.

CHAPTER 4

LABORATORY PROCEDURES

by Star Hempstead

Several goals need to be achieved in the laboratory processing of items recovered from archaeological excavations. These goals are: (1) careful removal of artifacts; (2) cleaning of materials; (3) accurate and complete record keeping; (4) recording of attributes appropriate to testing site hypotheses; and (5) curation.

Procedures for recovering and identifying artifacts in the field have been detailed in the preceding chapter.

Cleaning

Most artifacts are dirty when they come in from the field. How they are cleaned depends on their material and fragility. Most of the metal pieces found on this site (primarily nails) were dry brushed. Some of the miscellaneous pieces of metal were washed if especially dirty. Ceramics were always washed and glass pieces usually so, since the majority were window and bottle glass. Painted window glass pieces were wiped off carefully. Sample pieces of wood were brushed clean; no preservatives were applied. These, along with paper fragments, were dry brushed or otherwise treated gently. Miscellaneous items such as rubber, canvas, and leather were wiped off gently. Anything that was washed was dried thoroughly before packing.

Record Keeping

An Artifact Lot Register was provided by the California Department of Parks and Recreation and our accession number (P773) assigned. The Register details the accession number, site, artifact lot number, excavation location and strata, collection date and character of the collection. The hand-completed forms were later typed and are included as Appendix C.

The artifacts were placed in plastic bags for storage. Each bag has a small printed tag identifying site, unit, stratum, artifact, and number of items. A prepared catalogue sheet, one for each lot number, was also filled out (Figure 14). In addition to excavation and provenience information, the sheets contain data on individual artifacts including catalogue number, object name, number of pieces, number of items, material, description, nail size, remarks, function, cataloguer, and date catalogued. Catalog sheets were filled

Project Name Calaveras Big Trees Cottage
 Accession No. 773
 Lot No. 35E 15N

State of California - The Resources Agency
 DEPARTMENT OF PARKS AND RECREATION

Unit 35E 15N
 Level ST 1-3
 Collector CRTA
 Date Collected 9-14-87 - 9-15-87

ARCHEOLOGICAL CATALOGUE

Artifact No.	Object Name	No. Pieces	Min. Items	Material	Description (e.g. Color, Cond., Size)	Nail Size	Remarks (X Mend, ID Mark)	Function
1-1	WIRE	1	1	IRON	THIN, FOLDED			A-03-06
NE-2-1	SO NAIL	2	2	IRON	FRAG, RUSTY	M		A-03-02
	SO NAIL	1	1	IRON	RUSTY, RUSTY	L	hd	A-03-02
	BOTTLE LIPS	1	1	GLASS	THICK GREEN			K-03-00
	UNKNOWN	1	1	CERAMIC	IMP WW			K-01-00
SW-2-1	SO NAIL	2	2	IRON	FRAG, RUSTY	L		A-03-02
	SO NAIL	2	2	IRON	COMP. FRAG	M	hd	A-03-02
	UNKNOWN	1	1	IRON	SMALL ROUND BRG			UNK
SE-2-1	PLATE	1	1	CERAMIC	IMP WW / SMALL FRG			K-01-03
	SO NAIL	2	2	IRON	FRAG, FRAG	M		A-03-02
SE-2-2	SPURD SW	1	1	IRON	RUST, RUSTY	L		A-03-02
	SPURD SW	2	2	IRON	SCALLOP HANDLE, RUSTY			K-04-00
SW-3-1	SO NAIL	2-6	2-6	IRON	FRAG, COMP, RUSTY	M	hd	A-03-02
	SO NAIL	2-3	2-3	IRON	FRAG, COMP, RUSTY	M	hd	A-03-02
	SO NAIL	17	17	IRON	FRAG, COMP, RUSTY	L	hd	A-03-02
	SO NAIL	2-9	2-9	IRON	FRAG, COMP, RUSTY	L	hd	A-03-02
	SO NAIL	10	10	IRON	FRAG, COMP, RUSTY	L	hd	A-03-02
SW-3-2	SCREWS	3	3	IRON	(2-1) (1-1/4) RUSTY			A-03-09
	RD NAIL	1	1	IRON	SLIGHTLY RUSTY	(1)		A-03-03
	UNKNOWN	1	1	IRON	FRAG & FRAG			A-03-00
	BUTTON WASH	1	1	IRON	FRAG, RUSTY 3/4" HOOD			G-02
	TACK	1	1	BRASS	FRAG			A-03-33
	BUTTON	1	1	IRON	BRASS			CL-04-00
	UNKNOWN	1	1	SOLDER	SMALL ROUND, SILVER			UNK

CATALOGUED BY SHERIDAN - HEMSTEDS
 DATE 10-17-87

DPR 361 (Rev. 6/86)

Figure 14. Catalogue record form.

in by hand in the laboratory and are curated with the collection.

Artifact Variables

Cultural Phases

The cultural phases established for the Haynes Addition site reflect historic events associated with the area. Their definition was also influenced, however, by the nature of the archaeological strata. Identified strata were correlated throughout the site and then assigned to phases based on their physical characteristics and artifact contents (see Harris Matrix, Figure 17, below). Some important time periods were not discernible in the site soils while other minor episodes were well recorded. The historical/archaeological Phases which were established for the site are:

- Phase I: Pre-1852, Prior to historic period occupation;
- Phase II: 1857-ca. 1885, Occupation of Haynes Addition;
- Phase III: a) ca. 1885-ca. 1895, Removal of Haynes Addition; and, b) ca. 1895 to Modern; and
- Phase IV: Modern.

Phase I strata are those which underlie the historic occupation. They were only excavated to any depth in the

TABLE 5
Haynes Addition: Total Artifacts by Group and Phase

<u>Group</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>Total</u>	<u>%</u>
Architecture	61	50	819	686	1616	82
Kitchen	1	4	87	110	202	10
Clothing			4	32	36	2
Interior Furnishings	1	2	16	3	22	1
Arms		1	2	1	4	
Personal			4	2	6	
Farm/Land				16	16	
Shop/Industrial			4	1	5	
Transportation				1	1	
Bulk Storage			1		1	
Communications			1		1	
				Total	34	2
Unknown	<u>6</u>	<u> </u>	<u>12</u>	<u>39</u>	<u>57</u>	<u>3</u>
TOTALS	69	57	950	891	1967	100

TABLE 6
Haynes Addition: Selected Artifact Groups by Phase

Architecture

Class	I	II	III	IV	Total	%
Cut Nail	39	21	653	571	1284	79
Wire Nail			8	22	30	2
Spike			6	10	16	1
Window Glass	12	1	121	57	191	12
Misc.	<u>10</u>	<u>28</u>	<u>31</u>	<u>26</u>	<u>95</u>	<u>6</u>
Totals	61	50	819	686	1616	100

Kitchen

Class	I	II	III	IV	Total	%
Bottle Glass	1	4	75	75	155	77
Ceramics			5	12	17	8
Misc.	—	—	<u>7</u>	<u>23</u>	<u>30</u>	<u>15</u>
Totals	1	4	87	110	202	100

Clothing

Class	I	II	III	IV	Total	%
Buttons			3	27	30	83
Misc.			<u>1</u>	<u>5</u>	<u>6</u>	<u>17</u>
Totals			4	32	36	100

Interior Furnishings

Class	I	II	III	IV	Total	%
Mirror Glass	1		4	1	6	28
Lamp Chimney		2	5	1	8	36
Stove Parts	—	—	<u>7</u>	<u>1</u>	<u>8</u>	<u>36</u>
Totals	1	2	16	3	22	100

northwest quadrant of 35E10N. The small number of artifacts from this phase (Tables 5-7) reflects this minimal excavation. Artifacts present are presumed to have migrated downward from overlying strata. Phase II deposits were limited to the four foundation posts and associated soils and therefore also resulted in few recovered artifacts. The

vast majority of the artifacts come from Phase III and Phase IV deposits. This reflects not only the greater amount of excavation in these levels but also denser concentrations of artifacts. Phase III strata included the piles of boards and other artifacts which were deposited on the original ground surface, most likely when, or soon after, the Haynes Addition was dismantled. Phase IV includes the upper, loose duff of the forest floor and features related to the modern Three Senses Trail. The soft forest soils have allowed for considerable vertical movement of artifacts and the association of individual artifacts with the phases assigned to their strata must be taken loosely.

Functional Classification

All catalogued artifacts were assigned a functional code to facilitate analysis. The functional coding for historic artifacts developed by Julia Costello for the U.C.S.B. Coding Manual (1984) was used for this purpose (Appendix D). Each artifact was assigned to a general functional Group (Table 5) and then to increasingly specific classes and subclasses (Table 6). Only 3 percent of the artifacts recovered could not be assigned to a Group category. Interpretations of these distributions are found in Chapter 6.

Nail Sizes

One of the goals of the archaeological excavation at the site of the Haynes Addition was to locate the remains of the structure and its associated activities. Since a predominance of artifacts found at this site were nails, particularly cut nails, and these artifacts are instrumental in locating and interpreting structure locations, a nail-size category was added to the catalogue sheet. It was felt that size categories should reflect the actual types of nails found on the site and not rote functional categories. As a result of studying the size clusterings of the first 50 nails to be catalogued, three size categories were established: small, medium, and large (Table 7).

A page from an 1865 Hardware catalogue (Russell and Erwin 1865) which details cut nails and spikes (Figure 15) was used to correlate historic nail pennyweights with our established categories:

Small Nails	Fine 3d, 2d, and 3d
Medium Nails	4d, 5d, and 6d)
Large Nails	8d, 10d, and 12d
Spikes	12d and larger

A type collection of nails was made to help cataloguers identify nail sizes. Where exact pennyweights could be determined, this size was written in the "Remarks" column of the Catalogue sheet (Figure 14); virtually all nail

CUT NAILS.

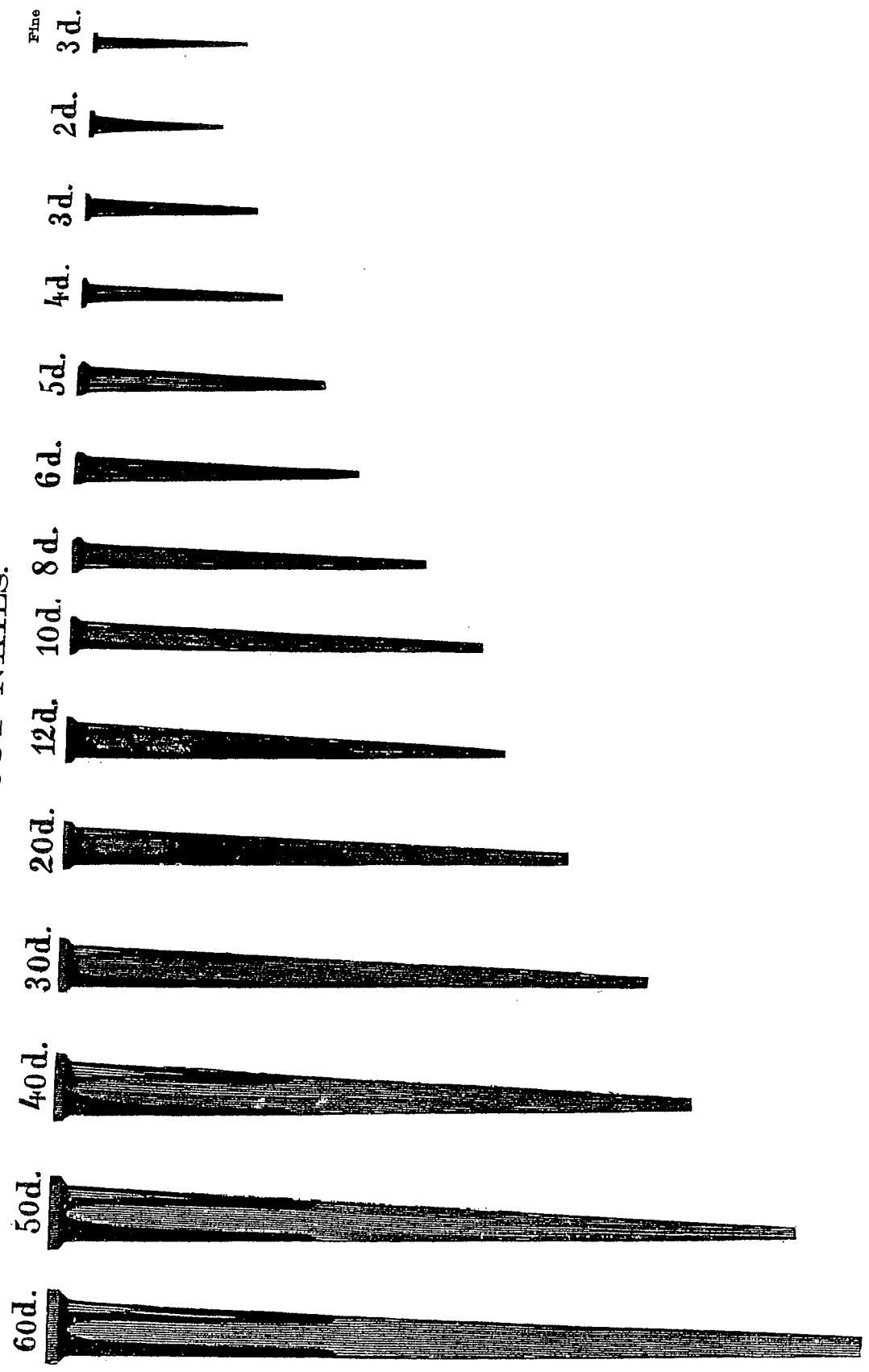


Figure 15. Nails and spikes from 1865 hardware catalogue (Russell and Erwin 1865:251).

fragments could reliably be assigned one of the size categories. Only nails with heads were counted as complete items. Nail-size categories facilitated tabulating nails and comparing percentages to the types of nails needed to build the structure (see discussion in Chapter 6). Separate catalogue numbers were given to cut nails from each size category, and to wire nails.

TABLE 7
Haynes Addition: Cut Nail Totals by Size and Phase

<u>Phase</u>	<u>Small</u>	<u>Medium</u>	<u>Large</u>	<u>Total</u>
I	4	14	21	39
II	2	10	9	21
III	49	332	268	649
IV	<u>21</u>	<u>271</u>	<u>283</u>	<u>575</u>
Total	76	627	581	1284
Percent	6	49	45	100

Storage

After cleaning, recording and cataloging were finished, the artifacts were packed for storage. The preservation of these materials is important to prevent loss, destruction, or deterioration. Records and artifacts should also be accessible to interested persons, other researchers, and for museum displays. To facilitate these goals, the artifacts were grouped by unit, quadrant, and stratum into labeled plastic bags and placed in labeled boxes. Any item that is needed can easily be retrieved easily from its box. The collections are stored at Calaveras Big Trees State Park in a designated storage place.

CHAPTER 5

DENDROCHRONOLOGY SURVEY: BIG TREE COTTAGE EXCAVATION

by Wayne Harrison

Objectives

Although the location of the Big Tree Cottage was fairly well determined from archival photographs and lithographs, the sites of associated out-buildings were not as well recorded. It was felt that attempting to estimate the historic landscape, ca. 1853 to 1870, would be useful in providing clues as to potential building locations. This would require determining which trees currently standing were definitely or likely to have been alive at the time, and what their diameters might have been. In order to determine potential locations, the Big Tree Cottage site was mapped for mature trees over the entire area of about 270 feet by 500 feet. Individual trees were placed on the map only if, by visual estimate of age, the trees were considered to be old enough to have been synchronous with the existence of the Cottage and Haynes Addition (1855-ca.1885). Increment borings were taken for each tree, and these were used to estimate the tree age and the diameter in the 1850s. In this way, an estimate of the historic landscape could be constructed, and building sites identified either by photo comparison with notable trees determined to be concurrent, or by the elimination of potential sites due to the presence of interfering vegetation.

Methods

Selected trees were mapped and identified by species, diameter at breast height (dbh) and an assigned reference number.

In order to estimate tree age, an increment boring was taken from each tree, using an 18 inch Haglof borer. One sample was taken from each tree at a point that seemed to avoid any areas of tree damage, callous growth, or, if the tree was leaning, compression and tension wood. The ideal method of sampling trees requires at least two increment borings, and more if the first two are significantly different in the resulting data. However, in the interest of time, and since the objective was for rough estimates of early tree age and diameter, it was decided that one sample per tree would be sufficient.

The ideal increment boring is one that reaches the center (pith) of the tree. Since trees are rarely perfectly symmetrical about the pith, and since most of the trees sampled were too wide for the borer to reach the center, most samples were not ideal, and only served to provide a basis for estimating the desired information.

The borings were measured for bark thickness (which was then discarded) and then mounted on cardboard. After being sanded to highlight the wood grain, each sample was measured for length and the growth rings counted. True increment width can only be measured perpendicular to the growth ring, and this was not always displayed on the samples. When the increments were at an angle significantly off from 90 degrees to the axis of the boring, the sample was treated as the hypotenuse of a right triangle, with the base being the hypothetically true increment length. This base was measured by visually constructing the triangle with rulers held up to the sample. An average overall increment was then derived for each sample by dividing the actual or estimated length by the number of increments.

Since tree growth rates have a tendency to slow with age, the inner (younger) increments are typically wider than the outer rings. This was true of most of the samples collected. Therefore, the inner rings of each sample were examined and a visual estimate made of the innermost section that displayed increments of similar widths. This section was then measured and counted as described above.

This estimate assumes that the undisclosed increments will at least be equal to the maximum increments displayed in the sample. In fact, the increment may be larger, resulting in an even younger tree. This was undoubtedly true with some of the trees sampled, and the estimates of minimum age should be considered as being based on the best available evidence only.

Results

Table 8 summarizes the data obtained from the increment borings. Original data (either collected in the field or measured directly from the samples) was used to derive estimated values for the theoretical maximum and minimum tree ages and diameters.

Maximum ages were determined by deriving the average increment using each entire sample (TL/TR). This figure was then divided into the estimated radius to obtain a theoretical age of the tree. Since this estimated average increment includes the outer narrow rings, the value tends to be small, and the resulting age is large.

Minimum ages were determined in a different manner. Since a portion of the tree's history is known (represented by the sample, and a portion is unknown (represented by the innermost, unsampled increments), a minimum age would consist of the a "best guess" of the unknown portion added to the known segment. As already mentioned, since trees tend to grow more quickly during the early portion of their lives, it was assumed that the unsampled rings should be at least as wide as the widest increments in the known portion. Each sample was examined for the number of rings contained in the longest sample segment of visually distinguishable large increments, and a maximum average increment determined. This figure was then used in the formula:

$$(R - TL)/I(MAX.) + TR$$

Where: R = Estimated Tree Radius
 TL = Total Sample Length
 I(MAX.) = Maximum Average Increment
 TR = Total Sample Increments

Estimates of the 1853 diameter were determined in three ways. If the total number of sampled rings was equal to or greater than 134 annual increments, then the estimated radius was simply reduced by the actual measurement of the 134 year segment, then this was converted to diameter. When fewer than 134 increments were sampled, then maximum and minimum estimates were created.

The formulas for determining the maximum and minimum diameters for the 1853 target year are essentially the same. Each reduce the estimated current age by 134 years, multiply the result by the appropriate average increment, double this value to convert from radius to diameter, and add an adjusted value for bark thickness. The formula for this is:

$$(A-134) \times 2I + (2B \times (A-134) \times 2I / 2R)$$

Where: A = Tree Age (Maximum or Minimum)
 B = Bark Thickness
 R = Estimated Tree Radius

Only trees with a current age estimate greater than 134 years are counted.

Conclusions

The dendrochronological analysis of the existing trees has provided a reliable method of estimating the general size and age of the trees during the target period, although the methodology is too inexact to provide estimates of the exact age and size of specific trees. It should also be noted that

this method does not provide data on trees that existed

TABLE 8
Results of Tree Ring Study

SAMP	SPEC	DBH	RADIUS	BARK	TL	TR	AVERAGE INCRMNT	INT RNGS	INT LNGBTH	MAX.AVE INCRMNT	MAX AGE	MIN AGE	MAX DIA	MIN DIA
01	IC	50.5	24.56	0.7	13.00	110	0.12	26	6.00	0.23	208	160	17.9	12.4
02	GS	67.0	33.06	0.4	10.37	62	0.17	14	2.50	0.18	198	189	21.6	19.9
03	GS	61.0	30.00	0.5	11.50	71	0.16	41	6.69	0.16	185	184	16.9	16.7
04	GS	31.5	14.50	1.3	12.12	121	0.10	20	4.00	0.20	145	133	2.3	0.0
05	WF	52.0	24.38	1.6	11.69	90	0.13	33	5.00	0.15	188	174	14.8	12.8
06	IC	25.0	11.63	0.9	10.87	101	0.11	31	4.25	0.14	108	107	0.0	0.0
07	FP	50.6	22.61	2.7	9.94	78	0.13	15	3.50	0.23	177	132	12.2	0.0
08	SP	52.0	24.31	1.7	11.31	76	0.15	22	4.06	0.18	163	146	9.3	4.9
09	IC	41.5	19.75	1.0	11.93	243	0.05	76	4.80	0.06	402	367	29.9	0.0
10	IC	44.5	20.56	1.7	13.00	119	0.11	23	5.00	0.22	188	154	12.7	9.3
11	IC	42.5	19.31	1.9	11.06	93	0.12	15	4.13	0.28	162	123	7.4	0.0
12	WF	47.0	22.00	1.5	11.75	124	0.09	24	6.00	0.25	232	165	19.8	16.5
14	IC	28.0	12.56	1.4	11.97	149	0.08	29	6.13	0.21	156	152	11.2	0.0
15	IC	35.0	13.63	3.9	10.37	91	0.11	17	4.50	0.26	120	103	0.0	0.0
16	SP	77.5	35.56	3.2	11.31	117	0.10	27	4.38	0.16	368	266	48.9	46.5
17	SP	56.0	28.00	0.0	11.19	75	0.15	21	4.50	0.21	188	153	16.0	8.3
18	IC	56.0	23.63	4.4	9.44	145	0.07	61	5.06	0.08	363	316	35.5	0.0
19	IC	41.5	18.38	2.4	10.81	216	0.05	63	3.69	0.06	367	345	27.7	0.0
20	IC	61.0	29.69	0.8	12.31	116	0.11	36	5.00	0.14	280	241	31.8	30.6
22	GS	52.5	25.25	1.0	12.12	38	0.32	16	5.69	0.36	79	75	0.0	0.0
23	IC	44.5	20.25	2.0	12.00	90	0.13	33	6.25	0.19	152	134	5.2	0.0
24	GS	121.0	54.38	6.1	7.75	128	0.06	46	4.50	0.10	898	605	101.9	101.4
26	SP	33.0	16.06	0.4	13.00	89	0.15	44	7.00	0.16	110	108	0.0	0.0
27	IC	58.5	27.38	1.9	7.50	151	0.05	49	4.00	0.08	551	395	45.7	0.0
28	IC	59.5	27.44	2.3	10.06	264	0.04	53	3.13	0.06	720	558	52.5	0.0
29	WF	43.0	20.44	1.1	14.25	128	0.11	41	5.87	0.14	184	171	11.6	11.2
30	WF	41.0	19.38	1.1	13.12	115	0.11	26	5.44	0.21	170	145	8.6	4.8
31	IC	46.5	20.00	3.3	10.06	201	0.05	37	2.63	0.07	400	341	33.7	0.0
32	WF	52.5	25.56	0.7	12.75	91	0.14	38	6.75	0.18	182	163	13.9	10.6
33	IC	54.0	26.56	0.4	13.94	198	0.07	80	6.13	0.08	377	363	35.2	0.0
34	WF	56.0	27.00	1.0	11.94	113	0.11	23	5.38	0.23	256	177	26.6	21.0
35	SP	58.0	28.56	0.4	12.69	76	0.17	19	4.75	0.25	171	139	12.6	2.8
36	SP	55.0	26.81	0.7	13.19	61	0.22	21	6.32	0.30	124	106	0.0	0.0
38	FP	47.0	23.50	0.0	12.19	92	0.13	12	4.75	0.40	177	121	11.5	0.0
40	FP	34.0	16.13	0.9	12.94	91	0.14	18	7.06	0.39	113	99	0.0	0.0
41	SP	102.5	50.50	0.8	11.00	102	0.11	41	5.13	0.13	468	418	73.2	72.0
42	FP	70.0	34.56	0.4	12.31	146	0.08	33	6.81	0.21	410	254	47.6	0.0
43	FP	60.0	29.00	1.0	12.87	326	0.04	89	5.93	0.07	735	568	51.7	0.0
44	FP	34.0	16.56	0.4	13.06	95	0.14	39	7.13	0.18	120	114	0.0	0.0
46	WF	39.5	19.06	0.7	13.06	177	0.07	58	6.62	0.11	258	230	23.8	0.0
47	GS	108.5	52.50	1.8	11.87	85	0.14	39	6.38	0.16	376	333	69.8	67.3
49	WF	37.0	17.44	1.1	11.12	189	0.06	70	7.38	0.11	296	249	28.0	0.0
50	IC	54.5	26.44	0.8	13.44	116	0.12	24	6.13	0.26	228	167	22.5	17.3
52	SP	55.5	27.13	0.6	12.00	142	0.08	56	6.00	0.11	321	283	33.0	0.0
53	SP	78.0	38.00	1.0	11.56	124	0.09	40	5.56	0.14	408	314	52.3	51.4

Specimen Key: PP = ponderosa pine; GS = giant sequoia; WF = white fir; IC = incense cedar; SP = sugar pine.

during this period but that have been lost due to natural mortality or deliberate removal, and of which no sign currently exists. Therefore, it is only possible to provide a partial reconstruction of the historic landscape.

The results show that the trees known to exist were part of an uneven aged mixed-conifer stand. The major change seems to be in ponderosa pine (Pinus ponderosa) density, with

an increase in number over the past 134 years. This is consistent with the suspected modification of the site, involving thinning of overstory trees and the opening of the canopy, resulting in a somewhat more favorable growing environment for ponderosas. The previous stand composition is typical of the borders of giant sequoia groves, with a mixture of white fir (Abies concolor), incense cedar (Calocedrus decurrens), and sugar pine (Pinus lambertiana) growing amid giant sequoias (Sequoiadendron giganteum) within the grove and a few ponderosa pines outside the grove.

CHAPTER 6

INTERPRETATIONS OF DATA

by Julia G. Costello,
Betty Jean Ciccio, and Star Hempstead

Proposed Building Locations

Figure 7 shows the location of the final, proposed positions of the historic buildings. The locations of the buildings are based on historic documentation and on results of the archaeological investigation. Some of the dimensions for these buildings were determined while others were estimated based on similar contemporary buildings.

The locations of the Bar Room and Ten Pin Alley are well known from historic photographs and sketches and from their physical location on the extant fallen Big Tree. Both can be fairly accurately measured from the fallen Big Tree: the Ten Pin Alley is 10 feet by 82 feet; the Bar Room is 14 feet wide and 16 feet long, sitting directly directly on the west end of the fallen Big Tree where it has been carved out. The Haynes Addition is generally located from historic photographs (Figure 4) and was more precisely located based on the archaeological discovery of the front footings. Its dimensions are 20 feet wide and an estimated 40 feet long.

The locations of the Cottage and the Barn are generally known from the 1855 drawing by Ayres (Figure 3a) and from the historical reference to the Cottage being less than 20 feet from the Big Stump. It was placed south of the MD-A line based on the absence of cut nails to the north of that line. The two wings (built in 1853 and 1854) appear in the historic sketches to be equal in size and are estimated to be about 16 feet by 30 feet each.

Metal Detector Survey

Cut Nail Distribution and Building Locations

Figure 7 shows the location of the metal detector lines in relation to the proposed positions of the historic buildings. One of the major goals of the archaeological investigation was to determine the location of the first structures built at Calaveras Big Trees. Frame buildings (which would exclude the initial cabin constructed in 1852) are often well defined archaeologically by the presence of cut nails, and nails are very appropriate targets for metal detectors. The paths that the metal detecting crews followed were therefore set up through parts of the site where the historic buildings were thought to have been located.

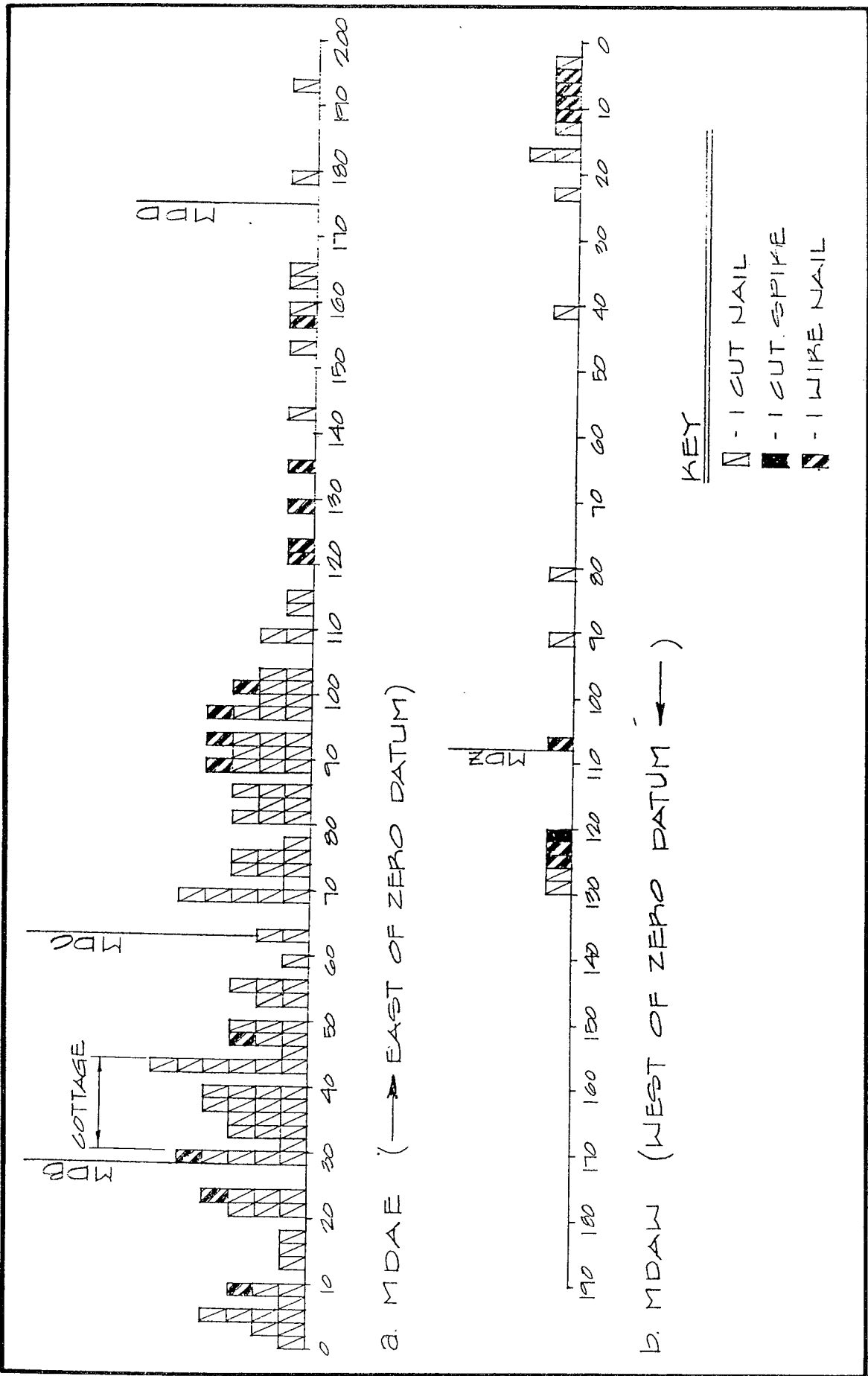


Figure 16. Metal Detector Survey, Distribution of Nails:
 a) MDAE - Metal Detector Line A, East; b) MDAW - Metal Detector Line A, West.

Although metal artifacts other than nails were found, they only constituted 21 percent of the artifacts recovered and could not be securely associated with this early occupation. Analysis of the results of the metal detector survey therefore concentrated on interpreting the distribution of the recovered nails.

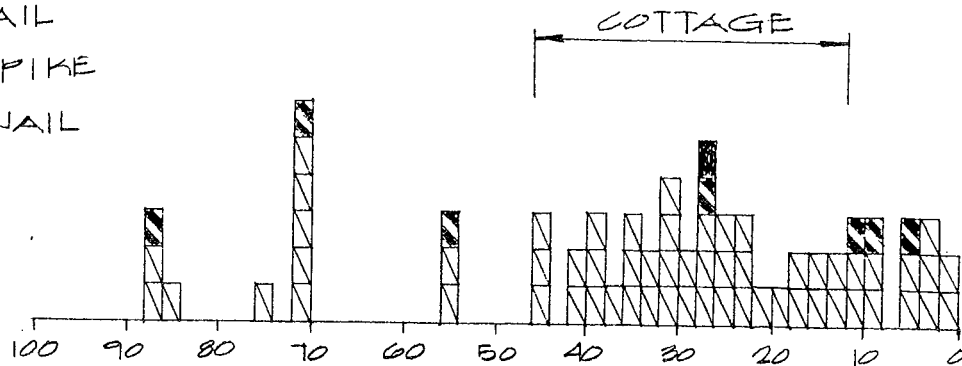
The distributions of cut nails and spikes, and wire nails are given in Figure 16. The highest concentration of cut nails is found at the intersection of Metal Detector (MD) lines A, B, and C - close to the proposed location of the Cottage. Since very few nails were located north of MDA (on MDBN and MDCN) the final proposed building location was established south of this line. Along MDAE (Figure 16a,b), The density of cut nails is seen to extend about 35 feet west and about 75 feet east of the building site. This MD line follows the major walking trail through this area and it is likely that this wide distribution is due to movement of the artifacts by foot traffic; the more extensive distribution to the east is probably due to the downhill slope in this area. The nail concentrations in MDBS and MDCS (Figure 16c, e) also extend further to the north and south than was anticipated. This area is also heavily trafficked and the same processes discussed above could account for this observed distribution.

The Haynes Addition is crossed by MDDN between about 55 and 75 feet. Although a thin scatter of cut nails shows close to this location (Figure 16h), the numbers are considerably smaller than what was found in the Cottage area. The reasons for the lack of "visibility" of the Haynes Addition are unknown. The thicker cultural strata here, due to lack of foot traffic, may have masked the nail density. This was also the last line worked at the end of a long day and the metal-detecting teams may simply have been less attentive. That the Haynes Addition was located at this spot, provides a caution to the rote use of metal-detector surveys for locating structures.

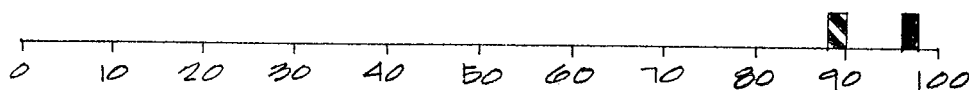
South of the actual building location, between 32 and 41 feet on MDDN, was a dense concentration of metal artifacts just below the surface (Figure 16h). Time did not allow for a count and collection to be made in this area as uncovering and recording each reading would have resulted in an excavation in itself. Artifacts included numerous cast iron stove parts and metal strapping in addition to architectural remains. The dating and association of this concentration of metal artifacts are unknown. Several other similar, although smaller, concentrations of large metal items close to the surface were also found to the east of the Haynes Addition during an unsystematic survey. There is an oral history account from Frances Bishop and former manager of the hotel Ernest Bernasconi (1988) that debris from the 1943 hotel fire was distributed throughout the grove. These dense

KEY

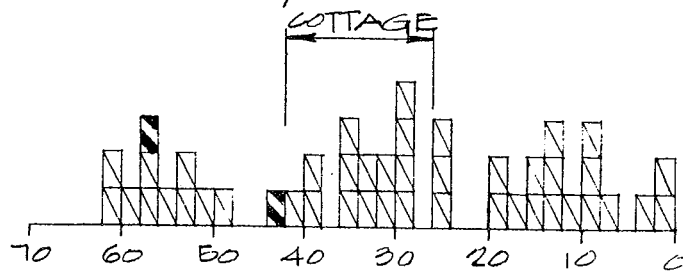
- ▨ - 1 CUT NAIL
- - 1 CUT SPIKE
- ▩ - 1 WIRE NAIL



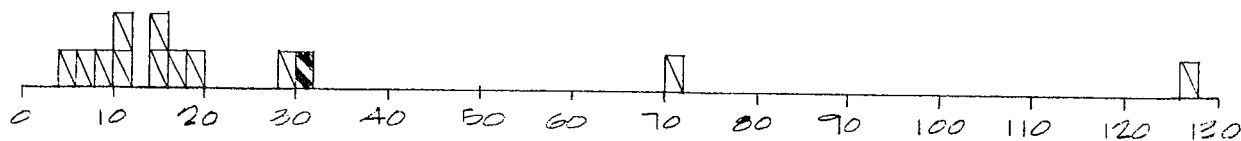
c. MDBS (← SOUTH OF MDA)



d. MDBN (→ NORTH OF MDA)

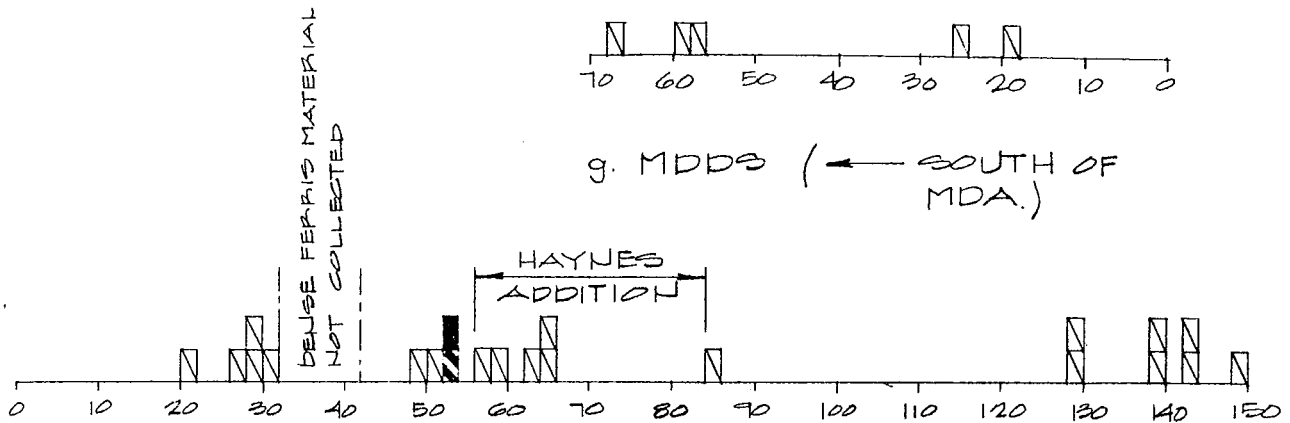


e. MDCS (← SOUTH OF MDA)

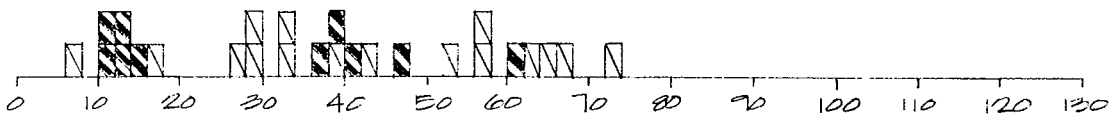


f. MDCN (→ NORTH OF MDA)

(Figure 16, continued): c) MDBS - Metal Detector Line B, South; d) MDBN - Metal Detector Line B, North; e) MDCS - Metal Detector Line C, South; f) MDCN - Metal Detector Line C, North.



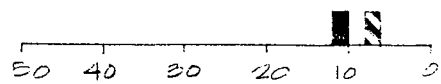
g. MDDS (← SOUTH OF MDA.)



h. MDDN (→ NORTH OF MDA)

KEY

- ▭ - 1 CUT NAIL
- - 1 CUT SPIKE
- ▨ - 1 WIRE NAIL



j. MDZS (← SOUTH OF MDA)

(Figure 16, continued): g) MDDS - Metal Detector Line D, South; h) MDDN - Metal Detector Line D, North; i) MDZN - Metal Detector Line Z, North; j) MDZS - Metal Detector Line Z, South.

deposits may indeed relate to these activities as features contemporary with the Haynes Addition were encountered about 7 inches under the ground surface (see section below on Nineteenth-Century Ground Level). It does seem unusual, however, that the hotel fire rubble would be hauled and dumped next to one of the major park attractions.

A small concentration of cut nails showed up on MDDN about 140 feet north of MDA. One old sketch suggests that some small buildings were located in this general area north of the Big Stump. It is possible that one such site was transected by the metal detector survey in this location.

Metal Detector line Z was originally laid out to bisect the proposed Barn location. After the metal detector survey had been nearly completed, additional historic information showed that the 1853-1861 Cottage road was located north of the 1861 Hotel road, thereby moving the proposed barn location. Some non-systematic metal detecting was done in this new area and a relatively large number of spikes were found, one embedded in a sawn beam. There was not time to conduct a systematic transect of the area and no conclusions can be drawn from this. MDZN did show a concentration of both wire and cut nails in the area between the two roads; these may be from the "dance hall" indicated on an early twentieth-century map (Figure 6).

Newspaper Scrap

An interesting artifact was recovered from MDBS, about 46 feet south of MDA near the intersection of the 1853 and 1861 roads. In the folded-back lid of a sardine can, a small fragment of newspaper was found from the "Furniture for Sale" section of the classified advertisements. Partial names and addresses for several businesses were preserved. Volunteer Robert Rice researched the San Francisco business directories for the years 1879 to 1907 to pinpoint the date of the newspaper (Rice 1987). He identified the following businesses as advertising in the artifact newspaper:

Terry and Company, 747 Market Street;
Bare Brothers, 308 Hayes Street;
Edward Preston, 10 Forth Street;
Gilbert and More (Sterling Furniture Co.), 18-20 Sutter
Street; and
Thomas H. Nelson Furniture, 136 Forth Street.

Although some of these businesses appeared in earlier editions, not until 1883 was a match found between all of the names and addresses (Langley 1883). These remained constant until 1886 when one of the entries changed again.

Microfilm files of the San Francisco Bulletin, the San Francisco Chronicle, the San Francisco Examiner and the San

Francisco Call were then reviewed for the years 1883 to 1885. The closest match was found with the San Francisco Chronicle where at least two of the identified businesses were listed and the style and general layout were similar with the artifact scrap from the site.

The can itself is typical of this time period. It was a distinctive rectangular sardine can measuring about 4 1/2 inches long, 3 3/4 inches wide, and 1 5/8 inches high. It was made of sheet iron coated with tin and the side and top seams were simply overlapped and soldered together. An embossed label had been soldered onto the side of the can and remaining fragments on the lower left corner showed scrollwork, part of an address "34 OUA...", and the word "LA" below. It is remarkably similar to a French sardine can depicted in Rock's study of cans (1987:58) and it seems most likely that these packaged sardines were also imported from France.

This can and newspaper fragment have given us a small connection with an individual visitor to the Calaveras Big Trees of a hundred years ago. Probably traveling up from San Francisco sometime between 1883 and 1885, our tourists included in their picnic basket a can of imported sardines and at least part of a newspaper either to read or as packaging. The picnic was held near the Big Stump, convenient to the facilities at this location and within view of the inspiring Sentinels. The can was opened on three sides with a knife and the top folded back over the long side with the label. As the newspaper scrap was wedged under the folded-back lid, it must have been held here during the opening operation - probably to keep the packing oil from getting all over the hands of the opener. Emptied, it, and perhaps other picnic items, were abandoned on the site. It may seem unusual that someone making a pilgrimage to admire the natural wonders of the Big Trees would then be insensitive enough to leave an emptied tin can in the heart of the visited area. Our modern ethic against littering is quite new, however, rising in response to the increasingly enormous amounts of garbage generated by packaging, manufacturing, and conservation practices of the industrialized world. In the early 1880s, in the Sierra Nevada, the pristine countryside was enormous and the impact of human litter still negligible.

Haynes Addition

Strata and Phases

The historical/archaeological phases established for the Haynes Addition site were discussed above in Chapter 4 and are summarized below:

Phase I: Pre-1852 Prior to historic period occupation;
Phase II: 1857-ca. 1885: Occupation of Haynes Addition;
Phase III: a) ca. 1885-ca. 1900: Removal of Haynes
Addition; and, b) ca. 1895 to Modern; and
Phase IV: Ca. 1900 - present: Modern.

The relationships of units, excavated strata, and phases are shown in a Harris Matrix (Figure 17).

Phase I relates to events prior to the construction of buildings in the Cottage area. No prehistoric occupation of the area has been documented so any artifacts found in Phase I strata are interpreted as having migrated downward through natural soil movement. Phase I strata were only excavated to any depth in the northwest quadrant of Unit 35E10N. Here, three cut nails and one glass fragment were recovered at a depth 20 to 30 inches below datum. Fragments of burned wood were also recovered from this depth but they commonly occur in the forest, a natural result of forest fires.

Phase II includes the period of occupation of the Haynes Addition. Although this is an important interpretive period for the building, the only strata which can be assigned to this phase with assurance are the four foundation posts. Although the ground level of Phase II activities could be identified (see discussion below), this only marks the boundary between the prehistoric soils of Phase I and the rich, artifact bearing soils of Phase III. The few artifacts specifically identified with Phase II strata include cut nails and glass fragments from around the foundation posts (Table 5).

The abundant cut nails, window glass, and other architectural artifacts recovered in Phase III deposits are interpreted as being from the Haynes Addition itself. Most were likely deposited in the ground during its destruction or removal, however, and not its occupation and they are therefore associated with Phase IIIa. The large cast iron pieces (Figure 13) were located within the building perimeters and were likely deposited soon after the Haynes Addition was removed. Some of the artifacts in the overlying soils of Phase III were also originally associated with adjacent Phase II and Phase IV activities but have moved from their original positions in the soil. Buttons, for example, likely belonged to occupants of the building. These small, personal items are commonly lost through floor boards and found under structures.

Phase IV strata are associated with the Modern Period and consist of loose surface organic debris which overlies the compact soils of Phase III. Associated artifacts found in these strata included those from earlier periods which worked their way to the surface and others primarily related to modern picnicking. Some surface concentrations of burned

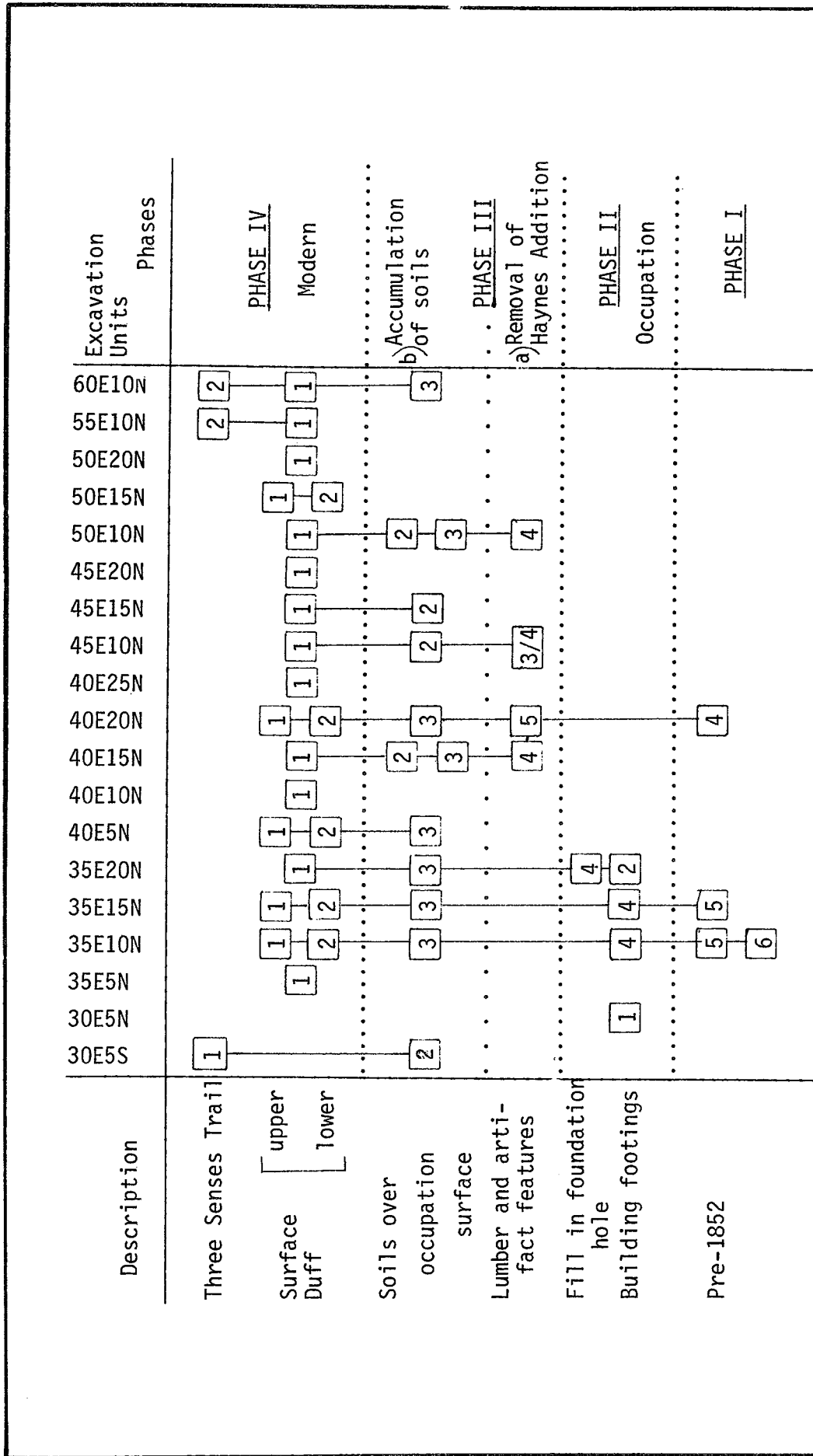


Figure 17. Harris Matrix of excavation strata at the Haynes Addition.

debris may also relate to the 1943 Hotel fire when burned remains are reported to have been scattered throughout the grove.

There has evidently been a great deal of artifact movement between strata as a result of natural soil turbulence. However, it apparently takes time to accomplish this homogenization. While, in the ca. 100 years since abandonment, 45 percent of the cut nails had migrated to Phase IV strata, only 25 percent of the more recently deposited wire nails had moved down into Phase III soils. Shape also influences the rate of movement in the soils. Flat window glass moves upward less easily and only 30 percent of these artifacts, deposited at the same time as the square nails, were found in Phase IV context.

Nineteenth-Century Ground Level

One objective of the excavation was to determine the ground level of occupation for 1857-ca.1885 when the Haynes Addition was in use. This was partially accomplished by measuring the elevation of the horizontal level on which several large features and artifacts rested (Table 9). These features are thought to be associated either with the destruction of the building or with activities soon after

TABLE 9
Haynes Addition: Occupation Period Ground-Level Indicators

<u>Unit</u>	<u>Description</u>	<u>Bottom Elevation</u>	<u>Depth from Surface</u> (in inches)
35E15N	Large window glass fragment	-17	7
40E15N	Flywheel part (St. 4)	-16	6.5
40E20N	Cast iron stove pieces; window glass (St. 5)	-16.5	7.5
40E5N	Piles of lumber with cut nails	-14.5	6.5
45E10N	Piles of lumber with cut nails (St. 3 and 4)	-16	8

the building was removed. The level on which they were deposited represents the ground level exposed at that time. Other associated artifacts, particularly cut nails and window glass, were also found concentrated on the same level. Although the date of the dismantling of the building is not known, it has been estimated as being ca.1885. The approximately 7 inches of soil (5 inches of humus and ca. 2

inches of surface duff) that has accumulated since that time therefore represents the amount of soil build-up in this area over about 100 years.

Foundation Posts

The four front foundation posts for the Haynes Addition were aligned along a bearing about 10 degrees east of north. They were approximately 1 foot in diameter and were spaced 6 to 7 feet apart on center, defining a front dimension of 20 feet. Although historic photographs (Figure 4) had indicated that the building was supported on wooden foundations, excavation revealed additional details of this construction.

The foundation posts discovered during excavations were of two types and in varying states of preservation (Table 3). Three were cut rounds of timber with diameters of 10 to 15 inches. The post in 35E15N had been cut to a chisel-shaped point with an axe and then probably driven into its posthole. Posts in 30E5N and 35E10N both had rocks wedged against them in the upper part of their holes for stabilization. The post in Unit 35E10N was preserved to its original height, a level, sawn surface -4.5 inches below datum, which indicates the original floor elevation of the building. The three posts therefore ranged in length between about 25 and 32 inches. Historic ground level, at 16.5 inches below datum, would leave the upper 12 inches of post extending above the ground. The building would therefore have been elevated about a foot above ground level.

The northernmost front footing was of a different construction than the other three. Instead of excavating a post hole for a vertical timber, a much larger hole was dug (4 feet long and 1 foot wide) and a large timber laid on a north-south orientation at the bottom. A series of at least three split timbers were then laid crosswise on top of this to build up the footing; the bottom two layers were buried under ground. This layering could have continued to the elevation of the floor, or a short round of wood could have been put on top. The reason for deviating from round posts has not been determined. It has been proposed that this footing might have been repaired at a later date and that wedging slabs under the building corner would have been easier than inserting a vertical post. It would seem awkward, however, to dig such a large bottom hole for the footing (4 feet x 1 foot) under a standing structure. It could also be that during the initial digging of the post holes, the ground in this spot was found to be soft -- perhaps from an old, decomposing tree root or from an animal burrow. The large horizontal timber was then necessary to stabilize the base of the footing.

It also appears unusual that other footings for the building were not found. Two of the four front footings had wood

extending to just above the forest floor. It would seem likely that some of the footings in other parts of the building would also have been preserved. The surface strata were cleared over most of the proposed building perimeter, however, without any success. One explanation might be that the four footings uncovered were for the front porch and not for the building itself; these four footings would line up under the columns for the porch. The footings for the building may have been of a different design and preserved archaeologically. It seems unlikely, however, that the larger and heavier building would have had such ephemeral foundations while the wooden porch had large posts sunk into the ground. It is also possible that the building sat on large rocks which were imported to this area and subsequently removed. The soft forest floor, however, would seem to require some support under these rocks to keep them from settling over the years. This problem of the building supports is still unresolved.

End of Occupation

There is no documentary information on exactly when the Haynes Addition disappeared from the site. It appears in photographs from the 1860s and 1870s (Figure 4). It also appears in the background of a photograph of the Stump House taken some years later (Figure 5b). Based on the growth rate of the row of aspen trees planted next to the Stump House and on other vegetation, this later photograph is estimated to have been taken between 1880 and 1885. The same photo shows what appears to be boards propped up along the southern wall of the building, as though stabilizing the wall. This may indicate that the deterioration of the building was already underway. The 1898 USGS Big Trees Quadrangle map does not show a building in this location.

The features of boards with cut nails found on the site are interpreted as relating to the dismantling of the building. The absence of indications of large-scale burning and these apparent piles of used lumber suggest that the structure was dismantled rather than burning. There were no additional artifacts within these features, however, which could provide a date for this event.

The stove parts and large machine piece were found within the area where the building would have been located (in Units 40E20N and 40E15N), resting on the original ground level. They, therefore, were likely deposited in this spot soon after the building was removed. The cast iron stove parts could have come from the Haynes Addition itself. The large machine piece appears to be the large spoke which regulates the length of stroke on a fly wheel driven by a single-piston steam boiler (Frances Bishop, personal communication). These artifacts cannot be precisely dated,

however, and therefore do not assist in determining the date the building was removed.

Nail Sizes and Construction Techniques

One of the research goals for the Haynes Addition excavation was determining a method for deducing the type of structure present on the site from excavated architectural remains. From analysis of the cultural phases (presented above) it seemed reasonable to consider cut nails from all excavated strata as being related to the Haynes Addition. Nail lengths had been recorded during cataloging and general sizes determined (see discussion, Chapter 4). This information is summarized in Table 10.

Some details of the Haynes Addition building are known from historic photographs and from archaeological data. It was a wooden, one-story dormitory, with a steep gable roof. The building was about 20 feet wide, and estimated to have been about 40 feet long. It had Gothic Revival trim and an elaborate front portico supported by four columns. Three bays are evident on the front, probably a central door flanked by two windows. There are no pictures of the long side of the building although the photographs in Figure 4 show no windows near either of the two ends. Based on the window configurations of the Coattage, there may have been 3 or 4 windows on each side. The roof was of shakes or lead shingles (some fragments have been found on the surface in this area) and the floor of boards. The building was raised about a foot above ground level on wooden posts and was probably supported by long stringers running its entire length.

TABLE 10
Haynes Addition: Summary of Cut Nails and Spikes

<u>Size</u>	<u>Number</u>	<u>Per-</u> <u>cent</u>	<u>Historic designation</u>	<u>Length</u> (in inches)
Small	76	6	2d, 3d, and 3d fine	1 - 1 1/4
Medium	627	48	4d, 5d, and 6d	1 1/2 - 2 1/8
Large	581	45	8d, 10d, and 12d	1 1/2 - 3 1/4
Spikes	<u>20</u>	<u>1</u>	20d - 60d	3 3/4 - 6
Total	1304	100		

Information on the numbers of different sizes of nails it would take to construct such an historic building could not be located. There are, however, some reprints of old building pattern books which might prove useful for future research (Aaron Gallop, personal communication). Inquiries

with contractors about a modern building of these specifications resulted in the following estimate (Tom Craig, contractor):

150 lbs 16d framing nails
 50 lbs 8d siding nails
 20 lbs roofing nails

Converting pounds into numbers of nails was done using standard hardware charts, the "common" nail being used in all cases (Table 11).

TABLE 11
 Computing Percent of Nail Sizes in Modern Construction

<u>Size</u>	<u>Length</u> (in inches)	<u>Pounds</u>	<u>Nails per</u> <u>Pound</u>	<u>Number</u> <u>of Nails</u>	<u>Per-</u> <u>cent</u>
roofing	1 5/8	20	300	6,000	32
8d	2 1/2	50	106	5,300	28.5
16d	3 1/2	150	49	7,350	39.5

The types of modern nails can be correlated with historic nails except for the modern roofing nail for which simple length was used (Table 12). The most drastic difference is in the dominating presence of spikes in modern construction and their near absence in the historic site. This is probably due to the very different construction practices of the two eras. Modern houses obtain their strength from heavy internal framing using numerous 2 by 4 inch and 4 by 6 inch boards spaced vertically down each wall and internally braced with shorter spans of the same thickness. This type of framing requires large nails and spikes. Modern siding and flooring is generally plywood, requiring relatively few nails. Virtually all of the medium sized nails used in modern house construction is for roofing.

1850s houses were constructed quite differently. They generally were not framed internally and vertical members were often only found at corners. Structural strength and wall rigidity came from the siding and paneling: horizontal exterior boards nailed to vertical interior boards. This type of construction required far fewer framing spikes, but considerably more large and medium-sized nails. In addition to roofing, the medium-sized nails would also have been used to secure floor boards.

TABLE 12
 Comparison of Modern Building Nail Proportions
 With Cut Nails from Haynes Addition
 (percent)

<u>Size</u>	<u>Haynes Addition Excavation</u>	<u>Modern Estimate</u>
Small	6	-
Medium	48	32
Large	45	28.5
Spike	<u>1</u>	<u>39.5</u>
Total	100	100

Historic Landscape and Dendrochronology

The dendrochronology study in Chapter 5 revealed how the locations and types of trees in the Big Tree Cottage area have changed over the past century due to the influence of selective cutting and forest regrowth. The estimate of maximum and minimum ages presented in Table 8 was also studied to help determine where the earliest building locations were and what the historic landscape looked like in the 1850s (Figure 18).

Data from Table 8 identified only nine trees as being younger than 127 years, i.e., that began growing after 1860. This appeared to be at odds with depictions in old photographs and sketches, however, which suggest a much more open area. Since the proposed minimum ages of the trees were based on estimates, the results were checked against existing historic information for accuracy. The Bar Room and Ten Pin Alley were located on the fallen Big Tree and the Haynes Addition site was identified from archaeological excavations. Both of these sites, however, were free of large trees and therefore did not help to verify age estimates.

The site of the original Cottage was more useful. It was identified from historic descriptions and sketches as being only 20 feet from the west side of the Big Stump, an area now occupied by two large trees, #35 and #36 (Table 8). The minimum ages of these trees are 139 and 106 years respectively. The Cottage was on the site until 1861, however, only 126 years ago. The minimum estimated age for

#35 therefore is at least 13 years older than it should be. It appears we had overestimated the age of some trees.

The minimum estimated ages of trees in the project area (Table 13) also show an interesting distribution. Sixty percent of the trees cluster at less than 190 years old. The remaining 40 percent of the trees, after a gap of nearly 40 years, are distributed more evenly over the next 400 years. The younger trees are also virtually all located in the center of the site, near the location of the Cottage and Big Stump while the older trees are near the borders of this area. Ponderosa pines dominate the younger group while species are more evenly distributed among the older trees.

TABLE 13
Distribution of Estimated Tree Ages
(1854 = 133 Years Old)

<u>Years Old</u>	<u>Number of Trees</u>	<u>Years Old</u>	<u>Number of Trees</u>
< 100	**	301-310	
100-110	*****	311-320	**
111-120		321-330	
121-130	**	331-340	*
131-140	****	341-350	**
141-150	**	351-360	*
151-160	****	361-370	*
161-170	***	371-380	
171-180	****	381-390	
181-190	*	391-400	*
191-200		401-410	
201-210		411-420	*
211-220		:	
222-230	*	:	
231-240		:	
241-250	**	:	
251-260	*	551-560	*
261-270	*	561-570	*
271-280		:	
281-290	*	:	
291-300		601-610	*

It is proposed that this group of younger trees all date to the post-1861 period when the hotel was moved to a new location and the clearing was allowed to grow over. That the age of many of these trees was overestimated (by as much as 55 years) is probably due to the unusual growing conditions in the middle of the old clearing where maximum exposure to sunlight caused rapid growth for several decades. The early rings would therefore have been much larger than later rings

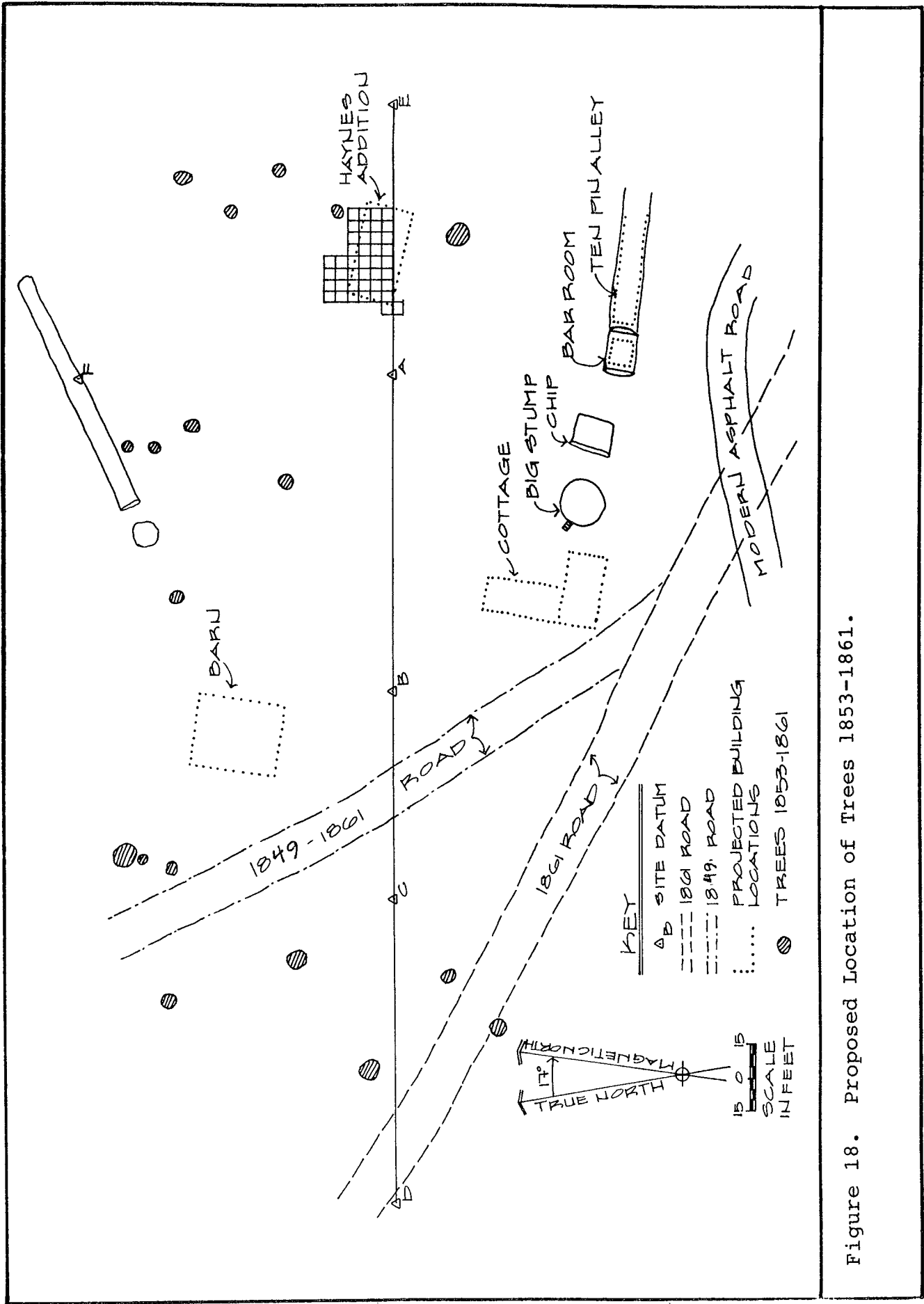


Figure 18. Proposed Location of Trees 1853-1861.

and the tree consequently younger than computed by the formula.

The historic landscape of the 1854-1861 Cottage complex at Calaveras Big Trees would therefore feature a clearing in the forest approximately 125 yards wide from east to west and extending about 40 yards north of the Big Stump (Figure 18). Entirely in the clearing were the Big Stump, Chip, and Cottage with the Bar Room and Ten Pin Alley extending off to the east. The Barn was located on the northwest edge of the open area with good southern exposure while the Haynes Addition was constructed on the northeast edge of the clearing, between two existing trees. When the hotel was moved in 1861, another clearing was made at the new site and the old Cottage area allowed to grow over. Trees were even planted next to the Big Stump, apparently in an attempt to encourage the return to a forest setting.

CHAPTER 7

MANAGEMENT RECOMMENDATIONS

by Julia G. Costello

Nature of the Resources

This study has demonstrated that archaeological resources related to the 1853-1861 complex of buildings at Calaveras Big Trees are both present and identifiable. General locations of early structures were deduced from the results of systematic metal detecting. The exact site of the Haynes Addition was determined through archaeological excavation and the original ground level of this time period was determined to lie ca. 7 inches under the present surface. The underground preservation of wooden footings and boards from the Haynes Addition suggests that similar remains from other buildings might also be found.

Artifacts were determined to have had considerable vertical movement within the soils. Small objects, particularly, migrated both upward and deeper into the soil while larger, flat items moved less readily. This movement of artifacts somewhat compromises the potential for associating particular artifacts with specific periods of occupation, especially where there has been constant human activity such as around the Big Stump. Features, however, do appear to remain where they were originally created, the original ground level could be identified, and certain deposits and artifact types could be associated with the Haynes Addition.

Archaeological investigations have also demonstrated that potential for providing exact locations of poorly documented buildings, such as the Haynes Addition. Similar procedures could be carried out at the proposed site of the Barn, the Bath house, and at possible locations of small structures in the north side of the project area. Some light has also been shed on the eventual disposition of some of the buildings. The Haynes Addition was determined not to have burned but dismantled.

In addition to architectural information, archaeological excavations on different types of sites can also provide unique information on the lives of the people who were present at Calaveras Big Trees.

The foundation for historical archaeological interpretations, however, is in the documentary record. The resources provided by Frances Bishop, and the excellent archives maintained by the Park, are invaluable resources on the history of the area.

Impacts to the Resources

The greatest impact to the archaeological resources is from foot traffic around the Big Stump area. The site of the Cottage is almost entirely within the path area and the metal detector survey indicated that remains from this structure are being moved considerable distances downhill. Where the Three Senses Trail crosses the Haynes Addition there is a change in both the density of metal artifacts and in the ground level. The natural forest soils appear to hold artifacts horizontally but when this is worn away, both feet and water rapidly erode the site.

The impact of visitors collecting artifacts is difficult to measure. The vertical movement of artifacts through the soil insures that old as well as modern items will be on the surface. There is a sizeable collection of artifacts curated by the Park which have been brought in by well-meaning visitors; how many similar artifacts are not turned in but are carried off is unknown. Park staff has also brought in numbers of historic items over the past decades; without careful evaluation and recordation, this activity also destroys the historic resource base. Despite the temptations to collect, it is surprising how many early artifacts and artifact features still remained in the area around the Big Stump.

Recommendations

The location of the Big Tree Cottage complex in the heart of the visited area of the North Grove insures that it will be continually exposed to erosion from traffic and from unsupervised collecting. The outlying, and relatively more undeveloped areas containing the Haynes Addition, the Barn, Bath house, and other structures can be avoided when planning future trails and other improvements. The sites of the original Cottage and the Bar Room and Ten Pin Alley, however, will be subjected to continued destruction. In order to protect the historic resources from accelerated deterioration, and to retrieve important historic information, the following recommendations are made:

1. Avoid placing all trails and other improvements in areas which are known to contain historic structures;
2. Educate the public with signs or exhibits that inhibit their natural desire to collect artifacts found on trails or in the woods. Park staff should also be actively discouraged from retrieving historic objects without consultation with a resource specialist;
3. Establish a permanent repository for the artifacts and field information generated from this study; catalogue and

properly curate all previously collected items; establish a collecting policy and procedure;

4. Improve the indexing and filing system in the Park archives so material can be easily accessed; catalogue copies of historic photographs as well as originals; continue to collect additional historical documentation; and,

5. Develop a phased archaeological program that will gather information from resources that are currently being destroyed and from resources that will provide new information on the history of Calaveras Big Trees. This program should:

a. Provide that all archaeological work be incorporated into some type of interpretive presentation for Park visitors;

b. Involve additional historical research into documents, photographs, and oral histories; and,

c. Involve a wide range of organizations and volunteers so that the local community is educated about archaeological research and additional support and publicity is garnered for the Park.

Some particular projects that could be incorporated into the program are:

1. Conduct testing and, if warranted, more extensive excavations at the sites of the Cottage and the Bar Room and Ten Pin Alley sites which are rapidly being destroyed;

2. Test and excavate the redwood-post features located north of the Haynes Addition which may be foundations for the Bath house;

3. Investigate features to the south and east of the Haynes Addition where concentrations of artifacts were located and unconformities in the ground surface may be identified;

4. Conduct a systematic metal detecting survey near the proposed site of the Barn; follow with an excavation to obtain information on this early facility; and

5. Conduct a systematic metal detecting survey in the area to the north of the Haynes Addition where structures are reported to have been located; if warranted, follow with test excavations.

APPENDIX A

BIG TREES COTTAGE COMPLEX: HISTORICAL CHRONOLOGY

by Judith Cunningham

Discoveries

- 1841 John Bidwell
- 1849 William B. Prince Party and others
- 1850 Whitehead, May 20; J.M. Wooster, early June
- 1852 Augustus T. Dowd (effective discovery)

Ownership

- 1853 July 19, William W. and Joseph M. Lapham filed land claims on two 160 acre parcels known as "Mammoth Grove Ranch."
- 1853 October, Joseph sold his interest to brother William.
- 1854 July, liens filed on property by contractor William Graves and lumber supplier Richard E. Shonyo & Co.
- 1854 September, liens satisfied by Dr. A. Smith Haynes, now half-owner
- 1856 July 1, Lapham sold his half-interest to Simon Schaeffle of Murphys.
- 1857 July 14, Haynes purchased Schaeffle interest, now sole owner.
- 1857 August, \$3,000 in improvements to property; mortgage to James L. Sperry and John Perry.
- 1857 December 26, property sold at Sheriff's sale to George Fisher (Deed dated July 28, 1858).
- 1858 October 6, Fisher sold to Smith Mitchell, James L. Sperry and John Perry (Haynes still operating hotel)
- 1860 Sperry and Perry became sole owners, buying out Haynes and Mitchell.

Structures

Log Cabin

- 1852 Eliza Palache account of rough log cabin and clearing, as told to her by Helen Mary Whitney who traveled to see Big Tree with Sperry and Dowd.

Big Tree Cottage

- 1853 Constructed for Laphams
- 1854 Summer, two-story addition built for Lapham.
- 1861 No longer on site.

Bar Room and Ten Pin Alley

1854 Constructed for William Lapham by William Graves
1862/3 Crushed by snow.

Haynes Addition

1858 May, completed.
1870 Appears in E. & T.H. Anthony photograph.
1880-85 Appears in photograph of Pavilion.
1898 Does not appear on USGS Big Trees Quadrangle map.

On Big Stump

1857 Big Tree Stump enclosed by arbor extending to hotel.
1861 Pavilion constructed for Sperry and Perry.
1934 Pavilion crushed by snow

New Mammoth Grove Hotel

1861 Constructed for Sperry and Perry.
1943 Burned

Roads

1849-1856 Emigrant Road; ran along ridge southeast of North Grove.
1849-1861 Emigrant Trail Loop past Big Tree.
1854 Walking trail, later Carriage Road, laid out through North Grove by Lapham.
1855 Entrance Road to North Grove built down ridge from Emigrant Trail through Sentinels.
1855-1862 Big Tree & Carson Valley Road constructed, same route as earlier Emigrant Road.
1861 Road altered west of Big Stump to lead to new hotel.
1862 Big Tree and Carson Valley Turnpike constructed, ran along same ridge southeast of North Grove as earlier roads.
1919 North Sentinel falls and road moved to north.
1926 New road constructed to Big Trees Hotel south of Sentinels and Big Stump (present paved road south of Visitor's Center).

APPENDIX B

DESCRIPTION OF STRATA AT HAYNES ADDITION EXCAVATION

By Betty Jean Ciccio

Archaeological excavation of the Haynes Addition site was by natural stratigraphy according to procedures identified by Harris (1979). For each stratum, a brief description is given followed by a summary of the artifact content. Where more detailed soil analysis was performed, soil type (Ahn 1976), degree of sorting (Sigma Gamma Epsilon n.d.), and color (Munsell 1975) are given. The strata are assigned to a Cultural Phase according to the following definitions:

- Phase I: Pre-1852, Prior to historic period occupation;
- Phase II: 1857-ca. 1885, Occupation of Haynes Addition;
- Phase III: a) ca. 1885-ca. 1895, Removal of Haynes Addition; and, b) ca. 1895 to Modern; and
- Phase IV: Modern.

The Harris Matrix (Figure 17) shows the relationship of units, strata, and phases.

Unit	Stratum Number	Cultural Phase	Description
30E5S	1	IV	Hard pack trail.
	2	III	Compact brown soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: architectural, kitchen, clothing.
30E5N	1	II	Post. Associated with stones supporting it and a spike.
35E5N	1	IV	Loose organic debris. A few associated architectural artifacts.
35E10N	1	IV	Loose organic debris. A few associated kitchen and architectural artifacts.
	2	IV	Tightly packed organic. A few associated clothing, personal, architectural artifacts.
	3	IIIb	Brown hard pack. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: architectural, personal, and kitchen.
	4	II	Post. Associated with four rocks packed tightly in post hole.

(Appendix B, continued)

Unit	Stratum Number	Cultural Phase	Description
	5	I	Brown soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: architectural and personal due to rodent disturbance.
	6	I	Soft brown soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts due to rodent disturbance.
35E15N	1	IV	Natural organic debris. Few associated artifacts: architectural, personal, kitchen.
	2	IV	Medium hard pack soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. A few associated architectural artifacts.
	3	IIIb	Light pack soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: architectural, kitchen.
	4	II	Post. Decomposed, post mold showed beveled, pointed end.
	5	I	Soft loam, sterile soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/6.
35E20N	1	IV	Loose organic debris. A few associated architectural artifacts.
	2	II	Layered foundation support.
	3	IIIb	Hard pack soil. A few associated architectural artifacts.
	4	II	Soft brown soil. Fill in foundation hole; some architectural artifacts.
40E5N	1	IV	Loose organic debris. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: architecture, kitchen, clothing.
	2	IV	Tight pack organic debris, a few miscellaneous associated artifacts.

(Appendix B, continued)

Unit	Stratum Number	Cultural Phase	Description
	3	IIIb	Brown, hard pack. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. A few associated architectural, kitchen, clothing artifacts.
40E10N	1	IV	Organic surface debris.
40E15N	1	IV	Organic surface debris.
	2	IIIb	Hard pack soil. A few associated architectural artifacts.
	3	IIIb	Hard pack, root disturbance. A few associated artifacts.
	4	IIIa	Fly wheel.
40E20N	1	IV	Loose organic surface debris. A few associated architectural artifacts.
	2	IV	Dark compact soil. Loamy sand. Medium, coarsely sorted. Munsell color 10YR 3/4. A few assorted architectural artifacts.
	3	IIIb	Hard pan, dry root disturbance. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. A few associated architectural artifacts.
	4	I	Soft soil. Loamy sand. Medium, poorly sorted. Munsell color 10YR 3/6. Under occupation level. A few associated architectural artifacts.
	5	IIIa	Stove parts.
40E25N	1	IV	Loose surface organic debris. A few associated architectural artifacts.
45E10N	1	IV	Loose surface organic debris. A few associated architectural artifacts.
	2	IIIb	Hard pack soil. Loamy sand. Coarse, poorly sorted. Munsell color 10YR 3/4. A few associated architectural, kitchen, clothing artifacts.
	3	IIIa	Used lumber pile.
	4	IIIa	Used lumber pile.
45E15N	1	IV	Loose surface organic debris. A few associated architectural artifacts.
	2	IIIb	Hard pack soil. A few associated architectural, kitchen, clothing artifacts.

(Appendix B, continued)

Unit	Stratum Number	Cultural Phase	Description
45E20N	1	IV	Loose surface organic debris. A few associated architectural artifacts.
50E10N	1	IV	Loose surface organic debris. A few associated architectural artifacts.
	2	IIIb	Soft loamy sand. Medium, poorly sorted. Munsell color 10YR 3/4. Associated artifacts: kitchen, architectural, industrial.
	3	IIIb	Root. Earlier thought to be a post.
	4	IIIa	Used lumber pile.
50E15N	1	IV	Loose surface organic debris. Associated artifacts: architectural, personal, kitchen, clothing.
	2	IV	Soft loam. A few associated architectural artifacts.
50E20N	1	IV	Loose surface organic debris. A few associated architectural, clothing artifacts.
55E10N	1	IV	Loose surface organic debris. Associated artifacts: architectural, kitchen, clothing, transportation.
	2	IV	Hard pack trail. Loamy sand. Find, poorly sorted. Munsell color 10YR 3/3. A few associated architectural artifacts.
60E10N	1	IV	Loose surface organic debris. A few associated architectural, kitchen, shop, industrial artifacts.
	2	IV	Hard pack trail. Loamy sand. Fine, poorly sorted. Munsell color 10YR 3/3.
	3	III	Neck of brown bottle.

APPENDIX C: ARTIFACT LOT REGISTER

Accession No. p773

Site: CBT COTTAGE

ARTIFACT LOT REGISTER

Artifact Lot No.	Excavation Unit	Stratum No.	Feature No.	No. of Containers	Excavator	Date	Identifying Artifacts, comments
MDAE	0 - 150'				CBTA	9/10/87	Cut nails, misc. metal, glass, w. nail
MDAW	0 - 151'				CBTA	9/10/87	Many square nails; hooks, can pieces
MDBN	0 - 98'				CBTA	9/10/87	Metal scraps, blade, nails
MDBS	0 - 94'				CBTA	9/10/87	Pottery
MDCN	0 - 130'				CBTA	9/10/87	Cut nails, wire nails, hacksaw blade, Bullet
MDCS	0 - 66				CBTA	9/10/87	Cut nails, w. nails, bottle caps, pottery
MDDN	0 - 149'				CBTA	9/10/87	Cut nails, misc. metal, penny, w. nail
MDDS	0 - 68'				CBTA	9/10/87	Misc. Metal, cut nails, lock plates
MDZN	0 - 117'				CBTA	9/10/87	Cut nails, wire nails, misc. metal
MDZS	0 - 17'				CBTA	9/10/87	Cut nails, pottery pieces, unknown metal
30E5N	30E5N	1			CBTA	9/26/87	W. nail, spike
30E5S	30E5S	1-2			CBTA	9/22/87	Ceramic, cut nails
35E5N	35E5N	1-3			CBTA	9/22/87	Cut nails, glass, leather, bottle cap
35E10N	35E10N	1-6			CBTA	9/22/87	Cut nails, wood, bolt
35E15N	35E15N	1-4			CBTA	9/14/87	Cut nails, button, glass metal
35E20N	35E20N	1-4			CBTA	9/14/87	Cut nails, glass, can, button hook, button
40E5N	40E5N	1-3			CBTA	9/21/87	Cut nails, wood, w. nail, glass, spring
40E10N	40E10N	1			CBTA	9/15/87	Cut nails, buttons, wire, metal
40E15N	40E15N	1-2			CBTA	9/22/87	Cut nail, glass, shell casing
40E20N	40E20N	2-5			CBTA	9/21/87	Fly wheel
					CBTA	9/21/87	Cut nails, rd. nails, hinge, glass,
					CBTA	9/14/87	Cut nails, can, stove parts, button

Accession No. P773

Site: CBT COTTAGE

ARTIFACT LOT REGISTER

Artifact Lot No.	Excavation Unit	Stratum No.	Feature No.	No. of Containers	Excavator	Date	Identifying Artifacts, comments
40E25N	40E25N	1			CBTA	9/21/87	Cut nails, glass, can
45E10N	45E10N	1-3			CBTA	9/21/87	Cut nails, glass, buttons
45E15N	45E15N	1			CBTA	9/21/87	Cut nails, buttons, glass, hardware
45E20N	45E20N	1			CBTA	9/22/87	Cut nails, glass, w. nail
50E10N	50E10N	1-2			CBTA	9/21/87	Cut nails, glass, ceramic, screw, wire
50E15N	50E15N	1			CBTA	9/22/87	Glass, cut nail, wire, spike
50E20N	50E20N	1			CBTA	9/26/87	Cut nails, glass, button
55E10N	55E10N	1-2			CBTA	9/21/87	Cut nails, w.. nails, horse shoe, button
60E10N	60E10N	1-3 HA			CBTA	9/26/87	File, cut nails, glass
Surf		MDB-80N			CBTA	9/22/87	Cut nails, spike in wood

APPENDIX D

FUNCTIONAL CLASSIFICATION OF ARTIFACTS

The following functional classification was used in analysis of the artifacts recovered from the Big Tree Cottage excavations at Calaveras Big Trees State Park. The coded classification is found on the Archaeological Catalogue in the right-hand column titled "Function" (Fig. 14).

The primary headings below identify Group categories. They have been abbreviated on the catalogue sheets according to the letters in parentheses. The secondary headings identify Class categories and are referenced on the catalogue sheets according to the prefixed numerals. Sub-Classes are not included in this appendix for brevity but examples the types of items included are given after the Class heading. This system is designed to proceed from general classifications (Group) to more specific (Class and Sub-Class) in a hierarchy. Artifacts functions can be assigned at whatever level of specificity is known.

Historic Artifact Functional Classification

from:

Catalogue Code Guide
UCSB Anthropology Department
Version 7, August 1984

Unknown (Unk)

Kitchen (K)

- 01 Table service: cups, bowls, dishes
- 02 Social drinking: mug, tumbler, shot glass
- 03 Bottle/jar: beer, whiskey, soda, canning jar, caps
- 04 Tin cans: beer, coffee, food, pull tabs
- 05 Table ware/flatware: fork, ladle, knife
- 06 Kitchenware: pot, pan, mixing bowl, ice pick
- 07 Food: bone, shell, seeds
- 08 Food packing: egg carton, aluminum foil, baggies

Architecture (A)

- 01 Window glass
- 02 Nails: round, square, tack, spike
- 03 Hardware: clasp, nut, washer, rivet, hinge, lock
- 04 Plumbing: tubing, ceramic pipe, faucet, hose
- 05 Electrical: wiring, fuse, plug
- 06 Construction material: brick, plaster, lumber, tar
- 07 Fencing: chicken wire, barbed wire, fence post
- 08 Roofing: tile, tar paper, shingles, rain gutter

- 09 Flooring: tile, linoleum, carpet
- 10 Wall/counter: tile, linoleum
- 11 Paint/accessories: can, brush

Interior Furnishings (IF)

- 01 Lighting: kerosene lamp chimney, light bulb
- 02 Heating: stove parts, heater
- 03 Furniture: chair, table, desk, upholstery
- 04 Window treatment: curtain rod, locks, sash weight
- 05 Decorative: mirror, flower pot, figurine, vase
- 06 Maintenance/cleaning: broom, plunger, scrubber
- 07 Pest control: fly swatter, trap

Clothing (C)

- 01 Buckles/clips: belt buckle, suspender clip
- 02 Buttons: shoe, military, "campaign"
- 03 Footwear/shoe maintenance: sandal, shoe nail
- 04 Garment: clothes, glove, belt
- 05 Decorations and fasteners: pin, snap, eyelet
- 06 Manufacture: needles, scissors, knitting needle
- 07 Maintenance: iron, clothes pin

Arms (AR)

- 01 Small ball/shot: shot, beebee, cannon ball
- 02 Bullets: 22 long, lead
- 03 Handguns: Colt, Derringer, revolver
- 04 Rifles/shotguns: air, flint lock, Springfield
- 05 Cannon
- 06 Shrapnel
- 07 Knives: jack, hunting, pocket
- 08 Casings only: 12 gauge, 22 rim fire

Personal (P)

- 01 Smoking and tobacco accessories: pipe, tobacco tin
- 02 Coins/tokens: penny, Mexican centavo, Chinese
- 03 Watches/clocks: watch fob, clock key, parts
- 04 Suitcase/trunks/bags: wallet, coin purse
- 05 Hair accessories: brush, comb hairpins, rollers
- 06 Tooth accessories: tooth brush, false teeth
- 07 Shaving accessories: brush, mug, razor
- 08 Cosmetics: rouge, lipstick, cream, perfume
- 09 Personal hygiene/medicinal: eyecup, soap, medicine
- 10 Jewelry: ring, earring, cuff link, beads
- 11 Eyeglasses/optics: glasses, telescope, goggles
- 12 Miscellaneous: flashlight, canteen, umbrella

Transportation (T)

- 01 Horse accessories: spurs, tack, stirrup
- 02 Wagon/buggy/carriage: parts, hardware
- 03 Bicycle parts: pedal, chain
- 04 Railroad parts: spike, pick, lantern
- 05 Automobile/motorcycle parts: jack, reflector
- 06 Boat parts: oar, cleat

Shop/Industrial (SI)

- 01 Shop tools: drill, chisel, rope, pliers, file, saw
- 02 Engine parts: boiler, steam eng. parts, belt
- 03 Shop materials: wire, rods, metal plating

Farming/Land Use (FL)

- 01 Hand tools: axe, rake, hose
- 02 Farming equipment: plow, disc blade
- 03 Livestock equipment: cage, feeder, sheepshears
- 04 Dairy: milk can
- 05 Beekeeping
- 06 Windmill parts
- 07 Well/pump parts
- 08 Irrigation equipment
- 09 Fishing equipment: hooks, reels, flies
- 10 Trapping equipment

Entertainment (E)

- 01 Toys/children's games: dolls, marbles, jacks
- 02 Adult games: dice, cards, darts
- 03 Musical instruments: harmonica, guitar parts, bell
- 04 Sports equipment: baseball
- 05 Pet care: collars, tags

Communications (C)

- 01 Written/graphic: newspaper, pencil, ink, paper clip
- 02 Electronic: telephone wire, batteries, television
- 03 Photographic: camera, flash bulbs

Bulk Storage (BS)

- 01 Barrel: hoop, stave
- 02 Box/crate: staples, cardboard
- 03 Can/drum
- 04 Bag: burlap, canvas
- 05 Miscellaneous: bailing wire

Religious (R)

- 01 Statues, icons
- 02 Crucifix
- 03 Incense burner
- 04 Rosary beads
- 05 Medal
- 06 Chinese religious items

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