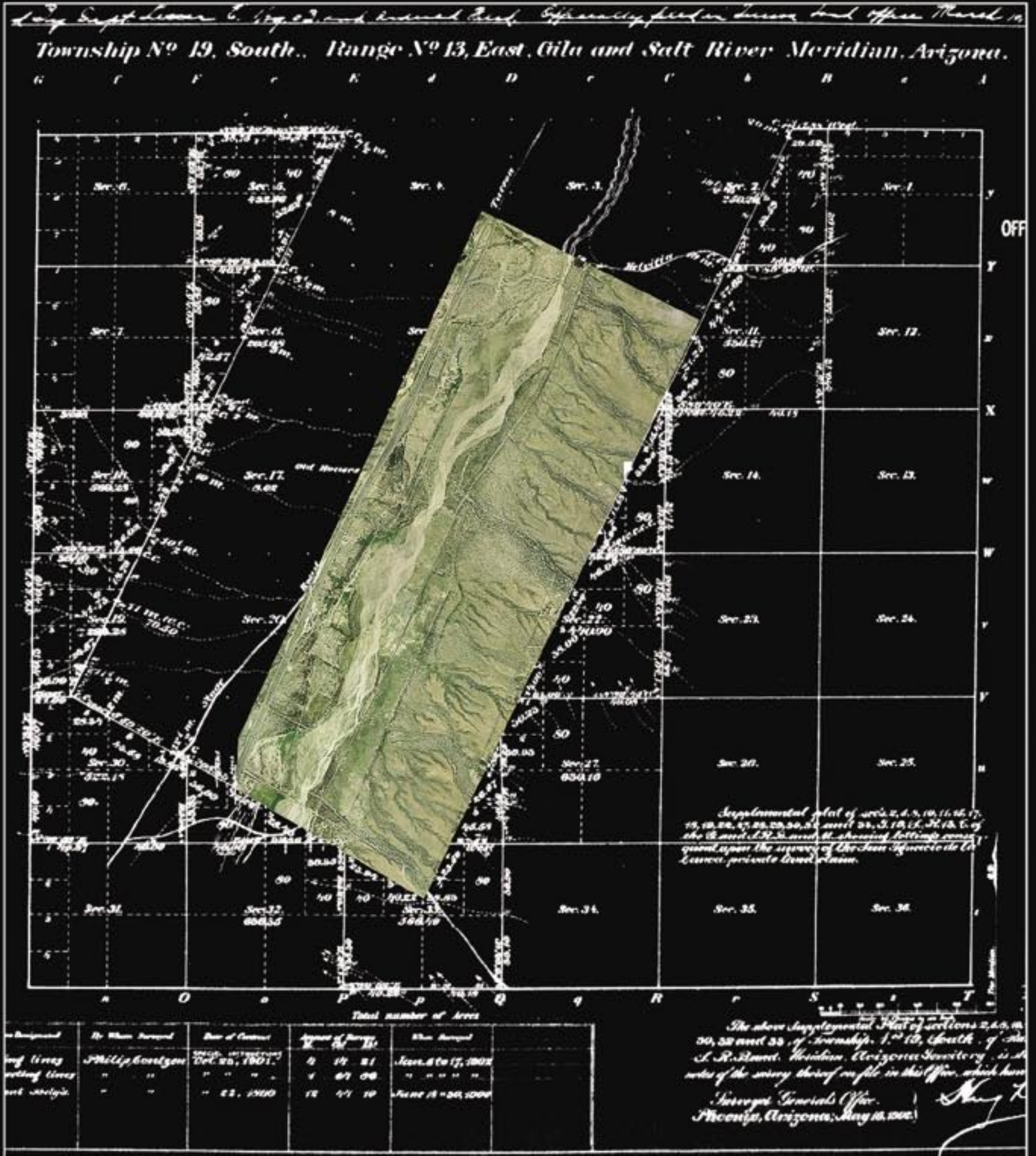


The Canoa Ranch Master Plan



Plat of Township 19 South, Range 13 East, based on the survey by Contzen in 1900 and 1902. 2002 aerial courtesy of Pima County

Background Report

April 2006



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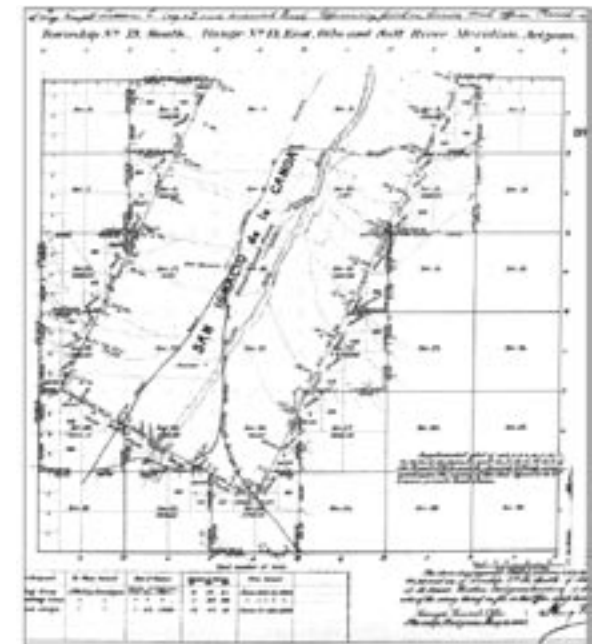
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Conservation 1997

Corporate 1967

Manning 1908

Wisconsin 1905

Maish Driscoll 1869

Early American 1854

Mexican 1821

Spanish 1690

Native People – Archaic; Early Ceramic; Hohokam; and O'odham

2000 BC

1000 BC

0

1000 AD

2000 AD

Credits for previous page

1. Main Entrance to the Ranch Headquarters during Manning Era
Photo courtesy of Diana Hadley, date unknown
2. Plat of Township 19 South, Range 13 East, based on the survey by Contzen in 1900 and 1902
Courtesy of Statistical Research
3. Canoa *vaqueros* at chuckwagon on roundup
Photograph by Howell Manning, Jr., ca. 1950. Courtesy of Deezie Manning-Catron
4. Stone marker at southeast corner of the San Ignacio de la Canoa Land Grant from 1900 Contzen survey
Photo courtesy of Statistical Research, 2006
5. Maynerd Gaylar at gate, Howell Manning, Sr. weighing cattle
Photo courtesy of Deezie Manning-Catron, location and date unknown
6. Remains of the Canoa Stage Station in May 1915
Photo credits: Arizona Historical Society, courtesy of Statistical Research
7. Canoa Ranch, looking east over fields toward Santa Ritas, in summertime
Photo courtesy of Deezie Manning-Catron, date unknown
8. Earliest known title or *titulo* granted to the Ortiz brothers in Ures, Sonora in 1849
Courtesy of Statistical Research
9. Representative pottery from the Santa Cruz Valley
Photo courtesy of Desert Archaeology
10. Signage at one of the six wells owned and operated by Phelps Dodge.
Photo courtesy of Poster Frost Associates, 2006
11. Lake at Canoa Ranch
Photo courtesy of Deezie Manning-Catron, date unknown

Overview

The Canoa Ranch Master Plan is a year-long planning project to identify the vast cultural, natural, and educational resources of the Canoa Ranch and to establish priorities for their future protection, interpretation and enjoyment by means of a comprehensive master plan. With the expertise of an exceptional consultant team, the participation of an active community, led by the Canoa Ranch Community Trust and Oversight Committee, and the trusted vision and leadership of Pima County and its natural and cultural resource professionals, the Canoa Ranch Master Plan strives to preserve the Canoa Ranch as a treasure for future generations where a sense of place from earlier times is retained.

As an important preliminary undertaking, the Background Report was prepared to synthesize the immense archival and documentary resources, field inventories and personal archives for the Canoa Ranch. While every attempt has been made to compile an inclusive account of both the historical and existing conditions at Canoa Ranch, adequately representing the several thousand year history of this place is a considerable challenge. In the process of collecting, evaluating and synthesizing the material, it is probable that information valuable to understanding the diverse stories of the Canoa Ranch has been left out of this report. As we move ahead with the master plan, we will continue to update and improve the background report as more insight and perspective into the Canoa Ranch's complex history is gained.

Throughout the master planning process the consultant team, led by Poster Frost Associates, will return to the community for direction. In the project proposal, three rounds of public meetings were scheduled, with the first public meeting having been recently completed. The purpose of the first round of public meetings, held in February of 2006, was to provide the community with a basic level of understanding of the Canoa Ranch as a means of stimulating the communities' participation in envisioning a future for the property. Comments received during those meetings are included in this report and will be valuable to developing alternative concept plans during the next phase of the master plan.

Canoa Ranch is a microcosm of the history of our land and our people and the telling of the Canoa Ranch story encapsulates many of the narratives of Southern Arizona. When we understand the rich and diverse past and present of the river, the land, the peoples, and the economy of this place, then maybe we can plan a future for Canoa Ranch that respects and honors its vital place in our community. Together these changes make up a string of stories told from very different perspectives. Like the story Rashomon (a Japanese story that changes when told from the perspectives of the different characters), when we understand these different stories and the very different ways that they describe the past, the present and future, then we understand the rich diversity of this place and perhaps we understand ourselves.

The significant contributions of the Canoa Ranch Community Trust / Oversight Committee should be mentioned up front as they are a key stakeholder and invaluable partner in the Canoa Ranch Master Plan. In our discussions with the Committee, we have been provided a number of constructive suggestions concerning the future use of the Canoa Ranch. As a framework for evaluating the feasibility of various interpretive and heritage approaches to the site, the following priorities should be taken into account:

- Canoa Ranch needs to be educational, gathering perspectives from many different cultures. The Canoa constituency is a very diverse group.
- The local community is our best customer; only incidentally be a tourist attraction. There should always be something new so that locals will return.
- We should be sure to always be thinking about kids.
- Educate people about conservation and sustainability; adobe, water and energy conservation. How to live appropriately in this desert.
- Bring to life the people that were there. Portray the social life of the ranch.
- Canoa was two communities at the same time – the Manning Community and the Mexican American; elaborate the concept of two worlds living alongside each other. The lives of women and children are a key part of the complex story that needs to be told. They were this foundation of ranch life.
- Ponder the cultural traditions of the sky. It is dark and it should remain a dark sky for a long time. Astronomy approach to the site.
- Fearful of a Disneyland approach. Keep the smell and feel of a ranch community. A “Cowboy roller coaster” is out. Keep it as natural as possible and as educational as possible. Yes there will be fresh horse manure on this property. It is a ranch and you may get dirty. Let it feel like 1939.
- People need to know where we live. Canoa can help us understand a sense of place –of this place. This ranch can show us that people can live together. It can give new people a sense of place. Newcomers need help to understand where they live and appreciate where they live.
- What about the working aspect of the ranch? Cattle are appropriate and could work out. One of the interests is in a “Cowboy College”. Working off a real working landscape. There is enough property to accommodate all uses.
- Staffing and stewardship are key.

Introduction

Timeline

Spanish □

that the location was important as a reliable source of water. Early descriptions include those of the Franciscan missionaries Father Francisco Garcés, Father Pedro Font, and captain of the presidio of Tubac Juan Bautista de Anza. Descriptions by subsequent explorers, travelers and residents include those of Raphael Pumpelly, John Spring, Charles Poston, and many Forty-niner diarists. The descriptions state that although La Canoa did not have permanent flowing water, it was a location where the shallow water table allowed travelers to obtain water even in times of □

mesquite bo□

highway) between the presidio of Tubac and San Xavier mission. The Canoa continued to be an important campsite and ford across the Santa Cruz River during the Mexican (1821-54) and Territorial (1854-1912) periods.

Prehistoric, Spanish and Mexican Land Grant

Archaic Period 1600s	Intermittent occupation of Canoa area throughout the Pre-historic period: Archaic (2500 BC-200 AD); Early to late Ceramic (200-600); Hohokam (600-1450); and O'odham (1600s-1800s) periods.
1690s-1711	Father Eusebio Kino and other Jesuit missionaries pass by the Canoa site on their way to Bac and Tchuk Shoon (later San Xavier del Bac and the city of Tucson).
1700s (early)	Former Indian trails along the river known as the Santa María Suamca (later known as the Santa Cruz) gradually become the official Spanish wagon road, a portion of the camino real (royal highway) through northern Sonora.
1775 (Oct 23)	Expedition to future site of San Francisco, Alta California led by Captain Juan Bautista de Anza, accompanied by fathers Pedro Font and Francisco Garcés, camps at La Canoa. (Native American settlements at the site are mentioned in both the Font and Garcés accounts of the expedition.)
1820	Ignacio and Tomás Ortiz (brothers) initiate the petition for a merced or land grant for 4 sitios (1 sitio = 1 square league, or 4,338 acres) of land for ganado mayor (large livestock, i.e. cattle and horses).
1821	Captain Ignacio Elías Gonzales of the Tubac presidio surveys La Canoa according to Spanish legal standards. Corner markers at prominent landscape features, Spanish period wells, and other prominent features from the survey are still visible today. The size of the land surveyed for the grant would convert to approximately 2.78 miles east to west and 11.1 miles north to south. Appraisers value land at 30 pesos per sitio, or 120 pesos total, a low price because the land did not contain permanent flowing water.
1821 (Jul 12)	Sale of Canoa land grant at the third public auction at Tubac for the sum of \$250 to the Ortiz brothers. Competitors in the bidding caused the price to increase. The three public auctions were a formality of the Spanish land alienation process.
1821 (Dec 15)	Land grant for the San Ignacio de Canoa grant is issued from the provincial capital at Arizpe, Sonora to Ignacio and Tomás Ortiz for 4 sitios (approximately 17,000 acres) of land. (A third brother, Agustín Ortiz owned a nearby land grant at Arivaca.) However, Mexico achieves independence from Spain at the time the grant is being processed. As a result, the Spanish government never issues a testimonio of title to the Ortiz brothers.
1830s-40s	Operation of cattle ranch at La Canoa hampered by Apache depredations.
1849	The Ortiz brothers present themselves at Ures, Sonora to request that the Sonoran government issue them a title to the grant.

Early American Occupation

1854	Area of La Canoa included in Gadsden Purchase, becomes United States territory.
1855-62	American “squatters” take up residence at the Canoa. The settlers erect log houses, cultivate fields, and raise cattle.
1855 (?)	Pete Kitchen, of Covington, Kentucky later a well-known rancher in the Nogales area, resided and ranched on the Canoa grant, remaining there for approximately 7 years. While at the Canoa, he supervised U. S. Army beef contracts for William S. Grant and Theodore W. Taliafero.
1856	Ignacio Ortiz takes part in a convention to promote territorial status for Arizona.
1857	Ignacio Ortiz killed by Papago Indians.
1857	William Kirkland of Missouri settles on Canoa, begins lumbering in the Santa Rita Mountains. Kirkland stocked Canoa with cattle, “the first ranch in this part of the country stocked with cattle by white men.” He remained at the Canoa until approximately 1862.
1857	American settlers “squatting” on the Canoa grant, including Richard M. Doss. Doss is somehow involved in an incident with the “murderers Ake and Paige,” although it is not clear that this occurred at the Canoa.

Timeline

- 1859 (Summer) Richard M. Doss of Tennessee, one of the original owners of the Patagonia mine, opens the Canoa Hotel and Crossroad Tavern on the Canoa grant, where he also sells lumber. He describes the Canoa as “my ranch.” Edwin Tarbox manages the hotel. Doss places ads for the hotel in Tucson newspapers as early as August, 1859.
- 1860 William S. Grant of Hallowell, Maine arrives in Arizona enters into partnership with Theodore W. Taliafero of Alabama, leases the “Canoa and Kitchen ranches” to “pasture his cattle.” Distinction between Canoa and Kitchen ranches implies different operations on Canoa grant likely at different locations on the grant. Grant operates the Canoa Hotel, Crossroad Tavern, and the Tucson and Fort Buchanan Stage Line, with stage stop at the Canoa.
- 1861 After the Bascom Affair in Apache Pass, Chiricahua Apaches increase depredations. In separate incidents, Apaches kill two Americans and one Papago at the Canoa. Ten lumbermen are reported killed in the Santa Rita Mountains above the Canoa. Apaches raid the Canoa and nearby ranches, taking 280 head of cattle.
- 1861 (Feb) Grant advertises the Tucson and Fort Buchanan Stage Line and Canoa Hotel, which was the stage stop.
- 1861(Summer) Apaches attack the Canoa grant, killing Canoa Hotel manager Edwin Tarbox and burning the hotel to the ground.
- 1864(March) “Hualpais” reported having stolen cattle from Canoa Spring in December of 1863, since Hualapais were the reported culprits this may have been another Canoa.
- 1869 Newspaper reports that the Santa Cruz Valley is not being cultivated because of Apache depredations.

Maish and Driscoll Period

- 1869 Frederick Maish of Pennsylvania and Thomas Driscoll of New York state arrive in Tucson from the Black Hills. (Frederick Maish was an important early settler in Tucson. He was the owner and developer of the Silver Lake dam and resort, a freighter, stage stop operator, cattleman, and mayor of Tucson from 1889-93. Thomas Driscoll was a well-known early rancher and partner in most of Maish’s enterprises.) Their first enterprise is operating a corral and selling bricks and lime. The following year they open a meat market. In 1872, they open a restaurant and in 1875 they build the Palace Hotel in Tucson.
- 1875(March) Maish and Driscoll begin running cattle on the Canoa grant, continue the operation until 1905 with Paul Abadie as additional partner.
- 1876 (Nov 18) Frederick Maish and Thomas Driscoll purchase an undivided one-half interest in the Canoa grant from Tomás Ortiz for \$1100 (variously reported as \$1200) at the rate of \$200 down and \$35 per month until paid. Following the death of Tomás Ortiz, partners make payments to his daughter, Rosita. The heirs of Ignacio Ortiz hold the other half of the grant.
- 1877 (Feb 7) Pima County Law Case is decided, subject of suit is unclear. Court rules in favor of Pima County against Tomás Ortiz and unknown heirs of Ignacio Ortiz. Sheriff set to auction rights to the Canoa grant on March 6, 1877.
- 1877 (Mar 6) Sheriff sells at public auction any interest Tomás Ortiz and unknown heirs of Ignacio Ortiz hold in the Canoa grant to Maish and Driscoll for \$200.76 to settle a judgment against Ortiz. (Presumably Maish and Driscoll acquire the other undivided half interest in the grant at this time.)
- 1877 (Sept 14) Pima County Sheriff issues deed to Maish and Driscoll for additional portions of Canoa grant.
- 1870s Maish and Driscoll initially stock the ranch with 400 head of Mexican cattle (or according to other accounts with 300 head of Texas Longhorns). After three years of losses, the operation becomes profitable. They expand the number of cattle on the Canoa to over 4000 by the end of the decade. They develop eight separate camps. ‘The river furnishes abundant water and land has plenty of gramma grass.’ The partners furnish beef to butchers in Tombstone and Los Angeles. They invest in Devon and Durham bulls to improve herd quality. They construct houses and corrals and develop steam-driven irrigation pumps, eventually developing enough water for 25,000 head of cattle.
- 1879 (Sept 1) Initial Petition of Claimants for the Canoa grant filed with Territorial Surveyor General George Wasson by Claimants: Maish and Driscoll with Ygnacio P. Ortiz, Anna M. Ortiz, Anna I. Ortiz de Yancey and Mariana Ortiz de Martinez, heirs at law.
- 1880 (Feb) Wasson recommends to the U. S. Congress approval of the claim and authorizes Harris survey of the property.
- 1880 Surveyor John L. Harris surveys Canoa grant.
- 1880s Maish and Driscoll obtain government contracts to supply the San Carlos Indian Reservation with beef cattle.
- 1884 Maish and Driscoll maintain 8 separate cattle camps on the Canoa and stock the Canoa and adjacent public ranges with 10,000 head of cattle. By 1884, in addition to the Canoa, Maish and Driscoll owned the Deep Well and Fresnal ranches and the Buena Vista land grant. They also owned the Palace Hotel, the largest in Tucson. In 1884, they also purchase Tucson’s first water-powered flourmill, originally constructed by William S. Grant shortly after 1860. During the Civil War, Union troops intentionally destroyed the mill when Confederates entered and occupied Tucson. In 1864 James Lee

Timeline

purchased the mill site rebuilt the mill and operated it in partnership with William F. Scott. During the late 1880s, Maish and Driscoll developed the lake at the mill, Silver Lake, into a resort with a hotel and facilities for fishing and boating. They constructed large holding pens and watering facilities for holding cattle waiting shipment on the railroad.

- 1884 Maish and Driscoll graze 10,000 head of cattle on the Canoa. Sold 2,600 head for \$65,000 to supply the San Carlos Indian Reservation.
- 1884 (spring) Levi Howell Manning of Halifax County, NC arrives in Tucson. A graduate of the University of Mississippi, he worked as a reporter for both the Citizen and the Star, served briefly as Mineral Clerk in the office of U.S. Surveyor General. He worked for two years as general manager of the Ice and Electric Company. He later opened a mercantile store and invested in the construction of the Santa Rita Hotel. He eventually concentrated on mining and real estate, playing an important role in the operation of the Canoa grant, first as a partner and later as owner of the ranch. (Details of his life and activities in Tucson can be found in the Manning Family Timeline.)
- 1887 (Oct) Maish, Driscoll, John Gardiner, J. H. Hise, and William Lovell incorporate the Canoa Canal Company, the main purpose of which is “to construct a main canal from a point on the Santa Cruz River...on or near the southern boundary [sic] of the Mexican Land Grant known as the ‘Canoa’ and from there in northerly direction down the Santa Cruz Valley, to the City of Tucson and to the north thereof...” Also to acquire water rights and develop water production on the land through artesian and other wells for “irrigating land, watering live stock and for domestic and other purposes.” The capital issue was \$500,000 with 5,000 shares at \$100 apiece. The project was apparently over a mile in length and 30 feet wide with many branches. After a flood washed out the canal, only a mile of the main canal was left. Another report states that the main ditch was reported to be 100 feet wide at the top, 12 feet wide at the bottom, and 15 feet deep. (The late 1880s mark the beginning of long-term irrigation and canal delivery system used on the fields at the Canoa Ranch. The system was briefly used in the attempt to transport water to the city of Tucson during the 1890s. During the Manning era, the system was repaired, expanded, and used to irrigate extensive fields at the Canoa until the late 1920s.)
- 1888 A pamphlet, Description of the San Ignacio de la Canoa Grant on the Santa Cruz River...in Pima County, Arizona Territory, is published indicating that the grant is for sale. Statistics of the ranch are given for cattle, irrigation costs computed, and the environment praised.
- 1888 (Dec.11) Frederic Maish (Democrat) is elected Mayor of Tucson (beating W. E. Stevens 349 to 266) having announced his candidacy the evening prior to the election.
- 1890-91 Canoa canals wash out in repeated floods.
- 1893-94 Work on Canoa Canal resumes.
- 1893 Maish and Driscoll submit maps to Court of Private Land Claims, supporting claim for 46,696.2 acres, a much larger parcel than the original grant for 4 sitios. Amount in claim is confirmed to the owners.
- 1893 (spring) President Grover Cleveland reportedly appoints Levi Manning to the position of surveyor-general of Arizona, a position he held for five years. The appointment resulted in Manning being called “General” Manning.
- 1894(Sept 14) Maish loses suit for repayment of a promissory note, for which his interest in the Canoa grant was the security. Maish’s interest in the company was to be sold a public auction in the future.
- 1895(May 24) Maish gives Paul Abadie of Ore, France a mortgage on his interest in the Canoa grant.
- 1898 Government appeals Canoa decision to higher court (variously reported as Supreme Court).
- 1899(Feb.15) U. S. Court of Public Land Claims rules in favor of Maish and Driscoll’s claim but confirms title of claimants for only 17, 203 acres, slightly less than original 4 sitios. The attorneys who worked on the case, Charles W. Wright and Rochester Ford, each receive an undivided one-eighth interest in the grant.
- 1899 (July 29) James Shea buys Maish’s interest in the Canoa grant at public auction for \$1491.91 to settle the judgment dating from September 14, 1894.
- 1899 (Oct4) Frederick Maish (63) and his new wife Basilia Velasquez Maish (30) and Thomas and Mina Driscoll sell an undivided one-eighth of their interest to Rochester Ford for \$1 and an undivided one-eighth interest to Charles Wright for \$1. (Sale is to attorneys who handle the Court of Private Land Claims case.)
- 1899 (Nov 1) Shea sells his interest to Rochester Ford.
- 1900 Paul Abadie initiates legal action (Jan 20) to redeem mortgage on Maish’s interest in the Canoa grant. March 24 receives deed for Maish interest from county sheriff.
- 1900 (Aug 31) Wright sells his interest in Canoa grant to his wife, Harriet, who sells it to Rochester Ford on June 26, 1902. (Wright also had an interest in the Buena Vista grant.)

- 1900 Third re-survey of the Canoa grant by Philip Contzen. Contzen replaces wooden post survey markers with stone markers.
- 1900 (Dec 6) Abadie settles claim on the Canoa grant for \$1 and a portion of the profit when land is sold. No filing is made until the grant is sold in 1905.
- 1902 (Jun 26) Harriet Wright sells her one-eighth interest in Canoa to Rochester Ford for \$10.
- 1903 (Aug 4) Rochester Ford sells his interest in Canoa grant to his sister, May Ford, of St. Louis.
- 1904 Levi Manning (Dem) elected mayor of Tucson on anti-gambling platform.
- 1905 (Apr 1) Driscoll, Abadie, and May Ford file suit against various corporations and individuals over ownership of Canoa grant. They later win the suit, which succeeds in “cleaning up” the title. [Driscoll, Paul Abadie, and May Ford file suit in District Court against the Arizona Land and Mining Co., Sopori Land and Mining Co., the Unknown Heirs of Tomás Ortiz, deceased, of Ignacio Ortiz, deceased, of Francisco Villaescusa, deceased, of Fernando Cubillas, deceased, of Fernando Rodriguez, deceased, and of Sylvester Mowry, deceased. This is because four granddaughters of Tomás Ortiz had turned up living in Tucson, two of whom became involved in the suit as defendants. They were Rosa Redondo and Virginia R. de Martinez, whose mother was Cerafina Ortiz Martinez, one of Tomás’ daughters. The other two were daughters of Tomás’ son, Jesus Maria Ortiz, Carmen Palmer and Josefa Warner, married to John Warner, son of Solomon Warner. Their claim is that Tomás was nearly ninety when he died and had been senile for a number of years before that. Tomás’ daughter Rosa took advantage of this and forged his signature in collusion with Driscoll on a deed of the Canoa grant conveyed to Maish and Driscoll. Because of this, the defendants hold that they are still legally owners of the grant and want it back, along with payment for the use over the years.] The defendants lose because they had done nothing to challenge the deed over the years.

Wisconsin Period

- 1905 (Jan 3) Mayor-elect Levi Manning delivers speech on construction of railroad line between Tucson and Twin Buttes Mine. Manning sets stage for development at Twin Buttes and for the period in which Wisconsin investors are the major owners of the Canoa grant.
- 1905 (Feb) First issue of The Twin Buttes Times is published to report on activities of the Twin Buttes Mining and Smelting Company, formed in September 1903, which operated the group of mines known as the Twin Buttes. [A separate corporation, the Twin Buttes Railroad Company, with same mix of men, was formed to build a line from Tucson to Twin Buttes Camp to haul ore from area mines to be smelted. John G. Baxter, one of the three men who discovered the nineteen mining claims that would make up the Twin Buttes complex, was from Wisconsin and would become Mine Superintendent. Most of the other stockholders and officers of the company were from Wisconsin. These include David S. Rose, mayor of Milwaukee; Earl B. Rose, his son; H. J. Blakeley, stepson of David Rose; Edward P. Hackett, of Hackett and Hoff, a real estate and brokerage firm. Phil C. Brannen and Vic E. Hanny, of Brannen and Hanny, a Tucson clothier and owner of a men’s furnishings store, represent local investment. There are extensive plans for Twin Buttes Camp, with advertisements for the Twin Buttes Store, the Twin Buttes Camp Hotel, the Twin Buttes Public Telephone Station, the Twin Buttes Freight Teams, an offer to buy wood, and notice of a beef market on Seward Brown’s ranch. The Twin Buttes Railroad Company will use materials supplied by Southern Pacific in the construction of the rail line. The Tucson depot is located at First Avenue and Twenty-Second Street, Block 170. The train should be running in about four months. The plat of a village of adobe cottages is in preparation. Besides the original nineteen claims, forty-two more have been discovered and claimed, bringing total acreage to twelve hundred acres. There is concern as to where a smelter might be located, Tucson being the preference.]
- 1905 (Mar 28) Canoa Sale Reported prior to formal transfer of deeds.
 March 28, 1905: Arizona Daily Star, p. 5, reported: “One of the largest real estate deals of the past year was closed yesterday when Mayor David Rose, of Milwaukee, together with his friend, E. P. Hackett, and other men who are interested in the Twin Buttes company, bought the big ranch located five miles this side of the mine spoken of, which is known as the Canoa grant...it is the intention of the new purchasers to turn it into the largest truck and hay ranch of the Territory. There are at least 10,000 acres that may be tilled for that purpose, and up to date there have been something like 1200 acres under cultivation. There is an irrigating ditch on the property on which already some \$10,000 has been spent, and this will be enlarged by the new owners to meet the demands of the day. In addition to this there are thousands of cords of mesquite wood on the land in the form of live timber, all of which will be utilized for modern purposes. Old Ignacio died in the ‘60’s in California, and Tomás followed him in 1879, passing away here, and leaving the estate to a half-witted daughter who has since also died...the Milwaukee capitalists...did not care to state the price last night, but it is known that it could have been bought for \$20,000 a short time ago...The Twin Buttes road will run through the northwest corner of the property, which adjoins the Stewart Brown ranch, thus furnishing the necessary transportation for the marketing of the products.”

According to newspaper articles available online from the Wisconsin Historical Society, David S. Rose (June 30, 1856-August 10, 1932) was a popular five-term mayor, who was known as “All-The-Time Rosie” for his refusal to shut down Milwaukee’s red-light district because of the tourist dollars it attracted. He sported a goatee and a large diamond, carried a cane, and was always fashionably dressed. He was a populist Democrat, a candidate for Wisconsin’s governorship in 1902, and a friend of Frank Lloyd Wright. After losing his last try for mayor in 1910, he spent time in China and the American West on various business opportunities. He wrote a book about his travels and experiences.

Timeline

- 1905 (Mar 30) Rancho de La Canoa Land Company files articles of incorporation, capital stock at \$150,000 shares at \$100 each.
- 1905 (Jul) Second issue of The Twin Buttes Times includes an article about the acquisition of the Canoa grant by the Rancho de la Canoa Land Company. Frank W. Sabichi is Superintendent of the ranch. 9,000 acres will be used for farming alfalfa, barley, red peppers, cantaloupes, watermelons, beans, and other vegetables, employing about three hundred people and fifty teams. Philip Contzen will be laying out an irrigation system using canals, reservoirs, and lateral ditches. There is 8,000 acres for grazing. 40,000 cords of wood will be harvested for use in making steam for the mines and the trains. There will also be a creamery and cheese factory, with about five hundred milch cows. A post office and a school district are also in the works. An ad for Sunday Excursions on the Twin Buttes Railroad to Twin Buttes for picnicking and camping. An ad for ice brought down from Tucson. There is an ad promoting summer homes in Twin Buttes. An ad placed by Starr and Wakefield for lots to be sold in the South Park Addition, across from the Twin Buttes Park where the train station will be in Tucson. A schedule for the train shows Canoa as one of the stops between Twin Buttes and Tucson, the rail line running across the grant's northwest corner.
- 1905 (Dec 12) Paul and Joaquina Abadie, Thomas and Mina Driscoll, and May Ford sell Canoa to Edward P. Hackett and David S. Rose of Milwaukee, WI for \$22,500. Sale includes "all water and water rights, ditches, and ditch rights."
- 1906 (Feb 5) Maish Driscoll Company file quitclaim deed selling whatever remaining interest they may have in Canoa to Rose and Hackett for \$1. (Clears up title.)
- 1906 (Feb) Maish and wife sell whatever remaining interest in Canoa to Rose and Hackett for \$5. Willard S. and Wornall J. Wright, John B. and Mary M. Wright, Frederick and Biceia Maish all separately file quitclaim deeds to Rose and Hackett for \$5 during the month of February.
- 1906 (June15) Maish and Driscoll (as individuals) make settlement with Maish Driscoll Company regarding personal debts. Maish and Driscoll receive money from the company for salaries.
- 1906 (Jun30) Stockholders begin visiting the ranch. "A good portion of the ranch has been cleared up and next week a large barley and alfalfa crop will be sown. It is stated that about 300 acres will be put out in alfalfa and barley."
- 1906 (Jun 30) The Twin Buttes Railroad expected to reach the Twin Buttes mining camp by that evening. A big excursion is planned for July 4 with hopes for many riders to Twin Buttes where a new dance pavilion was constructed, courting the tourists.

Manning Period

- 1908 (Dec 15) Santa Cruz Reservoir Land Company incorporated, with Levi Manning (pres.), Epes Randolph, V. S. Griffith, A. W. Forbes, and S. L. Kingan as board of directors.
- 1910 (Nov 19) Canoa Ranch Company (of Wisconsin) sells to Canoa Ranch Company (Arizona) for \$1. This occurs after additional suits have been filed to clear title. When Canoa Ranch Co. is incorporated in Arizona, the company will pay \$135,000. Exceptions for railroad right of way and personal property on the ranch. Deed transfer requires that 200 additional acres be cultivated and an increase to twice the present supply of gravity-fed water be accomplished by January 1, 1912. Profits from cordwood sale to be used to improve the water supply. The "gravel bed" cannot be used commercially without consent of the Wisconsin company.
- 1910 The Tucson and Nogales Railroad Company completes the line connecting the two towns, with 10 miles of track crossing the Canoa Ranch. The three-hour trip from Tucson to Nogales cost \$3.45. After 1923, through sleeping car service was available from Los Angeles to Mazatlan. Portions of the line were constructed previously: Nogales to Calabasas was completed in 1882 by the New Mexico and Arizona Railroad; Sahuarita to Tucson was completed in 1906 by the Twin Buttes Railroad Company. Many large shipments of cattle loaded at the Canoa shipping pens.
- 1910 (Nov25) Twin Buttes Mine shipping ore to El Paso smelter.
- 1910 (Nov25) Canoa Ranch Company incorporated by John Mets, N. E. Plumer, and J. Knox Corbett. No officers named, but Levi Manning becomes president.
- 1910 (Dec1) Canoa Ranch Co. (WI) sells Canoa grant to Canoa Ranch Co. (AZ) for \$10,000 including all water and ditch rights. Sam D. Adler is president and Ralph M. Friend secretary.
- 1910/11 Ancestors of the present-day McGee Ranch exercise an option on Canoa Ranch, but retain their mountain property in the Sierritas. Unable to continue making payments, they drop the option in 1913. [McGee, Harris, and Lively families resided on the McGee Ranch, arriving in approximately 1900, when wagons broke down on way to California. Legal documents only confirm a 1939 agreement between two McGee families with Howell Manning to settle ongoing disputes over use of leased land. This indicates that McGee family members likely leased land for grazing, probably between 1910 and 1913.]
- 1912 (Feb 23) Canoa Ranch Company (WI) deeds right of way across Canoa grant to Tucson & Nogales Railroad Co for \$10.

1912 (Jun 18)	Canoa Ranch Co. (WI) confirms sale of deed for right of way to the Southern Pacific Railway Co.
1912/1914	Later newspapers variously report that Levi H. Manning purchased the 30,000-acre Canoa Ranch for \$165,000 in 1912, or that he purchased it in 1914, but no deeds exist from either date.
1916 (Jul 16)	Manning is president of Canoa Ranch Company. The company sells a portion of the Canoa grant (including water and ditch rights) to Agricultural Products Corporation of New York. This is the northern half of the Canoa grant. The sale is connected to Intercontinental Rubber Company's attempt to grow guayule as a rubber substitute during World War I. The guayule experiment fails. This portion of the grant later becomes property of Continental Farms and Feed Yards. The farmland is planted in cotton and other crops, and a large feedlot is later operated along the railroad tracks, using cotton seed meal as part of the cattle feed. Eventually portions of this land become the town of Continental.
1917 (Mar 17)	Canoa Ranch Co. executes a Deed of Trust, conveying "all of the hereinbefore described premises" to the Merchants Bank & Trust Company...to secure the payment of...\$100,000...first mortgage....
1916-20	Manning acquires land adjacent to the southern half of the Canoa, bringing ranch lands to 100,000 acres. Grazing land is gradually divided into 18 separate fenced pastures, to facilitate rotational grazing.
1917	Manning introduces pure-bred Hereford bulls into his cattle herd.
1919 (Nov 13)	The Canoa Ranch Company (AZ) sells the Canoa grant to L. H. Manning for \$10, including all water and ditch rights. This is a warranty deed. Manning is president of the Canoa Ranch Co.
1919 (Nov 14)	Manning mortgages the Canoa grant to Fidelity Savings and Loan association of L. A. to secure a loan of \$137,500. At the same time the Canoa Canal Company assumes a mortgage on another loan from Fidelity.
1920 (Jan 12)	Manning sells the Canoa grant to the Canoa Ranch Company for \$10, including all water and ditch rights. Canoa Ranch Co. assumes loan from November 14, 1919.
1921	Levi Manning's son, Howell Manning, Sr., takes over management of the ranch. Howell Manning constructs two huge pit silos, installs an extensive irrigation system, fences interior pastures, initiates grazing rotation system, and constructs a 5-acre artificial lake.
1925 (Sept)	Canoa becomes well know for being one of the most progressive ranches in the Southwest with prized Arabian horse stock, including the famous thoroughbred Arabian stallions El Jafil and Saraband. Canoa employs 35-40 cowboys, with 10 families living permanently on the ranch. The ranch has a school for ranch children, a blacksmith shop, welding shop, barns, sheds, corrals, and 1200 acres of irrigated pasture. Howell Manning expands the depth of the canal head cuts to tap underground water and drills several deep wells to supplement irrigation water. Manning constructs two 2500-ton capacity concrete-lined pit silos for development of ensilage.
1926 (Dec)	Canoa Ranch cattle operation works in conjunction with Manning's Scotch Farms on the banks of the Santa Cruz River near downtown Tucson, where he keeps 160 registered sires and dams. Canoa Ranch has 800 bulls (likely registered or pure-bred).
1926	Manning purchases registered Clydesdale draft horses.
1926 (Feb 19)	Canoa divided into 18 large pastures to support cattle breeding and rotation. High grade cattle are purchased from well-established herds of Hazlett at El Dorado, Kansas; Yost of Kansas City; Blaney of Denver; Engle and Sons, Wallace Good; Taylor of Versailles, Ky. Pure bred herd originally confined to 500-acre Scotch Farms (Tucson on Santa Cruz River) now on more extensive area at ranch, where breeding is scientifically managed.
1926-28	Numerous newspaper articles on improved breeding stock at Canoa - both horses and cattle. Each breed is important in livestock history. Manning begins selling registered and pure-bred stock to buyers in California and mid-west.
1928 (Nov27)	Manning constructs the longest feeding trough in the nation, 1/3 mile long with capacity to feed 1500 head at one feeding. Feed consists of cottonseed cake and meal. Ration at two pounds of cottonseed cake per day per calf.
1930 (Jul)	Manning buys La Osa Ranch from Jack Kinney; also buys Palo Alto, Poso Nuevo, Brown Canyon, Saucito, Stevens, West Coast Represso, and Tully ranches.
1935	John W. Smith, architect, designs ranch house, supposedly situated on site at which Anza camped on his way to establish the presidio and settlement at San Francisco, CA.
1935	Levi Manning dies; Howell Manning acquires the ranch. Howell Manning was divorced in 1933, amid considerable scandal, accusations, and reports of large settlement.
1936	Howell Manning builds the new ranch house.
1937	New ranch house selected from 650 entries as one of six to be featured in August issue of Architectural Forum.

Introduction

Timeline

- 1937 Fire destroys three farm buildings and hay stacks valued at \$3000.
- 1939 (Feb) Canoa listed for sale in Country Life magazine with Drachman Grant Realtors handling sale.
- 1939 Samuel Goldwyn films The Westerner, starring Gary Cooper, at the Canoa.
- 1951 (Sept) Howell and Evelyn Manning sell 100 sections (64,000 acres) patented land with leases, including Palo Alto Ranch to Roland and Eldora Curry and Manerd and Alice Gayler for \$10. Later in the same month the Currys and Gaylers give a mortgage on the property to Howell and Evelyn for \$190,000.
- 1951 (Dec) Howell Manning, Jr. (grandson of Levi Manning and son of Howell Manning, Sr.) and two Canoa employees Dave Waldon (88) and Andrea Waldon (80) are killed in a head-on automobile collision on the Nogales highway.
- 1953 Manning, Sr. sells 200 sections (128,000 acres) of the Canoa Ranch to Kemper Marley of Phoenix for approximately \$600,000. The sale included all of the Manning cattle and land holdings with the exception of 20,000 acres at the southern end of the original grant near Tubac. Manning had already sold the Poso Nuevo and the Palo Alto ranches.
- 1954 (Jan) Howell Sr. and Evelyn sell land to United Liquor Company (owned by Kemper Marley) for \$10 – no Canoa grant land included. Later in the same month the board of directors United Liquors assumes a \$200,000 mortgage to Connecticut Mutual Life Insurance of Hartford, of which Marley is president. United Liquors gives a mortgage to Howell and Evelyn on the Marley property for \$250,000, subject to the mortgage to the Connecticut Mutual Life Insurance.
- 1956 (Jun) Marklan Manning (son of Howell, Sr., and brother of Howell, Jr.) files complaint alleging his father Howell Manning is mentally ill due to excessive drinking, which has caused memory lapses, delusions, rages, etc. Order for Detention is issued with hearing set for June 12. Manning is taken under guard to St. Mary's Hospital in Tucson
- 1956 Continued court actions by Marklan to have Howell, Sr. declared incompetent. By July, Howell has improved and in August Marklan's petition is dismissed.
- 1960 (Dec) Howell receives mortgage from Trans-West Trust for \$153,586 on approximately 678.62 acres on the Tucson-Nogales Highway for the purpose of creating a subdivision of single-family home (southern portion of Canoa grant).
- 1961 (May) Howell and Evelyn sell property to William and Clare Manning Schnauffer, their son-in-law and daughter, including the portion of the ranch that was part of the Trans-West sale.
- 1962 (Apr) Howell and Evelyn sell portion of Canoa grant southeast of Tucson-Nogales Highway to Phoenix Title and Trust Company, as Trustee.
- 1963 (Jan14) Howell sells Evelyn 112.9 acres of Canoa grant for \$198,000 as her sole and separate property.
- 1966 (Jun) Unnamed trust held by Phoenix Title and Trust Co. files suit in superior Court asking for \$32,000 in mortgages from Howell Manning. Not clear if this is Canoa grant land.
- 1966 (Oct10) Howell Manning, Sr. dies at age 67.

Corporate Period

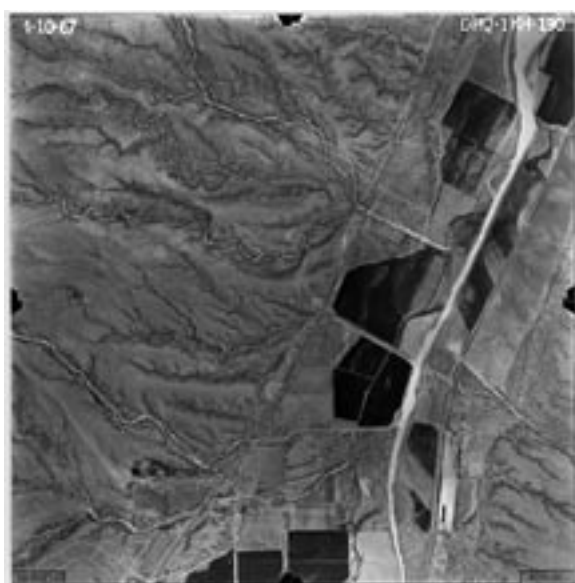
- 1967 (Jan 1) Madera Land and Cattle Company, an Arizona corporation owned by California investors, buys 2600 acres of deeded land from the Canoa, plus 5,000 acres of leased land.
- 1960s-70s Period of decline for the Canoa: artificial lake dries, cottonwood trees die, ranch equipment and infrastructure falls into disrepair, buildings deteriorate from disuse.
- 1967 (Oct 25) Evelyn Manning sells a portion of Canoa grant to State of Arizona, for right-of-way for highway for \$10; also sells ditch rights for \$1.
- 1968 (Feb15) Remaining portion of original land grant is sold to the Duval Sierrita Mining Corporation of Texas. Duval gets 6,000 acres for \$1,100,000 and 100 shares of Canoa Water Company.
- 1970 (May2) Evelyn Manning dies at 63.
- 1983 (Oct) October flood causes severe damage to fields and to the main ranch house.
- 1980s San Ignacio de la Canoa Ranch is listed on the Arizona State Inventory of Historic Places.
- 1980s Pennzoil Corporation purchases Canoa, holds property briefly.
- 1988 (Jan) Pennzoil sells the 6,200-acre Canoa grant to E. C. Garcia & Co., a local investment firm, for \$15 million.

Timeline

1988 (Aug)	Garcia & Co. sells the Canoa grant to Phoenician Financial Corporation, a subsidiary of Charles Keating's American Continental Corporation. Phoenician Financial later defaults and Pennzoil reclaims it.
1989	American Continental Corporation declares bankruptcy and is investigated for federal violations of insider trading regulations. Keating trial begins.
1989 (May)	Canoa Ranch buildings are included in the Green Valley Community Plan. Tubac Historical Society passes resolution to save the historic structures at the ranch and to include the Canoa area in a Santa Cruz linear park, with marker at the Canoa crossing. Canoa Ranch house opened to the public, used for annual meeting and picnic by Tubac Historical Society. Remaining ranch buildings include: main house, "long" house, guesthouse, bunkhouse, blacksmith shop, schoolhouse, and remnants of corrals, barns, and storage buildings.
1991 (Jan)	The Canoa Ranch Corporation, a subsidiary of Pennzoil, auctions the ranch property. Property sells for \$6.5 million to Lowell Williamson et al of Scottsdale.
1994 (Mar)	The Williamson group purchases Fairfield Homes of Green Valley.
1995	Fairfield Homes buys the Canoa Ranch for \$6,400,000 from Pennzoil.
1995 (Dec 12)	Pima County Board of Supervisors votes to amend the county's Comprehensive Plan, with the understanding that Fairfield will develop a Specific Plan for the 6200 acres.
1997 (Mar)	Pima County approves Fairfield's development plan for 300 acres.

Conservation Period

1997	\$2 million is approved by Pima County voters to buy the Canoa Ranch, along with \$200,000 for rehabilitation of structures
1998	Fairfield develops plans to rezone Canoa.
1998	The Pima County Cultural Resources Department identifies archaeological and historical sites on the Canoa dating from the Archaic, Hohokam, Piman, Spanish, Mexican, and Territorial periods. Historical and cultural remains include indications of the Anza Trail, the Canoa spring location, remains from Apache raids, and remnants of the Maish and Driscoll canal.
1999 (Jan)	Fairfield's Specific Plan for 5,238 acres rejected by the Board of Supervisors. Canoa Heritage Foundation, a non-profit group, develops plans for a satellite Smithsonian Museum at the Canoa. Amigos de Canoa, another non-profit organization, forms to promote historic preservation at the Canoa site.
2001 (Mar 13)	Pima County Board of Supervisors approves a plan for Fairfield Homes to build on 1300 acres and the County to purchase 4800 acres for \$6.6 million from Fairfield.



7



1



8



6



2



9



5



3



10



4



11



Native People – Archaic; Early Ceramic; Hohokam; and O’odham

2000 BC

1000 BC

0

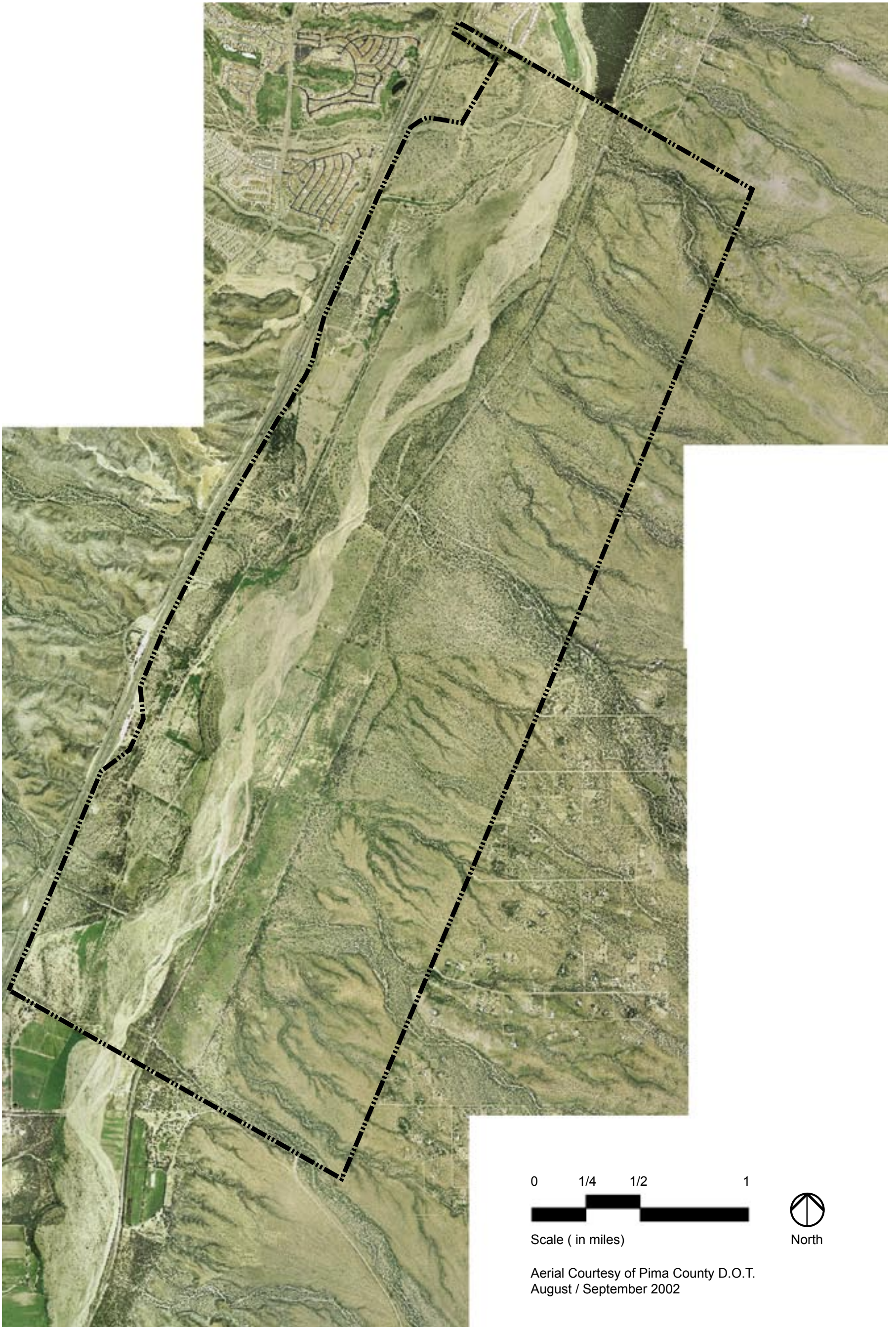
1000 AD

2000 AD

Credits for previous page

1. Canoa Ranch property looking east
Photo courtesy of Bob Sharp, 2005
2. Canoa Canal around 1925
Photo courtesy of Diana Hadley
3. North ramada at Guest House
Photo courtesy of Diana Hadley, date unknown
4. Union Pacific Railroad tracks, looking south
Photo courtesy of Statistical Research, 2006
5. *Retaque* corrals
Photo courtesy of Bob Sharp, 2005
6. Young Brahman bull at Canoa Ranch
Photo courtesy of Deezie Manning-Catron, date unknown
7. 1967 aerial photo of southern portion of ranch
Photo courtesy of Pima County
8. Lane to house occupied by Deezie and Howell Manning, Jr.; Note water tank in background
Photo courtesy of Deezie Manning-Catron, date unknown
9. Canoa Lake
Photo courtesy of Deezie Manning-Catron, date unknown
10. Representative image of an Early Agricultural village
Courtesy of Desert Archaeology
11. *Vaqueros* at the roundup
Photo courtesy of Deezie Manning-Catron, location and date unknown

Aerial Photo



0 1/4 1/2 1



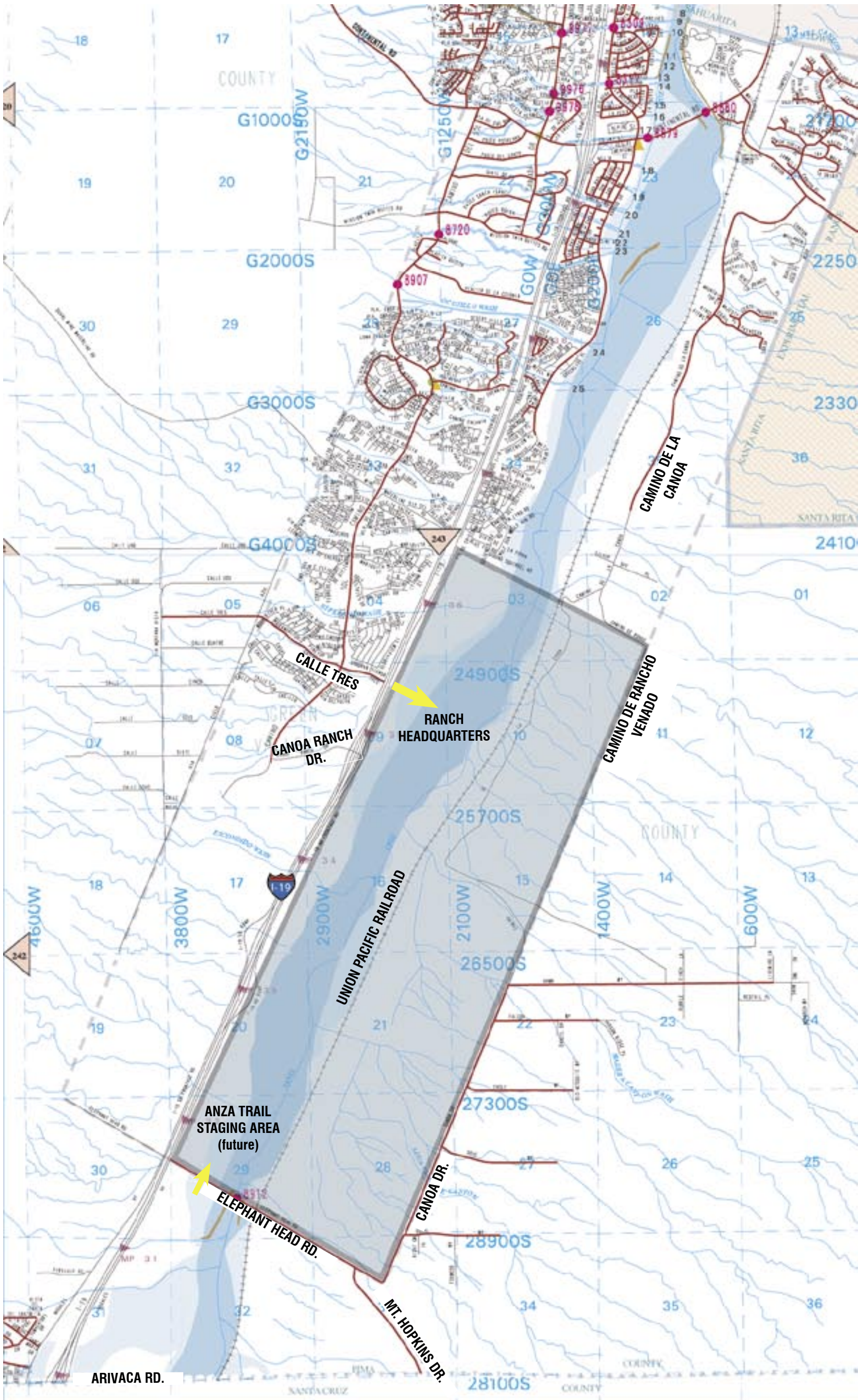
Scale (in miles)

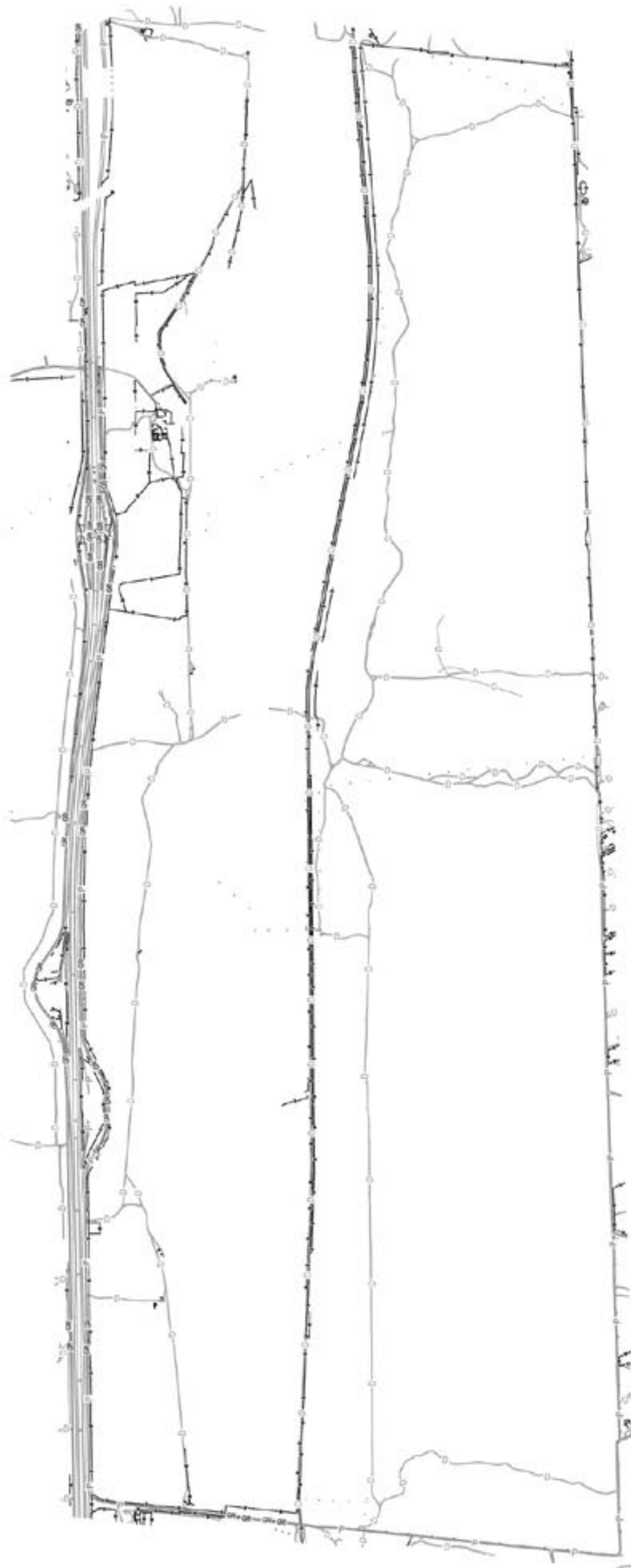


North

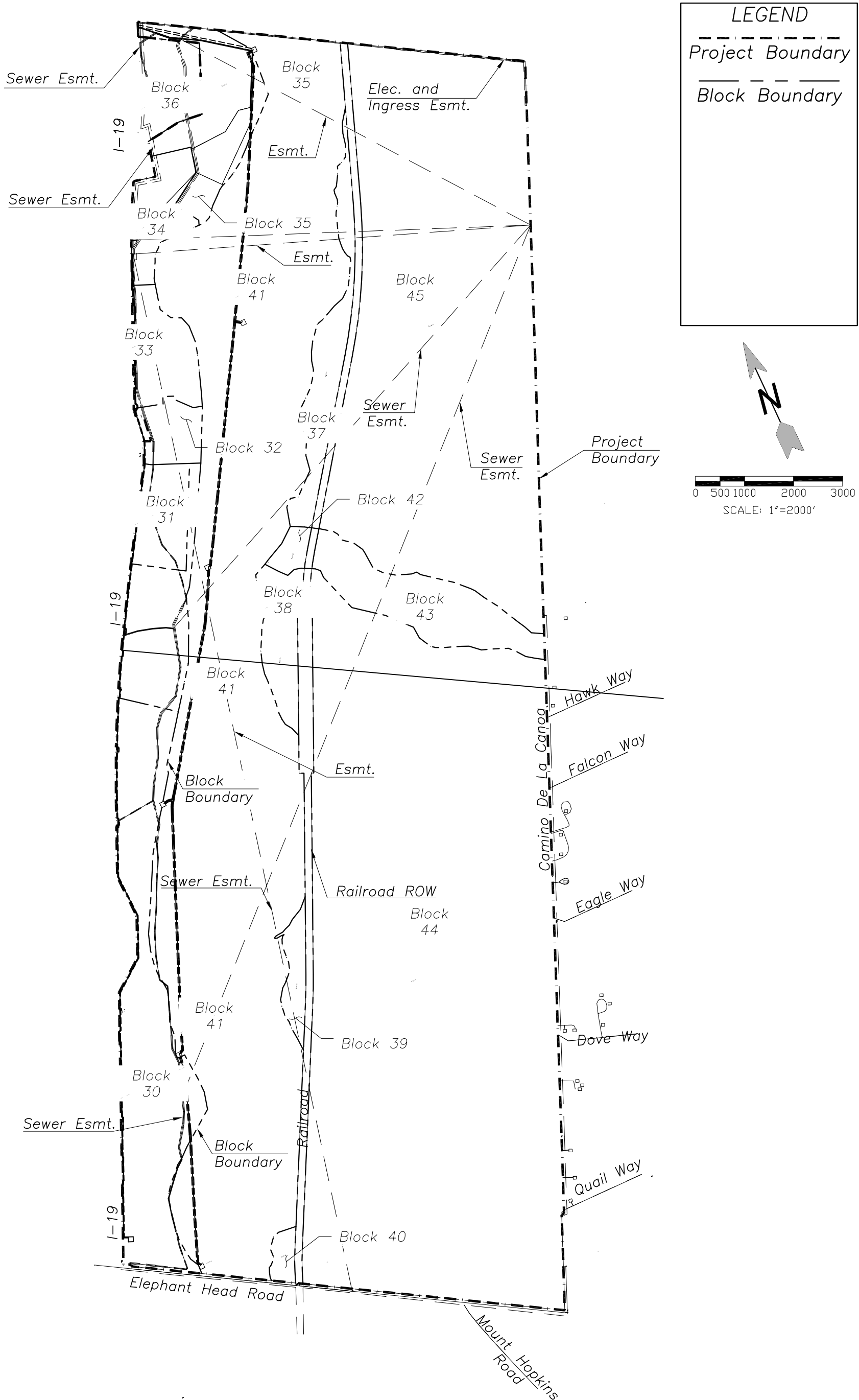
Aerial Courtesy of Pima County D.O.T.
August / September 2002

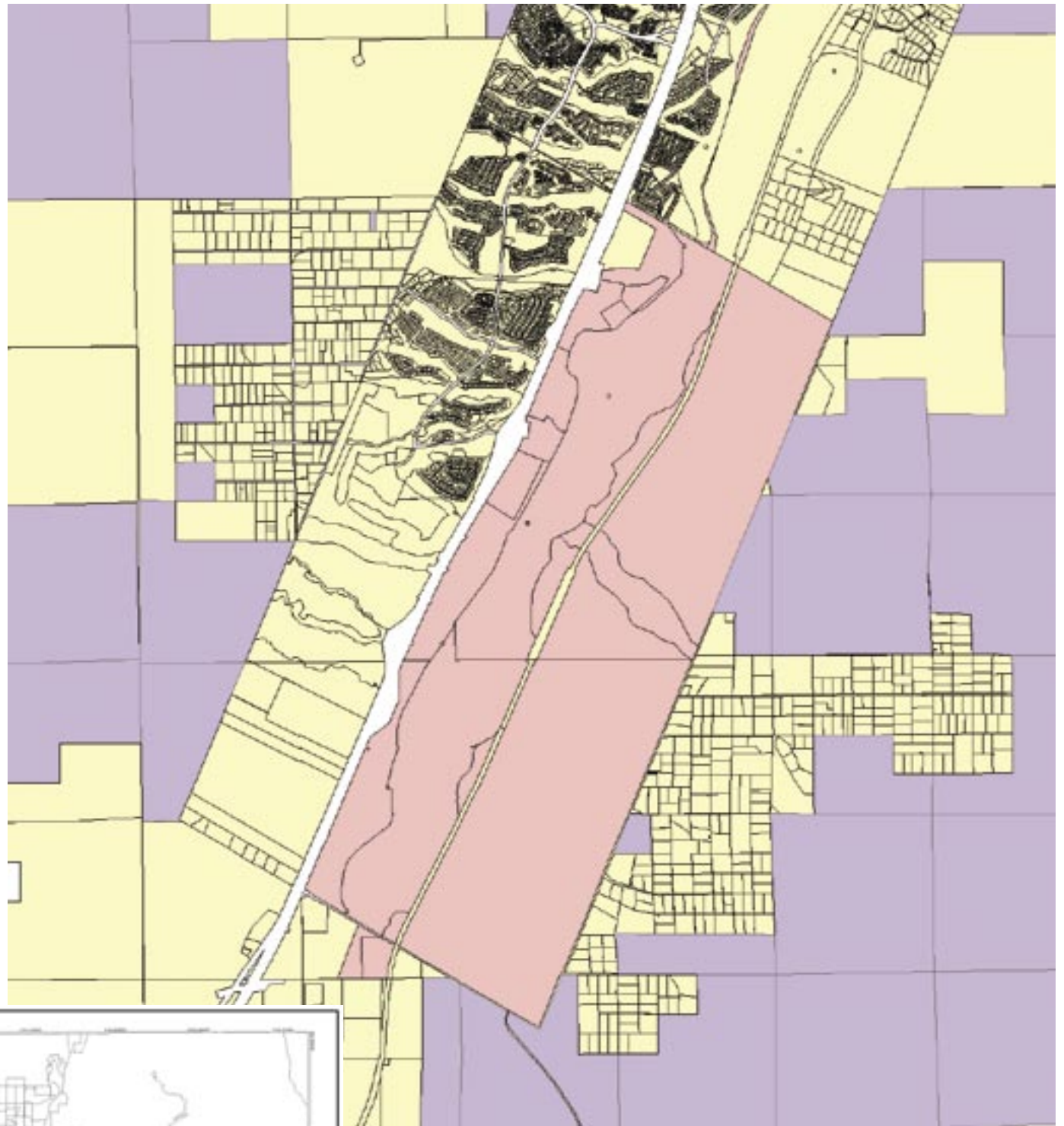
Transportation



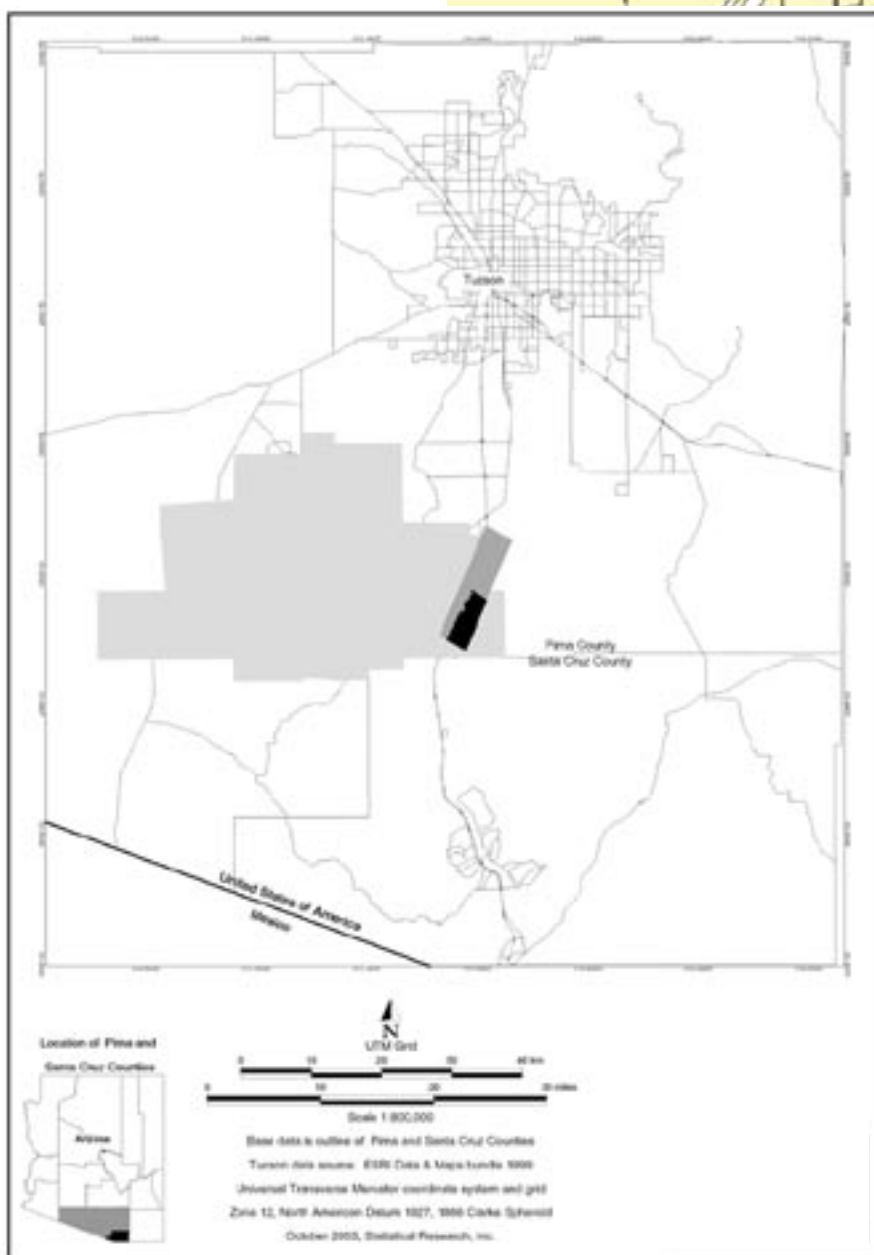


Survey Overview





Land Ownership Map
 Courtesy Pima County G.I.S. Database



- Key
- PRIVATE LAND
 - STATE OF ARIZONA
 - PIMA COUNTY
 - PIMA COUNTY PROPERTY BOUNDARY
 - LA CANOA LAND GRANT BOUNDARY
 - 1953 CANOA RANCH HOLDINGS

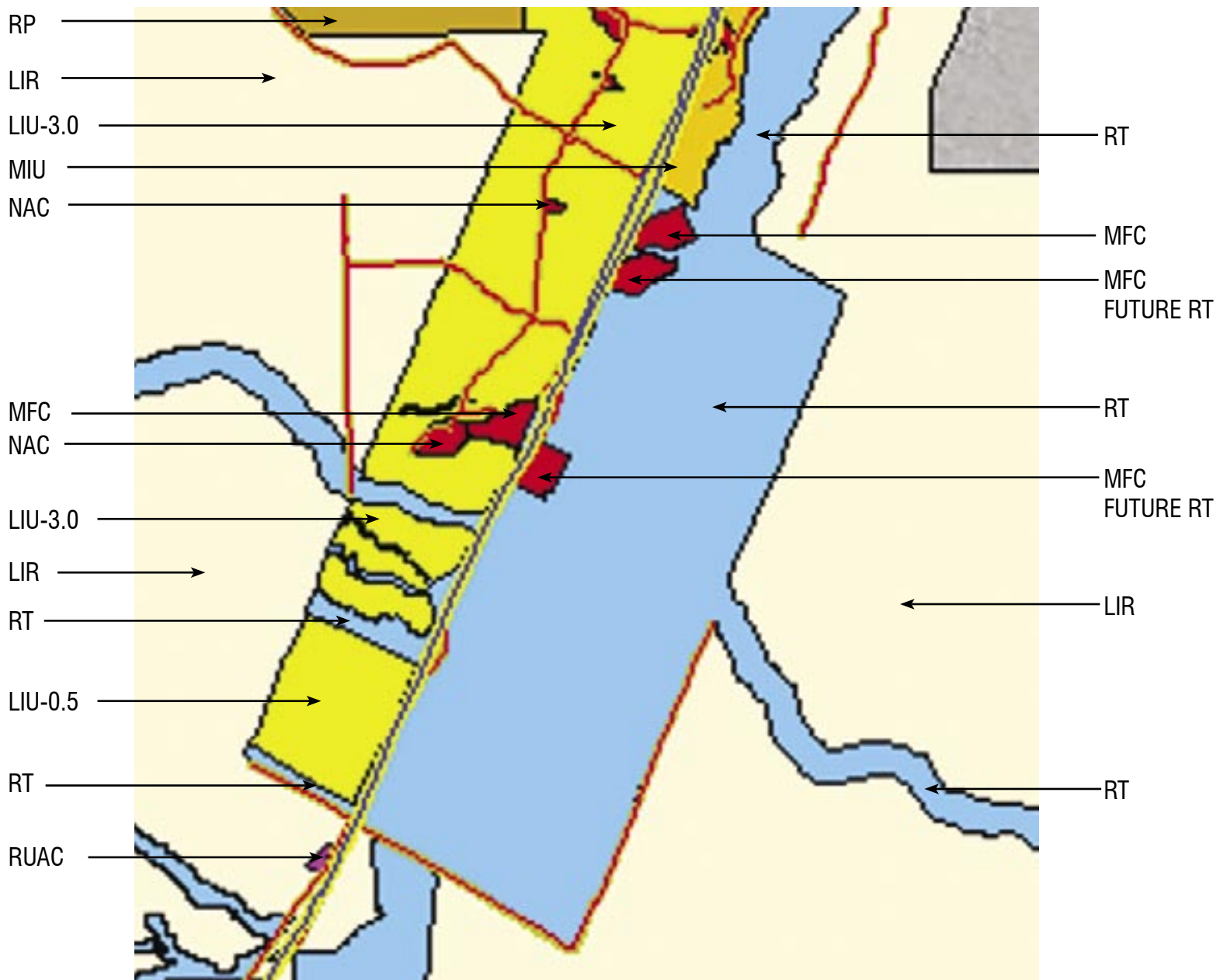
Map of Pima County showing location of Pima County Canoa Ranch property, original La Canoa land grant, and Canoa Ranch holdings in 1953. Courtesy of Scott O'Mack and Janet Parkhurst. National Register of Historic Places Registration for Canoa Ranch , 2003.

Land Use Intensity

Land Use Intensity (Per Pima County Comprehensive Plan)

Desires a mechanism to assure that rezoning approvals are consistent with the long-range land use plan. Rezoning and specific plans (Sections 18.91.040C and 18.90.030H, respectively) must comply with the Land Use Plan. To be in compliance, applications for rezoning must select from the zoning districts listed as permitted and comply with the gross density limitation for the land use intensity category in which the property is located. An amendment to the Land Use Plan must be processed for rezoning or specific plan applications that do not comply with the Land Use Plan. Amendments to the Land Use Plan are processed on an annual schedule with applications accepted only during the period from the first regular working day of February to the last regular working day of April (Section 18.89.040B).

Land use intensity around Canoa Ranch generally is for low density development. This level of development is compatible with the ranching and agricultural heritage of the Middle Santa Cruz Valley.



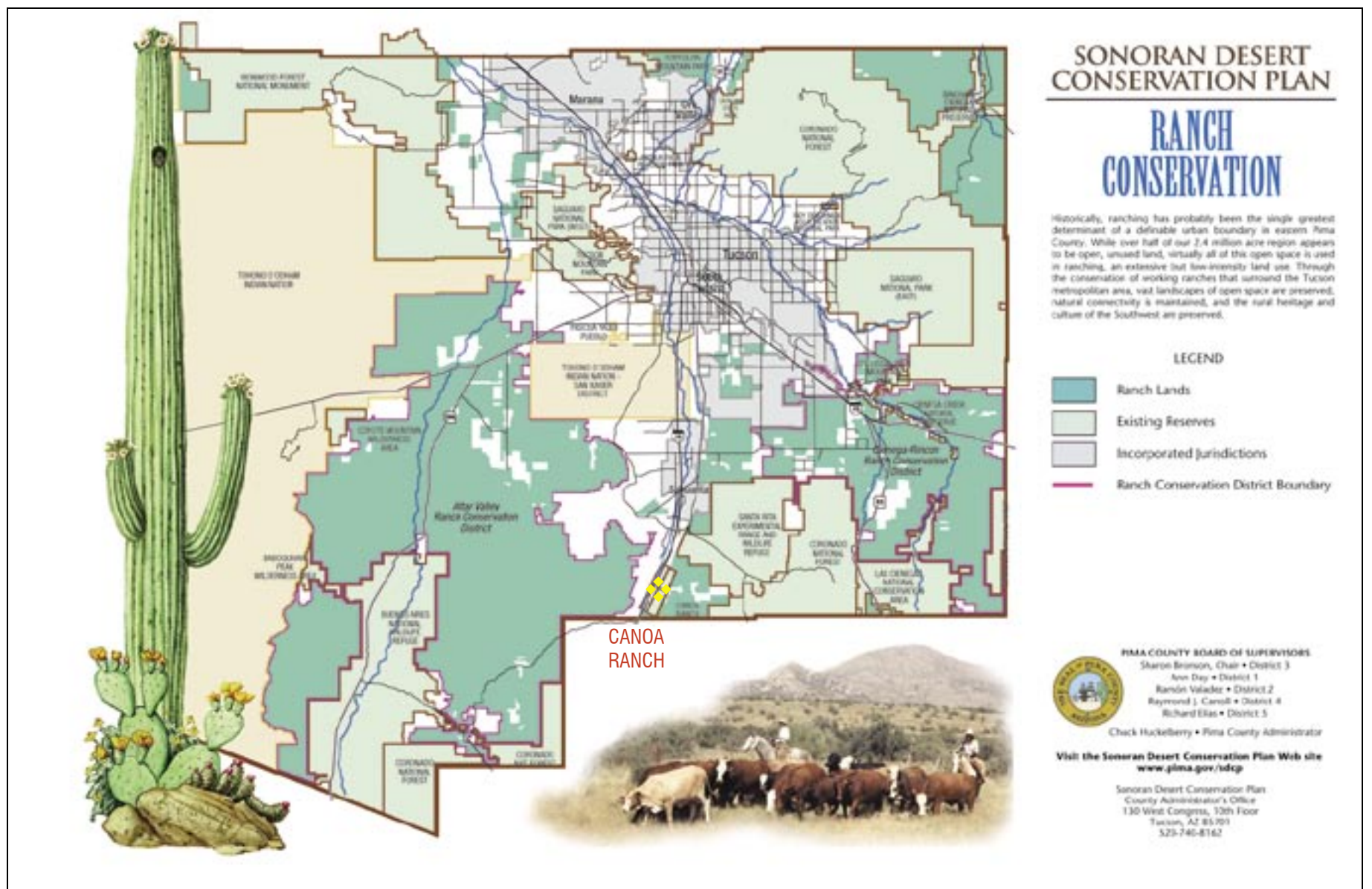
Neighborhood Activity Center NAC	CR-2, CR-3, CR-4, CR-5, CMH-1, CMH-2, TR, RVC, CB-1, CB-2 (Limited uses). Maximum Density: 10 R/AC.
Multifunctional Corridor MFC	GC, TH, CR-3, CR-4, CR-5, TR, CMH-2, MR, CB-1, CB-2, CPI. Maximum Density: 44 R/AC.
Low Intensity Urban 3.0 C-3.0	GC, SR, SR-2, SH, CR-1, CR-2, CR-3, CR-4, CR-5, CMH-1, MR. Maximum Density: 3 R/AC, or 4 R/AC with 30% Cluster Open Space.
Medium Intensity Urban D	GC, SH, CR-1, CR-2, CR-3, CR-4, CR-5, CMH-1, CMH-2, MR, TR. Maximum Density: 10 R/AC
Low Intensity Urban 0.3 C-0.3	GC, SR, SR-2, SH, CR-1, CR-2, CR-3, MR. Maximum Density: 0.3 R/AC, or 0.7 R/AC with 30% Cluster Open Space Plus 20% Natural Open Space, or 1.2 R/AC with 30% Cluster Open Space Plus 40% Natural Open Space. MR Natural Open Space Requirement: 30%.
Rural Activity Center RUAC	GR-1, SH, CR-2, CR-3, CR-4, CMH-1, RVC, CB-1, CB-2. Maximum Density: 10 R/AC; Minimum Density: 1.3 R/AC.
Resource Transition RT	RH, SR, MR. Maximum Density: 0.3 R/AC. MR Natural Open Space Requirement: 30%
Low Intensity Rural A	RH, SR, SR-2, GR-1, MR. Maximum Density: 0.3 R/AC. MR Natural Open Space Requirement: 30%.

Sonoran Desert Conservation Plan and Conservation Lands System

The Sonoran Desert Conservation Plan (SDCP)

The Sonoran Desert Conservation Plan (SDCP) is designed to ensure the long-term survival of the full spectrum of plants and animals and their survival” (Pima County).

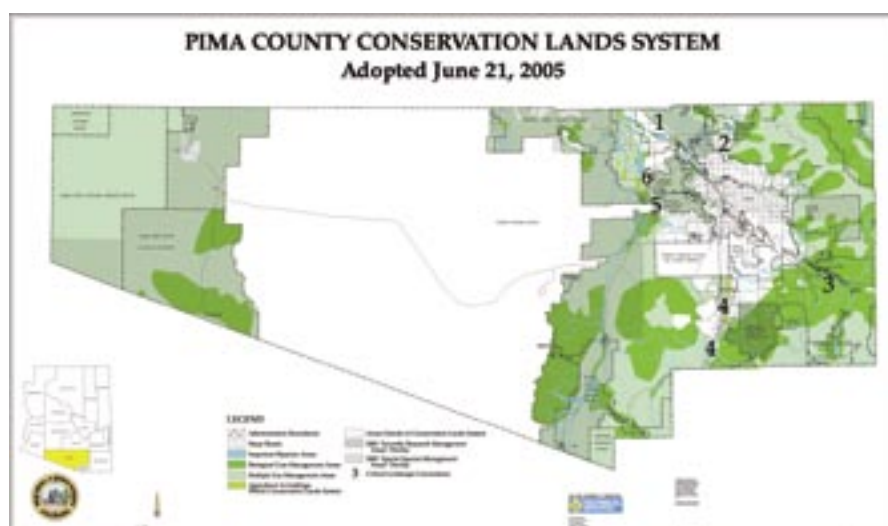
The plan is designed to protect cultural and historic resources. Early in the planning process, conservation of ranch lands was identified as a critical element of the plan because of the important natural and cultural connections these lands help to maintain. Pima County’s purchase of the Canoa Ranch is an important conservation measure that will help promote ranching for the significant cultural, natural and economic values it brings to our community.



Conservation Lands System (CLS)

The Conservation Lands System (CLS) is designed to protect biodiversity and provide land use guidelines consistent with the conservation goal of the Sonoran Desert Conservation Plan (SDCP).

“The Conservation Lands System (CLS) Regional Plan Policy was adopted as part of the Environmental Element of the Pima County Comprehensive Plan 2001 Plan Update in December 2001 and was updated June 21, 2005. The CLS categorizes and identifies locations of priority biological resources within Pima County, and provides policy guidelines for the conservation of these resources. These guidelines are applied to certain types of land use changes requested of the Board of Supervisors.”



MULTIPLE USE MANAGEMENT AREA

AREAS OUTSIDE CONSERVATION LANDS SYSTEM



IMPORTANT RIPARIAN AREAS

BIOLOGICAL CORE MANAGEMENT

Site Inventory

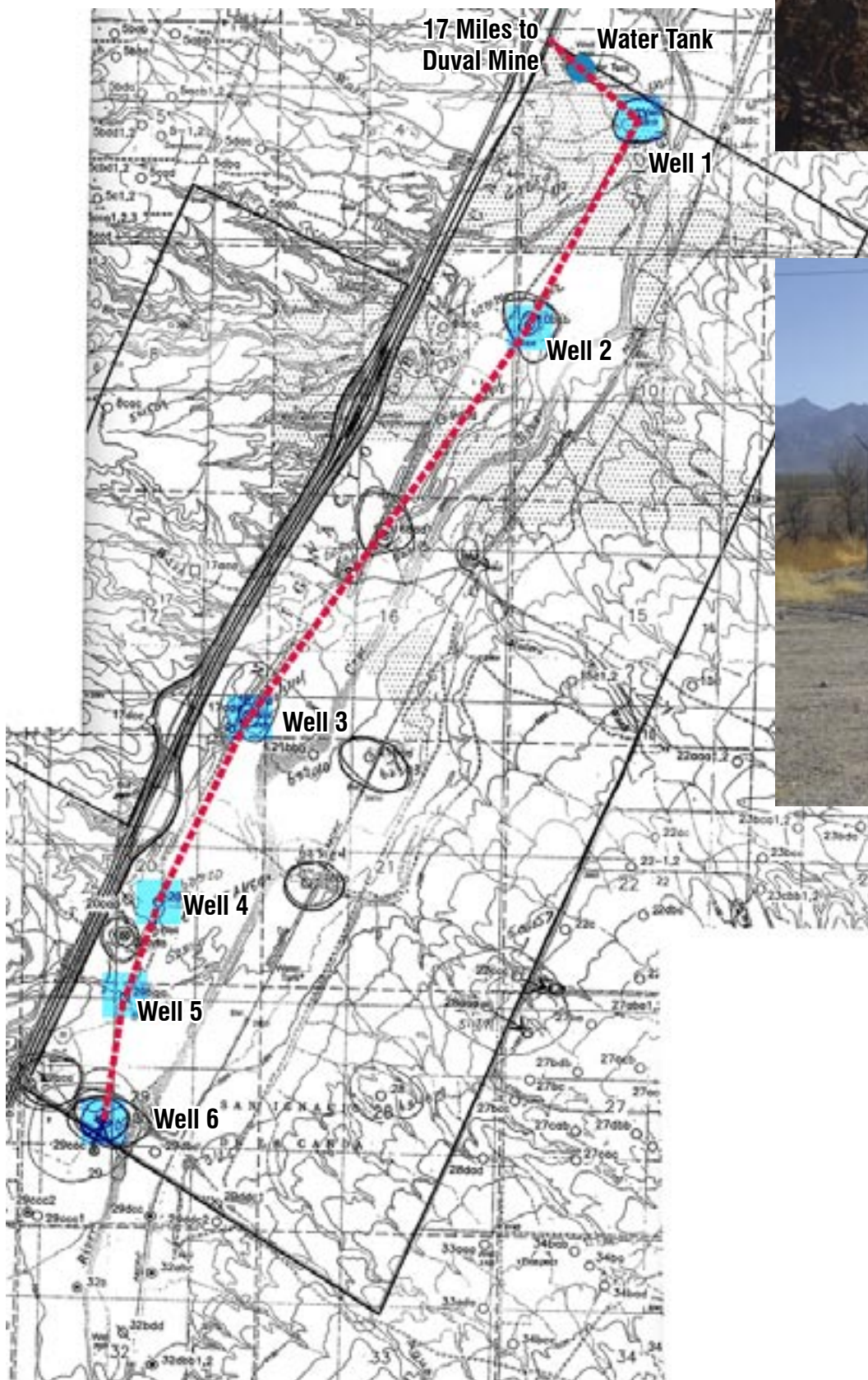
Water Rights (Phelps Dodge)

Phelps Dodge was granted ten Certificates of Grandfathered Water Rights on the Canoa Land Grant in 1984. 22,805 acre-feet of groundwater may be extracted from 10 wells of the 6231 series. These are Type 2 non-irrigation grand-fathered rights to be used for mining extraction and processing. In 1984, Duval Corporation was granted 3907.5 acre-feet of Type I Non-Irrigation Grandfathered Rights. The total acre-footage for both sets of water rights equals: 26,713 acre feet per year. Phelps Dodge is now pumping 22,000 GPM from 6 wells. This is equal to more than 6 feet of water over the entire 4,800 acres per year.

The map below shows the approximate locations of the 6 wells and associated infrastructure. Following are three utility plans that have more specific info on the water and electrical service lines, well sites and service road. Each well site is fenced with Phelps Dodge owning a 100' x 100' parcel at each well site. Water is stored in a large tank at the far northwest corner of the site before being pumped approximately 17 miles to the Duval Mine. The engineering drawings on the following pages provide a more detailed look at the well locations and the utility and water lines that serve these wells. Personnel from Phelps Dodge visit the Canoa Ranch property every day to check on the wells and to perform required maintenance operations. An access road exists parallel to the water and overhead electrical power lines. For more information, contact Arnold Velasco with Phelps Dodge at 520-954-2583.

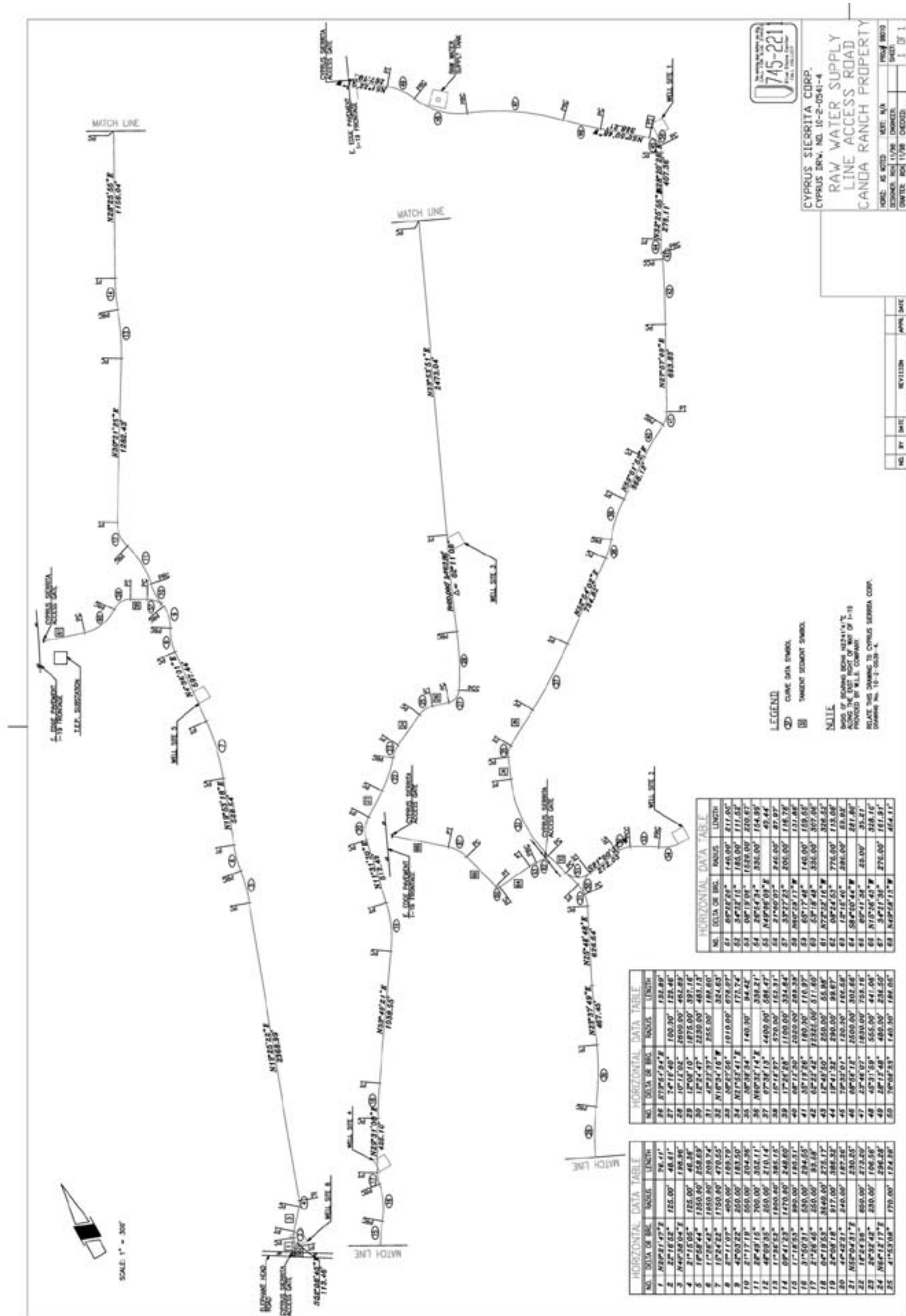


Access road for Phelps Dodge wells and infrastructure.
Photo courtesy of Poster Frost Associates



Access road for Phelps Dodge wells and infrastructure.
Photo courtesy of Poster Frost Associates

Approximate locations of Phelps Dodge well sites and infrastructure.
Base map courtesy of Bob Sharp



Well and Waterline Access Road
Drawing Provided by Phelps Dodge

HORIZONTAL DATA TABLE

NO.	DATA OR BCL	RADIUS	LENGTH
1	N32°21'47\"	76.41'	132.89'
2	S2°16'52\"	125.00'	48.61'
3	N49°38'04\"	100.00'	123.46'
4	S1°15'05\"	125.00'	46.26'
5	S17°58'44\"	1250.00'	258.63'
6	S1°28'42\"	1600.00'	209.74'
7	S1°24'22\"	1750.00'	470.55'
8	S1°11'07\"	400.00'	169.79'
9	S2°00'22\"	250.00'	103.50'
10	S1°17'18\"	650.00'	204.26'
11	S2°49'15\"	700.00'	352.11'
12	S2°09'35\"	650.00'	210.14'
13	S1°26'52\"	1800.00'	348.11'
14	S2°41'33\"	1470.00'	248.60'
15	S1°18'53\"	800.00'	180.31'
16	S1°50'31\"	650.00'	294.55'
17	S1°26'45\"	650.00'	33.68'
18	S1°18'53\"	3140.00'	275.17'
19	S2°08'18\"	817.00'	388.32'
20	S2°42'21\"	240.00'	187.28'
21	N52°04'31\"	230.00'	230.25'
22	S1°24'56\"	650.00'	212.20'
23	S2°32'48\"	630.00'	106.50'
24	N64°12'17\"	630.00'	236.28'
25	S1°53'08\"	170.00'	124.38'

HORIZONTAL DATA TABLE

NO.	DATA OR BCL	RADIUS	LENGTH
26	S72°51'54\"	100.00'	132.89'
27	S4°16'40\"	100.00'	123.46'
28	S1°15'04\"	1250.00'	492.83'
29	S1°00'10\"	1875.00'	397.16'
30	S2°24'47\"	2250.00'	483.13'
31	S2°22'37\"	255.00'	189.60'
32	S1°0'34'16\"	1010.00'	324.63'
33	S2°52'56\"	1010.00'	678.07'
34	N1°52'41\"	140.00'	173.74'
35	S2°38'34\"	140.00'	94.42'
36	N10°32'14\"	4400.00'	336.21'
37	S7°35'13\"	4400.00'	586.47'
38	S1°16'37\"	570.00'	152.31'
39	S1°24'28\"	1100.00'	334.64'
40	S2°12'29\"	2020.00'	283.23'
41	S2°12'28\"	1800.00'	170.97'
42	S2°22'42\"	3331.00'	571.60'
43	S2°49'50\"	250.00'	55.86'
44	S2°41'32\"	290.00'	99.87'
45	S2°32'01\"	120.00'	106.68'
46	S2°46'07\"	1630.00'	302.66'
47	S2°46'07\"	1630.00'	733.16'
48	S2°31'59\"	555.00'	441.04'
49	S2°11'48\"	480.00'	238.20'
50	S2°08'53\"	1740.00'	188.05'

HORIZONTAL DATA TABLE

NO.	DATA OR BCL	RADIUS	LENGTH
51	S2°32'29\"	140.00'	811.60'
52	S4°32'11\"	185.00'	111.52'
53	S2°18'08\"	1620.00'	230.67'
54	S2°54'34\"	335.00'	154.93'
55	N4°19'03\"	245.00'	43.44'
56	S2°40'01\"	245.00'	87.87'
57	S2°17'23\"	200.00'	116.28'
58	S2°12'17\"	140.00'	131.88'
59	S2°17'46\"	140.00'	159.55'
60	S2°18'48\"	335.00'	307.04'
61	S2°24'16\"	775.00'	326.52'
62	S2°44'53\"	775.00'	113.06'
63	S2°16'45\"	286.00'	63.62'
64	S2°10'44\"	286.00'	63.62'
65	S2°41'24\"	25.00'	21.21'
66	S1°16'45\"	25.00'	218.16'
67	S2°21'36\"	275.00'	181.31'
68	N42°18'13\"	1740.00'	188.05'

LEGEND
 (Symbol) CURVE DATA SYMBOL
 (Symbol) TANGENT SEGMENT SYMBOL
 (Symbol) MILL
 BASIS OF BEARING BEING N22411/16\"

745-221
 CYPRUS SIERRITA CORP.
 RAW WATER SUPPLY
 LINE ACCESS ROAD
 CANOA RANCH PROPERTY

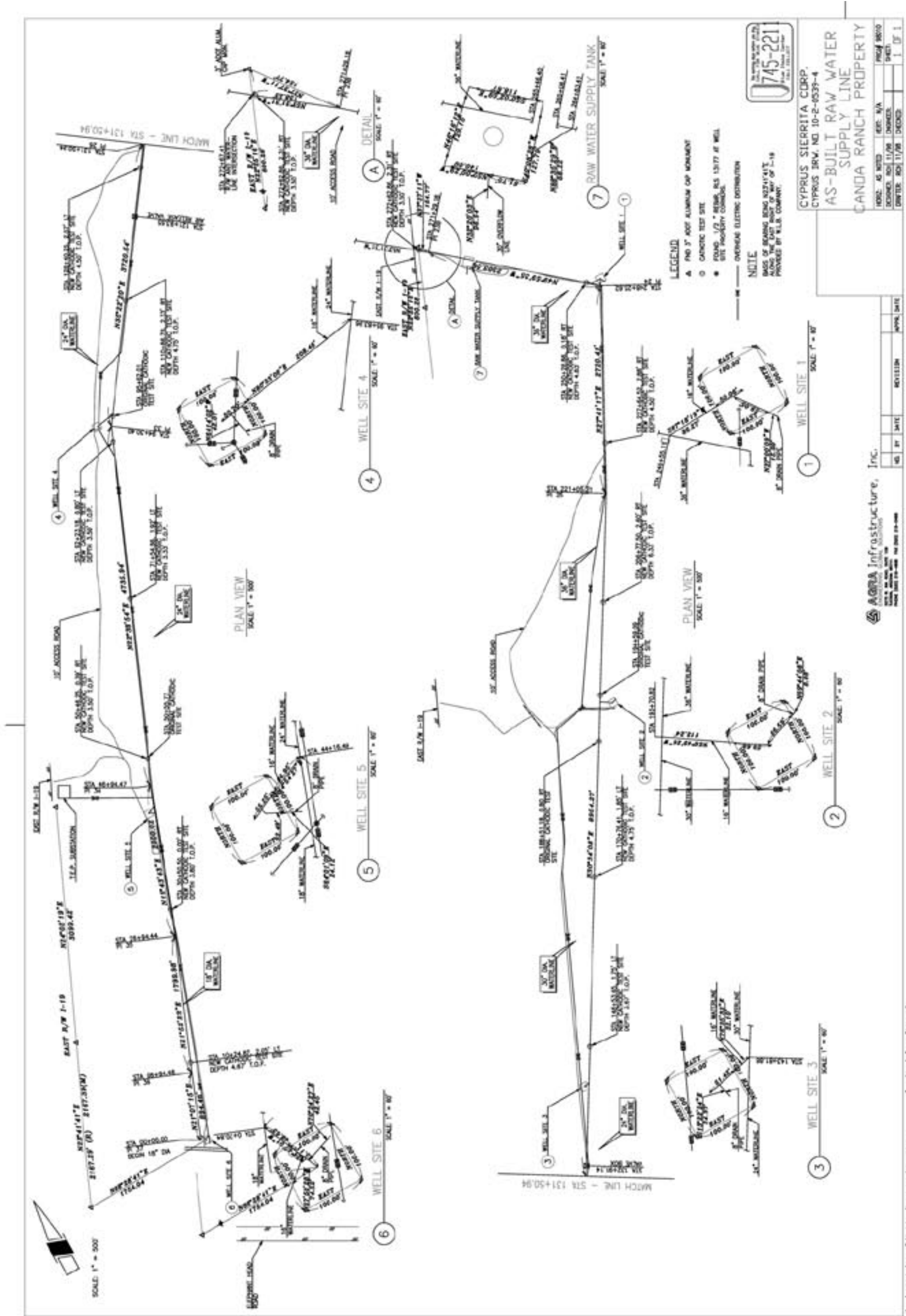
NO.	BY	DATE	APPROV.	DATE

FORM: AS NOTED
 DESIGNED: NOL LYNN DORRIS
 DRAWN: BOB LYNN DORRIS
 CHECKED: NOL LYNN DORRIS

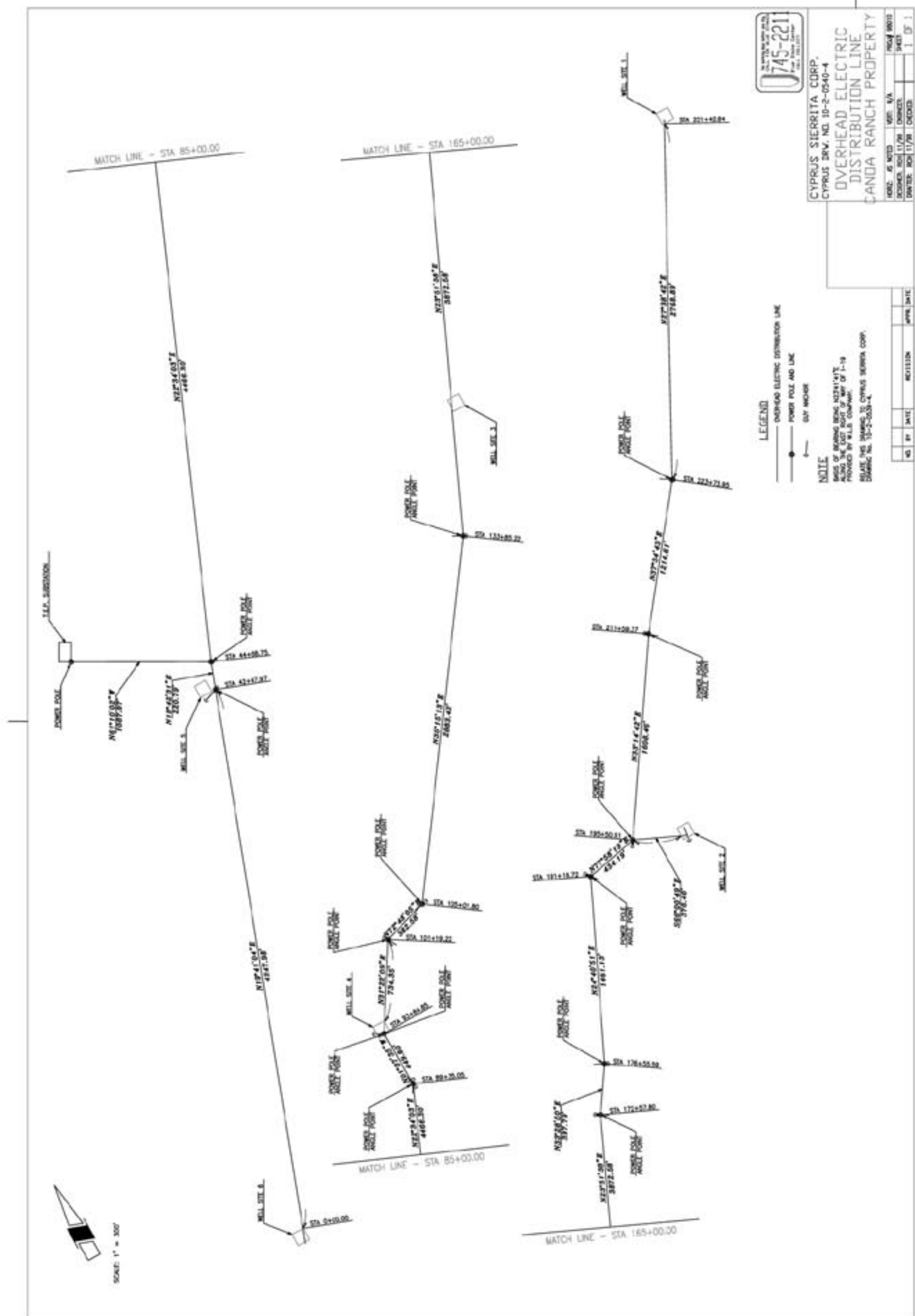
J:\ms\projects\745-221\745-221.dwg

11/10/2010

Site Inventory
Water Rights



Well Locations
(Drawing Provided by Phelps-Dodge)



Overhead Electric Distribution Line
(Drawing Provided by Phelps-Dodge)

Water Rights (Pima County)

Water Rights Retained by Pima County at Canoa Ranch

In 2002, 1889 acre-feet of Type I Rights for 629 acres were transferred to Pima County. This translates to the right to withdraw 3 acre-feet of groundwater per acre for domestic purposes.

In 1984, Duval Corporation was granted 70 acre-feet of Type 2 Non-Irrigation Grandfathered Rights. These rights are currently owned by the Equestrian Center. They may be used for any non-irrigation purpose.

Potential Access to Treated Wastewater for Irrigation Purposes

Pima County is currently in discussions with Pima County Wastewater about placing an on-site “mobile” sewer treatment plant (size of a RR car). This could allow class “A” effluent from Amado sewage pond for possible Canoa irrigation. The Amado pond is located south of the Canoa Property, along the eastern frontage road, north of Arivaca Rd. Wastewater infrastructure is already in place to transport effluent from the Amado pond to the mobile treatment plant that would likely be located at the SW corner of the Canoa property.



Historic photo of Canoa Ranch Canal, ca. 1925
Photo courtesy of Diana Hadley



Historic Photo of Canoa Ranch pond, circa 1951
Photo courtesy of Deezie Manning-Catron



Richard Willey at Canoa Ranch Canal, 1977
Photo courtesy of Statistical Research



Current view of Arivaca wastewater treatment pond
Photo courtesy of Bob Sharp



Current photo looking north towards Canoa Canal
Photo courtesy of Bob Sharp

Hydrology and Hydraulic Overview

General

This section describes the surface hydrology research for the Santa Cruz River and the various tributaries within the Canoa Ranch Master Plan project limits. The hydrology for this project includes peak discharges (100-year) obtained from various reports previously prepared in the project vicinity. Discharges are for the Santa Cruz River and various point source tributaries to the Santa Cruz River along the project limits.

Typical Storms in the Santa Cruz River Basin

The Santa Cruz River Basin at Continental Road, located near the northern limits of the San Iglacias De Canoa Land Grant, is 1,662 square miles (Santa Cruz River Watershed Management Study, Pima County, Arizona, U.S. Army Corps of Engineers). Floods in this basin are primarily limited to storm types categorized as cyclonic, monsoonal, and frontal. These storms occur at different times of the year, but do have a minor degree of interrelationship.

Cyclonic storms in Arizona are caused by dissipating tropical cyclones or hurricanes. These storms produce a significant amount of rainfall and are less frequent than monsoonal and frontal storms. Cyclonic storms typically occur during the late summer and fall. Recent events which have contributed to significant storms in the basin include Tropical storm Norma (Sept 4, 1970), Tropical Storm Joann (October 4-6, 1972), Tropical Storm Heather (October 6-10, 1977), and Tropical Storm Octave (October 3, 1983).

Monsoonal storms are caused by a shift in statewide wind patterns. The primary flow direction of wind in Arizona is from the west (California) and Northwest (Nevada) during the winter. Summer brings a shift of wind direction with winds from the south and southeast bringing moisture from the Gulfs of California and Mexico. This causes a relatively large shift in statewide moisture conditions. The intense surface heating of the Arizona desert floor causes the monsoonal thunderstorms to develop. These storms cause serious, localized (flash) floods, but do not generate a significant runoff volume. The monsoon season is considered to start when the average daily dew point is 54 degrees or greater for a period of 3 consecutive days. The average start date is July 3rd.

The main source of runoff volume is the frontal storm system. Frontal storms generate slow to moderate rainfall intensities over large (statewide) areas and over long periods (days and weeks). Frontal storms are typically developed in winter and early spring.

The typical Pima County winter storm produces light to moderate precipitation which occurs over a relatively large area (statewide in some instances). A typical winter storm can continue for several days and is made up of individual storms with or without small breaks between storms. The winter storms typically begin in the North Pacific Ocean and are characteristic of frontal storms.

The general summer storms within Pima County are typically a result of tropical storms (dissipating cyclones). Summer storms are typically more localized with high intensity rainfall occurring within a relatively small area when compared to winter storms.

Local storms occurring in Pima County typically occur in the summer and are resultant of tropical moisture in association with convective activity (monsoonal storms). These storms bring lightning and loud thunder.

Santa Cruz River Basin Drainage Area

The Santa Cruz River begins in the San Raphael Valley in eastern Arizona. The river runs south at this point into Mexico, west through Mexico, then northward back into Arizona. The Santa Cruz River terminates at the convergence with the Gila River about 12 miles southwest of Phoenix. The river actually disappears near Picacho Peak, southeast of Phoenix and near Casa Grande. At this location, the majority of the flow goes into the Greene Reservoir Wash. The total length of the Santa Cruz River is 225 miles, with approximately 35 miles within the boundaries of Mexico. The Santa Cruz River Basin drains approximately 8,581 square miles of watershed within Arizona and Sonora Mexico.

The Santa Cruz River near Canoa Ranch is dry throughout most of the year. Historically, the Santa Cruz River through this area would have flowed during floods or during periods of runoff from snow melting on the contributing mountains. Some stretches experienced intermittent and perennial flows. Through the drier reaches of the river, vegetation typically consists of desert shrubs and grasses.

Santa Cruz River Hydrology

The Santa Cruz River Basin has been the source of numerous studies. Multiple sources are reported in this text for peak discharges within the Santa Cruz River along Canoa Ranch., including:

- A United States Army Corps of Engineers (USACE) publication entitled Santa Cruz River Watershed Management Study (August 2001).
- The Pima County Floodplain and Erosion Hazard Management Ordinance.
- The Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) of Pima County.
- Stream gauges are found throughout the basin with recordings found as early as 1891, the United States Geological Survey (USGS) has a stream gauge along the Santa Cruz River at Continental Road (USGS 09482000 Santa Cruz River at Continental, Az).

In the USACE Watershed Management Study, peak runoff values were found by a mixed population discharge-frequency analysis. A mixed population analysis is developed when two or more separate casual factors are present. This is the case in the Santa Cruz River Basin due to the large area, orthographic effects, and the differences in seasonal (temporal) and spatial storm patterns

For the Santa Cruz River basin the largest flood of record occurred in October 1983 with 45,000 cfs at Continental Road (USGS Gauge at Continental Road). This storm event was a result of Tropical Storm Octave. This event followed a relatively wet season with some parts of the basin containing soil at or near saturation. The largest winter flood of record occurred in January 1993. This flood was the second largest on record at 32,400 cfs (USGS Gauge at Continental Road).

Table 1G-1 list the peak discharges used in this study, as obtained from the Santa Cruz River Watershed Management Study.

The FEMA FIS models and the Pima County Ordinance define the 100-year discharge at Continental Road at 45,000 cfs. Additionally, Pima County sets the design discharge (the discharge to be used in the design of structures) at this location at 55,000 cfs.

Table 1G-1 Santa Cruz River Discharge Frequency Values at Continental Road

Drainage Area (mi ²)	Peak Discharges (CFS)					
	2-YR	10YR	20-YR	50-YR	100-YR	500-YR
1662	3,500	12,000	17,000	30,000	45,000	115,000

Hydrology and Hydraulic Overview

Tributaries

There are many tributaries to the Santa Cruz River in the study reach as shown in Figure 1G-1, Sheets 1 through 7. Information regarding the tributaries was obtained from drainage reports and studies within the area. A preliminary study entitled “Hydrology and Hydraulic Report for Canoa Ranch” (August 2002) by MMLA defined existing hydrologic and hydraulic conditions for much of the Canoa Ranch site. This report defined peak discharges which enter the site, including discharges of tributaries which contribute to the Santa Cruz River and cross the site. This report also identified existing drainage structures which convey tributary flows to the Santa Cruz River under Interstate 19 (I-19) and the Southern Pacific Railroad (SPRR).

The following tables list the known concentration points, tributaries, and point source discharges along the project limits. Most of the information was obtained from the MMLA study and the concentration points correlate to that study. Some of these tributaries have been previously labeled and include the Agua Caliente Wash, the Demetrie Wash, the Escondido Wash, the Esperanza Wash, and the Madera Canyon Wash. Many of the large watercourses in this area are unlabeled. The larger, unlabeled watercourses with discharges of near 2000 cfs or greater have been labeled for the purpose of this study as W-xxx or E-xxx, depending if they contribute from the west or the east. The following tables show the tributaries.

Table 1G-2 – Western Watersheds

Concentration Point ID	Point of Entry	100-Year Discharge (cfs)	Drainage Area (acres)
15	Block 30	454	104
16	Block 30	166	42.7
17	Block 30	32	5.7
18	Block 30	583	252
19	Block 30	32	5.7
20	Block 30	1435	1305
21	Block 30	40	7.1
22	Block 30	16	2.9
23	Block 30	174	38.2
24	Block 30	24	4.3
25A	Block 30	3941	6773
25B	Block 32	403	212
26	Block 32	109	22
27	Block 32	126	28.5
28	Block 31	24	4.3
29	Block 31	193	51.2
30	Block 31	32	5.7
31	Block 31	179	51.2
32	Block 31	32	5.7
36	Block 34	585	245
37	Block 34	337	95.4
38	Block 34	11420	17792
39	Block 36	414	105
41	Block 30	1013	493
41B	Block 30	20	3
41C	Block 30	89	13.2
42A	Block 30	4090	6258
42B	Block 30	40	10

Table 1G-3 – Eastern Watersheds

Concentration Point ID	Point of Entry	100-Year Discharge (cfs)	Drainage Area (acres)
43	Block 40	4707	4063
44	Block 39	5087	5949
45	Block 41	9193	14980
45A	Block 41	1270	1040
46	Block 37	330	131
47	Block 37	1494	1221
48	Block 37	155	38.7
49	Block 37	694	515
50	Block 37	1518	1565
51	Block 37	3385	3564
54	Block 44	850	366
55	Block 44	149	42.7
56	Block 44	194	65
57	Block 44	107	28
58	Block 44	3242	2484
59	Block 44	931	448
60	Block 44	129	27
61	Block 44	236	88.1
62	Block 44	2345	1457
63	Block 44	712	360
64	Block 44	143	42.7
65	Block 44	157	45.5
66	Block 43	224	80.2
67	Block 45	9847	14135
68	Block 45	563	242
70	Block 45	280	74
71	Block 45	1271	864
72	Block 45	118	26.1
73	Block 45	188	49.8
74	Block 45	406	216
75	Block 45	1694	1485
76	Block 45	2334	2084
77	Block 45	1856	1205
78	Block 45	111	20.9

Hydrology and Hydraulic Overview

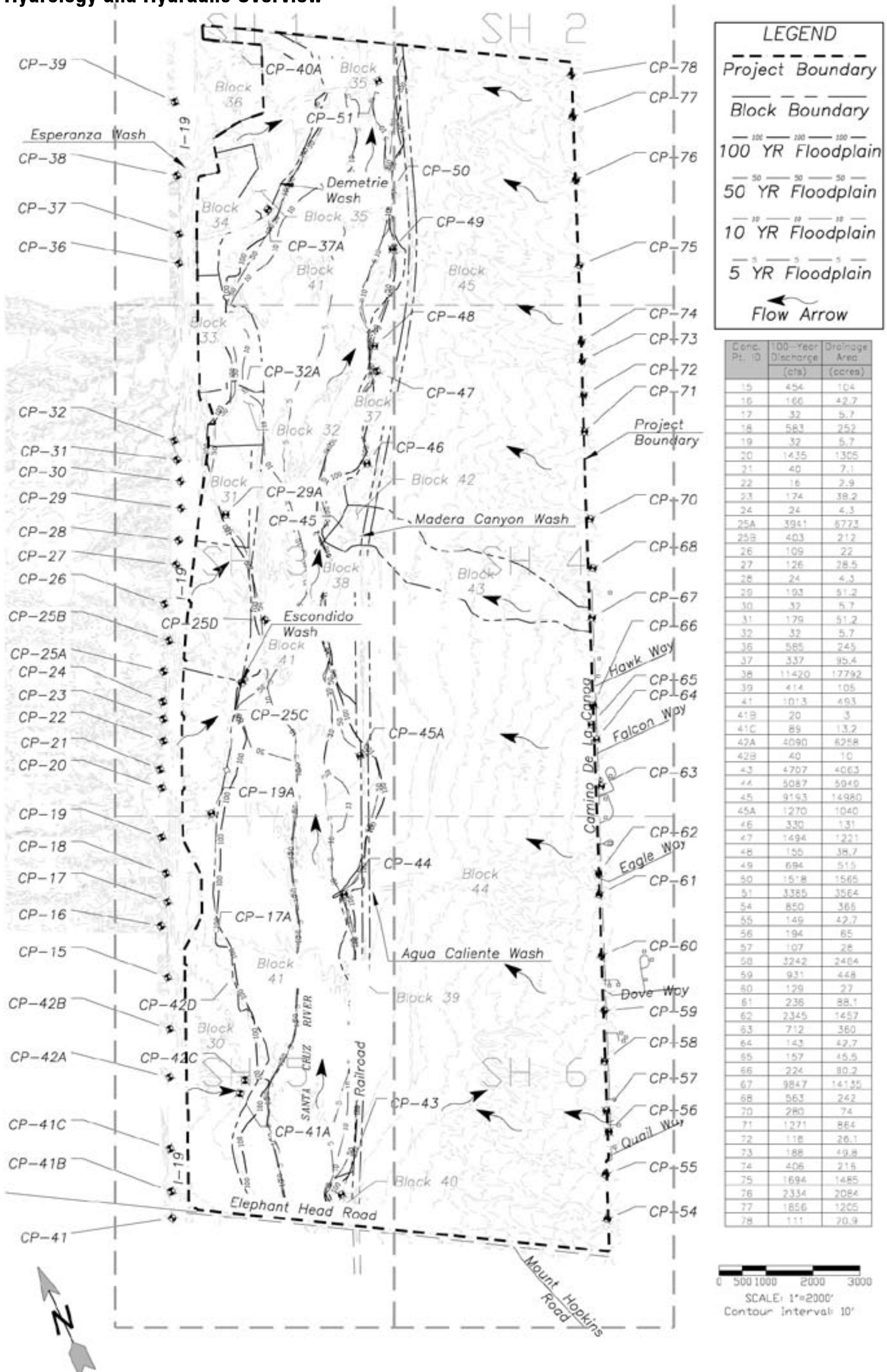
Table 1G-4 – Tributary Discharges from the West

Concentration Point ID	Tributary Name	100-Year Discharge (cfs)	Drainage Area (acres)
41A	unnamed	308	113
42C	W-10	3,938	6,281
42D	unnamed	339	92.4
17A	unnamed	716	216
20	W-20	1,435	1,305
19A	unnamed	603	313
25C	Escondido Wash	4,522	8,250
25D	unnamed	408	237
29A	unnamed	652	198
32A	unnamed	386	169
37A	Demetrie Wash	1,983	1,524
38	Esperanza Wash	11,420	17,792
40A	unnamed	903	363

Table 1G-5 – Tributary Discharges from the East



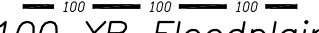
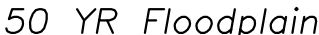
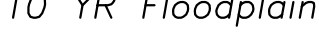
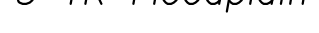

Concentration Point ID	Tributary Name	100-Year Discharge (cfs)	Drainage Area (acres)
43	E-5	4,707	4,063
44	Agua Caliente Wash	5,087	5,949
45	Madera Canyon Wash	9,193	14,980
45A	unnamed	1,270	1,040
46	unnamed	330	131
47	E-10	1,494	1,221
48	unnamed	155	38.7
49	unnamed	694	515
50	E-20	1,518	1,565
51	E-30	3,385	3,564

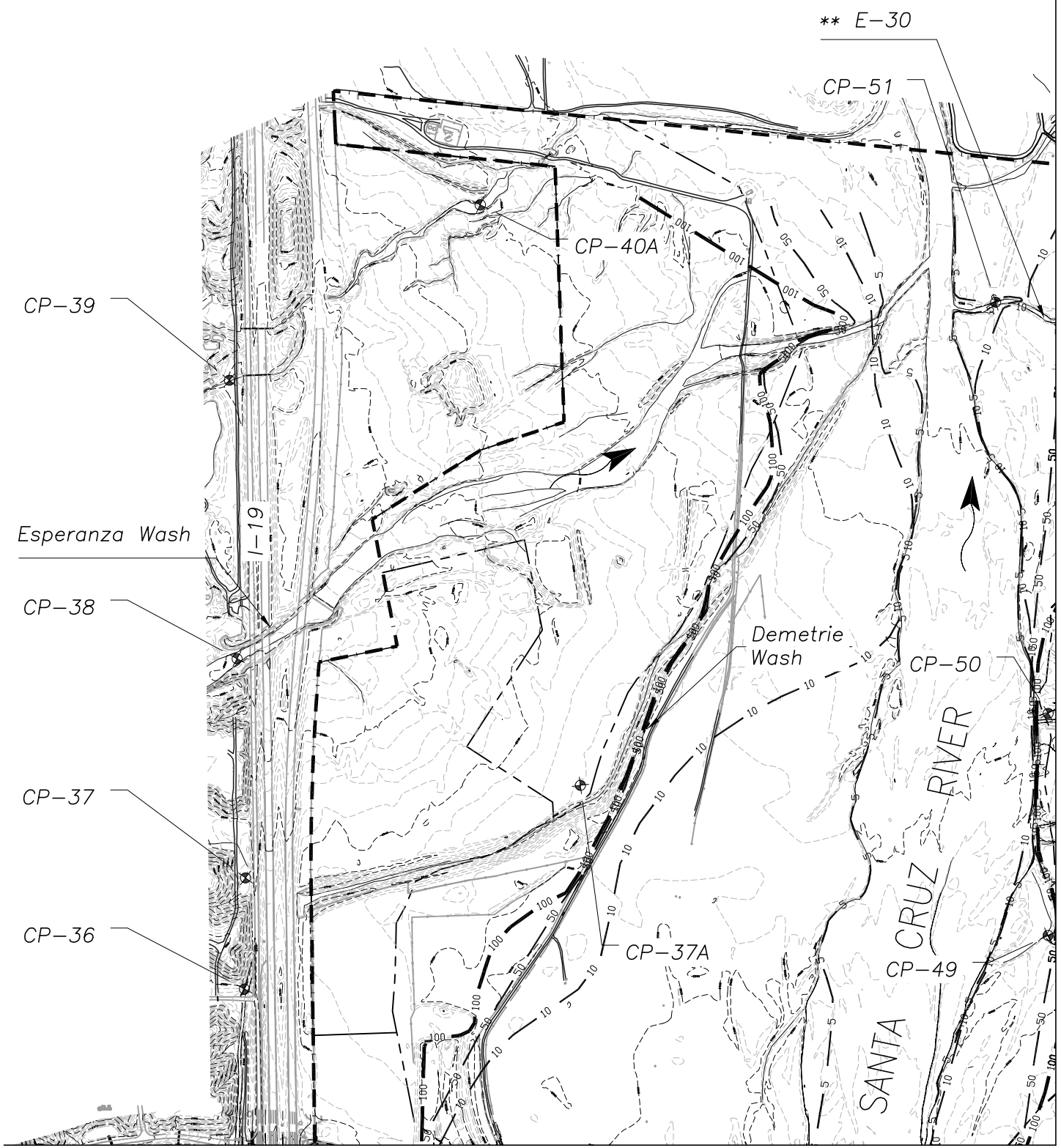
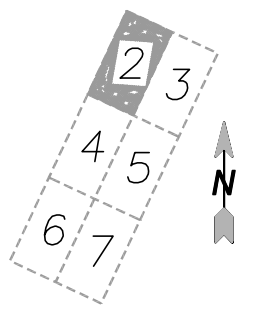
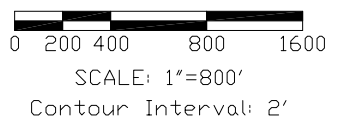
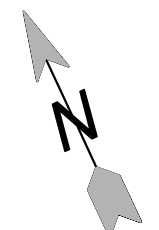
Hydrology and Hydraulic Overview



Hydrology and Hydraulic Overview

LEGEND

-  Project Boundary
-  Block Boundary
-  100 YR Floodplain
-  50 YR Floodplain
-  10 YR Floodplain
-  5 YR Floodplain
-  Flow Arrow



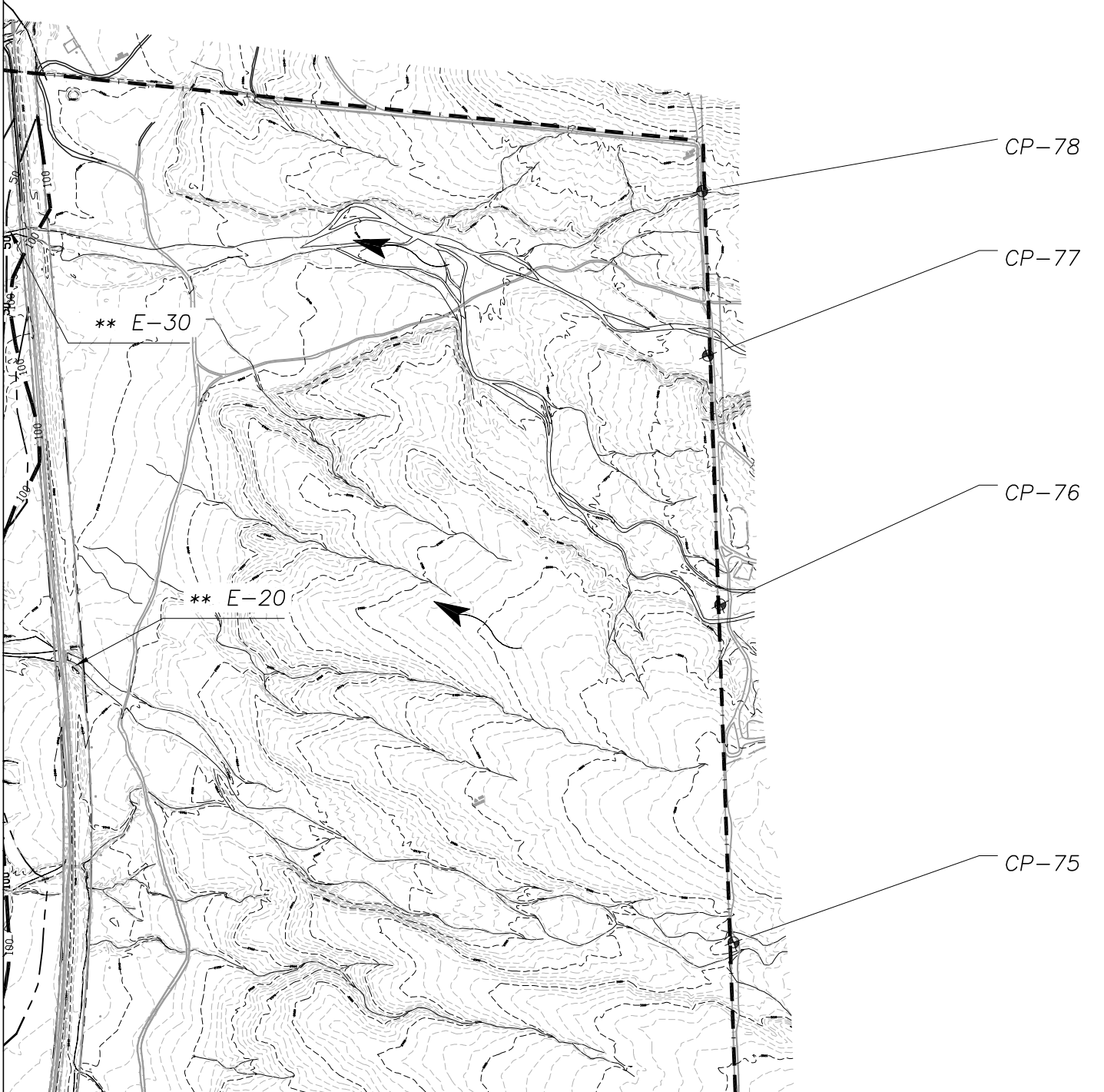
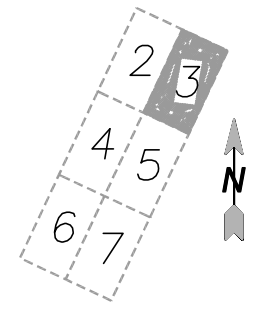
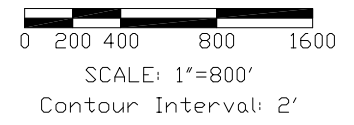
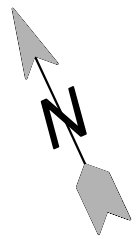
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MATCH LINE - SEE SHEET 4

Hydrology and Hydraulic Overview

LEGEND

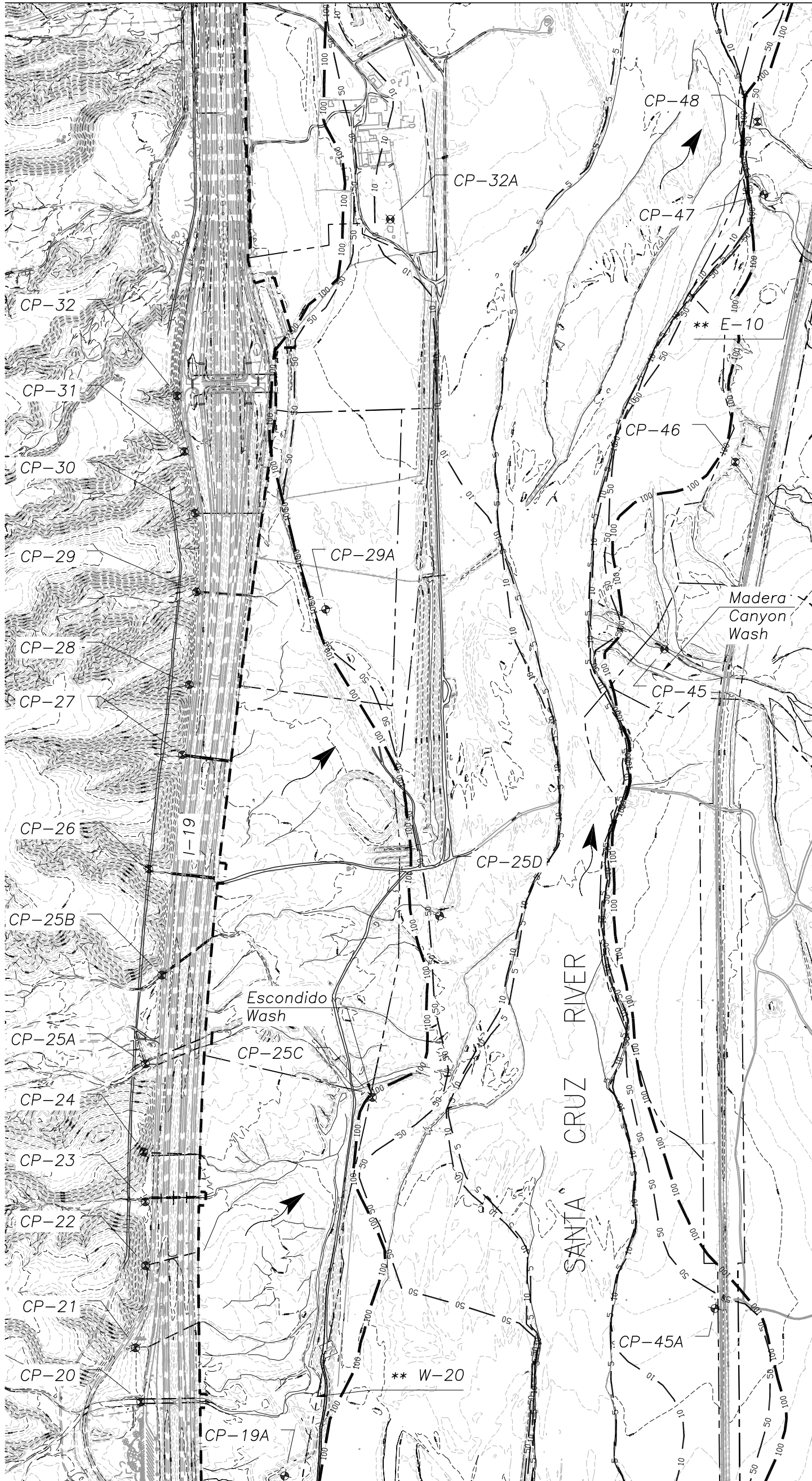
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- Block Boundary
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- 50 YR Floodplain
- 10 YR Floodplain
- 5 YR Floodplain
- Flow Arrow



MATCH LINE - SEE SHEET 5

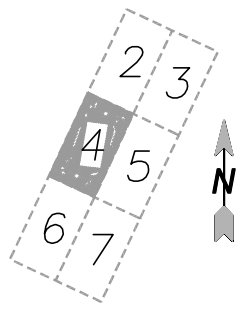
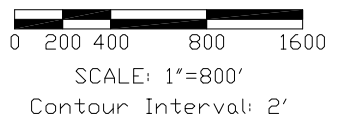
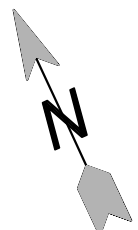
Hydrology and Hydraulic Overview

MATCH LINE - SEE SHEET 2



LEGEND

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- Block Boundary (solid line)
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- 50 YR Floodplain (medium dashed line)
- 10 YR Floodplain (thin dashed line)
- 5 YR Floodplain (dotted line)
- Flow Arrow (arrow with tail)

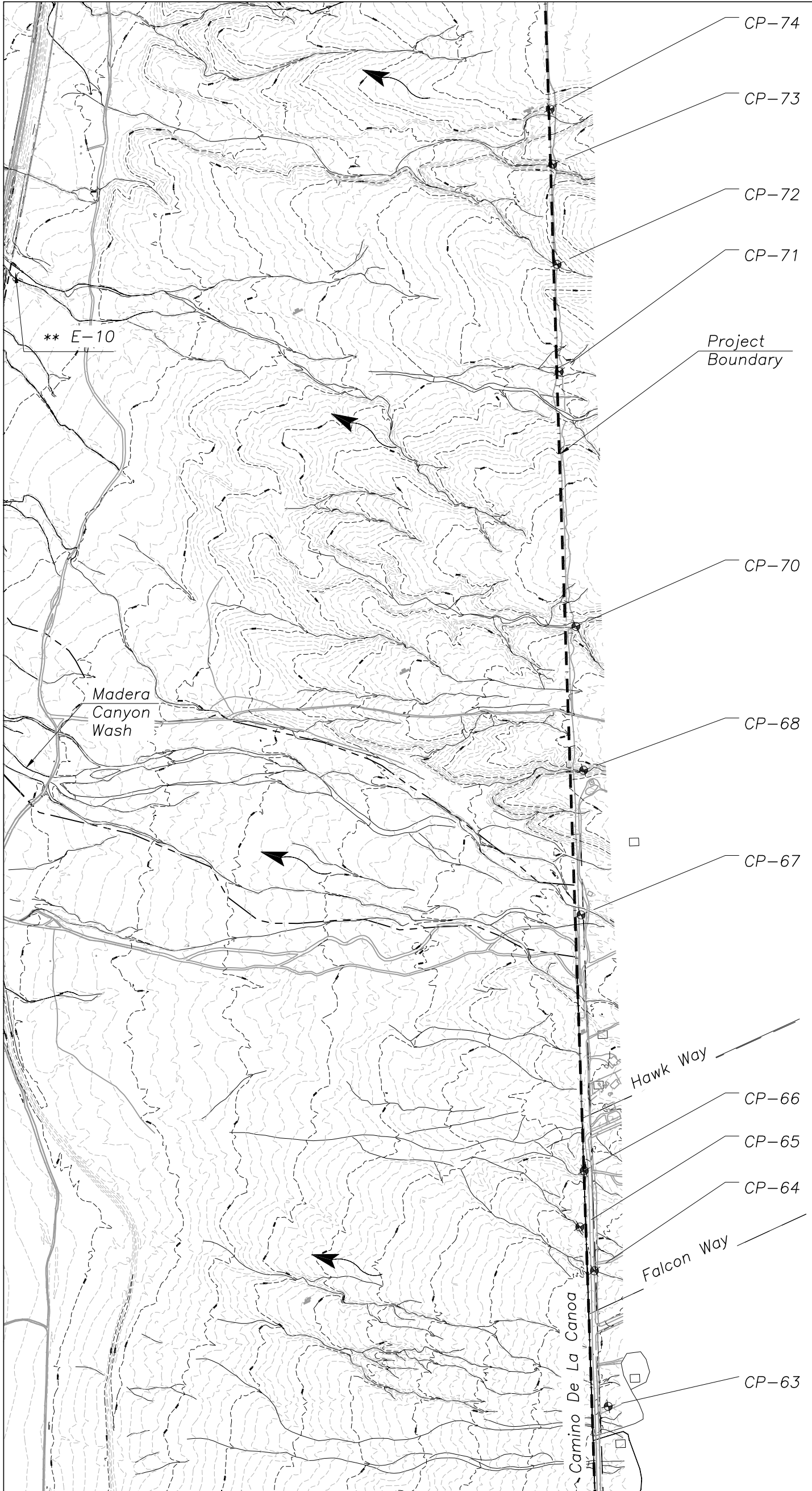


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MATCH LINE - SEE SHEET 6

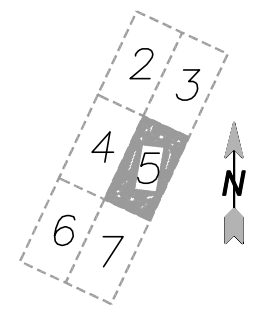
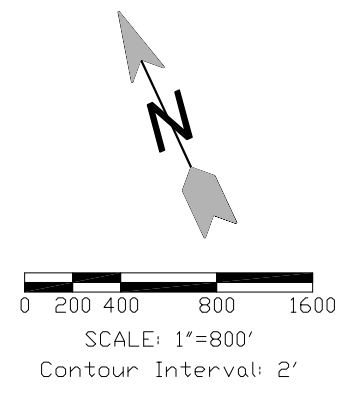
Hydrology and Hydraulic Overview

MATCH LINE — SEE SHEET 3



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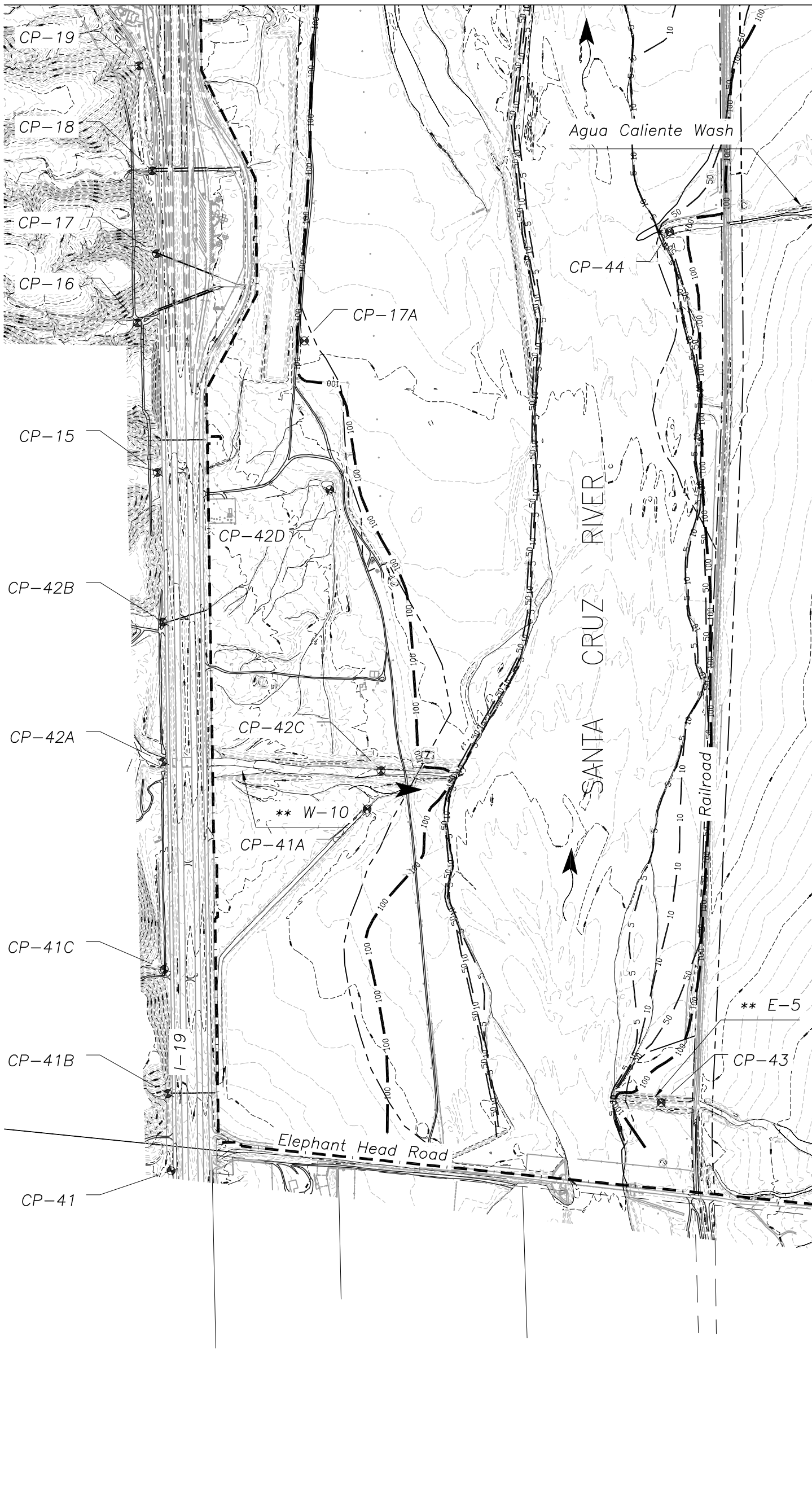
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- Block Boundary
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- 50 YR Floodplain
- 10 YR Floodplain
- 5 YR Floodplain
- Flow Arrow



MATCH LINE — SEE SHEET 7

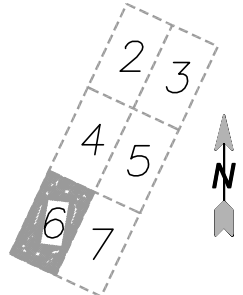
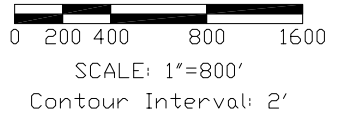
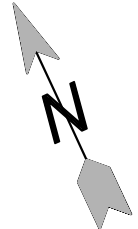
Hydrology and Hydraulic Overview

MATCH LINE – SEE SHEET 4



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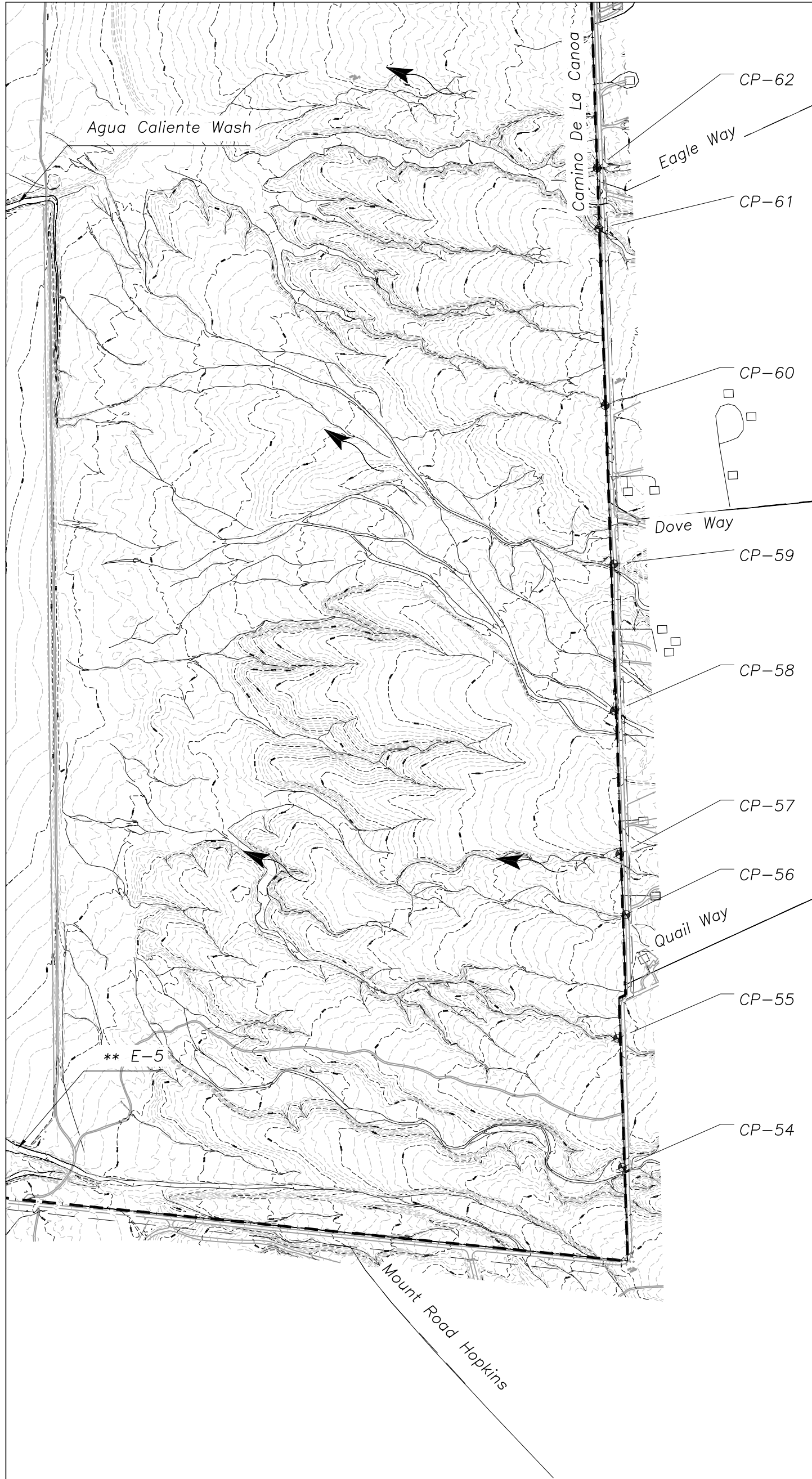
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- - - Block Boundary
- 100 YR Floodplain
- 50 YR Floodplain
- 10 YR Floodplain
- 5 YR Floodplain
- ← Flow Arrow



MATCH LINE – SEE SHEET 7

Hydrology and Hydraulic Overview

MATCH LINE — SEE SHEET 5



LEGEND

- Project Boundary
- Block Boundary
- 100 YR Floodplain
- 50 YR Floodplain
- 10 YR Floodplain
- 5 YR Floodplain
- Flow Arrow

FEMA Floodways

General

The analysis and compilation of existing hydraulic conditions are described within this section. Sources used to compile the existing hydraulic conditions include the FEMA FIS modeling, the MMLA report, and previous Castro Engineering reports for the area.

FEMA Information and Model

The most recent FEMA FIS model of the Santa Cruz River was based on 1992 and 1993 post-flood topography. The results of the FIS model are reflected on Figure 1I-1 which is a representation of digital Flood Insurance Rate Map (FIRM) panels for the project area. The Santa Cruz River in this area is defined as a FEMA Zone AE as shown on Figure 1I-1. The remainder of the area is defined as Unshaded Zone X with some areas defined as Shaded Zone X. A FEMA Zone AE or X is a flood insurance rate zone. Zone AE corresponds to areas where the base (100-year, 0.1-percent-annual-chance) floodplain has been determined by detailed methods. A shaded Zone X is an area between the limits of the base flood and the 500-year (0.2-percent-annual-chance) flood. An Unshaded Zone X is an area outside of the base floodplain and the 500-year floodplain.

FEMA has designated a floodway along this stretch of the Santa Cruz River. A floodway is typically an area where the flowing water is likely to be deepest and fastest. A floodway also has regulatory measures in that floodways are typically areas reserved for the flow of water. Placement of structures and fill material is generally not allowed in floodways.

Many Pima County owned buildings are within the FEMA floodplain. Figure 1I-2 shows the buildings located within Block 33 along with Finished Floor Elevations (NAVD 88 Vertical Datum) and the flood limits. All eleven identified structures within Block 33 are within the FEMA designated Base Floodplain (Zone AE). All of the structures are outside of the floodway; however the floodway is relatively close to the buildings.

The results of the FIS model have been criticized locally as inaccurate due to several factors including geomorphology of the river and the scale of the original model. Review of aerial maps with the base flood limits overlaid shows areas of well defined channel flow which are out of the base flood limits, indicating a shift in flow since the model was generated. Castro Engineering previously reviewed 23 cross sections within the project area, in the report ‘Evaluation of Flood Protection Measures for Canoa Ranch’. The topography represented by the FIS model was compared to more recent topography with noticeable differences found. The general trend was channel widening since the FIS study, with the channel floor being lower in the more recent topography. Also noted was the elimination of mid-channel islands. Little change was found in the overbanks.

Additional Santa Cruz River Model

Because the FEMA FIS model has exhibited inaccuracies, Pima County and Castro Engineering developed a revised model within the project area as a part of a previous study to protect Block 33 from flooding. HEC-RAS (HEC-RAS, version 3.1.2 by U.S. Army Corps of Engineers Hydrologic Engineering Center) was used with the most recent, 2-foot, NAVD 88 datum topography available. The results of the existing conditions hydraulic modeling for the Santa Cruz River are shown on Figure 1G-1 and also on 1I-2. Figure 1G-1 shows the aerial extents of the 5-, 10-, 50-, and 100-year floodplains. Figure 1I-2 shows the flood limits near Block 33.

Tributary Flow

The Escondido Wash tributary to the Santa Cruz River has been modeled previously by Castro Engineering. The limits of the floodplain modeling of this tributary extend from the Santa Cruz River bank line to near Interstate 19. In additions to the Escondido Wash, several small tributaries have been studied. The MMLA

“Hydrology and Hydraulic Report for Canoa Ranch” was used as a baseline as this report documents the tributaries which drain to and under I-19 and onto the study area. The MMLA defined concentration points are shown on the cross section map, Figure 1G-1. The flood limits from the MMLA study are not provided in this report but can be found in the documentation for the MMLA study.

Flooding of Buildings within Block 33

The flooding potential of the buildings within Block 33 is presented in this section. Figure 1I-2 shows the eleven surveyed structures along with the flood limits discussed in this report. All structures are outside of the 5-year floodplain. Structure 2 is the only structure above the 100-year floodplain. Iterative analysis has found a threshold flood discharge of 11,400 cfs. Discharges greater than this value will have a potential of flooding the historic structures within Block 33. The following table lists the flow depth and velocity at each structure.

Table 1I-1 – Inundation of Structures

Structure	10-Year Flow Depth (ft)	10-Year Flow Velocity (ft/sec)	50-Year Flow Depth (ft)	50-Year Flow Velocity (ft/sec)	100-Year Flow Depth (ft)	100-Year Flow Velocity (ft/sec)
1	0.5	<1	2.6	1 to 2	3.7	>3
2	0.0	0	0.0	0	0.0	0
3	0.0	0	0.0	0	0.0	2 to 3
4	0.0	0	2.4	<1	3.7	2 to 3
5	0.0	0	1.8	<1	3.0	2 to 3
6	0.0	0	0.8	<1	1.9	2 to 3
7	1.6	<1	3.9	<1	5.2	2 to 3
8	1.6	<1	3.8	<1	5.0	2 to 3
9	0.0	<1	2.2	<1	3.2	2 to 3
10	0.0	<1	2.1	<1	3.2	2 to 3
11	0.0	0	1.4	0	2.5	2 to 3

FEMA Floodplain Map

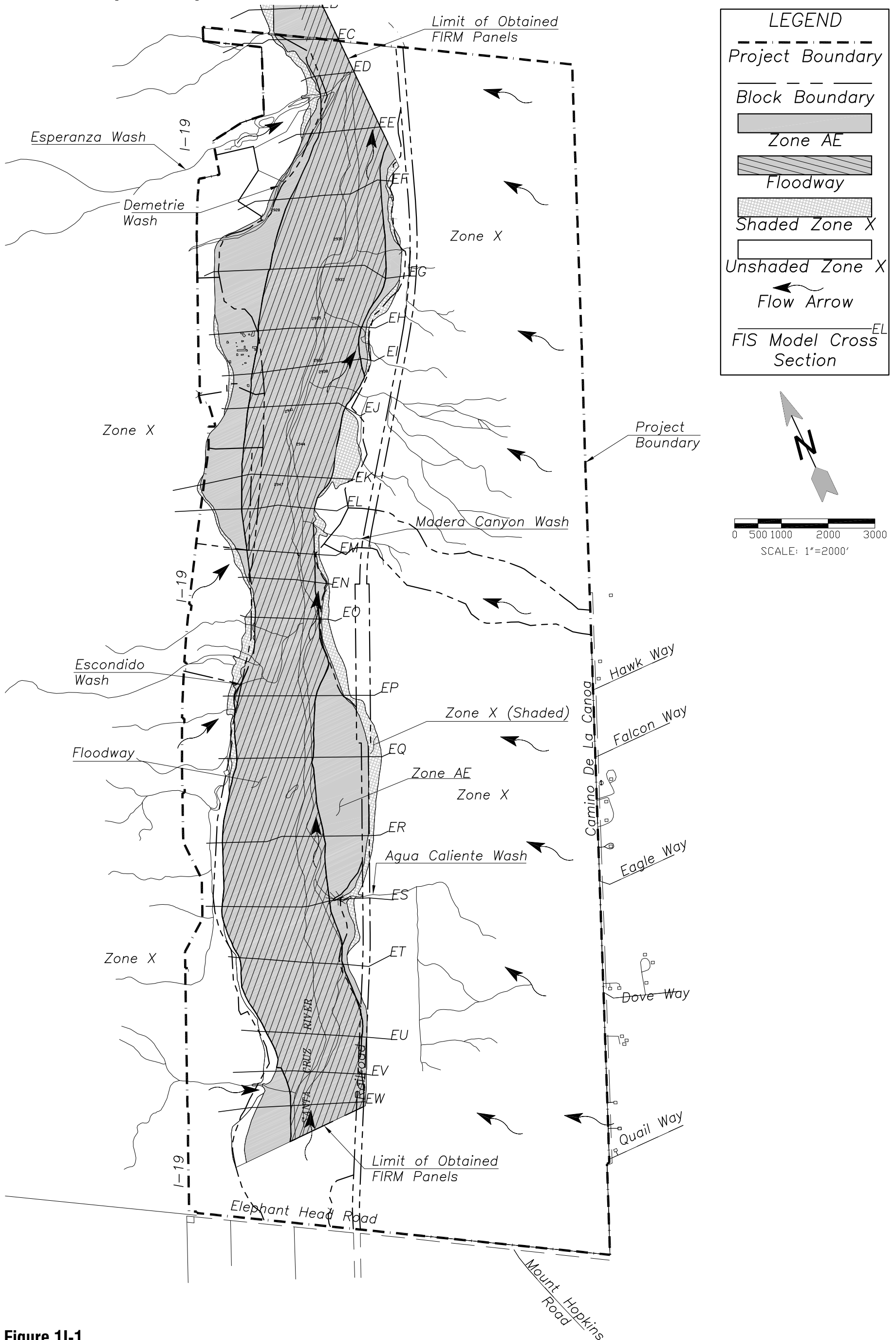


Figure 11-1

Block 33 Inundation Map

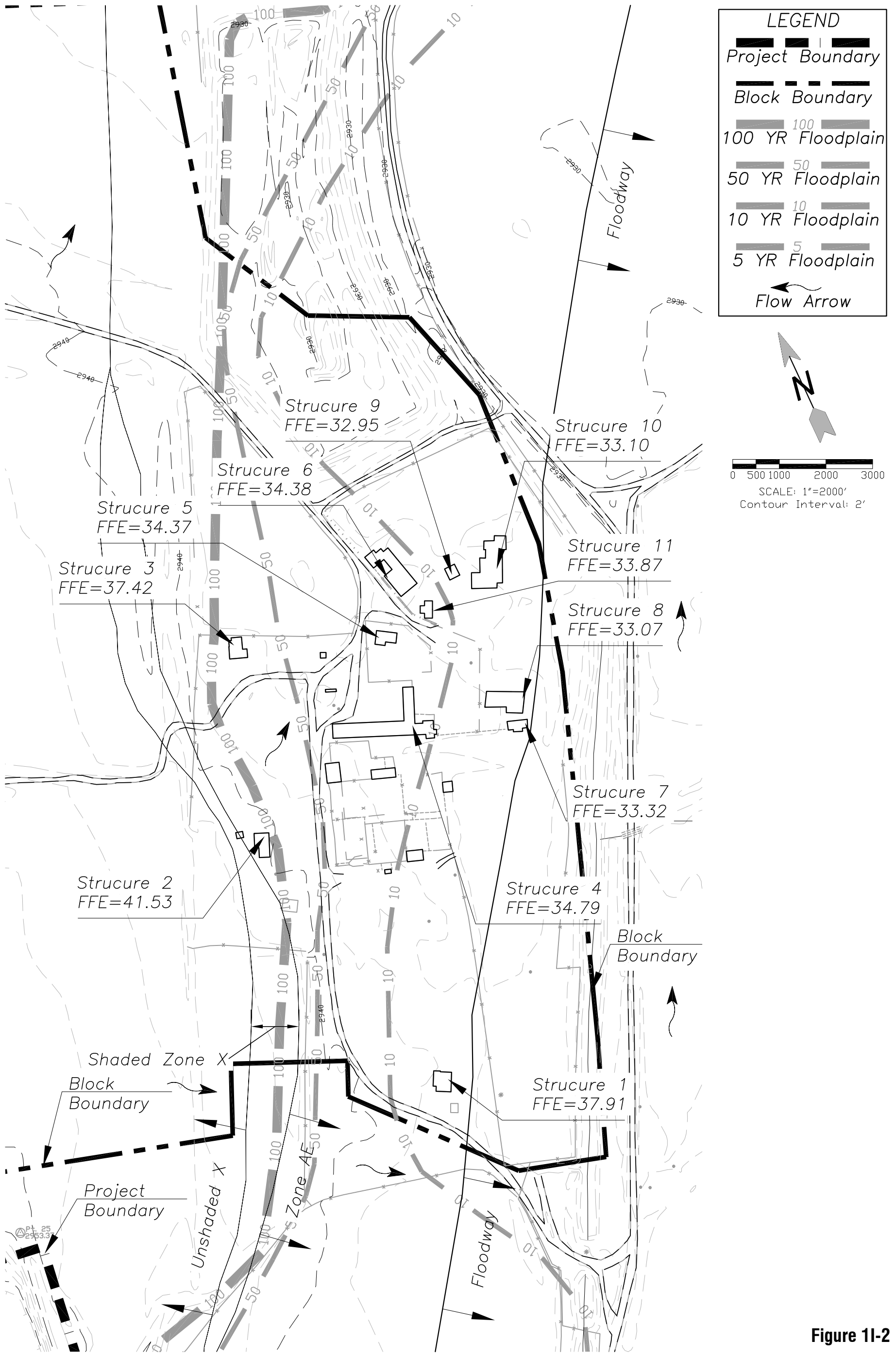
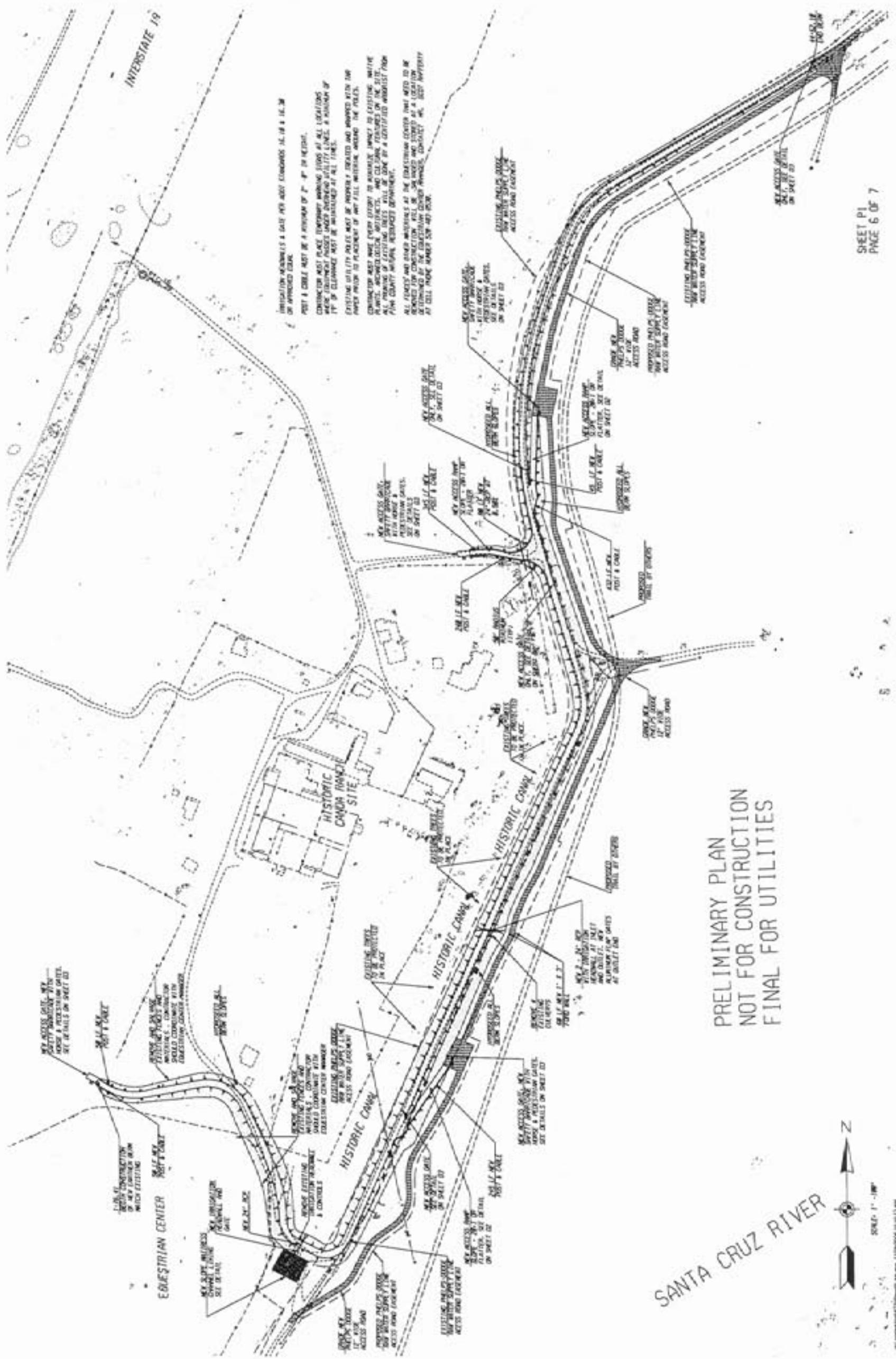


Figure 11-2



Construction document from flood control berm project
Courtesy of Pima County

Vegetative Communities and Habitat

Vegetative Communities

The Canoa site lies within the Arizona Upland subdivision of the Sonoran Desertscrub biome. This subdivision's vegetation takes on the form of scrubland or low woodland with intervening shrubs and perennial succulents (Brown 1994). Canoa Ranch lies in the "Upper Santa Cruz" Sonoran Desert Conservation Planning (SDCP) Sub Area. Central basin of Canoa is in "Riparian Habitat" area as adopted by Board of Supervisors (BOS) on August 2, 2005.

Primary existing threats to these native vegetative communities at the Canoa Ranch include groundwater pumping, reduction of surface water and exotics or "invader species" which inhibit growth of native species.

Following in this section are descriptions of specific vegetation found on the project site. The section that immediately follows this describes in the specific habitats found in this biome and including the project area.

a) Riparian:

Riparian communities respond to available moisture and are subdivided into hydriparian, mesoriparian and xeroriparian classifications. They provide ecological connectivity and biological corridors.

1) Sonoran Interior Strand Association is located along the Santa Cruz River and is characterized as a hydro and mesoriparian communities, and identified as a Habitat of Concern in the SDCP. Mesquite, Gooddings willow, salt cedar, cocklebur, Russian thistle, amaranth and burro bush are observed species. (Thompson and Associates)

2) Xeroriparian - Mixed Scrub is the dominant riparian type on the property. Mesquite, catclaw acacia, desert and netleaf hackberry, blue palo verde, and Gooddings and desert willow are some of the observed species of this habitat. (Thompson and Associates)

3) Aquatic and Riparian Woodlands. Historically a pond and a canal existed on the ranch site, but neither resource currently contains water or provides riparian habitat. Aquatic habitats, wetlands and riparian woodlands are considered to be a high priority for conservation planning. Several scattered cottonwood -willow trees are located in or near the Santa Cruz River channel at the southern reaches of the ranch. These ecosystems are rapidly disappearing throughout Pima County. A large number of vertebrate and invertebrate species listed within this report either live in aquatic or riparian habitats, or utilize them in some way. Plant species associated with aquatic and riparian woodlands include cottonwood and Gooddings willow. These associations are valued for their higher water availability, vegetation density, and biological productivity, compared to adjacent uplands.

b) Upland:

1) Mixed Scrub - Mesquite Association community is dominated by an abundance of perennial shrubs and small trees. While Mesquite is present throughout the property it is not the dominant species. Other plants include burro weed, whitethorn acacia, and cat claw acacia. (Thompson and Associates)

2) Disturbed Lands on the property include uncultivated agricultural fields, pastures and roadsides. Most disturbed lands have been heavily grazed. Some of the areas have grasses and forbs while others contain an abundance of mesquites and other shrubs. Plants found in this area include those common in the Mixed Scrub Mesquite and include pigweed, Bermuda grass, telegraph weed, and burro bush. (Thompson and Associates)

c) Desert Grasslands:

Native grassland communities are rapidly disappearing throughout Pima County due to development pressures and poor land and fire management. One specific grassland type identified in the Sonoran Desert Conservation Plan as a conservation target is the big galleta grass (*Hilaria rigida*) association. Grassland communities thrive when large tracts of undeveloped land are present. Introduction

of exotic grasses, lack of fire, and other activities (e.g. grazing livestock) have degraded grasslands and reduced species diversity. Exotic species like Johnson Grass (*Sorghum halepense*), Buffelgrass (*Pennisetum ciliare*) and Lehmann's lovegrass (*Eragrostis lehmanniana*) were identified on or near the Canoa Ranch. Exotic grasses are now widespread throughout southern Arizona and compete with native grasses for space, nutrients, and water. Many of these were introduced by Department of Agriculture and U.S. Soil Conservation Service scientists for erosion control or low-elevation forage. In many places, exotic grasses have permanently crowded out and replaced native vegetation. No other major Sonoran Desert plant family has such a high percentage of non-native species, and such a dramatic impact on the Sonoran Desert.

Habitat

The Canoa Ranch property provides high quality, critical and important habitat for numerous species. This is due to several unique factors which combine at this location. The first is the existence of the Santa Cruz River which serves as a conduit, or a corridor for species which range short or long distances. The Santa Cruz River is identified as a raptor corridor, providing tree shelter, and forage opportunities along a long distance. Another component is that the foothills of the Santa Rita Mountains provide a connection to adjacent preserved forest lands of the Santa Rita Experimental Range and Wildlife Refuge and the Coronado National Forest, where many species exist without threat of impact. And third, are the influences of surrounding land use. The pecan groves to the north and the effluent recharge in the river upstream at the Audubon site both create additional habitat resources nearby. The most common habitats found on the property are:

- Riparian: Dense clusters of low trees or tall shrubs. Generally found near permanent surface water or consistent high groundwater level.
- Palo Verde/mixed cacti: The vegetation looks similar to scrubland or low woodland with open spaces filled with shrubs. Noted for rich bird life.
- Open desert scrub: Generally low lying scattered shrubs with large patches of bare ground. Canopy covers less than half of this habitat.
- Desert grassland: Principle species are summer-active root perennials. Density of the grassland during the summer and fall depends on the rainfall during summer. Landscape becomes increasingly bare from November until the onset of the summer rains.
- Mesquite Bosque: Clustering of small trees growing adjacent to desert streams and rivers. The canopy maintains a thick layer except during the winter when shrubs grow beneath the leafless trees. This is a highly productive habitat for insects, birds, mammals, and reptiles.
- Cottonwood/willow: Consists of winter-deciduous trees near desert streams and rivers. The cottonwoods generally have dense growth of willow species below their canopy.
- Rock shelters: Found along the northeastern ridges. Home to various bat species because of dark, cool shelter.

Each of these habitat types are home or food sources for species of special concern, as well. Maintenance of each of these is important in order to support dependent plant and animal species.

Special Status Species

The U.S. Fish & Wildlife Service (USFWS) maintains a list of protected species and their critical habitat known to occur in each Arizona County. These species are currently listed or are proposed for listing as endangered or threatened under the Endangered Species Act (ESA; 16 USC §1531 et seq.). The list also includes Candidate species for proposal as threatened or endangered. Section 9 of the ESA specifically prohibits the "take" of a listed species. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct." Some bird species also receive legal protection under the federal Migratory Bird Treaty Act (16 USC §§703-712).

Habitat and Wildlife Corridors

The Arizona Game & Fish Department (AGFD) formerly listed 116 species as extinct, endangered, threatened, and candidate in Arizona (AGFD 1988). While the terminology used was identical to that used by the USFWS, the AGFD categories were advisory and provided no legal protection for take of such species or modification of their habitat. The latter point contrasts the USFWS categories. To avoid confusion, AGFD modified and reissued their list as “Wildlife of Special Concern in Arizona” without using the terms ‘endangered’ or ‘threatened.’ The revised list has been distributed in draft form and has not yet been officially adopted (AGFD 1996).

In 1997 the Arizona Game and Fish reported species of special status specifically located on the Canoa Land Grant. According to this report, the following are species specifically found on the site:

- i) Endangered species in the Endangered Species Act (ESA):
 - (1) Pima Pineapple Cactus
- ii) Species of special concern in the ESA:
 - (1) Mexican Long-tongued Bat
 - (2) California Leaf-nosed Bat
 - (3) Northern Grayhawk
 - (4) Pima Indian Mallow
- iii) Candidate species in the ESA.
 - (1) Western Yellow-Billed Cuckoo
- iv) AZ Wildlife Species of Special Concern
 - (1) Black capped Gnatcatcher
 - (2) Brown Vine Snake
 - (3) Tropical Kingbird
- v) AZ salvage restricted species
 - (1) Crested Coral Root
 - (2) Tumamoc Globeberry

Since the 1997 report there have not been any additional studies specifically on the land grant regarding special status species.

In addition, the entire Santa Cruz River Basin is home to a large number of species with special status. Due to the Santa Cruz River running the entire length of the property through its center, it is likely that there are more species of special status located there. Based on this information, it is possible that the following are found on the property:

- a) Endangered species in the Endangered Species Act (ESA):
 - (1) Lesser Long nosed Bat
 - (2) Southwestern Willow Flycatcher
 - (3) Cactus Ferruginous Pygmy Owl
- b) Species of special concern in the ESA:
 - (1) Gentry Indigo Bush
 - (2) Pale Townsend Big-eared Bat
 - (3) Giant Spotted Whiptail
 - (4) Lowland Leap Frog
 - (5) Talus Snail
- c) Listed as threatened in the ESA
 - (1) Chiricahua Leopard Frog
- d) AZ Wildlife Species of Special Concern
 - (1) Western Red Bat

Wildlife Corridors

Wildlife corridors are segments of land that provide linkages for species migration throughout a region. These corridors are integral in the maintenance of biodiversity, connection different habitat types, and seasonal migration. Plant species rely on wildlife corridors for pollinators to migrate through, as well.

Canoa provides numerous linkages along its major east/west washes to and from the Santa Rita Mountains to the Santa Cruz River. There is evidence that these corridors are actively used due to observed wildlife and fresh footprints along the property and its washes. These corridors exist to a lesser extent on the western half of the project

site, because of barriers to movement, primarily Interstate 19.

Preservation, Restoration, and Threat Assessment

Vegetative Communities

The Sonoran Desert Conservation Plan (SDCP) places significant importance on the restoration and protection of riparian resources. According to SDCP, 60 to 75% of Sonoran species rely on riparian environments at some point during their life.

Several Riparian restoration projects and studies are occurring along the Santa Cruz outside of the Canoa property. The Tucson Audubon Society and the Sonoran Institute are administering the projects. The projects include implementation of water harvesting with swales and basins, historically native species planting, mix of plant species, invasive plant removal, and fencing to reduce impact during restoration. These efforts can be built upon through, or example, additional effluent recharge into the Santa Cruz River. When more water is available, the riparian vegetation associations improve. This section of the Santa Cruz River is known for the ability to recharge the water table very quickly when rain events or additional water is available.

The greatest threat to riparian restoration and maintenance are soil erosion from riparian degradation, flooding, invasive species, and reduced groundwater. Managing and controlling these threats will be critical to the success of this project and to the restoration of the natural resources.

Habitat

Many of the streams and rivers in Pima County have ceased to flow year around and are impacted by a lower water table. The Santa Cruz River that intersects the Canoa property does not flow annually but is recharged with effluent from the International Wastewater Treatment Plant (IWTP) located south of the site in Rio Rico. During flooding, the Canoa site receives a mixture of rainwater and effluent from the river.

Habitats are sensitive to housing developments, invasive species, human uses, reduced pollination from decreasing wildlife corridors, and a decrease in groundwater supply. When working with the riparian habitat one should also focus on the water source (stream, wash, etc). Care should be taken in maintaining this habitat and its water source as well as restoring them.

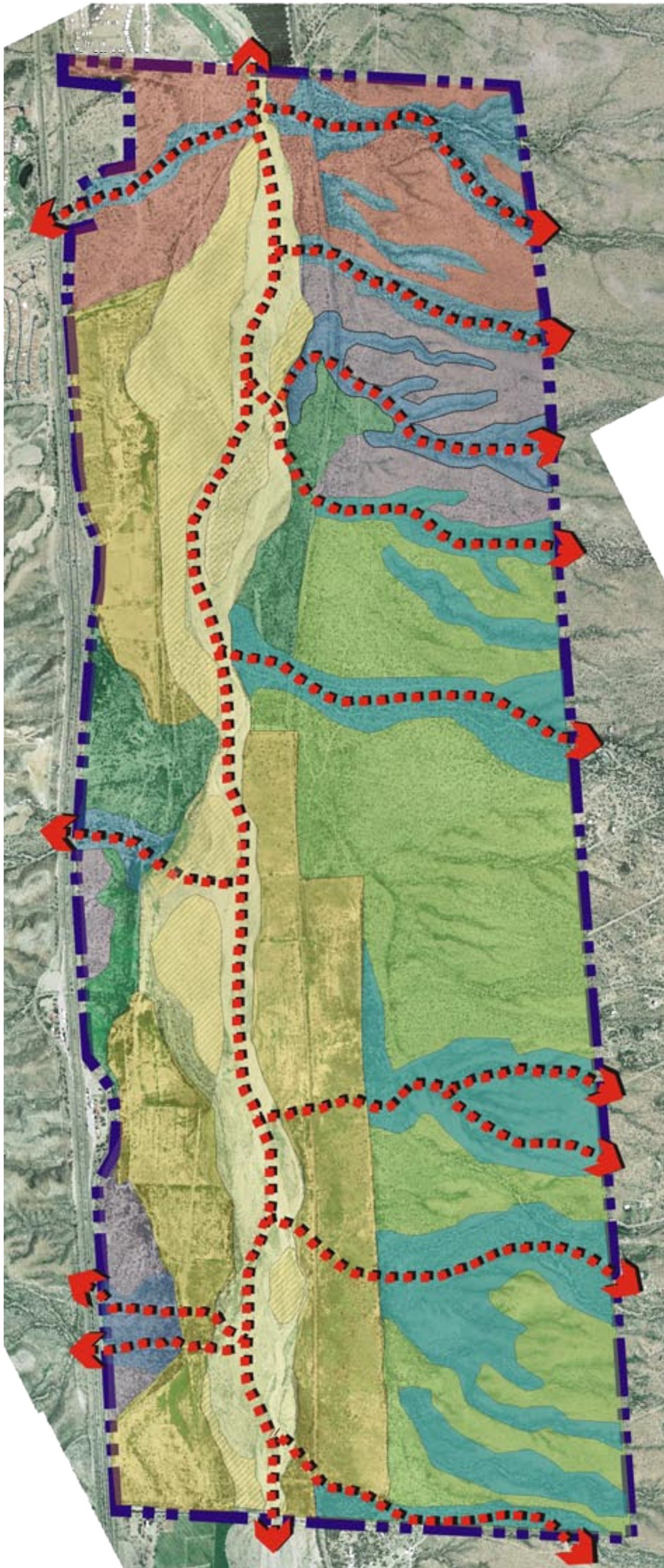
Special Status Species


The largest threat to special status species is loss, alteration, and degradation of habitat; fragmentation of habitat; human use and overuse; decline in groundwater levels; and invasive species. The development of the Canoa Ranch should focus on maintaining and restoring habitats, wildlife corridors, and invasive species removal to ensure protection of species and their habitats.


Wildlife Corridors

Wildlife corridors are essential to maintain biological diversity, genetic mixing, and seasonal migration. Avoiding fragmentation of habitats is very important to species survival. The corridors identified on the Canoa property lie along the major washes running east/west. These washes should receive less human impact and more restoration of habitats. When people are introduced into areas of high wildlife value, it should be done carefully so that the impacts to the habitat are minimized.


Vegetation and Wildlife




 RIPARIAN: SONORAN INTERIOR STRAND ASSOCIATION


 XERORIPARIAN: MIXED SCRUB-CAT CLAW ACACIA, BLUE PALO VERDE, VELVET MESQUITE


 XERORIPARIAN: MESQUITE BOSQUE

 UPLAND: MIXED SCRUB ASSOCIATION. OPEN IN CHARACTER.

 UPLAND: MIXED SCRUB ASSOCIATION. HEALTHY AND DIVERSE IN CHARACTER

 DESERT GRASSLAND: CACTUS, OCOTILLO PRESENT

 DISTURBED LANDS: REMNANT AGRICULTURAL FIELDS - OFTEN DEGRADED

 DISTURBED LANDS: PALMER'S AMARANTH PREDOMINANT

 WILDLIFE CORRIDOR

Soils and Geology

Soils

The majority of the soil located on the Canoa property is Continental soil, which is a sandy-loam and gravelly sandy loam. The erosive characteristics of all the soils are generally low. Along washes the soil tends to have a higher sensitivity to erosion and soil located farther from these features has less sensitivity. The soil west of the Santa Cruz River and east of Interstate 19 is more sensitive to erosion.

The Continental series consists of very deep, well-drained soils formed in alluvium from mixed sources. Continental soils are on fan terraces and have slopes of 0 to 15 percent. They have low to high runoff and slow permeability. Continental soils are used for grazing and irrigated cropland.

Soils at the Canoa Ranch site will need evaluation for structural stability if foundations are used.

Geology

Geologic features of the Canoa property are limited to washes and ridges. The washes run east/west with drain into the Santa Cruz River. The ridges run parallel to the washes along the northeastern portion of the property. The ridges are covered with medium size stones that contrast from the sandy soil along the remaining property.

Preservation, Restoration, and Threat Assessment

Soils

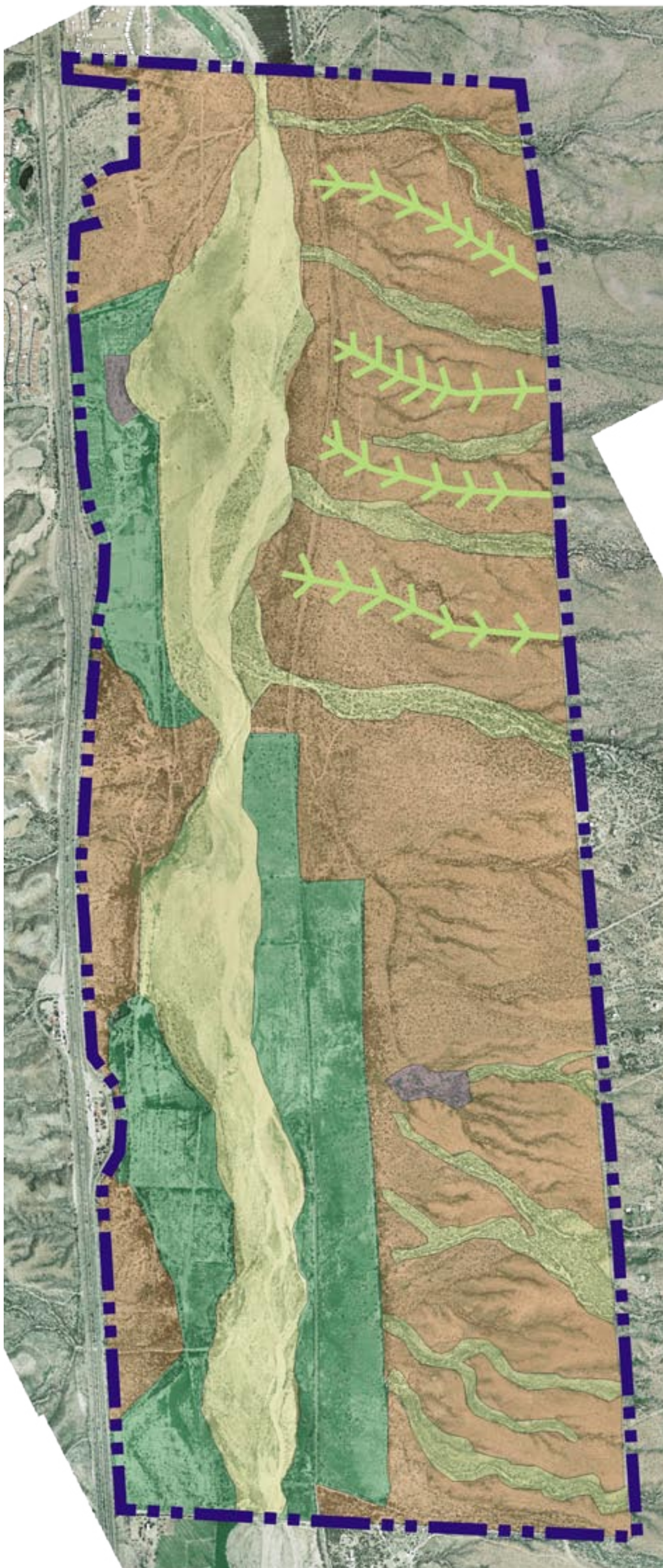
Currently the Canoa Land Grant has a variety of soils with varying sensitivity to erosion. In order to reduce risk of erosion, restoration and maintenance of appropriate soil type, soil quality, habitat, and vegetation should occur. Construction on these soils should be evaluated for structural integrity.

Geology

Washes should be maintained and rehabilitated. Habitats along the washes should be restored to reduce soil erosion. The Santa Cruz River has a history of bank fluctuation. This is a natural feature that needs to be preserved to maintain the integrity of the habitats.

The ridges along the northeastern portion of the property should be maintained for visual resources as well as habitat preservation. Any possible reduction of vegetation and increased erosion should be avoided.

Soils and Geology



SANDY WITH SOME CLAY



STONY SANDY LOAM / SANDY LOAM



GRAVELLY SANDY LOAM / LOAM / WITH SOME CLAY



LOAM



RIDGES

Site Inventory

Fire Threat Assessment

Pima County's standard approach to fire is suppression and it is assumed this approach would be the same for Canoa Ranch. Currently there is no fire management plan for any Pima County park that includes prescribed burns.

Wildland fire response at a park is handled through a reciprocity agreement with Arizona State Land Wildland Fire Center. The process begins with park staff calling the local fire station to report a wildland fire. The station contacts the state fire center which then coordinates the response.

There are two groups of valued resources at Canoa that would be threatened by fires: cultural resources, such as the historic structures and other structures of value, and biological resources of high value and high fire sensitivity. The biological resources include non-fire adapted desert plant communities that are important wildlife corridors or resources such as xero-riparian habitat in the river and washes as well as the agave and columnar cactus habitat in the southwest corner of the property.

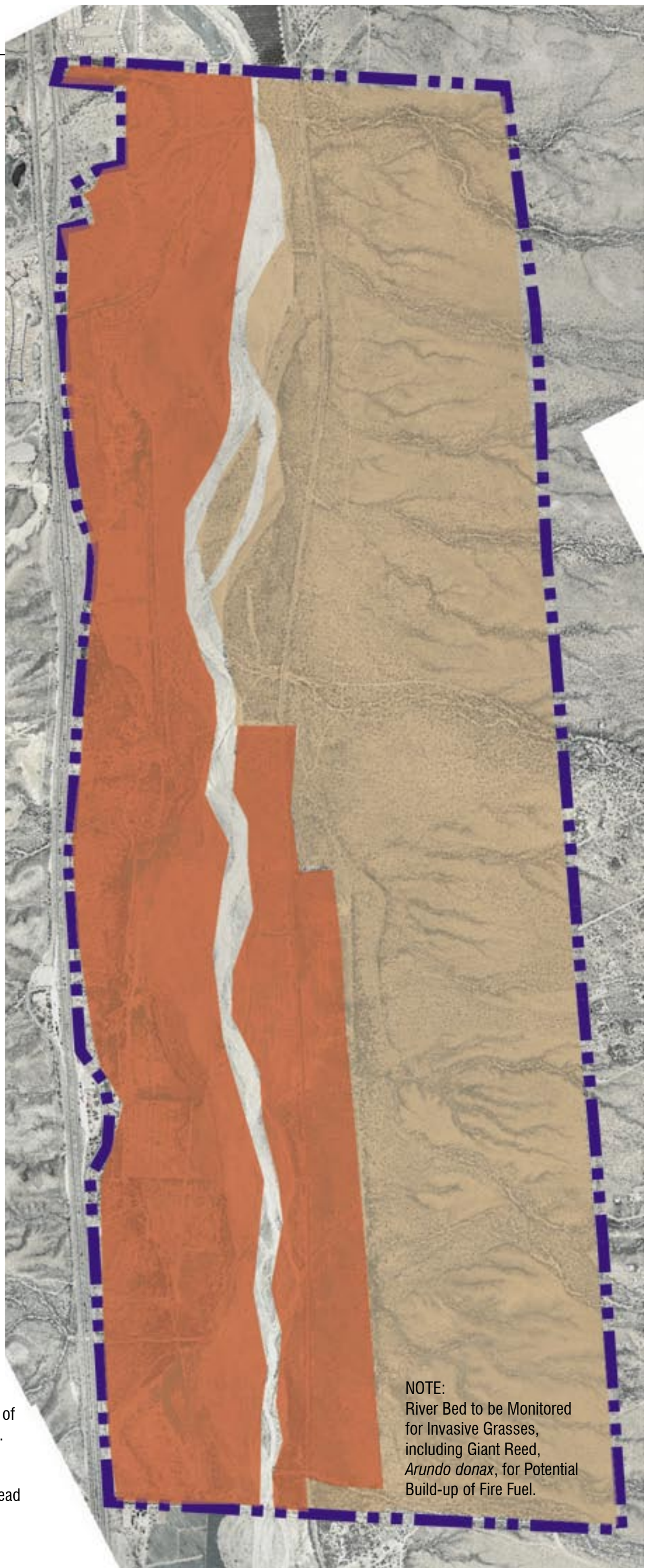
An initial step in wildland fire control could be cutting fire breaks in areas with invasive plant species as a means to contain or limit the spread of wildland fire damage. It is possible the roads and railroad track, as well as the planned Anza Trail, could function as fire breaks

It is conjectured that prescribed burns may have use as a tool in rehabilitation in conjunction with other restoration/rehabilitation methods. However, this is dependent on the completion of an analysis of existing biological conditions and specific rehabilitation objectives to determine the feasibility of prescribed burns as a rehabilitation tool.

Specific concerns regarding prescribed fire at Canoa Ranch are related to the close proximity of residential neighbors and the fragmentation of the land surrounding the park. These would tend to increase the risk associated with prescribed burns and the perceived nuisance of smoke to the neighbors.

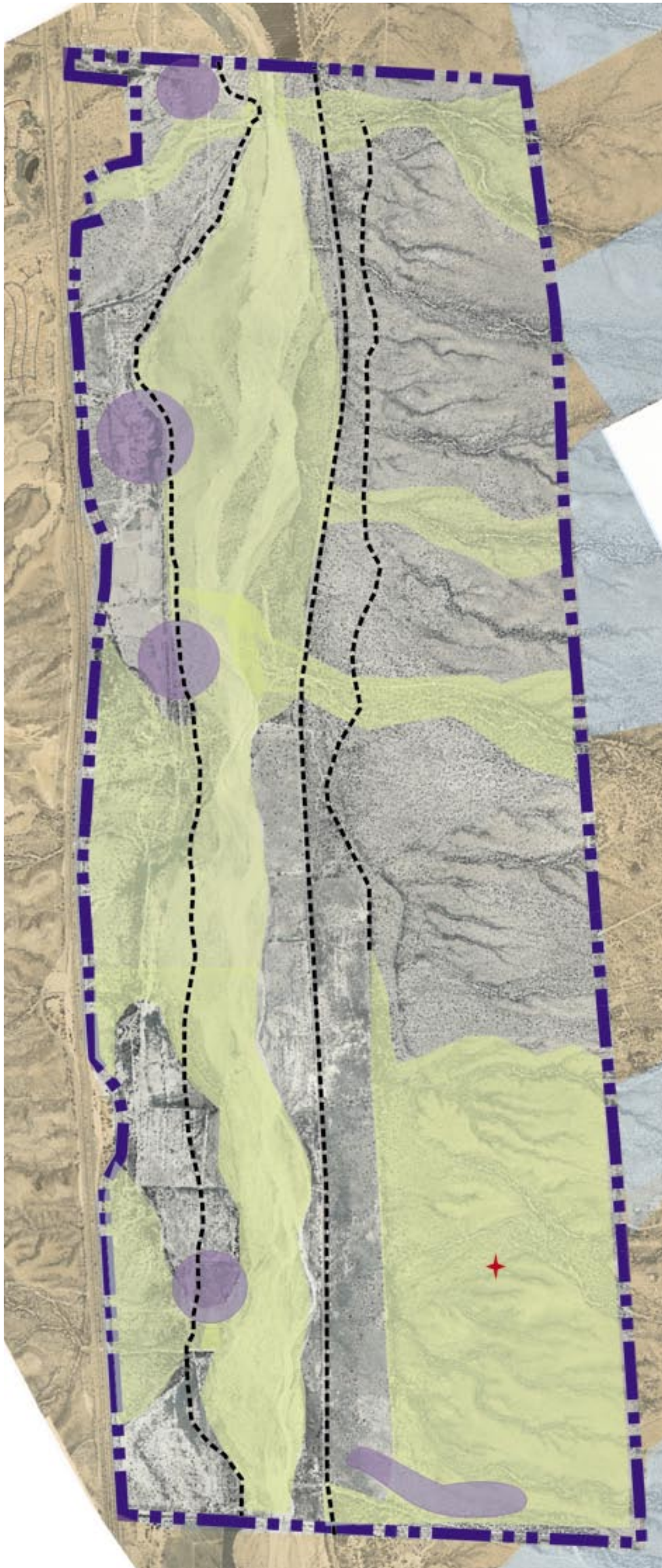
Fire Fuel Areas


-  ASSUMED HIGH FIRE FUEL AREA / POTENTIAL THREAT
Disturbed Land with High Concentration of Fire Adapted Exotic Invasive Plants
-  ASSUMED FIRE FUEL AREA / POTENTIAL THREAT
Land Formerly use for Grazing. Areas of Fire Adapted Exotic Invasive Grasses. (Lehmann Lovegrass, *Eragrostis lehmanniana*). Potential for Additional Fire Fuel Resulting from Build up of Dead Material From Native Plants.





NOTE:
River Bed to be Monitored for Invasive Grasses, including Giant Reed, *Arundo donax*, for Potential Build-up of Fire Fuel.


Fire Threat Assessment High Value Resources





-  HIGH VALUE NATURAL RESOURCES
Wildlife Corridors
River, Washes, Bosque
Non-fire Adapted Plant Communities

-  HIGH VALUE CULTURAL RESOURCES
Historic Structures
Other Structures of Value

-  OFF-SITE PRIVATE PROPERTY VALUE: HIGH THREAT SENSITIVITY
Loss of Property

-  STATE LAND: LOW THREAT SENSITIVITY
Designated as High Protection Priority for Conservation

-  APPROX. LOCATION OF PIMA PINEAPPLE CACTUS (1997 SWCA)

-  POTENTIAL FIRE BREAKS
Existing or Planned Roads, Tracks and Trails

Recreation and Visual Resources

Recreation

The Canoa property is used in a variety of recreational ways. The primary recreational activities for the property include hiking, equestrian use, mountain biking, four wheel driving, and all terrain vehicle (ATV) use. There are six planned trails on the property:

- vi) Santa Cruz/Anza Trail
- vii) Madera Canyon Wash
- viii) Elephant Head/Hawk Way
- ix) Esperanza Wash Trail
- x) Power Line Loop Trail.

In addition to these trails there are several unnamed and commonly used trails on the property. All of these trails vary in definition and run North/South on the property.

The diverse plant and animal species found at the site and the historic and cultural resources are a significant draw for users. Specifically, the variety of birds residing in or migrating through Canoa's habitats offers exciting bird watching for users of the property. Madera Canyon is a world renowned birding destination.

Other trail use includes unauthorized, illegal immigration from and to Mexico. A significant amount of foot traffic uses the Santa Cruz River corridor for illegal entrance and activity, as well as camping associated with it. The U.S. Border Patrol attempts to stem the tide of illegal immigration, to reduce smuggling and other criminal border activity and to cut the number of migrant deaths through this Canoa Ranch property.

Visual Resources

Visual Quality Inventory

This visual quality inventory will guide the planning process of the Ranch. The visual quality inventory is a process where the magnitude of the views, the types of views, and continuity, the silhouette, and the duration of the views, are taken into consideration. Once visual quality is assessed, desirable views can be captured and emphasized, undesirable views blocked or screened, and any impacts to views caused by development of the project can be mitigated.

The property is divided into visual units, each offers numerous foreground, middle ground and background visual resources both within and surrounding the property. The most significant elements which contribute to the high quality visual resources are the diverse vegetative communities, the varying topography, the surrounding panoramic views, the unique cultural historic features, and the wide variety of viewsheds. This diversity of visual resources contributes to a visitor's ability to enjoy the wide range of natural scenery of the Sonoran Desert without leaving the property.

Topography contributes to creating several important locations with desirable views. These locations are identified on the site maps within this report. The views identified range from foreground to background. The best foreground views are enclosed intimate views of the river and vegetation. Desirable middleground views are characterized by views up washes, or otherwise semi-enclosed midrange views. The best background views are from the highest locations on the property and are typically toward the Santa Rita Mountains to the east. The ridges running along the northeastern portion of property are an example of this. From this vantage point the entire expanse of the Canoa property and the Santa Rita Mountains can be seen. Also, the ridges offer unique ocotillo clusters not found anywhere else on the property. These desirable viewshed points can serve as destination points for visitors, with nodes which provide amenities such as shade and seating, or a story telling area, or an amphitheater. Capturing the views at these locations, whether formally or informally, will be an important contributor to the visitor's experience.

Some visual resources are indicated as undesirable. This is usually due to erosion, other environmental damage, blocked views, or off-

site development and mining scars.

Background Views

Visual Resources not located on the property that provide benefits to Canoa include the Santa Rita Mountains to the East, the Pecan Orchards to the North, and Duval Mine to the West. The Canoa property offers a magnificent venue for viewing Elephant Head Rock located in front of the Santa Rita Mountains.

Visual Mitigation

The best mitigation reduces the contrast of new elements and blends them with the natural setting. Color and texture consistency are the most important. Much visual mitigation can be achieved through natural slope treatments, and revegetation.

Preservation, Restoration, and Threat Assessment

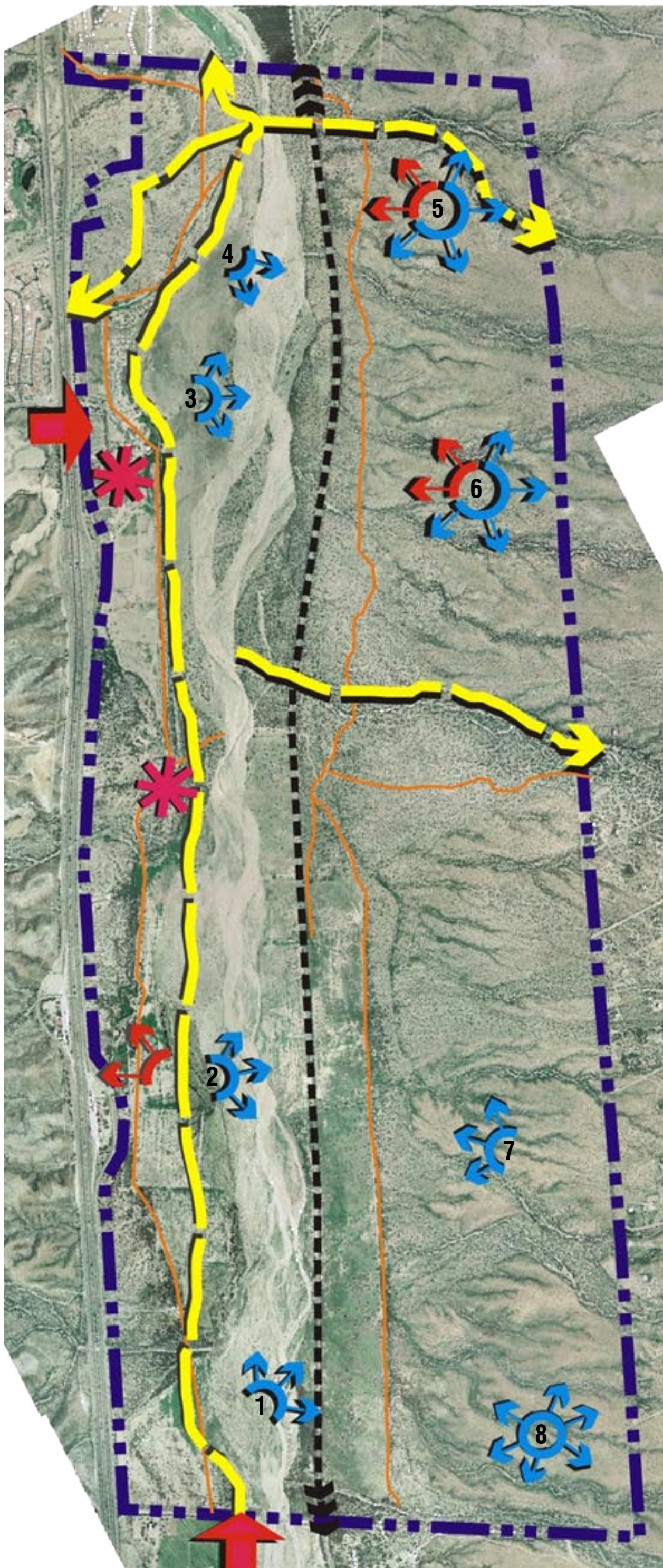
Visual Resources

Maintenance of current habitats is critical for preserving the visual resources on the site. Threats to these resources lie in habitat modification, human development, human use, and invasive species. Care should be taken to reduce impact from each of these.

Recreation

The recreational uses of the Canoa property vary in degree of environmental impact. Care should be taken in maintaining the trails and uses while reducing impact on the habitats of the property. Current unnamed trails running North/South should be carefully considered due to obvious use by large groups of people, including illegal activities. Significant amounts of trash have accumulated along these trails, as well. If the trails are to be maintained for recreational use then security concerns for recreational users and plant and animal species should be addressed. Recreational use should be designed so that it is contained in designated areas. Uses should be assessed and zones, so that they do not conflict. For example, equestrian use have different requirements than bicycles, and the two uses should not be located in the same areas.

Recreation and Views



-  PRIMARY POINTS OF ENTRY
-  DESIRABLE VIEWS
-  UNDESIRABLE VIEWS
-  RANCH ROADS
-  CANOA CAMPSITE
-  CANOA RANCH HEADQUARTERS
-  RAILROAD TRACKS
-  TRAILS

NOTE: See following pages for view photos

View Photos



1-East



3-East



1-Northeast



3-Northeast



2-East



4-East



4-Northeast



4-Southeast

NOTE: See preceding map for photo locations



5-Northeast



5-North



5-Southeast



5-West



5-East



5-South



5-West / Northwest

NOTE: See preceding map for photo locations

View Photos



7-North



7-Northwest



7-West

NOTE: See preceding map for photo locations

Anza Trail

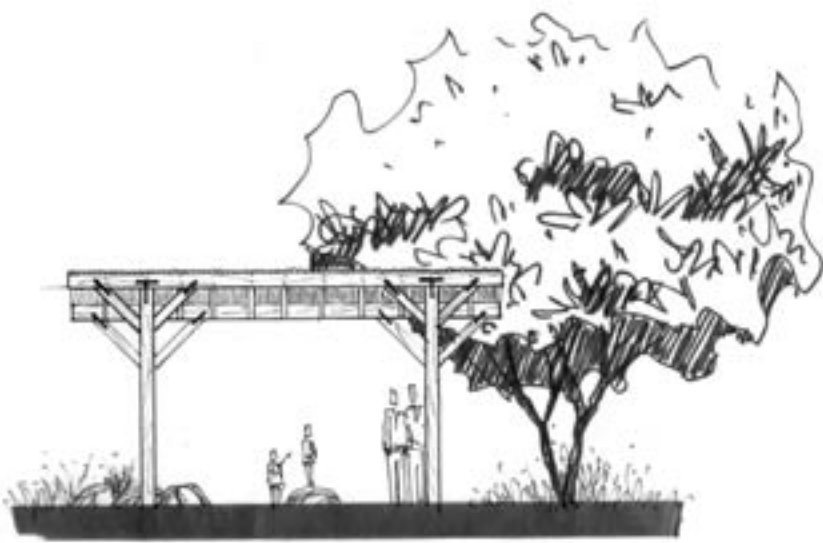
On October 23, 1775, Captain Juan Bautista de Anza, accompanied by fathers Pedro Font and Francisco Garcés, camped at La Canoa. Their party was on an expedition from Tubac to the future site of San Francisco.

At La Canoa, two momentous events occurred, one joyful, the other tragic. Manuela Pinuelas, the wife of soldier Jose Vicente Felix, gave birth to a boy, Jose Antonio Capistrano Fexiz. Within hours, however, the mother died, the only fatality of the entire Expedition. She was later buried at San Xavier del Bac. The boy survived and completed the journey to San Francisco (<http://www.pima.gov/areainfo/anza/CanoaCamp.html>.)

In his journal, Anza made the following report: *“At the end of the afternoon today the wife of one of the soldiers of the expedition began to feel the first pains of childbirth. We aided her immediately with the shelter of a field tent and other things useful in the case and obtainable on the road, and she successfully gave birth to a very lusty boy at nine o’clock at night. (October 23, 1775)*

At three o’clock in the morning, it not having been possible by means of the medicines which had been applied in the previous hours, to remove the afterbirth from our mother, other various troubles befell her. As a result she was taken with paroxysms of death, and ... she rendered up her spirit at a quarter to four.” (October 24, 1775)

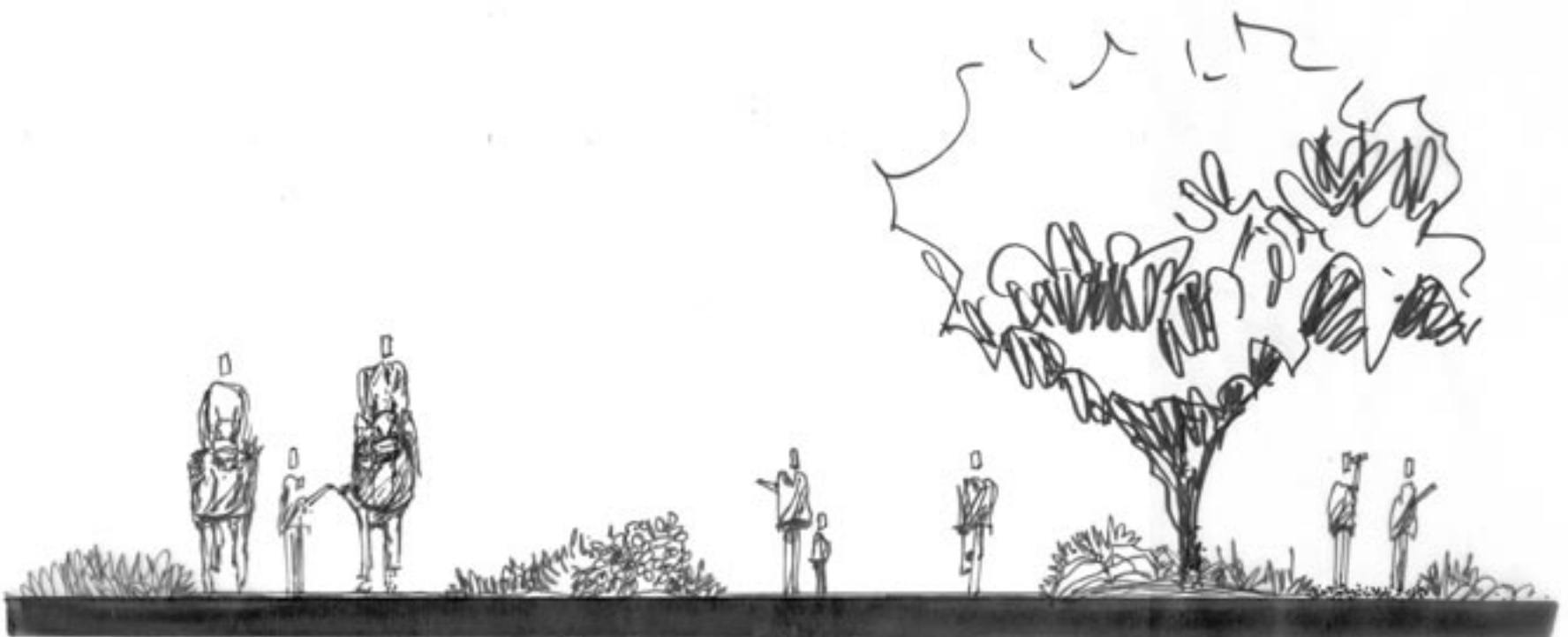
The Juan Bautista de Anza National Historic Trail is an effort by the National Park Service to highlight the approximate route of Anza and his party. Trail segments in both Santa Cruz and Pima Counties have been planned and in some cases implemented. A five mile long segment of the Anza Trail through the Canoa Ranch property has been designed and it is anticipated that construction will begin by late summer of 2006. A multi-use path for pedestrians, bikers and equestrians will provide increased recreational opportunities at the ranch property. A parking and staging area will be located off of Elephant Head Road, just west of the Santa Cruz River.



Conceptual drawing of ramada at the proposed Anza Trail
Courtesy of Sage Landscape and Environmental



Identification signage along the Anza National Historic Trail
Courtesy of National Park Service



Conceptual section drawing of trail at the proposed Anza Trail
Courtesy of Sage Landscape and Environmental

Ranching and Agricultural History

Several comprehensive histories of ranching have been compiled over the years and should be consulted to gain a further picture of the development of ranching in Arizona. William S. Collins, *Cattle Ranching in Arizona*, a context study prepared for evaluating historic ranching properties eligible for the National Register of Historic Places, contains a historical overview of ranching in Arizona and criteria for evaluating ranching properties.

At the local level, *Ranching in Pima County*, Arizona, a report compiled by Linda Mayro and Micaela K. McGibbon during the development of the Sonoran Desert Conservation Plan, summarizes current ranching practices and trends. Ranch conservation helps define a stationary urban boundary that maintains unfragmented open space, protects habitat and sustains traditional ranching culture.

This summary will highlight general ranching trends as they relate to Canoa Ranch and the Santa Cruz Valley through the historical period. To date, specific research on historical ranching practices at Canoa has not been compiled. Additional historical research, along with interviews with former vaqueros and ranch hands could provide additional insight into the actual working practices at Canoa. The Canoa timeline provided in the Background Report is another source of ranching history.

One of the earliest accounts of cattle in the region is from Francisco Vasquez de Coronado's failed attempt to reach the fabled Seven Cities of Cibola. On this journey, it was reported that Coronado had 150 cattle that he was forced to abandon in Sinaloa. A few cattle may have still accompanied Coronado as he made his way up through southeastern Arizona, but the permanent introduction of cattle was still another 150 years away.

Jesuit missionary Francisco Eusebio Kino is widely credited with bringing significant numbers of cattle to missions in Arizona. Cattle were one aspect of his wider plan to settle the native Pima and Papago at missions. For example, Kino brought 700 cattle to the mission at San Xavier del Bac from his ranch at Dolores. The gift of cattle helped missionaries establish relationships with tribes in the Pimaeria Alta.

Following Kino's death in 1711, the Spanish encountered difficulties in maintaining control of the region. By the middle of the 18th century, a Presidio was established in Tubac to fend off Apache attacks. Apache attacks focused on securing livestock, which had become important to both resources for both the Spanish and Indians by this time. A time of relative peace ensued between the 1780s and 1820s when Apache raids were largely quelled by new governance "bribes" that provided Apaches a more domesticated lifestyle dependent on Spanish supplies. Due to this increased peace, it was reported that 5,600 head of cattle were around Tucson in 1819.

In 1821, Tomas and Ignacio Ortiz successfully petitioned the Spanish government for 4 *sitios* (approx. 17,350 acres) of land. Due to Mexico receiving its independence from Spain at this time, no title is provided to the brothers for the San Ignacio de la Canoa Land Grant. Most of the Land Grants in Southern Arizona were successfully petitioned between 1820 and 1833.

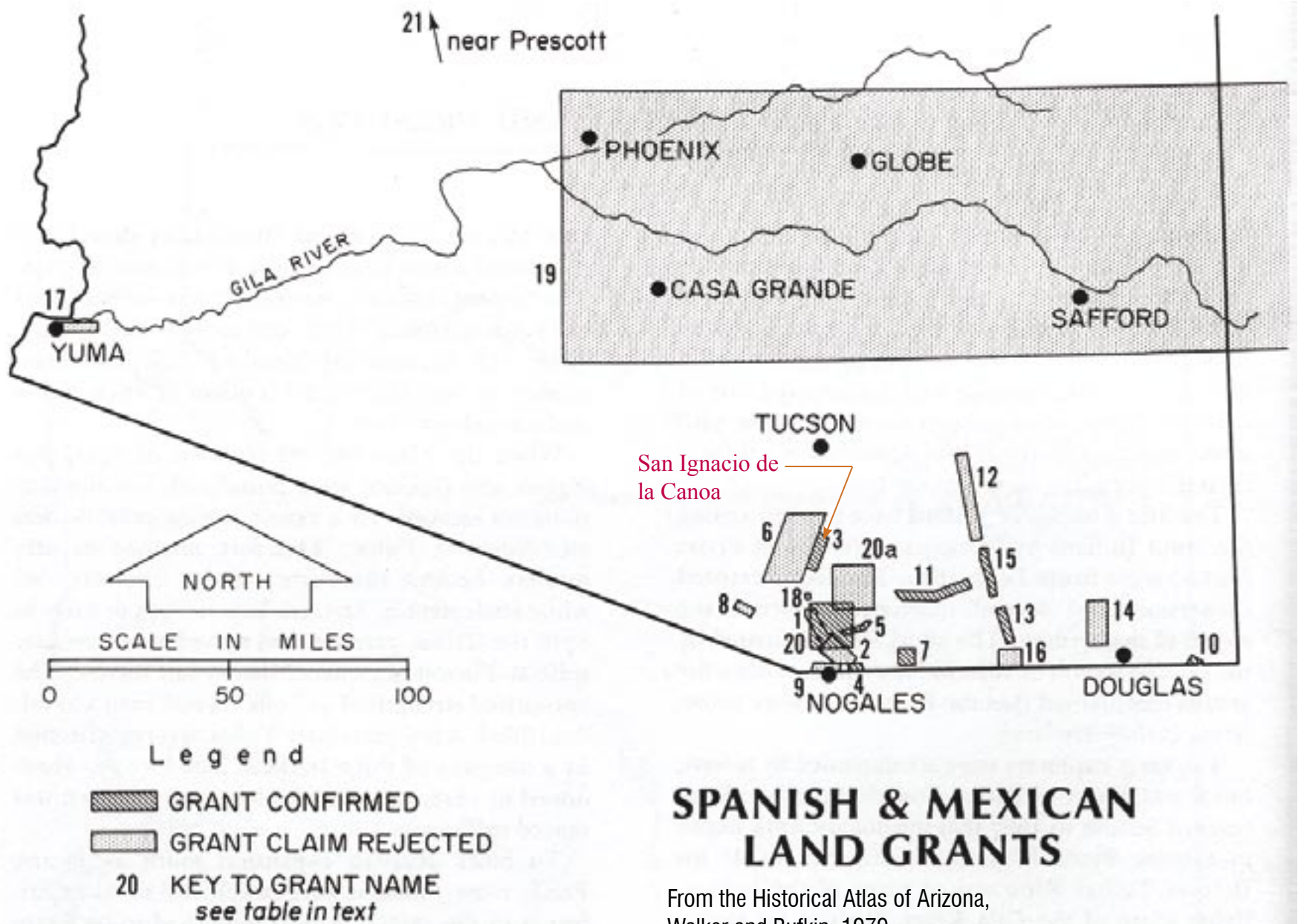
By the 1840's many Mexican ranches were abandoned and there were few settlers at the Presidio in Tucson due to increased hostility by the Apaches. Ranching activity at La Canoa was likely restricted by Apache aggressions during this time. Apache parties made off with a 7,000 cattle form the San Bernardino Ranch and by the early 1850s had proceeded to slaughter most of the remaining wild cattle that occupied the range. In the 1850s, cattle activity in Southern Arizona was virtually non-existent with the exception of the driving of cattle through the region from Texas and points East through to California. By the time that Southern Arizona finally became a part of the United States following the Gadsden Purchase in 1853, cattle were virtually exterminated from the area.

The Homestead Act of 1862 was the first of several federal programs that profoundly influenced Western lands and led to significant reorganization of the region. The Act provided 160 acres to anyone who would settle and work on the land. Several small-scale ranches, most notably Pete Kitchen's Ranch north of Nogales, supplied the army, mines and others with a variety of agricultural goods. As word spread of the excellent opportunities for ranching in the region, more settlers arrived. Well rested from the Mexican Period into the 1870s, the range was were lush and forage, especially along the water courses, was abundant. Settlers recognized the importance of establishing a presence at or near water, allowing them access to the most productive land and to exert control over far more land than they actually owned. This early pattern of settlement is still visible in the land ownership organization of ranches, as deeded ranch lands, typically located at reliable water sources, are surrounded by larger grazing allotments.

Fueled by the speculation of outside investors who took advantage of the Territory's open lands to run cattle, the 1880s was a time of virtually unrestrained growth in cattle operations. With the arrival of the railroads in the early 1880s, ranching activity became more connected to the national economy and ranchers were focused on exploiting a niche in the national cattle market. Shorthorn and Hereford breeds replaced the Longhorn and Criollos breeds that were more adapted to the harsh conditions of the region. To protect herds, ranchers began using fencing on public lands to control strays and to isolate herds from potential predators. Bowing to the complaints of homesteaders, in 1885 Congress declared it unlawful to enclose any public lands. This decision was maintained until the 1930s when more comprehensive grazing legislation was enacted. Another significant resolution was the Desert Land Act of 1877 that gave settlers access to a full section of 640 acres so long as irrigation was being applied to the land. The lack of available water caused many claimants to commit fraud to prove this requirement. The General Public Lands Reform Act of 1891 scaled back the allotments to 320 acres and set aside the first forest reserves on public lands. A number of other regulatory measures were adopted in the late 19th and early 20th Century, including the Carey Land Act of 1894, the reclamation Act of 1902 and the Forest Homestead Act of 1906. In 1909 and 1912, the Homestead Act was further modified, encouraging more settlement in the West up until the United States entered World War I.

By the 1890s, extreme drought, coupled with livestock grazing, hay harvesting and fire suppression, greatly impoverished the ecological health of the land. Riparian areas were particularly hard hit. Erosion and the replacement of native grasses with non-native plants and grasses severely altered the ecological structure and function of many rivers and streams. While ranching practices in the early 20th Century were modified in response to the overgrazing of the boom years, many public lands were still abused by private ranching. As support for public oversight of grazing lands mounted, the Stockraising Homestead Act of 1916 was passed. This order provided claimants to 640 acres of grazing land if the ranchers made \$1.25 worth of improvements to each acre. The Taylor Grazing Act of 1934 marked the beginning of public regulatory control of grazing lands. Under the Act, public lands were leased to stockraisers with the intention of curbing overgrazing and soil erosion while further stabilizing the livestock industry.

Ranching and Agricultural History



NUMBER ON MAP	NAME OF GRANT CLAIM	ACREAGE CLAIMED	ACREAGE APPROVED OR REJECTED	SUCCESSFUL CLAIMANT
1.	Tumacácori	81,350	rejected	
2.	Calabasas			
3.	San Ignacio de la Canoa	46,696	17,204	Maish & Driscoll
4.	Buenavista (María Santísima del Carmén)	17,354	5,733	Maish & Driscoll
5.	San José de Sonoita	7,593	5,123	Santiago Ainsa
6.	El Sopori	141,722	rejected	
7.	San Rafael de la Zanja	152,890	17,352	Colin Cameron
8.	Aribaca	8,677	rejected	
9.	Los Nogales de Elías	32,763	rejected	
10.	San Bernardino	13,746	2,383	John Slaughter
11.	San Ignacio del Babocomari	123,069	33,792	Robert Perrin
12.	Tres Alamos	43,385	rejected	
13.	San Rafael del Valle	20,034	17,475	Juan Pedro Camoul
14.	Agua Prieta	68,530	rejected	
15.	Ranchos de las Boquillas	30,728	17,354	William R. Hearst
16.	San Pedro	38,622	rejected	
17.	Algodones	21,692	rejected	
18.	Otero (Tubac claim)	1,199	claim not filed	
		850,050	116,416	
19.	Peralta-Reavis	11,280,000	rejected	fraudulent claim
20.	Baca Float Number 3		94,289	Lieu Land selection
21.	Baca Float Number 5		99,000	Lieu Land selection
		12,130,050	309,705	

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Ranching and Agricultural Resources

Evaluation of Grazing and Ranching on the Canoa Ranch

In order for an historic restoration of Canoa Ranch to be authentic, the headquarters should be integrated with the surrounding natural and working landscape. The adaptive reuse and the continuity of an original, longstanding land use such as ranching will help to enlighten visitors about Canoa's original intent and ongoing contribution. Over 250 years of ranching has strongly influenced the cultural heritage and sense of place in this portion of the Santa Cruz River Valley.

Southern desert shrub and desert grassland

Canoa Ranch is a southern desert shrub community sprinkled with elements of desert grassland. It is an example of a semi-brittle environment, which has shifted from a grassland community to a woody plant community over time. As a result of former poor livestock management, periods of drought and periods of too much rest, mesquite and other varieties of brush have encroached throughout the ranch. There is a tremendous amount of bare ground, along with Leymann Lovegrass, competing with the native grasses. These problems can be partially addressed by reintroducing cattle. The simple act of animal hooves breaking the soil crust allows for a wider variety of plant communities to establish themselves and to progress towards greater complexity (succession). With revived succession, water cycles, mineral cycles and energy cycles also improve. This process can be accomplished by establishing a well-designed, well-managed, high intensity, short duration grazing system. Over time, such a system will improve vegetative cover, enhance wildlife habitat, reduce fuel for wildfire and improve soils.

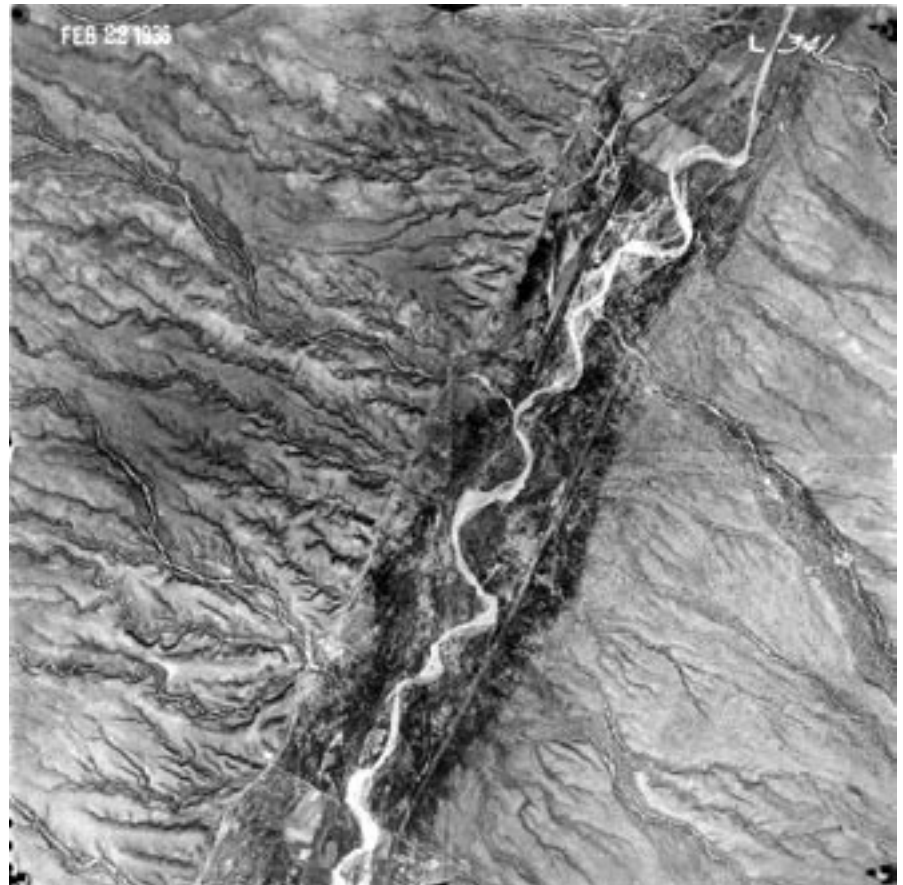
Currently, there are several obstacles to the establishment of such a system: First, a complete fencing system will have to be installed. Fences throughout the ranch are in very poor condition. The pasture to the east of the railroad tracks has no cross fencing at all, suggesting the former use of a yearlong grazing system, contributing to the poor rangeland health that exists today. Secondly, current water availability is not sufficient for livestock use, especially on the east side. Finally, the grazing system will have to be designed in accordance with other planned activities such as recreation and education.

The Santa Cruz River and Riparian Habitat Restoration

Coinciding with the cattle operation should be the establishment of a sound conservation program. River banks should be stabilized, tanks and dikes carefully located, designed and established, and erosion of gullies controlled by small spreaders and gabions.

In areas with greater rainfall and more perennial water in the streambed, significant improvements can be made by controlled grazing within the watercourse itself. However, the situation at Canoa is more difficult and complex. Conditions are much drier. Excessive groundwater pumping has lowered the ground water table. In addition, the geology at Canoa is of extreme importance. Beginning at Elephant Butte Road, a major fault crosses the riverbed. Water begins its descent downward underground into the Tucson water basin and does not resurface until it reaches Martinez Hill close to San Xavier Mission. This lack of perennial water in the streambed slows any restorative process within the riparian habitat. However, by accepting and appreciating the river as it exists today, we will not be tempted to undertake grandiose, unneeded projects such as the establishment of wetlands.

The overall goal of restoring the health of the riparian and upland areas can be accomplished by seeking to retain as much water as possible throughout the ranch. Soils retain more moisture and rainwater when they are broken up by cattle hooves or the so called "golden hooves" of sheep. Placing gabions in gullies also helps to slow runoff and retain water. Water catchment tanks provide water not only for livestock, but for wildlife as well. Mesquite and brush eradication enable more water to seep into the soil. Regularly scheduled burns establish healthier, denser plant communities. All



1936 aerial photograph
Courtesy of Pima County

these practices combine to increase soil moisture and help to raise the water table, thereby improving the health of uplands as well as riparian habitat.

The 10-year and 100-year flood plain boundaries are marked on the flood plain map. When considering the construction of any water or fence improvements, it is important to be mindful of these boundaries. Most of the farm fields lie within the 100-year flood plain. This proves to be beneficial since large floods would deposit silt and sand on top of these largely clay soils.

Water availability and wells

A major liability of the Canoa ranch today, from a ranching and farming perspective, is the lack of water. The 1936 aerial shows that the only visible, irrigated farmland surrounded the Headquarters. By 1967, however, an extensive network of farmland had been developed to the south. Throughout the Santa Cruz River Valley at this time, widespread groundwater pumping contributed to the lowering of the water table. In 1984, most of Canoa's grandfathered water rights were transferred to the Phelps Dodge and Duvall Corporations. This accounts for the thousands of acre feet being used by the mining operations to the west of Canoa. Remaining water rights for Canoa are minimal, not sufficient for ranching, and by no means adequate for any irrigated farming operation.

The solution is to drill several wells. The legality of this needs to be ascertained, and may be compromised by the 1978 FICO Agreement between Anamax, Richland and FICO.

Railroad tracks and wildlife linkages

The railroad tracks are important, along with the frontage road and I-19, because they are major barriers to wildlife. Movement of wildlife along essential corridors is blocked, diminishing overall function of the natural system. The raised railroad bed also serves as a dike, channeling water runoff to flow under a few bridges, inhibiting the natural water runoff over the entire watershed.

Main dike and erosion control

This long north-south dike was established to protect the erosion of farm fields located to the southeast of the Santa Cruz River. For that purpose, it has been successful. Now, however, since these fields are no longer farmed, the dike prevents the more natural distribution of water runoff over the landscape. It illustrates the need to design and implement a comprehensive, erosion control plan for the entire ranch.

Ranching and Agricultural Resources



Location of primary irrigated fields, based on aerial photographs
Courtesy of Bob Sharp

Northeast corner

The only water trough for livestock exists in the extreme northeast corner. Again, this illustrates the need for an updated water distribution system. Along with fencing, water delivery and distribution aids in the ability to distribute livestock evenly throughout the landscape.

Threat assessment/ fire/ vandalism

A significant concern at Canoa is that it is a major migration route for the passage of illegal immigrants into the United States. This presents a threat to the overall security of the Canoa Ranch, an issue of daily concern to landowners along the border throughout the southwest. Not only do vandalism and break-ins occur, but fences are also cut and gates left open, resulting in loss of time and the reworking of livestock. The Border Patrol is responsible for this



10 year and 100 year flood plains
Courtesy of Bob Sharp

security, but they often find themselves entwined in bureaucracy. The best solution is to accept the situation, spending as much time as possible out in the field, exhibiting a human presence.

Under present conditions, fire is another major threat. Fuel buildup in the form of brush and Palmer Amaranth is severe and extensive throughout the ranch. To make matters worse, at this time, Canoa finds itself in a seemingly relentless drought. The simplest remedy is to introduce a high number of livestock for a short period of time to remove this unwanted, excess vegetation.

Retaque corrals

The corrals at Canoa are one of the finest examples of retaque corral construction remaining in Arizona. The word retaque comes from the Spanish verb, retakar, meaning to “stack up.” In this case, horizontal

Photo Reference

lengths of mesquite wood are carefully fitted and laid on top of one another to a height that cattle cannot jump. The Canoa corrals are unique in that they are still in excellent condition, well suited for working with cattle, horses and other livestock.

Off site activities/ opportunities and partnerships

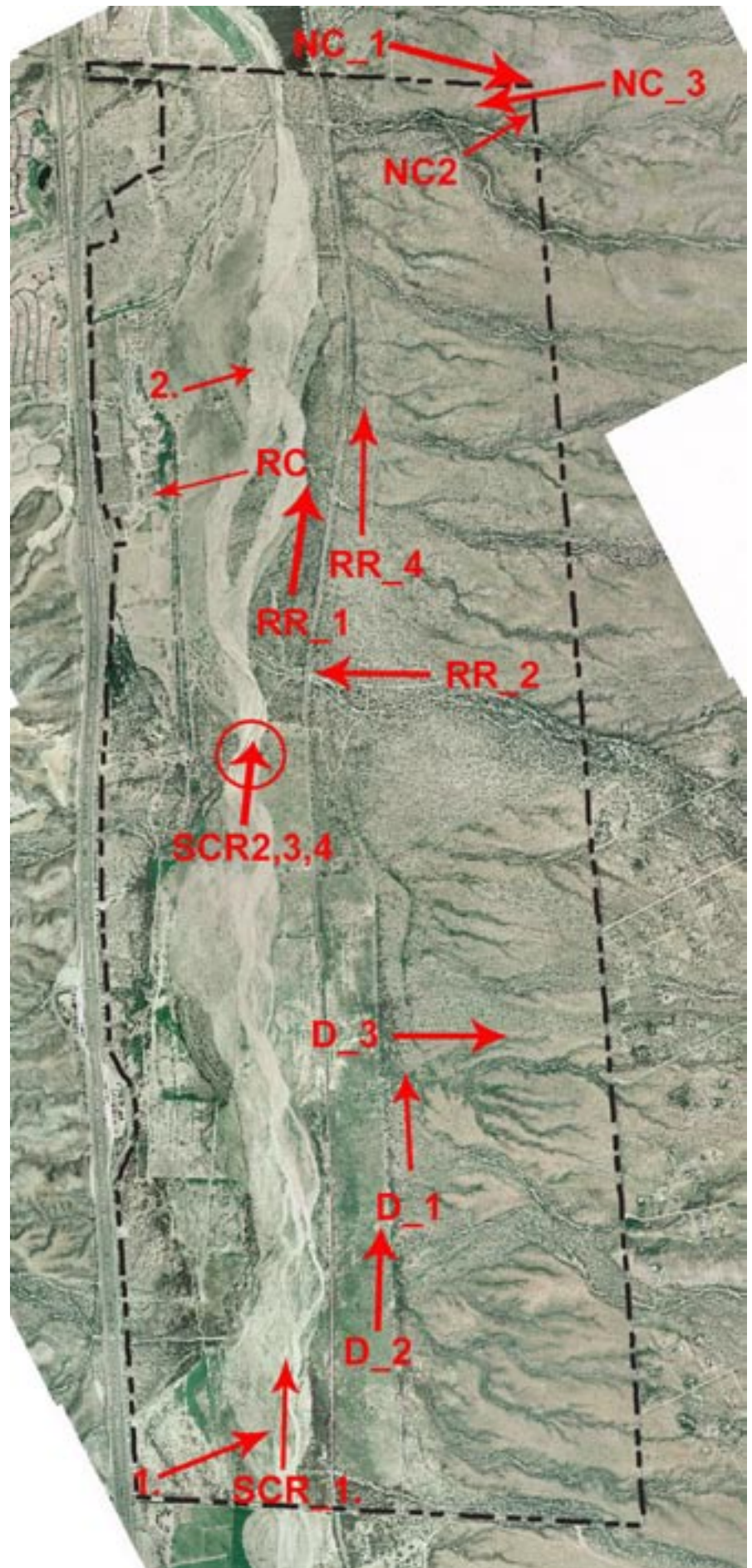
Production agriculture still occurs to the north and south of Canoa along the Santa Cruz River floodplain. In the future, Canoa may possibly serve as a grass bank for adjacent property owners. In such a system, during times of drought, neighboring ranchers might utilize the resources on Canoa. This would encourage the continuation of production agriculture in this working landscape, thereby insuring functional connectivity throughout the region.

Partnerships could be set up with the University of Arizona in the Animal Science Department and the Renewable Natural Resources Department. Range Science has had a long-standing relationship with the Santa Rita Experimental Range located directly east of Canoa. In addition, the Natural Resource Conservation Service provides invaluable advice, as well as the monitoring of transect stations.

Many opportunities exist for Canoa Ranch, especially in the field of environmental education. For example, Boulder County, Colorado has purchased over 70,000 acres of land, and leased back about 25,000 acres to local farmers. The county has completely renovated a turn-of-the-century farm as an educational experience for area residents. School tours and drop-in visitors come to this link with the past to better understand and gain an appreciation of local agriculture.

Similarly, in Lincoln, California, Lincoln High School is the steward of 280 acres of irrigated farm land. During the past several years, approximately 20% of the student body has been involved with the farm classes. Students work with cattle, sheep, tend an orchard, grow crops, conduct population counts on wildlife, and involve themselves with species identification. Students gain an appreciation for the agricultural life style and develop an active relationship with nature.

The Canoa Ranch, by incorporating such involvement, has a golden opportunity to provide people with direct, natural experiences, thereby increasing their knowledge and understanding of the realities of natural systems.



Reference map for agricultural / ranching photos
Courtesy of Bob Sharp

View Photos



NC_1



NC_2



RR_1



NC_3



RR_4



RR_2



RC



2

NOTE: See preceding map for photo locations

View Photos



1



SCR_1



D_1



SCR_2



D_2



SCR_3



D_3



SCR_4

NOTE: See preceding map for photo locations



6



5



1



7



4



2



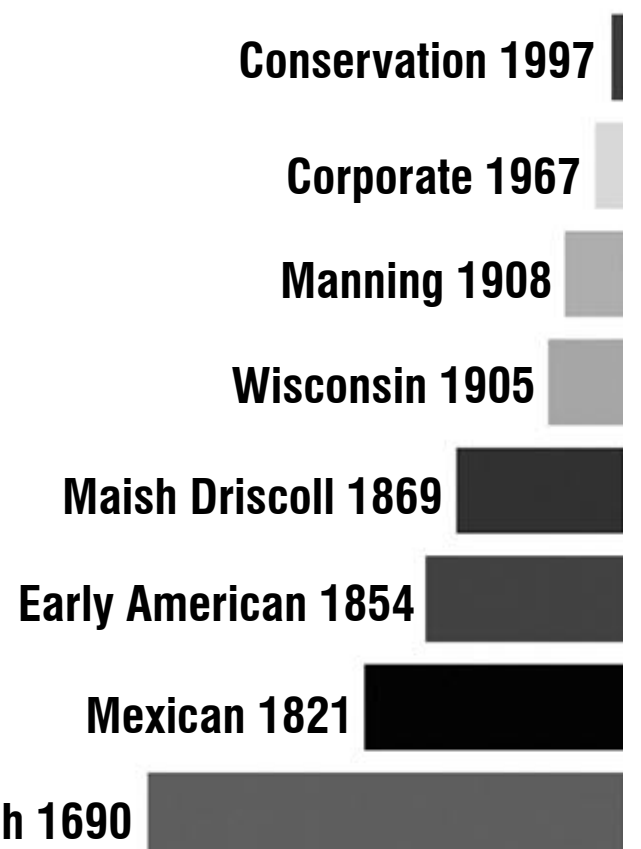
8



3



9



Native People – Archaic; Early Ceramic; Hohokam; and O’odham

2000 BC

1000 BC

0

1000 AD

2000 AD

Credits for previous page

1. Mrs. Ramón Ahumado at the Canoa Ranch “north unit,” with three children from Canoa Ranch. Ann Manning is the dark-haired child, Leslie Manning is in the middle, and the third child is Deezie’s godchild, Prindle Gorman
Photo courtesy of Deezie Manning-Catron, date unknown
2. Ramada
Photo courtesy of Diana Hadley, date unknown
3. Watkins Jackson, the cook, and Ann Manning, at Canoa Ranch
Photo courtesy of Deezie Manning-Catron, date unknown
4. Howell Manning, Jr. with Deezie on back, and black cat in corral at Canoa Ranch
Photo courtesy of Deezie Manning-Catron, ca. 1950
5. Loretto, a ranch hand, holding Ann Manning
Photo courtesy of Deezie Manning-Catron, location and date unknown
6. Image of Juan Bautista de Anza
Source unknown
7. Howell Manning, Sr., as manager of Canoa Ranch; location and date unknown. This photograph appeared in Caton MacTavish’s *The Pure-Bred Herefords of the Canoa Ranch and Scotch Farms* (1924).
Photo courtesy of Deezie Manning-Catron, ca. 1919
8. Jesus Salcido in the documentary film *Canoa* directed by his grandson
Courtesy of Tomas Javier Castillo, 2003
9. Representative image of an Early Agricultural village
Courtesy of Desert Archaeology

Prehistorical Period Sites

The known set of prehistoric cultural resources preserved on Pima County's Canoa Ranch property consists of 76 prehistoric archaeological sites, including 64 significant sites (judged to be potentially eligible for listing in the National Register of Historic places under Criterion D) (Huber and Van West 2003). Register-eligible sites range in age from approximately 5000 B.C. to A.D. 1450. Sites range from small and medium size Late Archaic/Early Agricultural and Early Formative habitation sites bordering the Santa Cruz River, to relatively large, late Classic villages in the vicinity of Madera Wash. Other site types include fieldhouses, agricultural fields, procurement and processing sites, hunting blinds, special-activity areas, and water-control features. This assemblage of archaeological sites represents a physical record of human land use in the upper Santa Cruz River Valley spanning almost 7,000 years, and includes a large number of prehistoric sites critical to local and regional prehistory.

Treatment Recommendations For Prehistoric Archaeological Resources

Plans for the development of Canoa Ranch need to consider the possible direct and indirect impacts to the prehistoric cultural resources on the property, and measures to ensure long-term preservation of the most significant of those resources.

Avoidance

Impacts to significant archaeological sites should be avoided. Direct and indirect impacts may result from construction activities, ranching activities, public visitation, and other uses of the property. Continuing existing ranching activities will probably not increase the degree of surface disturbance of archaeological sites. However, the potential impacts of construction of new ranching facilities or significant changes in the concentrations of livestock should be considered, and steps should be taken to avoid those impacts. Key steps in avoiding impacts to archaeological sites include use of existing maps of site locations and boundaries, and consultations with archaeologists about the scopes of planned construction projects and other uses of the property.

Mitigation of Construction Impacts

If avoidance is not possible, then federal and state laws and county regulation require that impacts to significant archaeological resources (those that are eligible, or potentially eligible, for listing on the National Register of Historic Places) be mitigated through documentation, data recovery, protection, or a combination of those measures. Mitigation strategies can range from monitoring of construction activities, to archaeological testing and excavation, to protection through burial. The appropriate type of mitigation strategy will vary in relation to the type of archaeological remains and the scope of impacts. During each phase of development of construction plans, mitigation plans for impacts to prehistoric archaeological resources should also be developed.

Long-term Preservation

Avoidance and mitigation of impacts should also be supplemented by active measures to ensure long-term preservation of the most significant archaeological deposits both within and outside the areas of construction impacts. The Advisory Council on Historic Preservation (1990) states explicitly that preservation is the preferred

method of dealing with archaeological deposits. Additionally, the Secretary of the Interior's Standards for the Treatment of Historic Properties state that "Archaeological resources will be protected and preserved in place." Only if the archaeological site is going to be disturbed should mitigation measures be undertaken (National Park Service 1995:56, U.S. Department of the Interior 1983).

At Canoa Ranch, positive protective measures must be taken against vandalism, erosion and other natural processes, significant changes in ranching activities, heavy visitation by the public, and other unforeseen impacts, both presently and in the future. The range of possible protective measures for archaeological sites on the Canoa Ranch property include, in order of level of effort and cost: 1) regular monitoring of site conditions; 2) fencing off areas or locking existing gates to restrict access; and 3) site burial with a layer of clean fill.

To determine whether preservation is an appropriate treatment for the resources outside of the areas of direct impacts of construction, the benefits and drawbacks of preservation should be considered. The benefits of preservation include: 1) the affected site will be available for future researchers when new data recovery techniques and research issues are developed; 2) the deposits will be protected from natural processes that might cause the site to deteriorate; and 3) the expense of preserving portions of the site is much less than conducting data recovery in those areas. Potential drawbacks of preservation include: 1) the possibility of inadvertent or intentional destruction; 2) the alteration of the biological and chemical conditions; and 3) limiting the area available for the construction crews to use. Usually, these drawbacks can be overcome or minimized.

Interpretive Possibilities For Prehistoric Archaeological Resources

An important component of the mission of Canoa Ranch will be to communicate to the public, through interpretive programs, the significance and value of the property's prehistoric archaeological resources. These programs can be varied, and can be effectively framed in terms of several of the interpretive themes developed in the Feasibility Study for the proposed Santa Cruz Valley National Heritage Area (see opportunities and partnerships section). The following is a list of possible interpretive programs for the prehistoric archaeological resources at Canoa Ranch:

- ◆ interpretive exhibits in existing or future buildings
- ◆ interpretive brochures
- ◆ interpretive website content
- ◆ teaching materials for schoolchildren
- ◆ demonstrations of prehistoric technologies (e.g., flint knapping) at public events
- ◆ public lectures by archaeological experts
- ◆ construction of low-maintenance, low-impact, multi-use paths with interpretive signage at focal points

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Prehistorical Period Sites

Map and table of Prehistorical Archaeological Sites is not included in this document.

Historical Period Sites

Historical-Period Archaeological Sites on Canoa Ranch

Most of the archaeological research carried out on the Canoa Ranch property to date has focused on the many prehistoric (Native American) sites found there, but the ranch also holds many historical-period archaeological sites, or sites associated with the Euroamerican (Hispanic and Anglo-American) presence in the area. Unfortunately, many known historical-period sites on the ranch have yet to be recorded systematically, and an evaluation of how events and activities known through documentary sources relate to archaeological sites has been limited to only a few sites.

Archaeologists from Pima Community College (PCC) carried out a comprehensive survey of the Canoa Ranch property in 1994–1995 on behalf of Fairfield Homes (Stephen et al. 1996). The focus of the survey was prehistory, but PCC also recorded the locations of many historical-period features and provided brief descriptions. These finds were not recorded formally as archaeological sites and were not assigned Arizona State Museum (ASM) site numbers. Shortly after the PCC survey, Western Heritage, Inc., carried out test excavations at some of the historical-period sites identified by PCC (Welch 1996). These excavations, which consisted mainly of backhoe trenches, were written up only cursorily, and the impact of the testing on individual sites is unclear.

Statistical Research, Inc. (SRI) later carried out additional archaeological survey of the Canoa Ranch property on behalf of Fairfield Homes (Huber 1996; Riggs and Van West 1998). The focus was once again on prehistoric sites, but some effort was made to confirm the locations of historical-period sites identified by PCC. In 2003, SRI was contracted by Pima County to survey a proposed sewer line corridor running north-south along the western portion of the current county ranch property (Van West 2003). The purposes of the survey were: to document more fully all previously recorded archaeological sites located within the corridor; to record any additional sites within the corridor; and to evaluate the potential impact of the proposed sewer line on each site. The survey resulted in the recording of 10 sites with historical-period features; 8 of the 10 sites also had prehistoric components. Two of the sites with historical-period components were the subject of archival study, an effort to determine how the sites were related to historically documented aspects of ranch history (O'Mack 2003). SRI later studied the history and extant architecture of the Canoa Ranch headquarters as part of a National Register of Historic Places nomination (Parkhurst and O'Mack 2003). The headquarters is itself a historical-period archaeological site, although it has never been excavated and its archaeological component is known only through an examination of surface artifacts.

A list of the historical-period archaeological sites recorded by PCC and SRI on what is now the Pima County Canoa Ranch property is provided in Table histarchsites. The locations of these sites are shown in Figure histarchmap. The information in Table histarchsites comes from the descriptions of Stephen et al. (1996) and Welch



Pit silo near the head of the Canoa Canal. ASM No. AZ DD:4:48
Photo courtesy of Statistical Research, 2006

(1996), corrected and supplemented by SRI's later work (Van West 2003). Stephen and his colleagues were wrong about many things—not surprisingly, since their study was a preliminary one. For example, their Site 47 was not, as they assumed, the historic Maish South House, but the more-recent building currently serving as the caretaker's house.

Chronological Summary of Historical-Period Archaeological Sites

Four major periods can be distinguished in the history of Canoa Ranch: the Spanish Colonial period (1692–1821), the Mexican period (1821–1854), the Territorial period (1854–1912), and the Manning period (1912–1970). Only the Manning period is represented today by substantial, known archaeological features on the ranch, although a few remains of probable association with the Territorial period have also been recorded. The following paragraphs summarize the archaeological finds and potential of each of the four periods.

Spanish Colonial Period (1692–1821)

This period began with the first documented Spanish expedition down the Santa Cruz River valley from Mexico in 1692, led by the Jesuit Eusebio Francisco Kino. The period ended with Mexican independence from Spain. To date, no archaeological features or artifacts associated with this period have been found on Canoa Ranch, although it is probable that the Pima County ranch property includes the location of La Canoa, a regular stop (paraje) along the trail between Tubac and Tucson during the Spanish Colonial period. Documented use of the paraje during this period is limited to the famous 1775 expedition of Juan Bautista de la Anza to Alta California, which spent one night at La Canoa, and the original survey of the San Ignacio de la Canoa land grant in 1821 by Ignacio Elías González, who used La Canoa as the starting point for his survey. The trail used by Anza and his party, which was probably a trail used long before 1775, and definitely used long after that year, passed through the length of the Pima County ranch property, paralleling the river on one or both sides. Neither Anza or Elías González refers to buildings or other substantial features at the paraje, so it is difficult to say if the remains of such features might be preserved on the ranch.

Mexican Period (1821–1854)

This period began with Mexican independence from Spain in 1821 and ended with the effective date of the Gadsden Purchase in 1854. Tomás and Ignacio Ortiz became the owners of the San Ignacio de la Canoa land grant (of approximately 17,000 acres) shortly after it was surveyed, but they were apparently unable to establish a permanent presence on the grant during the Mexican period because of the threat of Apache raids. To date, no archaeological features or artifacts associated with this period have been found on Canoa Ranch, even though the Ortiz brothers must have had some kind of presence on the grant, and even though La Canoa continued to be a regular stop along the trail between Tubac and Tucson. After 1848, near the end of the Mexican period, traffic along the Santa Cruz River rose greatly in response to the discovery of gold in California. La Canoa was regularly mentioned in the diaries and letters of Anglo-American and other travelers along the river trail, but none referred to buildings or other substantial features at La Canoa.

Territorial Period (1854–1912)

This period began with the Gadsden Purchase, which made the San Ignacio de la Canoa land grant a part of U.S. territory, and ended with both Arizona statehood and the purchase of the land grant by Levi Manning. Various people settled on the land grant in the late 1850s, but few stayed for long because of continuing difficulties with the Apache. It is unclear what arrangement these settlers made with the Ortiz brothers, who remained owners of the land grant after the Gadsden Purchase; to date, no physical evidence of the settlers' presence has been recorded.

Historical Period Sites

In 1859, an inn named La Canoa opened on the Tucson-Tubac road, the first building known by documents to have existed at the ranch. This inn, built of adobe and surrounded by a wooden stockade, was destroyed in 1861 in an Apache raid long known as the Tarbox Massacre, after the young keeper of the inn who died in the raid (along with several other people). The ruins of the inn have never been found, and finding them may be difficult because of the perishable materials used in construction, but a careful study of descriptions of the inn, related features, and the massacre has yet to be carried out. Based on historical accounts, the ruins may include the graves of the people who died in the massacre, as well as the remains of a lumber camp based at the same location.

In 1876, Tucson entrepreneurs Frederick Maish and Thomas Driscoll bought the ranch from the Ortiz family and began to develop it for agriculture and grazing. Historically documented features dating to their ownership include:

- a group of ranch buildings called Canoa Ranch, located in roughly the same location as the current ranch headquarters (possibly an unrecorded archaeological component of AZ DD:4:74)
- the Canoa Stage Station (possibly represented today by AZ DD:4:59)
- an older ranch house (or group of buildings), sometimes referred to as the Maish South House, possibly predating Maish and Driscoll's ownership (possibly represented today by AZ DD:4:48)
- the Canoa Canal
- fenced agricultural fields
- several roads

O'Mack (2003) reviewed the documentary evidence for all of these features and tried to correlate their locations on early maps with the locations of features recorded in SRI's survey of the proposed sewer line. Except for the Canoa Canal, which is largely intact today and in its original alignment, none of the historically documented features is unequivocally associated with a recorded archaeological site. Based on a comparison of early maps of the land grant with the current ranch property, three possible correspondences are worth noting. First, the archaeological site centered on ranch headquarters, AZ DD:4:74, may well include the remains of earlier buildings. Most (or possibly all) of the buildings that stand at the current headquarters postdate the Canoa Ranch buildings shown on late-nineteenth-century maps (see Parkhurst and O'Mack 2004), but the earlier buildings must have stood close to the current headquarters. Second, the former location of the Canoa Stage Station apparently fell close to AZ DD:4:59, the only site recorded to date in the vicinity that has surface artifacts of probable late-nineteenth-century date (though no architectural features). Third, the former location of the Maish South House apparently fell close to AZ DD:4:48, which is the only site recorded to date in the vicinity that has surface artifacts of probable late-nineteenth-century date (again, no architectural features).

Manning Period (1912–1970)

The Manning period began with the purchase of the San Ignacio de la Canoa land grant by Levi Manning in 1912 and ended with the death of Evelyn Manning, the widow of Howell Manning, Sr. (only son of Levi Manning) in 1970. After Mrs. Manning's death, the ranch was owned by a succession of corporate interests.

As noted above, almost all of the buildings that still stand at the ranch headquarters were built during the Manning period. The Mannings also built the current caretaker's house located in the southern portion of the ranch property. Both the headquarters

(recorded as AZ DD:4:74) and the vicinity of the caretaker's house (recorded as part of AZ DD:4:239) may preserve significant buried features related to the Manning period, and possibly earlier periods. Most of the numerous, mostly unrecorded agricultural features visible on the ranch property today—earthen berms and tanks, irrigation ditches, associated water-control features—also apparently date to the Manning period. The group of ranching features located at the head of the Canoa Canal date to the Manning period and include two large pit silos, a large earthen reservoir, a truck scale, a cattle trough, and other features. These features were recorded by SRI as part of AZ DD:4:48, which also has a Territorial component (see above). This site may preserve significant buried features related to both the Territorial and Manning periods. Finally, many of the small historical-period sites listed in Table histarchsites as having undetermined period associations are probably related to the Manning period.



Typical concrete gate boxes

Photo courtesy of Statistical Research, 2006



Typical concrete lined irrigation ditch

Photo courtesy of Statistical Research, 2006



Truck scale foundation associated with AZ DD:4:48

Photo courtesy of Statistical Research, 2003

Historical Period Sites

Recommendations for Further Work on Historical-Period Archaeological Sites

All of the historical-period archaeological sites on the Canoa Ranch property that have been formally recorded and assigned ASM numbers (see Table histarchsites) are considered eligible for listing in the National Register of Historic Places (NRHP). Any construction, restoration, or other project proposed for the ranch should be evaluated for its potential impact to these sites. If possible, any such impact should be avoided, but impacts that cannot be avoided should be mitigated through data recovery. The other historical-period sites (and “historical entities”) identified by PCC but not formally recorded as ASM sites (see Table histarchsites) should be found, formally recorded, and evaluated for NRHP eligibility.

Additional Recording of Known Sites and Features

At least some of the historical-period features already formally recorded as parts of ASM-designated sites merit additional, more detailed recording, and some well-known historical-period features on the ranch have yet to be formally recorded.

One ASM-designated site especially deserves additional recording: AZ DD:4:48, which includes the pit silos, earthen reservoir, truck scale, and cattle trough located near the head of the Canoa Canal. The pit silos and truck scale currently present hazards to visitors to the ranch and will need to be filled or otherwise made safe very soon. It is important that all of these features are fully recorded before they are modified in any way. Recording of the pit silos should include profile drawings, analysis of the concrete lining preserved on the pit walls, and test excavation of the floors to determine the original depth of the pits and any surface treatments.

Two well-known historical-period features on the ranch that have yet to be formally recorded are the railroad that bisects the ranch property and the Canoa Canal. The railroad is apparently associated with at least one trash feature (PCC Site 79) that has yet to be formally recorded and may also be associated with other features in need of recording. The Canoa Canal, designated PCC Site 27, has never been recorded as an ASM site. An adequate recording of the canal will require attention to its full length, which extends far to the north of the ranch headquarters, and to the many control structures (gates, turnouts, culverts, etc.) found along it.

Previously Unrecorded Sites

As noted above, all of the Pima County Canoa Ranch property has been surveyed for archaeological resources. Nevertheless, it is clear that the prehistoric focus of previous surveys has left many historical-period sites and features entirely unrecorded. On January 20, 2006, SRI archaeologist Scott O’Mack and Andrew Gorski with Poster Frost Associates drove around the ranch property searching for and photographing previously unrecorded historical-period features. The number of potentially significant features found in this casual search was surprisingly high and included numerous irrigation and water-control features. The irrigation features included unlined and concrete-lined ditches, large concrete gate boxes, wells with concrete pump platforms, and buried pipe. The water-control features included large earthen berms and reservoirs, some clearly designed to divert and store surface water for use in fields or for stock. The majority of these features are probably associated with the Manning period on the ranch, but some may date to the Territorial period, when Maish and Driscoll first developed the ranch for agriculture. Determining the age and significance of these features will require archival research and much additional fieldwork.

Given the near-absence of any mention of such prominent historical-period features in the reports of previous surveys, it is reasonable to wonder how effective the surveys were in identifying less conspicuous historical-period features, such as artifact scatters. This is a concern for the entire ranch property, but as Figure histarchmap suggests, the portion of the property east of the Santa Cruz River is

probably especially understudied (as far as historical-period sites are concerned; numerous prehistoric sites have been formally recorded there). It is possible that potentially significant historical-period features remain unidentified. For example, based on the archival research of O’Mack (2003), the Canoa Inn, scene of the 1861 Tarbox Massacre, was located east of the river and in the southern portion of the ranch property. Willey (1979:168, photo caption) noted that the “remains of several early buildings” were once visible (30 or more years prior to his work) on the east side of the river, yet nothing has been recorded that obviously corresponds to these ruins.

Ideally, another comprehensive archaeological survey of the entire ranch property will be carried out, with a specific focus on historical-period sites and features. If this is not immediately feasible, it would make sense to carry out the work in phases, either defined as portions of the ranch property based on development priorities or focused topically. In the latter case, one phase might consist of a systematic recording of all irrigation and water-control features, accompanied by archival research focused on the same subject. Another phase might consist of a concerted effort to find and record Territorial-period sites of all kinds, accompanied by archival research of similar focus.

Additional Historical Research

Apart from archival research on specific topics, the interpretation of historical-archaeological resources on the ranch would greatly benefit from additional comprehensive historical research on the ranch. Two recent archival research efforts (O’Mack 2003; Parkhurst and O’Mack 2003) have focused on the ranch headquarters and the major features found in the western portion of the ranch, but it is likely that a wider focus would yield new information about other parts of the ranch property, or additional information about known aspects of ranch history such as the Canoa Inn and the Canoa Canal.



Irrigation equipment adjacent to railroad alignment
Photo courtesy of Statistical Research, 2006



Earthen reservoir west of Santa Cruz River
Photo courtesy of Statistical Research, 2006

Historical Period Sites

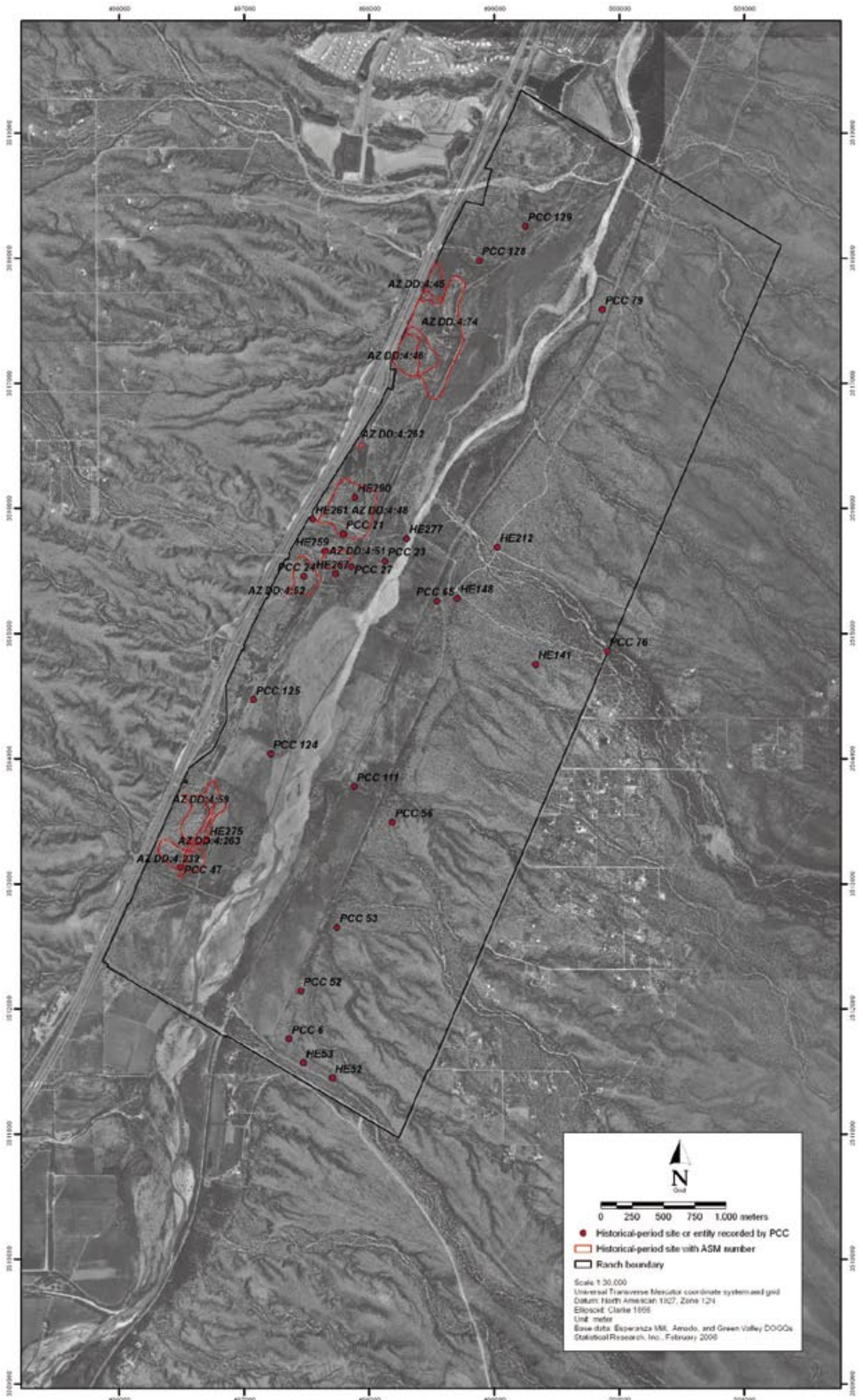


Table histarchsites. Historical-Period Archaeological Sites on the Pima County Canoa Ranch Property

Historical Period Sites

ASM No.	PCC Site Nos.*	PCC Field (HE) Nos.	Tested by Welch?	Historical Period Associations**	Prehistoric Component?	Description of Historical-period Component***
AZ DD:4:45	—	—	—	Manning	yes	unpaved entrance road to ranch headquarters
AZ DD:4:46	—	—	—	Manning	yes	field with irrigation features, just southwest of ranch headquarters
AZ DD:4:48	21	262, 263, 264, 290, 291	yes	Territorial; Manning	yes	2 silo pits; earthen reservoir; truck or wagon scale foundation; remains of cattle trough; rock alignments; artifact scatter (possibly represents Maish South House)
AZ DD:4:51	—	259[?], 267[?]	—	Manning	yes	artifact scatter
AZ DD:4:52	24	253	no	undetermined	yes	road; artifact scatter
AZ DD:4:59	—	275[?]	—	Territorial; Manning	yes	artifact scatters (one possibly represents Canoa Stage Station)
AZ DD:4:74	—	—	—	Territorial; Manning	no	Canoa Ranch headquarters
AZ DD:4:239	47	268, 269, 270, 271	no	Manning	yes	house, wash house with rooftop water tank, 2 corrals, earthen stock tank, other small ranching features
AZ DD:4:262	—	—	—	Manning	yes	artifact scatter
AZ DD:4:263	—	—	—	Manning	no	long (2,130 feet) earthen berm; earthen stock tank
—	6	54, 55, 56	no	undetermined	no	3 U-shaped rock alignments; trash
—	23	310	yes	undetermined	no	trash deposit exposed in river bank
—	27	266, 276, 278, 288, 296, 299	yes	Territorial; Manning	no	Canoa Canal and associated irrigation features; trash
—	52	78	yes	undetermined	no	rock alignment; trash
—	53	81, 82	yes	undetermined	no	2 rock alignments; rock piles; trash
—	56	89, 90	yes	undetermined	no	2 rock alignments; trash
—	65	243	no	undetermined	no	remains of water tank (scattered sheet metal) and corral (scattered wood, wire)
—	76	146	no	undetermined	no	rock pile; trash
—	79	306, 307	no	undetermined	no	large wooden beams (railroad-related?); trash
—	111	231	no	undetermined	no	2 cattle feeding troughs; wooden cart; earthen (?) cattle tank
—	124	251	no	undetermined	no	trash
—	125	248	no	undetermined	no	rock alignment; trash
—	128	298	yes	undetermined	no	rock alignment; trash
—	129	311	yes	undetermined	no	oblong (0.8 × 2.1 m) rock pile (possible grave)
—	—	52	—	undetermined	no	rock alignment
—	—	53	—	undetermined	no	trash
—	—	141	—	undetermined	no	trash
—	—	148	—	undetermined	no	well or tank
—	—	212	—	undetermined	no	water faucet
—	—	259	—	undetermined	no	trash
—	—	261	—	undetermined	no	debris; blocks
—	—	267	—	undetermined	no	trash
—	—	275	—	undetermined	no	trash
—	—	277	—	undetermined	no	trash dump

*The sites and historical entities (HEs) recorded by Pima Community College (PCC) (Stephen et al. 1996) are plotted on Figure histarchmap using the UTM coordinates provided in their report. However, if Stephen et al. considered an HE to be part of a PCC site, the location of the HE is not shown in Figure histarchmap. Some of the UTM coordinates provided by Stephen et al. are evidently incorrect, which is reflected in the plotting of some PCC sites and HEs slightly outside the SRI-recorded (ASM-numbered) sites that presumably contain them.

**See the text for a discussion of historical periods at Canoa Ranch.

***The descriptions of sites with ASM numbers are based on Van West (2003). The descriptions of sites lacking ASM numbers are based on the minimal and sometimes ambiguous information provided by Stephen et al. (1996) and Welch (1996).

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Introduction

HISTORIC PRESERVATION
ARCHITECTURAL SERVICES:
BUILDING CONDITIONS
ASSESSMENT REPORTS AND
CERTAIN CONSTRUCTION
DOCUMENTS
POSTER FROST ASSOCIATES -
WINTER/SPRING 2004



The architectural resources at Canoa Ranch are centered around the Canoa Ranch Headquarters, a collection of buildings and ranch features recently nominated to the National Register of Historic Places. In the great variety of architectural resources present at the Ranch Headquarters, there is a remarkable cohesiveness to the complex based on a uniformity of materials, scale, texture, color and the repetition of architectural features, including shed roofs with tree trunk posts.

In the layout of the site, there is a clear distinction between the Mexican vernacular buildings to the southwest and the architect-designed ranch houses to the northeast. Most of the buildings and site walls are adobe, reflecting the strong Sonoran influence throughout the complex.

For each of the 10 buildings outlined in this report, a preservation matrix is included that illustrates the significance and integrity of the major architectural features of each building. Many of the buildings display a high degree of integrity and possess many original features. At the same time, the condition of several of the buildings is compromised by neglect and lack of maintenance. Currently, several projects are underway to stabilize portions of the complex that are the most compromised. Two buildings, 103 and 105, are scheduled for more extensive rehabilitations later this year. A comprehensive preservation plan, including direction on the periodic maintenance of adobe should be completed with the stabilization plans currently being developed.

Building descriptions included in this report were borrowed from the National Register Nomination prepared by Scott O'Mack and

Janet Parkhurst and building condition assessment reports prepared by Poster Frost Associates. Both resources provide additional descriptions and historical information that are not covered in this report.

Literature Cited in the Architectural Resources Section

- 2003 National Register □
Archaeology and Historic Preservation Department, Tucson.
- 2004 Building Assessment Reports for 10 Buildings at Canoa Ranch. Poster Frost Associates. Prepared for Pima County.

**Building 101
Howell Manning Sr. House**

The Big House is a single-story, compound-plan dwelling located at the east end of the owners' residential zone. This architect-designed, early Ranch-style building was built for Howell Manning, Sr., and his second wife in 1935. (According to Deezie Manning-Catron, the Big House incorporates elements from an earlier dwelling. Whether the Big House resulted from an architect-designed build-out or was built from scratch, it acquired its essential appearance in 1935.) The 1935 date and mention of the architect, John W. Smith, appear in historian Diana Hadley's timeline for the Southwestern Mission Research Center newsletter (Hadley 2000:13). The August 1937 issue of *Architectural Forum* also identifies John W. Smith as the award-winning designer of the Big House (see Additional Documentation). The award was for the creative use of glass in the narrow glazed terrace on the east facade. (*Architectural Forum* 1937:78). The architect John W. "Ginger" Smith was from Tucson, and this early Ranch-style house resembled residences he was designing in Tucson at that time. Possibly around the same time and possibly also designed by Smith, a two-bedroom, one-bath structure was built nearby for the sons of Howell Manning, Sr. (though according to Deezie Manning-Catron, this wing may have been built prior to 1935). This was the first wing of Building #4, enlarged in 1948 to be the residence of newlyweds Deezie and Howell Manning, Jr.

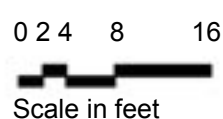
The rambling residence has white-painted, stuccoed adobe walls and wood-shake-clad, gabled roofs. Its compound, massed plan terminates in a master bedroom suite on the north end. The principal facade faces east and is capped by an elongated, side-gable roof with a shed extension that incorporates the entry vestibule and a glazed terrace. At present, window and door openings are boarded. The roof over the main building portion forms a belled gable, with a steeper pitch at the center and lower pitch at the eaves. The master bedroom suite at the north end has a side gable with a cross-gabled dressing room/bathroom to the west. Roof framing is not exposed but boxed by rounded stuccoed eave and rake soffits. A pair of matching, aligned chimneys appears on either gable end of the principal building portion. There are, in addition, chimneys on the eave end of the master bedroom and connected to the living room fireplace. Foundations are concrete, and the floor level is above grade with a crawl space. The main entry is on the south end of the east terrace. There is a west entry on the kitchen end. Other than minor interior modifications and the possible addition of two small rooms near the kitchen on the west facade, the residence has remained essentially unaltered since 1935. The original rooms include today's living room, dining room, kitchen, butler's room, powder room, pantry, breakfast room, two central bedrooms, bathroom, and the master bedroom suite. Possible additions may include a storage room, ramada, and walk-in freezer near the kitchen.



View of east elevation from the southeast
Photo courtesy of Poster Frost Associates, 2004



Historical view of east elevation from the southeast
Photo courtesy of Deezie Manning-Catron, date unknown

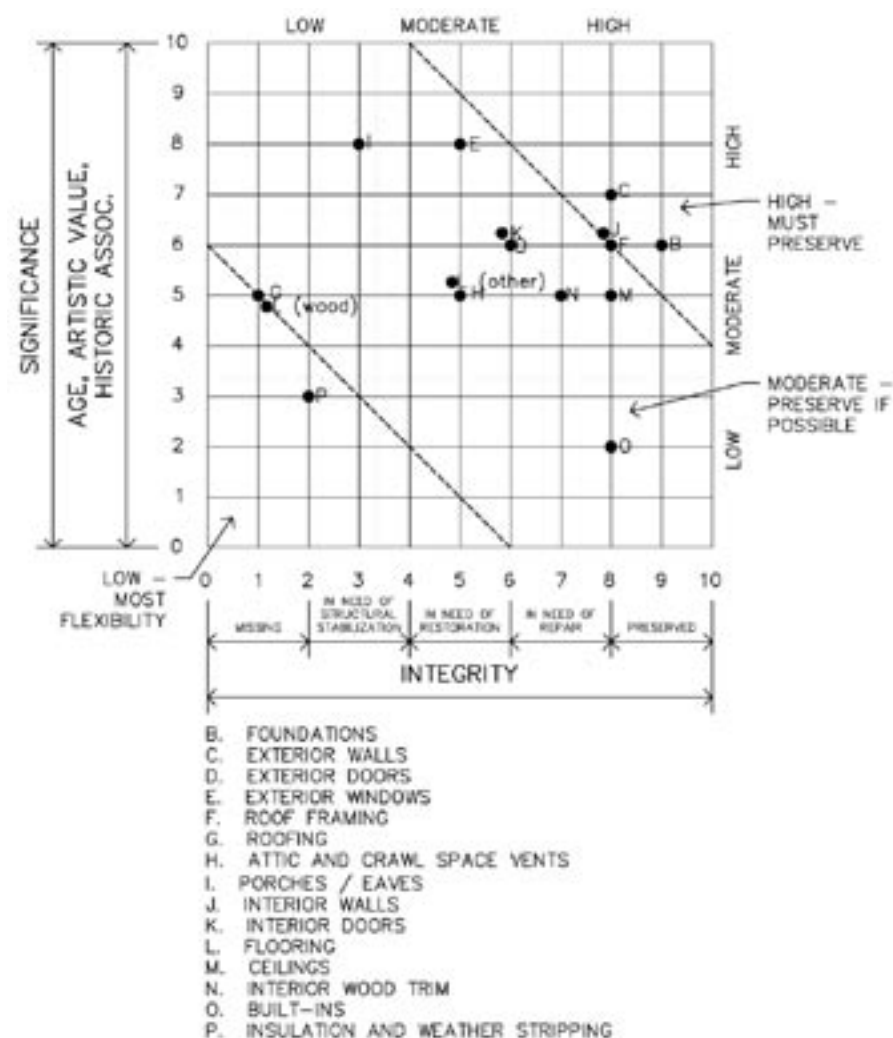


Building 101 Howell Manning Sr. House

Today's wood-shake-shingle-clad roof has intersecting gables. Vents in the gables are formed by groups of four missing adobes. There are four stuccoed chimneys, two of which are located on end walls. The chimneys on the principal south and north gables are battered, slightly off-center from the ridge, and have a rounded cap reveal. The chimney on the east eave end of the master bedroom wall is substantially proportioned with straight sides and a rounded cap. At present there are two outdoor paved areas serving both entries. The west porch for the kitchen entry, between the flanking gabled additions, is paved with 8-by-8-inch red terra-cotta tiles between sunken planting strips. Above, between the projecting additions is a ramada built up of thin slats over 2×3s bolted to 3×4 spanning members. Serving the east entry is an open, paved stoop, paved with terra-cotta tiles. Starting at the edge of this stoop, along the east wall is a series of low concrete planters with six higher-squared elements. The walls are between 4 and 6 inches thick, and the squared elements range from 19 inches to 3 feet above grade which slopes down toward the north. The photograph in the 1937 issue of Architectural Forum shows evergreens in the currently weed-filled planters. The main south entry has a pair of tongue-in-groove plank doors. The kitchen entry and breakfast room entries on the west have original 1935 single-panel, single-light doors. The windows are wood frame of the fixed or casement types. Unique, large, single-pane casements flank the dining room fireplace. Also, the series of fixed and 4-light casements that illuminate the breakfast room and adjoining hall make this corner of the house a light-filled space, well remembered by Deezie Manning-Catron and Clare Schnauffer. The terrace is divided into two sections. Large 5-foot-6-inch-high picture windows, separated by 7½-inch wood posts enclose the section adjacent to the entry. The windows are slipped into slots and clipped by trim at the top only. The north section of the terrace features a full-width heavy-frame window wall, one panel of which is a 5-foot-6-inch sliding door. The master bedroom addition windows are fixed and slipped into slots. The master dressing room and bath have boxed windows in which the central panel is fixed and the side panels are operable casements.

The interior of the house is divided into the spaces mentioned above. One possible modification inside may have been the removal of the east living room wall to incorporate the adjacent terrace section. This may have necessitated raising the level of the terrace floor and adding wood flooring to match that of the living room. The result of these alterations may have created the unusual, T-shaped living room of today. Interior features include attractive finishes like tongue and groove hardwood floors, plaster walls, and 5½-inch base with quarter round trim. Ceilings are flat except they slope in the terraces and near the west edge of the service zone where the kitchen is located. The dining room is sunken, three 4-inch step risers down. Ceilings in this room are 10 feet 5 inches high. The main focus is the south wall with its central marble-clad fireplace and flanking casements. Likewise, the living room focus is the central fireplace on the west wall. There are built-in bookcases and seating in this room. A plastered beam before the east addition indicates the location of the former living room wall, where an opening would have been located. The service zone on the west includes a series of rooms related to food preparation and breakfast serving. The floor covering in this area is sheet vinyl. The heart of this zone is the well-equipped kitchen with contemporary, light-colored, wood built-ins on its east and west walls. Cabinets have flush panel, plywood doors. There is a large built-in can cabinet, a gas range, a built-in oven, stainless steel sink, and dishwasher. The adjacent, narrow butler's pantry to the south, lined on two walls by contemporary cabinetry, provides the corridor to the steps down into the dining room. Adjacent to the butler's pantry is the back door hall with a storage room and a toilet room. At the south end of the service zone is a roomy storage pantry with built-in shelving. North of the kitchen is a corner breakfast nook connected to the interior bedroom hallway. The north bedroom of the internal pair, with its marble-clad fireplace, is larger. As shown in Architectural Forum, the original east bedroom doors with access to the terrace were glazed French style.

Additional spaces include the master bedroom suite and the main entry and glazed terraces that form a wide, multilevel corridor along most of the east edge of the original building. From the stoop outside, there is one step up into the entry hall and yet another step into the east living room extension. As mentioned, the extension of the living room has created a T-plan space with the T wider than the living room and at the same floor level. According to Clare Schnauffer, at times children slept in this zone. The floor of this extension is also wood tongue-and-groove that does not match the original, and the ceiling slopes down to the east. Adjacent to the north is an enclosed terrace that has a floor 15 inches lower. The floor is nearly at grade here and clad in 12-inch terra-cotta tiles. From this room, there is one step up into the master bedroom. The master bedroom is a large, simple, contemporary-looking space illuminated by natural light on three of its walls. There is a plastered fireplace centrally located between flanking picture windows on the east wall and an oversized mirror on the west wall. There is a door to the dressing room on the west wall. On the north wall of the dressing room is a vanity cabinet boxed in by windows. The south wall of this room contains a cedar closet. The bathroom features a lavatory and base cabinet boxed in by north windows that match those of the dressing room. In addition, there is a custom-built shower and white vitreous china fixtures. Flooring in the master bedroom is hardwood and that of the master bath is white ceramic tile. Possible post-1935 additions include the pair of gable-roofed extensions by the west kitchen entrance. Accessible from the kitchen area is the walk-in refrigerator/freezer—the “cool room,” according to Clare Schnauffer—which includes two chambers. Six-inch-thick, insulated freezer doors of wood with metal trim and heavy latches are used to secure these chambers. The inaccessible second gable-roofed extension has large, boarded-up picture windows. Apparently it was once a utility room and is said to have a cedar closet. (Description from National Register of Historic Places Registration for Canoa Ranch prepared by Scott O'Mack and Janet Parkhurst.)



Preservation Matrix
Courtesy of Poster Frost Associates, 2004

**Building 103
Guest House**

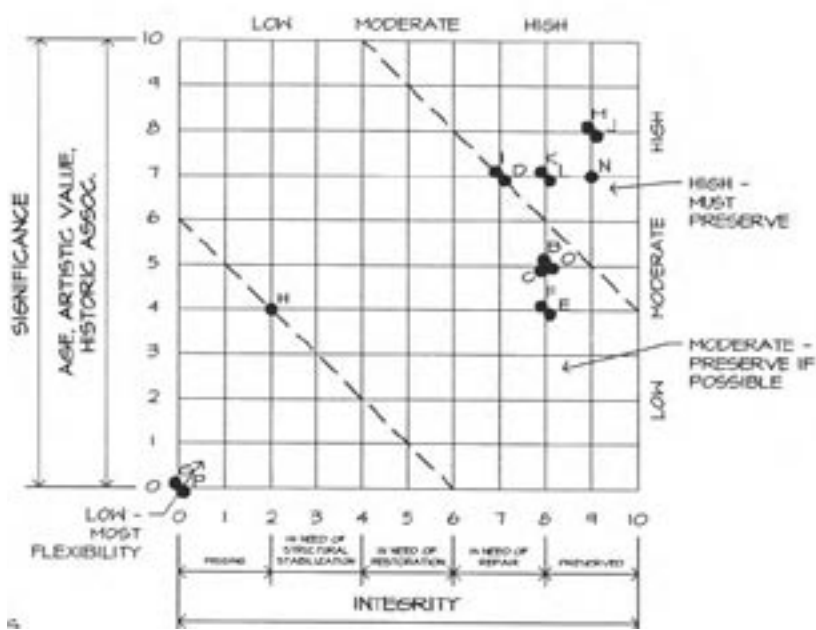


View from the northeast looking southwest
Photo courtesy of Poster Frost Associates, 2004



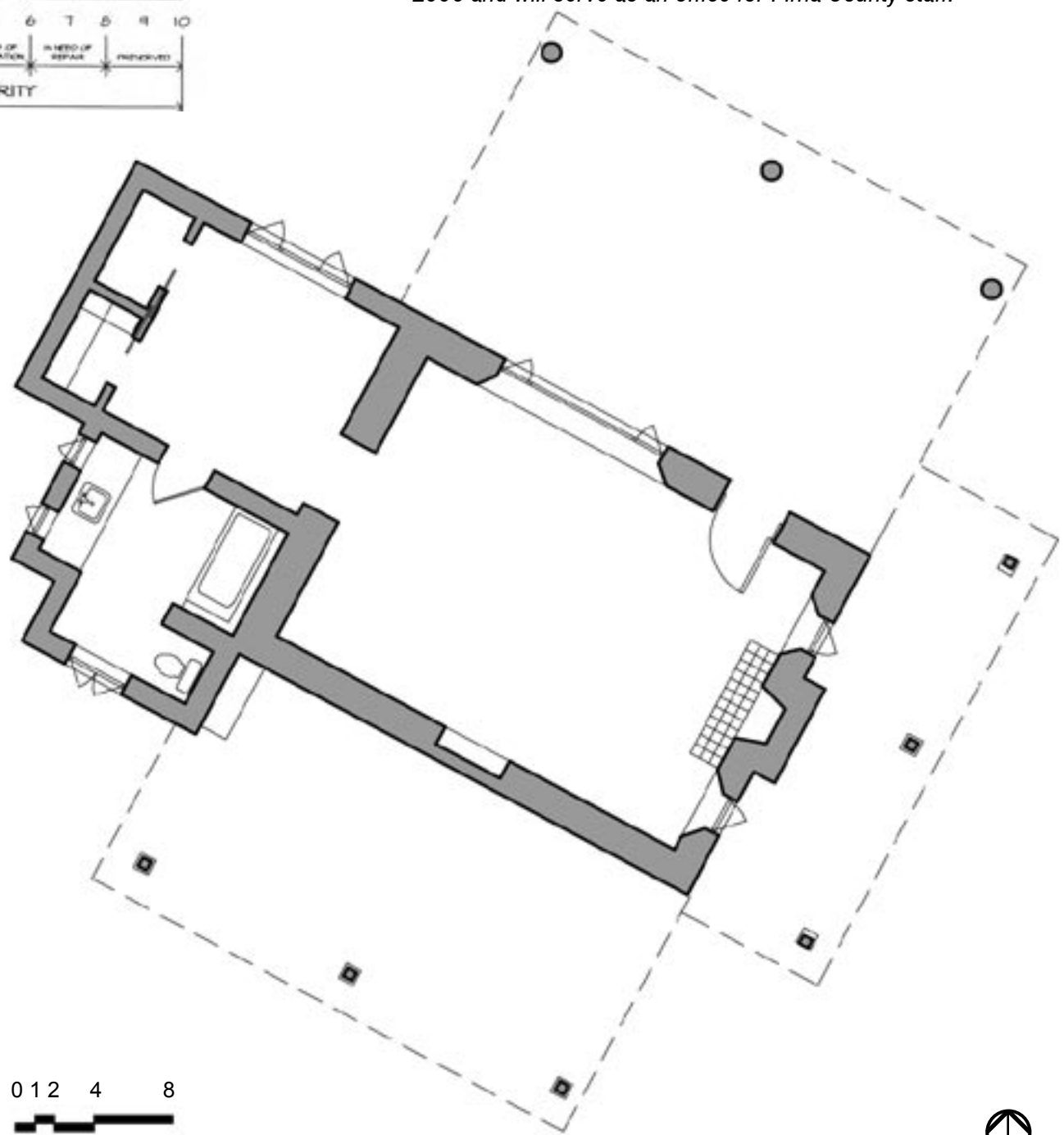
View from the northeast looking southwest, before addition
Photo courtesy of Diana Hadley, date unknown

This modest guest house of approximately 850 square feet includes a living room, bedroom, and bathroom. It is wonderfully adapted to its desert setting using mud adobe walls and deep shade structures on three sides (a porch, a carport, and a wooden shade lattice). It is remarkably temperate in hot weather. Wood frame and galvanized corrugated metal roofed porches surround simple Spanish Colonial Revival stuccoed walls with double corbel parapet caps. The unspoiled interiors feature walnut paneling, flooring, ceilings, and trim, as well as a quintessential early 1950s bathroom. Foundations and floor slab are concrete, roof framing is flat wood joists, and windows are steel sash. (Description from PFA Assessment, 2004.)
NOTE: Building 103 is scheduled to undergo a rehabilitation project in 2006 and will serve as an office for Pima County staff.



- B. FOUNDATIONS
- C. EXTERIOR WALLS
- D. EXTERIOR DOORS
- E. EXTERIOR WINDOWS
- F. ROOF FRAMING
- G. ROOFING
- H. ATTIC AND CRAWL SPACE VENTS
- I. PORCHES / EAVES
- J. INTERIOR WALLS
- K. INTERIOR DOORS
- L. FLOORING
- M. CEILINGS
- N. INTERIOR WOOD TRIM
- O. BUILT-ING
- P. INSULATION AND HEATHER STRIPPING

Preservation Matrix
Courtesy of Poster Frost Associates, 2004



0 1 2 4 8
Scale in feet

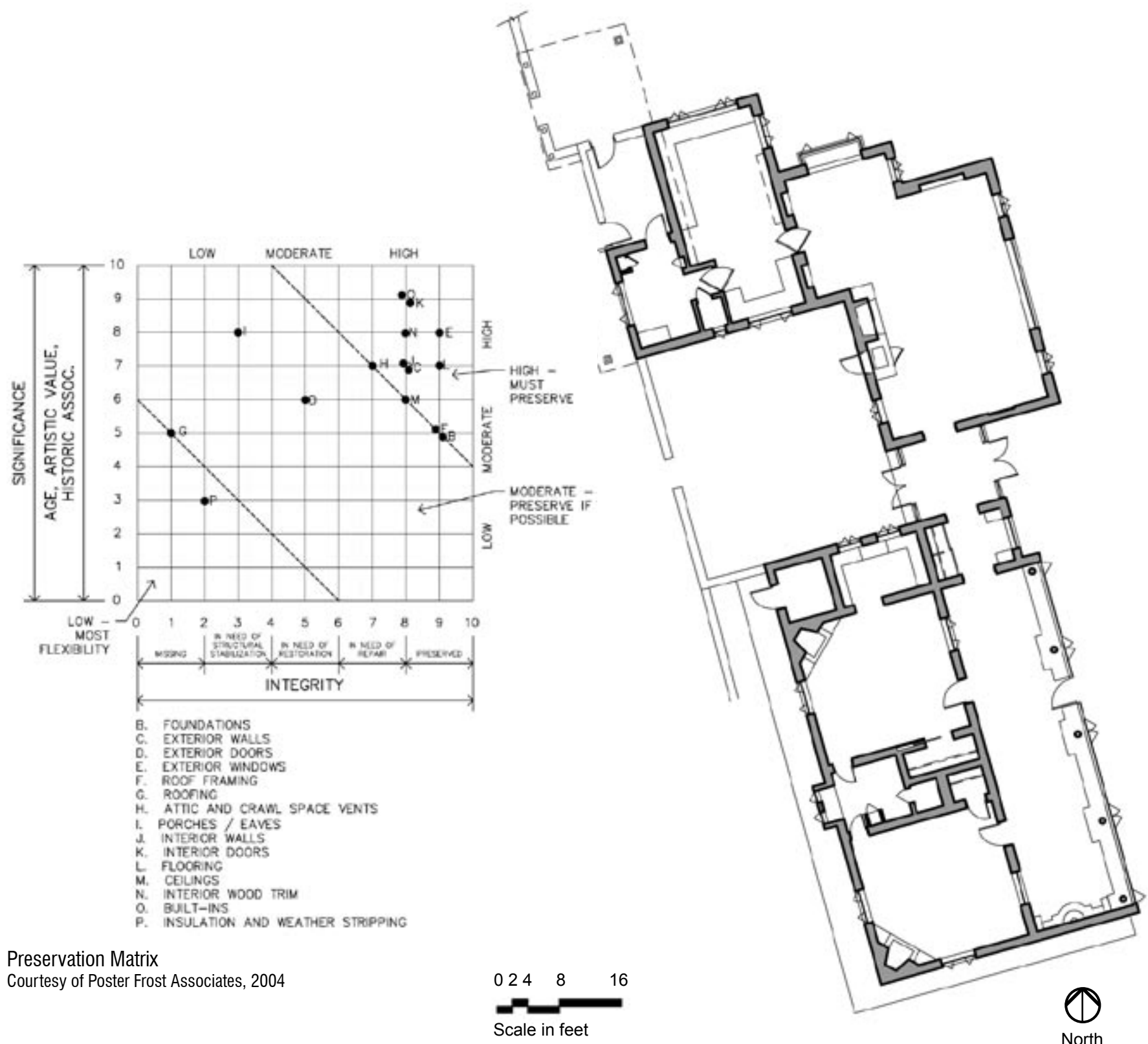


Building 104 Howell Manning Jr. House

This residence is a single-story, compound-plan dwelling located at the west end of the owners' residential zone. Formed from an original bedroom wing to which communal, food preparation, and utility spaces were later added around an enclosed courtyard, this rambling residence has stuccoed adobe walls and wood shake-clad gabled roofs of different heights that abut in three distinct sections. Eaves are boxed and stucco-clad and there are stuccoed chimneys for the three fireplaces inside. At present, the window and door openings are boarded up on the exterior and can only be examined from inside the building. This home was built in two phases. It is known that the two sons of Howell Manning, Sr., occupied the rectangular plan, gable-roofed, two-bedroom, one-bath building that is now incorporated into this dwelling as its south wing. This unit does appear on the 1936 aerial, and the simple bedrooms with their high-quality, durable materials and corner fireplaces appear to be the work of a trained designer. An early photograph shows that this original structure had a shed-roofed east porch supported by rustic tree posts. According to Deezie Manning-Catron, in 1948 a second wing designed by John W. Smith was added to create a completely functional residence for herself and her new husband, Howell Manning, Jr. The second wing included a breezeway connection, a living room/dining room, a kitchen and a utility room. The former porch was enclosed to create a sunroom as well as an indoor passageway from the bedrooms to the new, more public zones of the house. In addition, a dressing room and outdoor storage space were added adjacent to the north bedroom. The new construction



View of east elevation from the northeast
Photo courtesy of Poster Frost Associates, 2004



Preservation Matrix
Courtesy of Poster Frost Associates, 2004

Building 104 Howell Manning Jr. House

was configured to enclose a west courtyard. Interior partitions were largely adobe. For example, the partition between the kitchen and dining room is 18 inches thick.

Today's residence has an elongated Ranch-style appearance on its principal, northeast facade. Walls are white-painted stucco and match those of the Big House. This facade steps by means of setbacks to differentiate the bedroom/sunroom wing, the breezeway, and the living room. Deeper steps are the faces of the dining room corner and the north kitchen corner. The gable ridge is lowest over the bedroom wing and steps up 2–3 feet for each section to the north. The majority of spaces on this facade feature picture windows, and the large expanses of glazing are currently boarded up. A cross gable is introduced over the dining room, the south part of the kitchen, and the utility room to the west. On the north facade, the dining room corner, capped by the eave end of the cross gable, features a box bay window with a shake-clad hipped roof. The kitchen is a front gable wing. The west facade presents an interesting view, as its courtyard is integrated into one of the adobe site walls. This, too, is a shingled, side-gable and white-stucco-dominated view with setbacks, although the utility room has a frontal gable wall. The foundations of the original and newer wings are concrete stem walls. The foundation forms a visible plinth on the west bedroom and south sunroom walls. The finished floor level averages approximately 8 inches above grade, and all floors are slab on grade. The stuccoed mud adobe walls have concrete window sills. The main entry is into the narrow breezeway, which features matching door assemblies on the east and west walls, the latter of which is accessed from the courtyard. Each door assembly consists of a pair of double doors, custom made on the ranch by Frank Robles (according to Deezie Manning-Catron), with an upper and lower glass panel and wood spindles built inside the glass, and flanking sidelights. There is a tri-part transom above. Windows are steel sash and include picture, casement, and bay types. The original bedroom wing consists of two nearly identical, square rooms with plastered walls, ceilings and corner fireplaces. The north bedroom is the former master bedroom, and the south bedroom is that of the Mannings' daughters.

The fireplaces have a raised hearth, approximately 1 foot 6 inches high, and built in plastered benches. According to Deezie Manning-Catron, the fireplaces were the only source of heat in these rooms. The floors are gray painted concrete with carefully executed 2-foot-2-inch-square scores. There is a 5-by-¾-inch scored plaster base. The original closets are small, but that of the children's room is even smaller to make space for a shower in the shared bathroom. The original exterior casement windows remain on the east wall, now providing a view into the sunroom. The dressing room addition for the master bedroom has three of its walls lined with painted custom built-ins. Sliding plank-panel doors enclose shoe racks and other clothes-storage areas. There are many drawers plus a vanity with a mirror. The shared bathroom has white ceramic tile on the floor and up four feet on the walls. The built-in lavatory base is also tile-clad. The fixtures are white, probably vitreous china. The sunroom, formerly an open porch with stripped-tree-trunk posts that still remain, was enclosed by a custom-built window wall in 1948 (new stripped-tree-trunk posts were installed the same year, according to Deezie Manning-Catron). This room features materials characteristic of the Southwest. Its floor is flagstone mortared in a random pattern. The use of regionally quarried flagstone as an attractive paving material has long been a common practice of Tucson architects. The ceiling slopes and has substantial 4×4 wood rafters. The tree trunks are set into a built-in flagstone feature that serves as a bench and planter. There is also a flagstone fountain on the south wall. The west wall, the original exterior bedroom wall with its casement windows and doors, is plastered. The breezeway addition is a connector between the original wing and the living room. It is partitioned into two spaces.

The purpose of the narrow, light-filled space to the north is to provide the main entry from the east and west and circulation between the wings. As described, the doors were custom built on the ranch. They lend a southwestern appearance to the space and match the wood elsewhere in the 1948 addition. In the south breezeway chamber is a built-in, wood telephone desk flanked by cabinets, a central path, and a wood-lined coat closet with plank panel doors. The living/dining room comprises a roomy living space with view windows to the east and a large central fireplace on its west wall plus a squared dining space on the northwest corner. The white painted adobe walls are plastered and have rounded edges. Wood trim in these spaces includes a 5-inch-by-½-inch stained wood base with half round that curves around wall radii and 2-inch-thick matching windowsills. A large rectangular niche is located on the south wall. This once held a picture painted by George M. D. Lewis, the father of Deezie Manning-Catron, who gave the artwork as a wedding gift to the young couple. In addition, there is a niche in the north living room wall with built-in stained wood shelves. An exposed diagonal beam spans between corners of the living room and dining room walls and there are exposed, heavy, rough-sawn, ceiling framing members in both spaces. According to Deezie Manning-Catron, these timbers are pine from Mt. Lemmon, north of Tucson. As elsewhere, the floor is scored, polished concrete. The living room fireplace is contemporary, eye-catching, and built of 1–2½-inch flagstone slabs. It features a built-in planter, a wood box, and a 3-inch-high flagstone hearth. The dining space is noteworthy for its north facing box bay window that incorporates a planter. Two niches with stained wood shelving flank the custom-built plank door to the kitchen. This door has a single light with glazing and spindles. The kitchen is an elongated rectangular space with a small toilet room located on the southwest corner. Built-in cabinetry with work surfaces almost completely lines the four walls. Like the rest of the house, this room has scored concrete floors. The cabinets are unique and, according to Deezie Manning-Catron, constructed of Mexican cedar. These cabinets feature plank doors with wooden knobs. The countertops and backsplashes are also built of wood planks. One interesting custom feature is a pull-out table incorporated into the west cabinet bank. There is no space for a dishwasher, and the range and oven are missing. Suspended from the ceiling is a custom designed light fixture, a bronzed metal chandelier with uplights.

Accessible from the kitchen is the utility room to the west where the washing machine was once located adjacent to the utility sink on the south wall. There is also an ironing closet in this room. The back door accesses a small outdoor court adjacent to a yard with clotheslines. The large central courtyard to the west, flanked by the bedroom and kitchen wings, has a stuccoed adobe west wall with an opening to the dirt drive outside. This adobe wall is linked to the compound walls that define the owners' residential zone. The courtyard probably served as a planting area. (Description from National Register of Historic Places Registration for Canoa Ranch prepared by Scott O'Mack and Janet Parkhurst.)



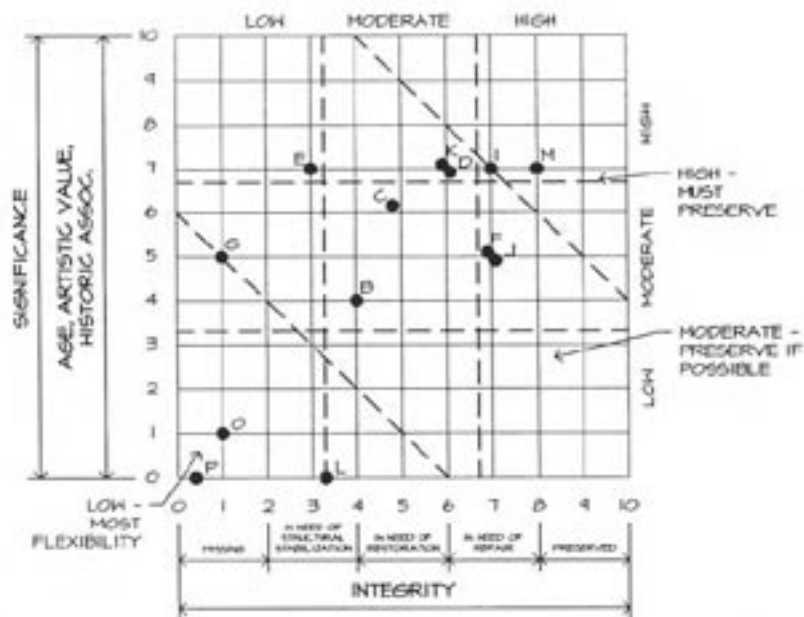
View of Howell Manning, Jr. Residence before 1947 addition
Photo courtesy of Deezie Manning-Catron

Building 105 Employee's House

This employee's cottage of approximately 1,000 square feet includes a living room, kitchen, office, bedroom, and bathroom. It is sited as a stand-alone structure among the landscape some 100 yards to the west of the main headquarters complex. The stuccoed adobe wall surfaces are capped by a vernacular cross-gabled corrugated metal roof. The structure is "transitional" in that it fuses vernacular adobe wall technology with Euroamerican mass-production elements such as wood truss roof framing, metal roofing, and wood windows and doors. Two ample porches are a large part of the romantic appeal of the cottage giving interest to the form, shading the interior of the building, and creating sheltered outdoor areas. Heavy masonry piers and knee walls convey a feeling that the porches have been carved out of the mass of adobe walls. A substantial chimney with stepped trunk anchors the south elevation. Interiors are plaster walls, finished concrete floors, and board-and-batten ceilings. Planning of the interior is done in a variation of the Hispanic tradition of stringing "unspecialized" single rooms together in a linear process. (Description from PFA Assessment, 2004.) *NOTE: Building 105 is scheduled to undergo a rehabilitation project in 2006 and will serve as a caretaker's residence.*

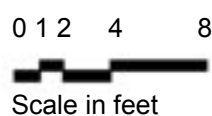
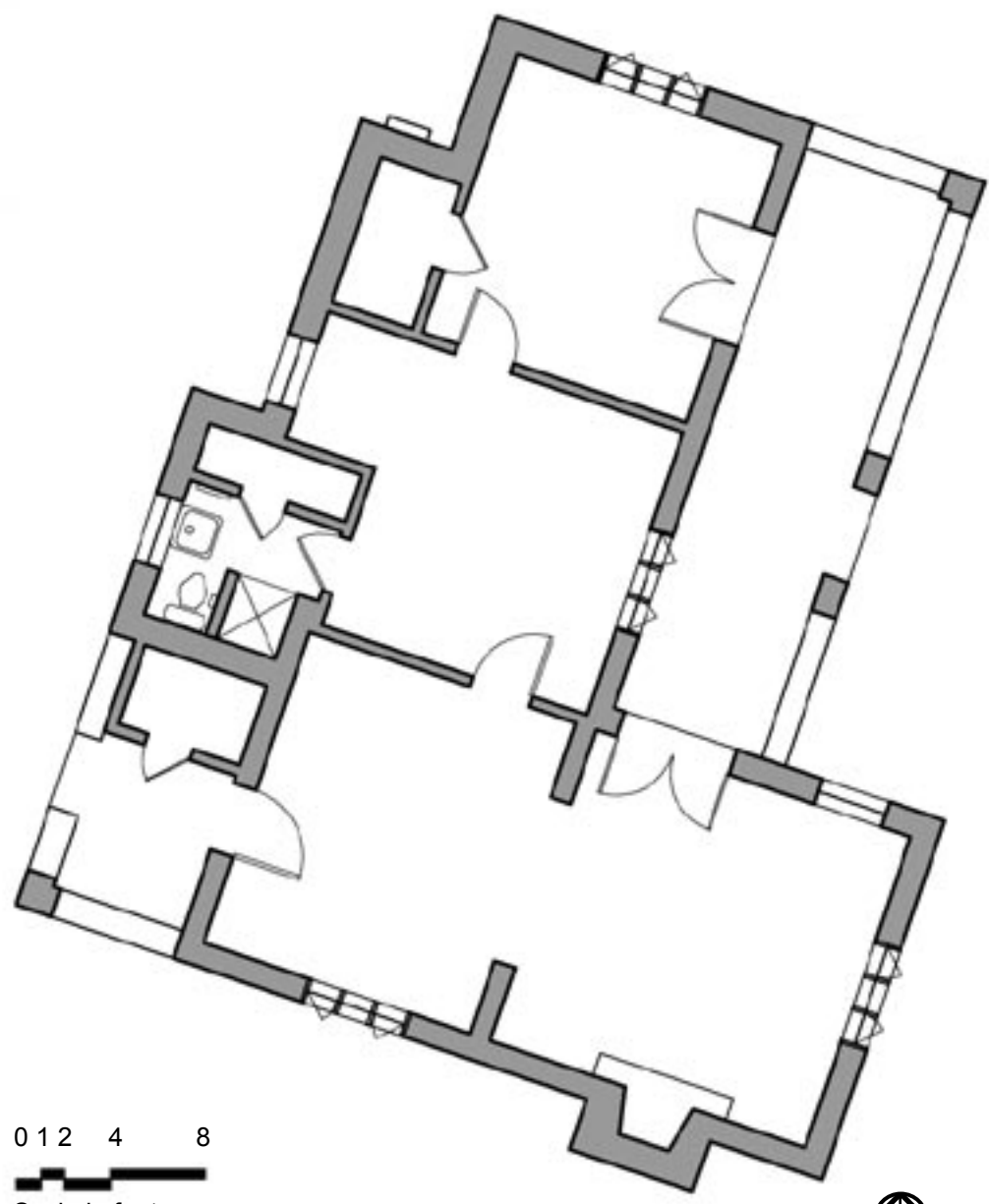


View looking northeast from the southwest
Photo courtesy of Poster Frost Associates, 2004

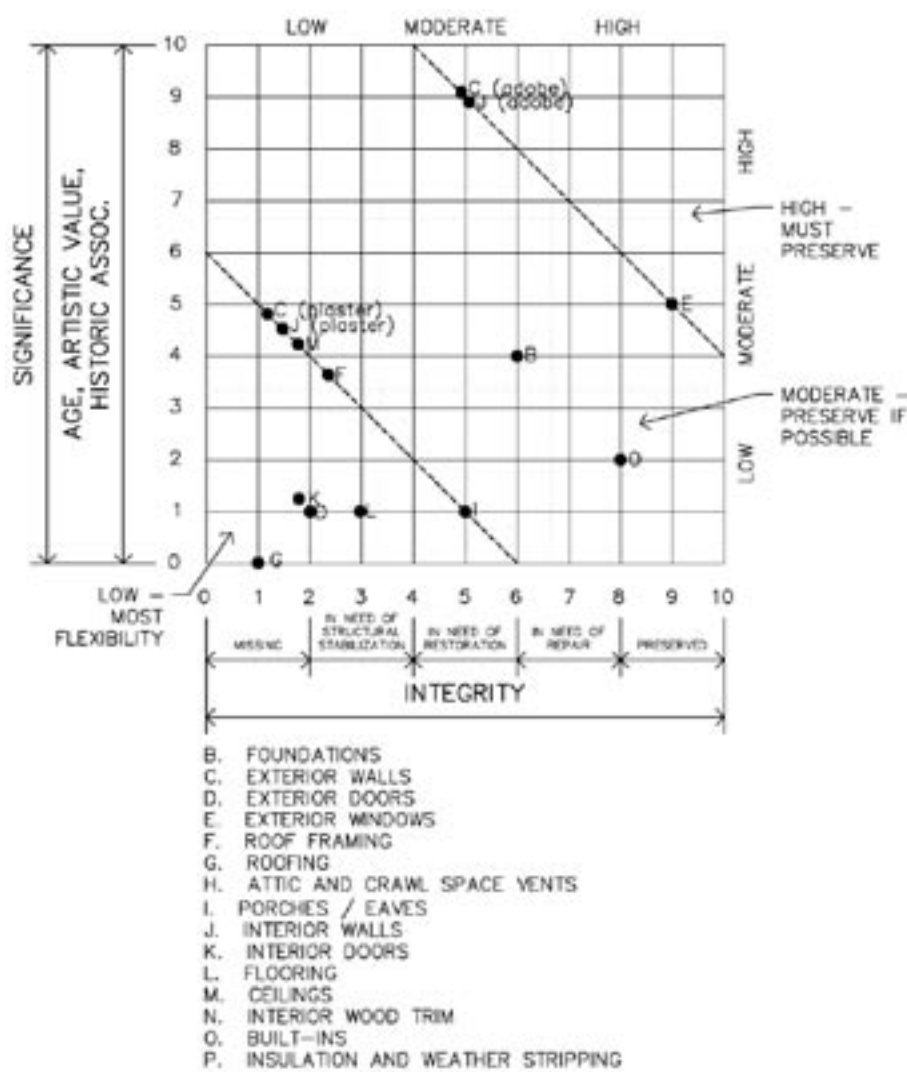


- B. FOUNDATIONS
- C. EXTERIOR WALLS
- D. EXTERIOR DOORS
- E. EXTERIOR WINDOWS
- F. ROOF FRAMING
- G. ROOFING
- H. PORCHES / EAVES
- I. INTERIOR WALLS
- J. INTERIOR DOORS
- K. FLOORING
- L. CEILING
- M. BUILT-INS
- N. INSULATION AND WEATHER STRIPPING

Preservation Matrix
Courtesy of Poster Frost Associates, 2004



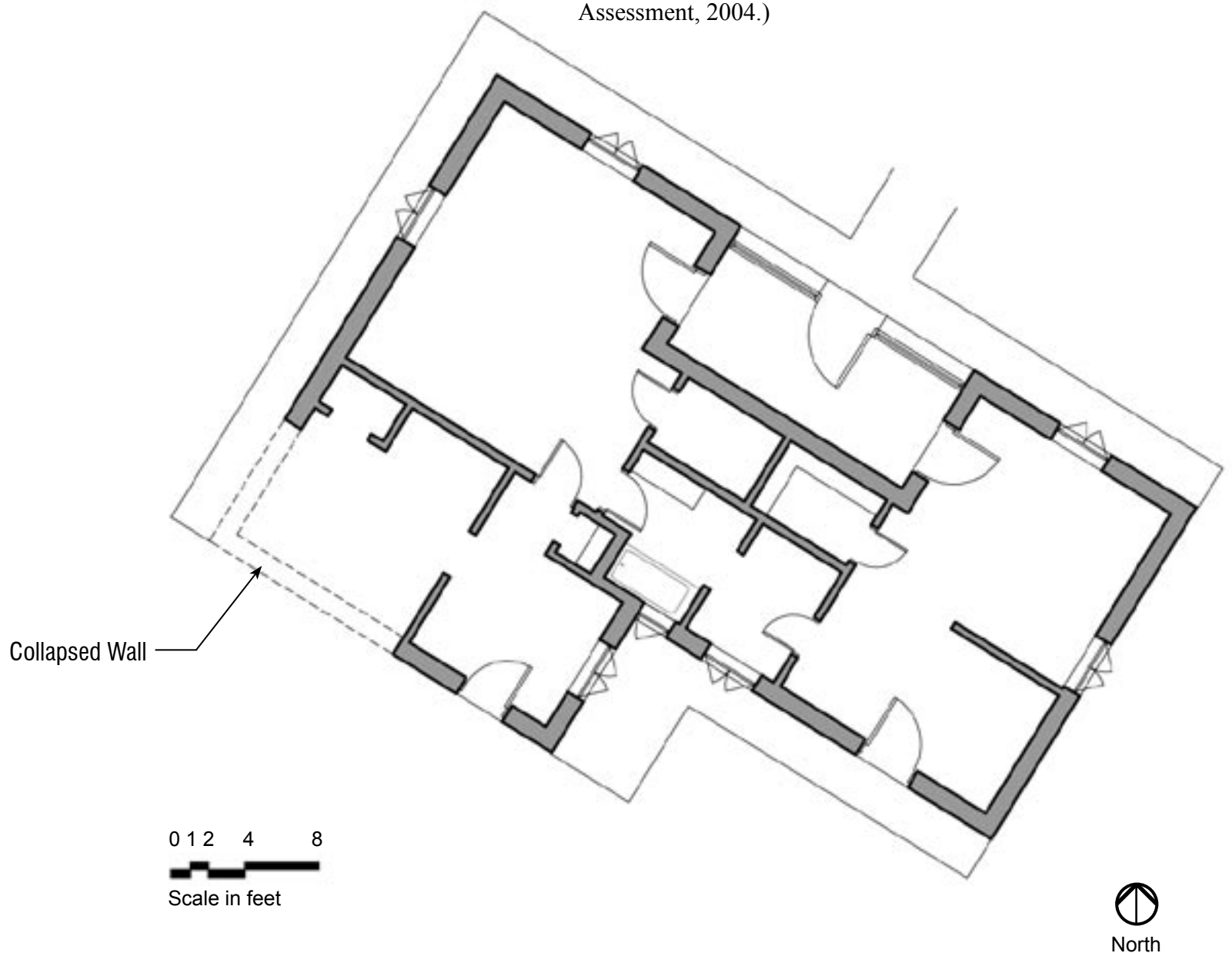
Building 106 Employee's Residence



View looking northwest from the southeast
Photo courtesy of Poster Frost Associates, 2004

This modest Spanish Colonial Revival dwelling is located just on the south side of the driveway that separates the Howell residences from the working areas and employee's houses. As such it is situated between the more Anglo styled gabled roofed Ranch houses (to the north) and the older, more Hispanic high walled Transitional structures (to the south). It appears to be the last structure built in this section of the Ranch but may have been intended to blend with the older flat roofed buildings south of the drive. The 1,124 square feet of interior space includes an entry vestibule (possibly an enclosure of an earlier porch), living room, dining room, kitchen, bath, bedroom, closets, and an inaccessible chamber on the south west corner (an additional bedroom, or possibly a rear porch). Exterior walls are mud adobe approximately 12 inch thick and 11 feet high. Interior walls are wood stud with metal lath and plaster. Roof framing is flat wood joists and roof drainage is via sheet metal canales. Windows are steel sash. Doors are flush wood and appear to be modern era replacement doors. (Description from PFA Assessment, 2004.)

Preservation Matrix
Courtesy of Poster Frost Associates, 2004

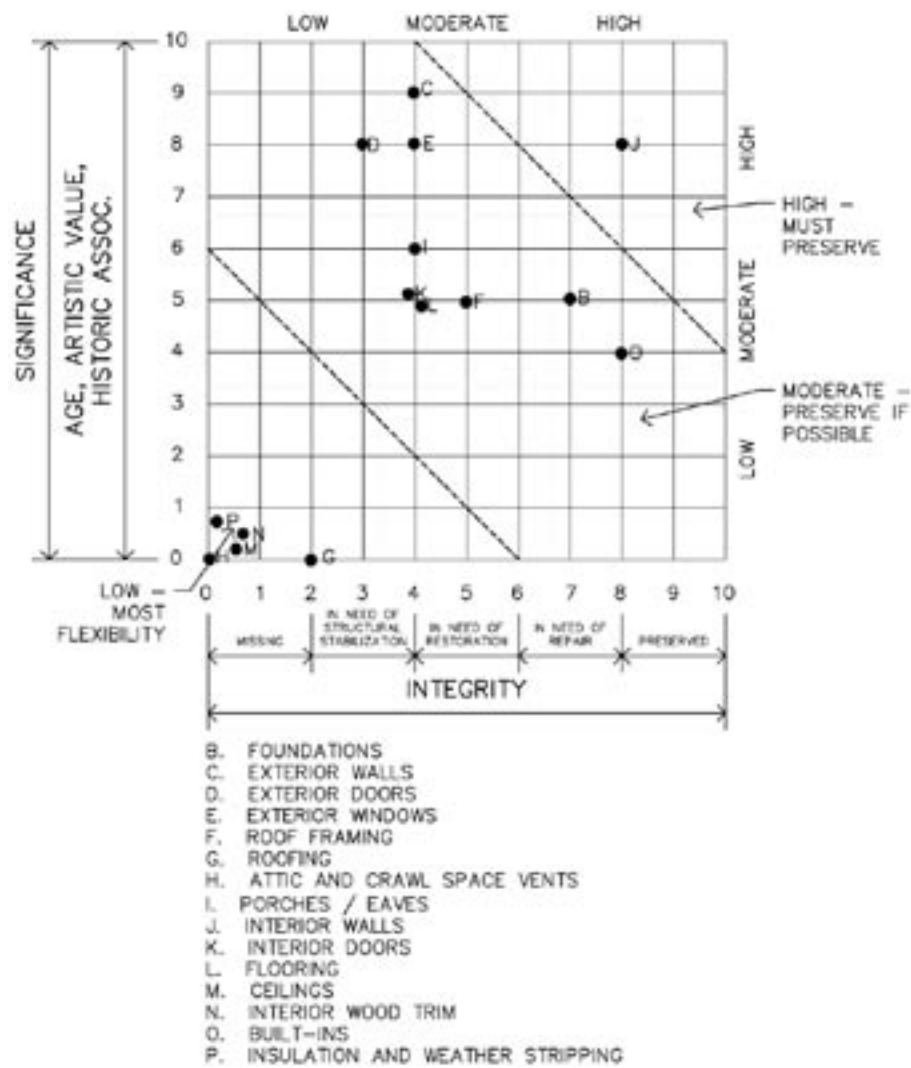


Building 107 Storage / Utility Building

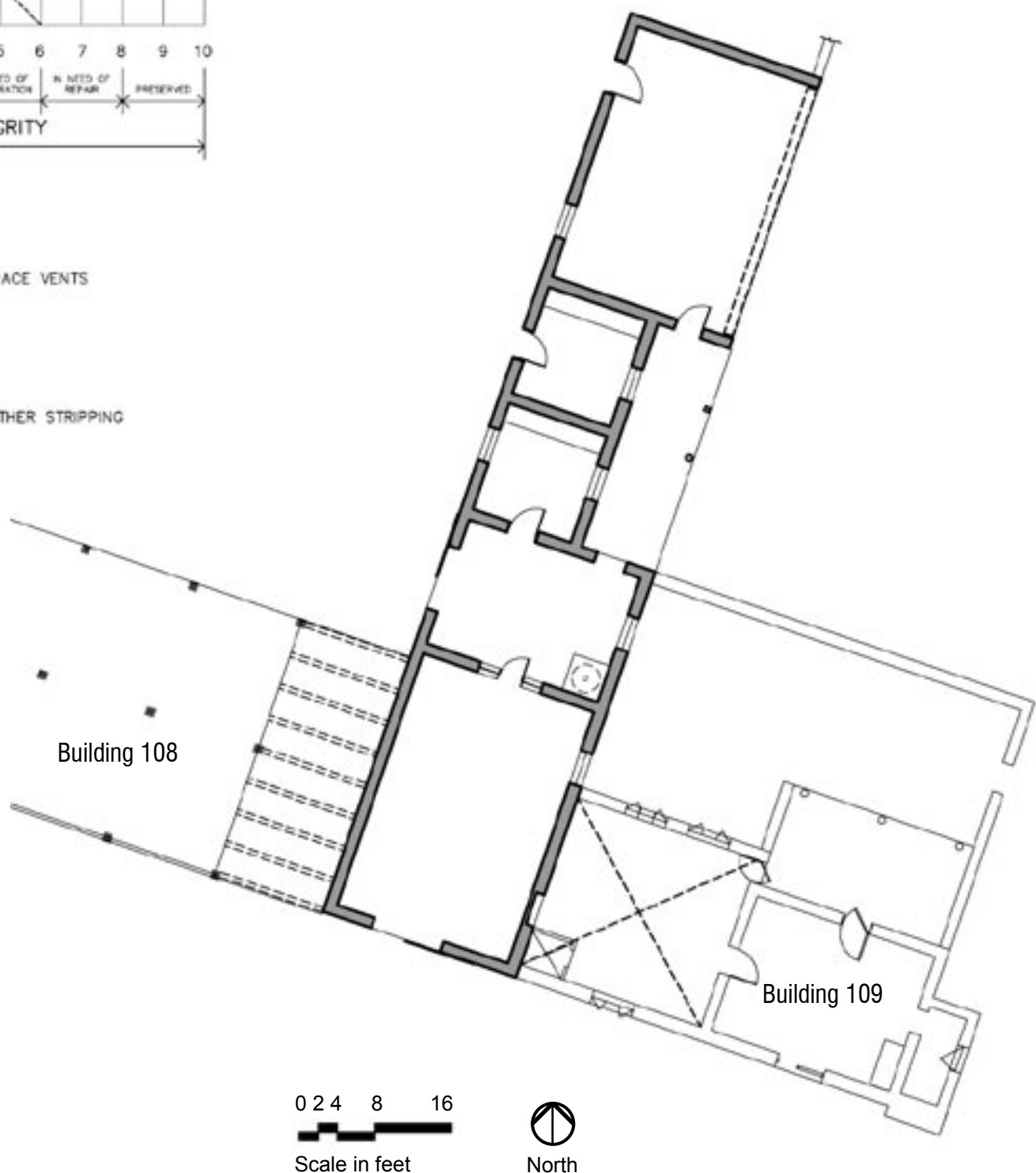
This Transitional vernacular structure was probably one of the earliest buildings on the Ranch. It is located at the heart of the working section of the Ranch and is interconnected with two other structures (108, the Equipment Storage Shed to the west; and 109, an Employee's Residence to the east). The equipment shed is believed to have been added a good deal later. The date of the employee's residence is unknown but is also believed to be a later addition. The bedroom chamber of the residence was probably a high walled courtyard between the two buildings at one time. The 2,150 square feet of interior space includes five chambers arranged from north to south as follows: Salt Storage room, two small Storage rooms, the Blacksmiths Shop, and a large Tack Room. Interior and exterior walls are mud adobe approximately 15 inch thick and 14 feet high. Roof framing is flat wood joists and roof drainage is via sheet metal canales. Doors are wood plank and panel, windows are wood sash, and foundations and floor slab are concrete. (Description from PFA Assessment, 2004.)



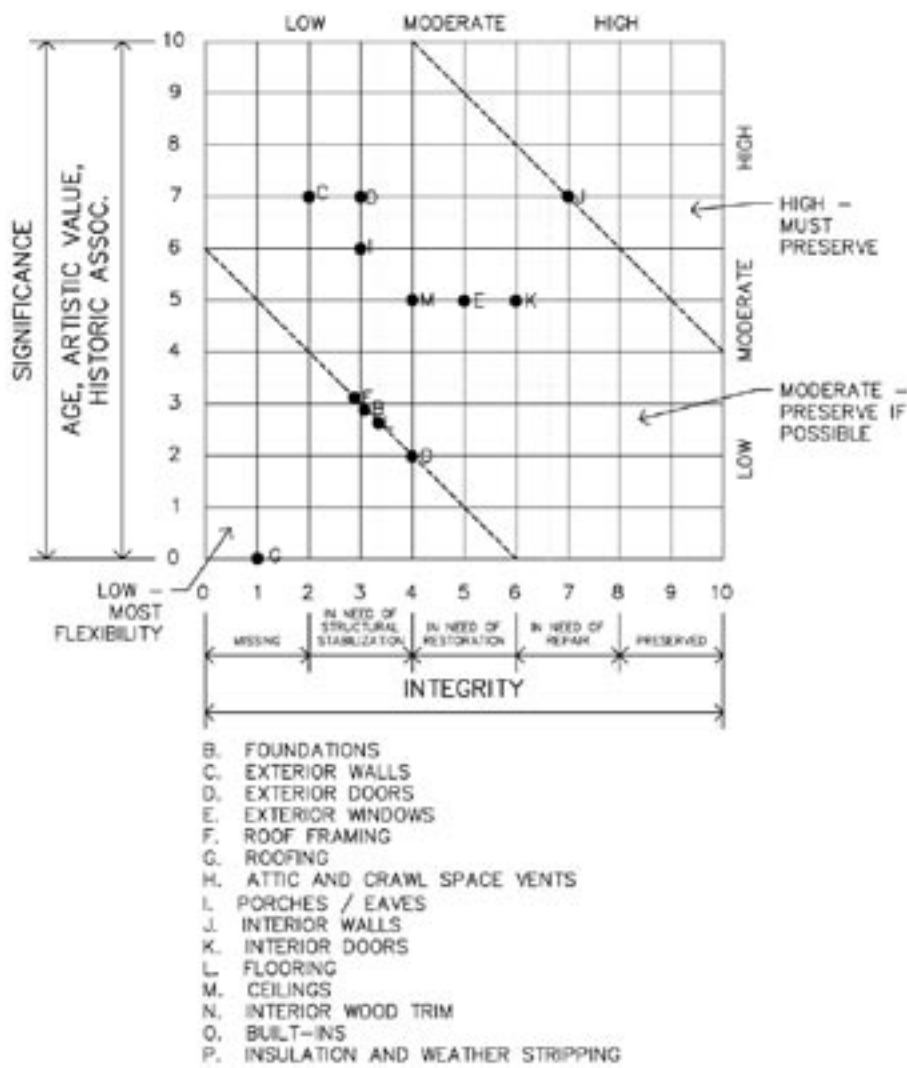
View looking west from the east
Photo courtesy of Poster Frost Associates, 2004



Preservation Matrix
Courtesy of Poster Frost Associates, 2004



**Building 109
Employee's Residence**

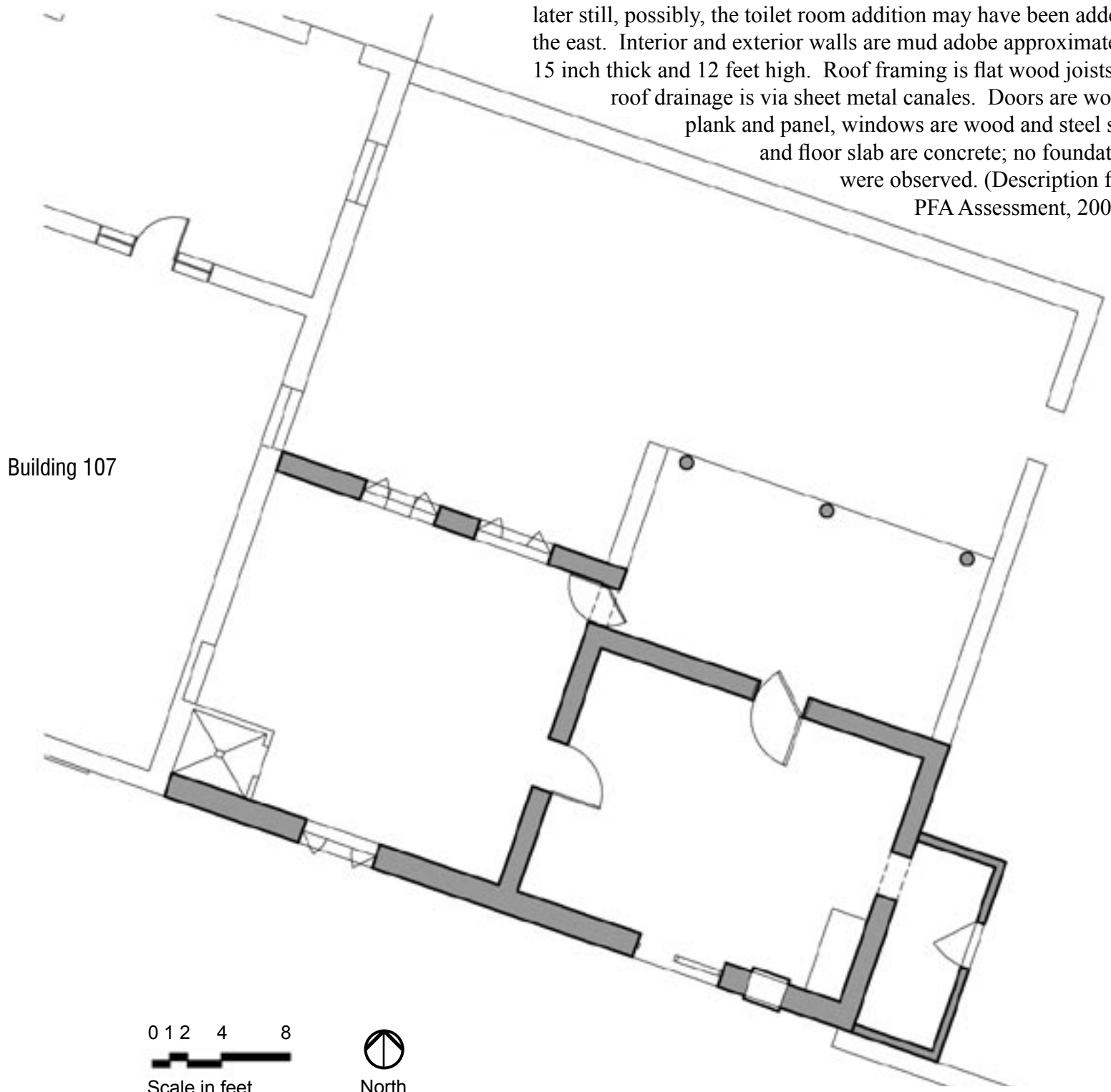


Preservation Matrix
Courtesy of Poster Frost Associates, 2004



View looking southwest from the northeast
Photo courtesy of Poster Frost Associates, 2004

This Transitional vernacular structure is interconnected with two other structures (107 and 108 to the west) and helps to form the working section of the Ranch. The 890 square feet of interior space includes three chambers arranged from east to west as follows: Bedroom, Living room/Kitchen, and Toilet room. This residential structure was probably an addition to the earlier utility building (107), and probably developed over time. It appears that the large eastern chamber may have been a stand alone single-chamber building connected to building 107 by a high-walled courtyard. At some later date (possibly post-1935) it appears that the courtyard was in-filled to create the bedroom chamber. Many of the construction details used on this “addition”, including doors, windows, and ceiling are very similar to those used on other post-1935 structures on the Ranch. The sequence of construction suggests that the north porch may have been added at this time. And later still, possibly, the toilet room addition may have been added to the east. Interior and exterior walls are mud adobe approximately 15 inch thick and 12 feet high. Roof framing is flat wood joists and roof drainage is via sheet metal canales. Doors are wood plank and panel, windows are wood and steel sash, and floor slab are concrete; no foundations were observed. (Description from PFA Assessment, 2004.)



Building 110 Foreman's House

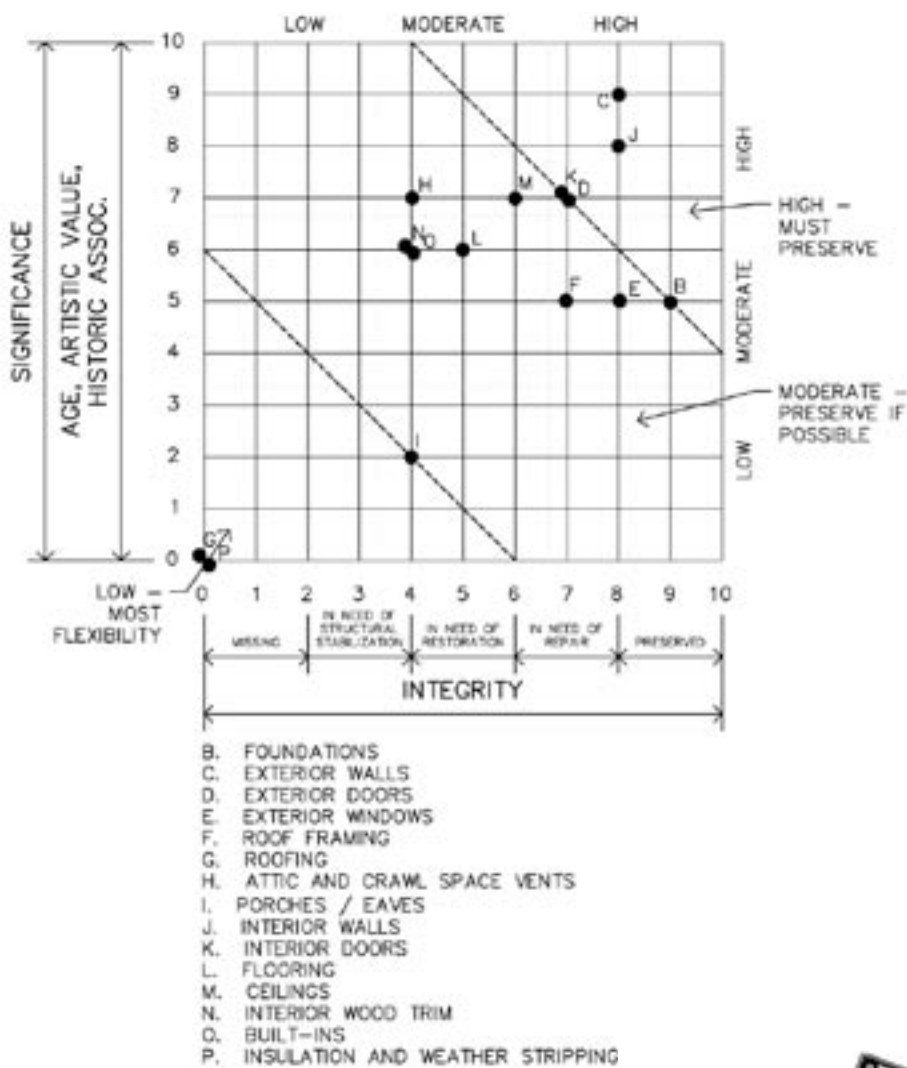
This traditional Sonoran adobe row house is a linear grouping of single rooms, with circulation between rooms occurring on the exterior in many cases. The 1,565 square feet of interior space includes a living room, kitchen, bathroom, and two bedrooms. It is certainly among the oldest structures on the ranch; it is known to have existed in 1924 and structures of this type were most common during the later half of the 1800's. A Sonoran shade ramada, supported by tree trunks and clad in thatch, was removed and replaced by the current screened porch sometime after 1924. This long deep porch stretches the entire north side of the structure and must have served as an outdoor living area for the family. Earlier speculation held that the structure was a bunk house for ranch hands but the National Register Nomination documentation has established that it was, in fact, used as a single residence for the ranch foreman and his family. Interior and exterior walls are thick mud adobe approximately 18 feet high, roof framing is flat wood joists, and roof drainage is via sheet metal canales. Doors are wood plank and panel, windows are steel and wood sash, and foundations and floor slab are concrete. (Description from PFA Assessment, 2004.)



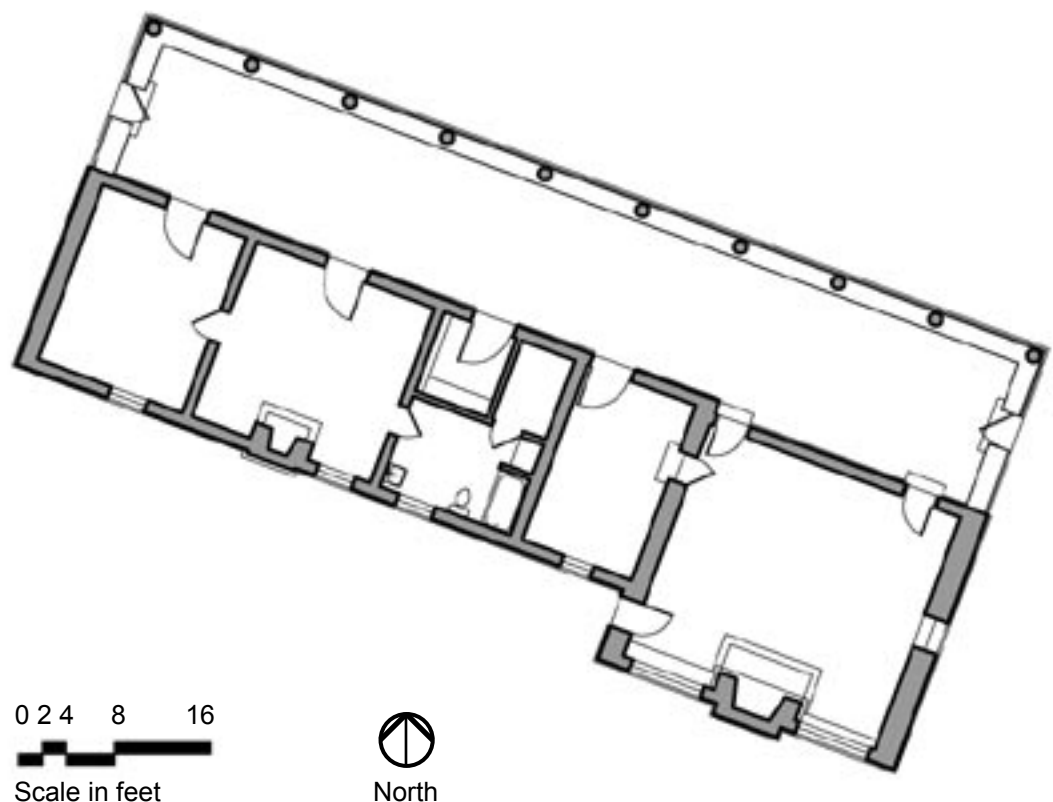
View looking southeast from the northwest
Photo courtesy of Poster Frost Associates, 2004



View looking southeast from the northwest
Photo courtesy of Deezie Manning-Catron, date unknown



Preservation Matrix
Courtesy of Poster Frost Associates, 2004

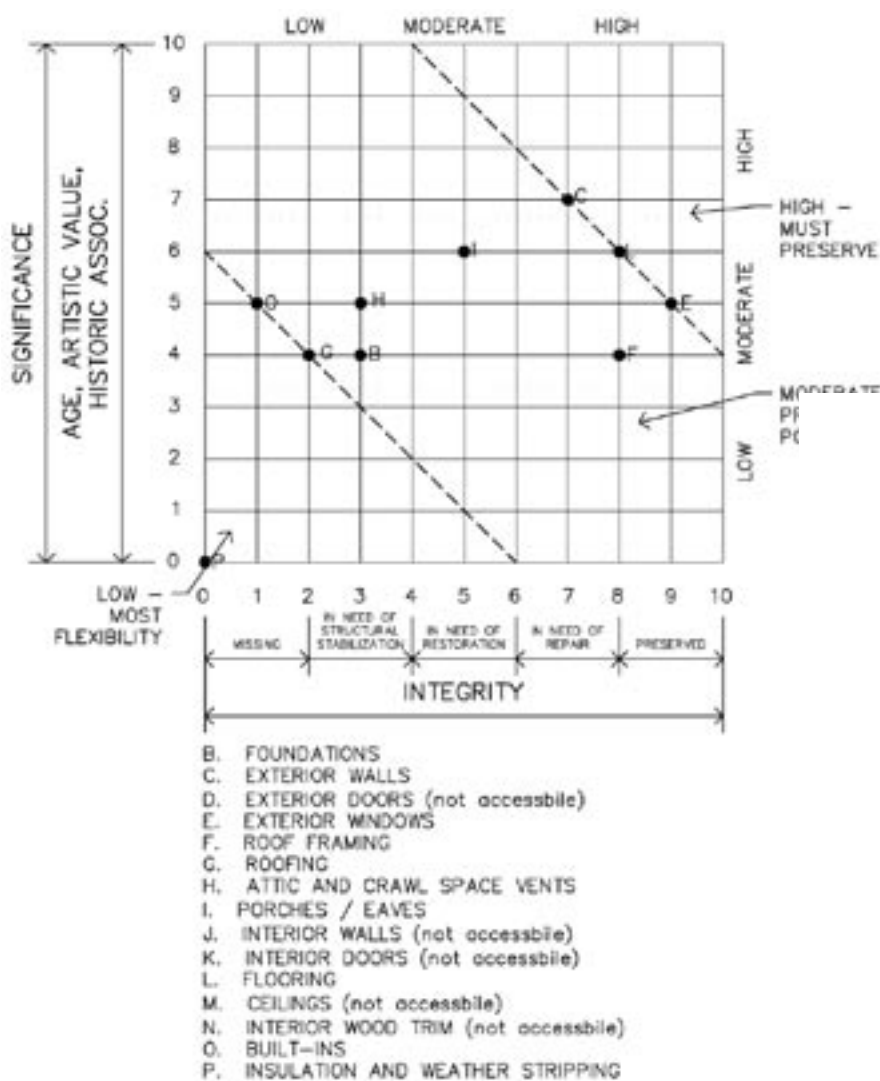


Building 117 Bunkhouse

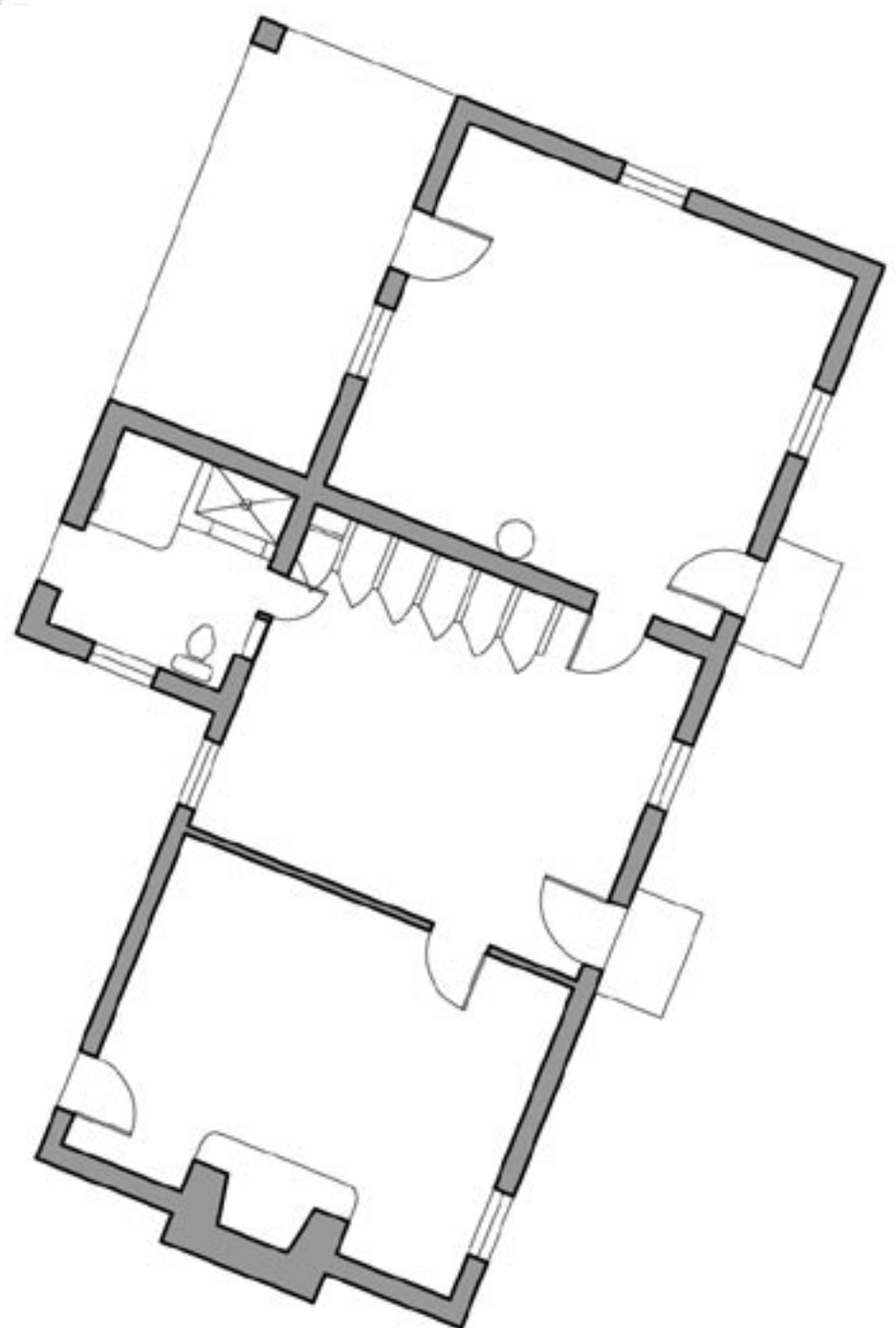
Building 117 is a compact 1,100 SF vernacular side-gabled structure that was used as a working bunkhouse. It is a traditional linear plan comprised of three main chambers and an attached bathroom and porch. It was constructed between 1948 and 1955 and located away from the other residential structures, to the south and west of the main residential zone. It was sited with its principal façade facing east, possibly to allow visual surveillance of the nearby corrals. It is the newest structure on the ranch and features building materials - such as dimension lumber, steel sash windows, exposed concrete stem walls, cast-in-place concrete lintels, and burnt adobe - typical of the slightly later era. It is the only structure on site built from fired adobe. It is a no-frills modest building but is interesting historically as a well preserved and well constructed example of a vernacular bunkhouse. The interior of the building was inaccessible for investigation; descriptions and conclusions are based on exterior examination and review of earlier documentation. (Description from PFA Assessment, 2004.)



View looking northwest from the southeast
Photo courtesy of Poster Frost Associates, 2004



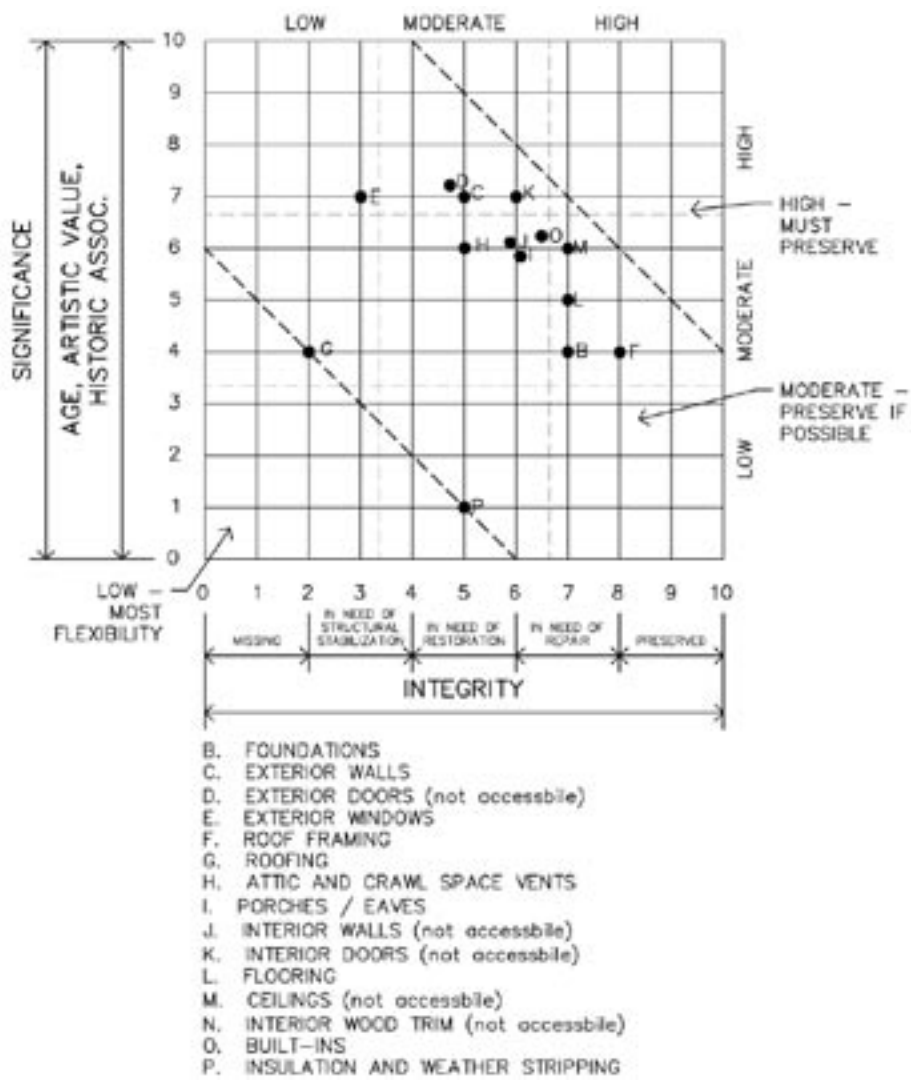
Preservation Matrix
Courtesy of Poster Frost Associates, 2004



0 12 4 8
Scale in feet



Building 120
Employee's Residence



View looking southeast from the northwest
Photo courtesy of Poster Frost Associates, 2004

Preservation Matrix
Courtesy of Poster Frost Associates, 2004

The South House, as it has informally been called, is a compact 1,400 SF vernacular side-gabled structure that appears to have developed over time, beginning sometime after 1935 and possibly extending into the modern era. It was once a traditional linear plan of about 650SF comprised of three white stuccoed adobe chambers. At that time the roof structure was a simple side gable form with corrugated metal. There was also an attached porch on the east face that featured stripped tree trunk posts. Over time the eastern porch was enclosed, small shed additions were added to the west, and several of the original window and/or exterior door openings were altered. The age of the alterations is difficult to determine but some evidence suggest that some of this work, at least, took place on the cusp of the modern era. The building was located away from the other residential structures to the south of the headquarters complex and the corrals. (Description from PFA Assessment, 2004.)



0 1 2 4 8
Scale in feet



Tucson's Apaches Mansos: The Peaceful Pathway to Ethnic Oblivion (summary)

Grenville Goodwin considered all the Apaches of Arizona to belong to the western tribe, except for the Navajos, Chiricahuas, and a “small band of Apache continually friendly with Mexicans and Papagos who lived about Tucson, San Xavier, Tubac, and Tumacacori.” He called the latter group “Apaches Mansos” and, based on the comments of a few informants, hypothesized that they spoke the Chiricahua dialect. These were self-selected individuals from several Apache tribes who settled near Spanish and Mexican military posts beginning in the late 1700s. Their encampments were called “establecimientos de paz” or “peace establishments.” The Indians themselves were known as “Apaches Mansos,” which translates into English as “Tame Apaches;” “Apaches de paz,” which means “peaceful Apaches;” and “Apaches establecidos” or sometimes just “establecidos,” which means “established” or “settled” Apaches.

By the time that Mexico became an independent country in 1821, the Tucson Tame Apache community consisted of representatives of two bands – the Arivaipa and Pinal – both members of the San Carlos division of the Western Apache tribe. The beginning of the Apache peace establishments can be traced to a Spanish policy initiated in 1786 by Viceroy Bernardo de Galvez. In many respects the policy resembled one adopted by the U.S. government nearly a century later during President Grant’s administration. It called for unrelenting warfare against hostile groups such as the Apaches and Comanche’s. Those Indians choosing to avoid the warpath were to be rewarded with land near the frontier military posts and were to receive regular rations, along with clothing and other gratuities. By the end of 1793, there were eight establishments in Sonora, New Mexico, and Chihuahua, including one at Tucson. Together, these establishments contained about 2,000 Apaches. These people were not only under military control but were considered prime candidates for conversion into Catholicism. They were transferred from other presidios such as Tubac and Santa Cruz and used as laborers and defense. In addition to serving as part of the militia, the Tame Apaches at Tucson, Tubac, and Santa Cruz regularly provided the presidial commanders information about the war and raiding plans of the hostile groups. At Tubac, both through natural increase and immigration from Tucson – the Apache Manso population had grown to nearly 299 and were the largest ethnic group in that community. When the first Anglo-Americans came through in the late fall of 1848, one observer described Tubac as “an Apache town” and remarked on the fact that these Indians “nearly all talk Mexican.”

A little over a month after the visit of the Americans, several of Tubac’s Apache Mansos were killed in a Pinal raid on the town and the nearby Pima community of Tumacacori. Both these settlements were abandoned and the Mansos took up residence at Tucson and San Xavier.

The Mexican flag was lowered over Tucson and replaced with stars and stripes on March 10, 1856, six months after the U.S. – Mexico boundary commission finished surveying the new border. One of the Americans living in the community at that time later wrote that the Mexicans who went south to Sonora forced the Apaches Mansos to accompany them, but that later most of them returned to Tucson.

Their sojourn in Sonora must have been a short one. In December of 1857, U.S. Indian agent John Walker reported to his superiors that 300 Mansos were living at Tucson, where they were generally employed “as peons.”

The Apache Mansos of both Tucson and Tubac were a clearly visible ethnic minority throughout the 1860s. By the middle of the decade, they were served by an Indian Bureau official with the impressive title “Special Agent for the Pimas, Maricopas, and Tame Apache, as well as for the Papagos.” The Mansos continued to serve as scouts and militiamen in campaigns against other Apaches.

The first reference in American documents to the establishment of a reservation for Tame Apaches occurs in a letter written in 1860 by a Tucsonan named Thomas F.M. McLean. It is directed to Sylvester Mowry, who, at that time, was in Washington as a Special delegate seeking the establishment of a territory to be named Arizona. McLean, who apparently had considerable knowledge of the Tame Apaches, remarked that “with proper management,” they might “be made invaluable to the American government as a nucleus about which to gather their wild relatives. They should not be overlooked. They frequently ask the question why the American government is a better friend to wild Indians than to Tame Indians. They have not received a cent while the government has made many presents to wild Apaches.”

The last official communication concerning the Apaches Mansos was in BIA documents bearing the date 1871. It was written by William H. Tonge, owner of a ranch on the Camp Grant Military Reservation, and addressed to M.O. Davidson who now headed the Arizona Superintendence. In it, Tonge remarks, “as for the Tame Apache Band, nothing has been done for them. You used to talk of taking up a reservation on the San Pedro for these Indians. This would have been a fine and proper reservation.” The following year, in 1872, the Indian Service developed a comprehensive plan for Apache reservations in Arizona and New Mexico. Nowhere in the 12-page document on this subject is there mention of Arizona’s Tame Apaches.

What happened to the Mansos after 1871? This is not known. They lost their ethnic identity quickly, because they are not mentioned as a group in any later documents thus far examined. They are remembered by the To at San Xavier, some of whom are their descendants. There are many Tucson Mexican-Americans who have reported Apache ancestors, but most have not been able to tell whether they were Mansos or otherwise.

Ethnic identity remains strong today among the once hostile Indians of the four major Apache reservations in Arizona and New Mexico; and ironically, the lands reserved to them are among the finest in the country. Meanwhile, there are only memories – vague ones – of the Apache Mansos who chose the peaceful pathway to ethnic oblivion. (Officer: Summary)

Reference to Spanish policy initiated in 1786 by Viceroy Bernardo de Galvez:

The Galvez scheme was to dupe the Apaches into cultural suicide by adopting:

- Firearms (defective)
- Fire-water (strong liquor)

These were substances that the Apaches could only get from Hispanic settlers; leading to dependency and degeneracy – The goal was to turn the Apaches into harmless if unproductive wards of the state.

Although there is no official documentation as to a connection of the Mansos with Canoa, it can be assumed that the Mansos passed by Canoa in their travels to and from Tucson to Tubac, Tumacacori, and Sonora by way of the Santa Cruz River. All who traveled in the desert attempted to remain as close to the river as possible especially in the summer months.

The times that the Mansos were traveling back and forth from Tubac and Tucson would have been around the same time as the Tarbox incident as per the other summary that follows this section.

Native American

Edwin Tarbox – “Tarbox massacre” of 1861 – (Reference: Tucson Ephemera files, Arizona Historical Society Library Archives)

On the 15th of July, 1861, a band of sixty Apache Indians attacked a party of men at the abandoned rancho called the Canoa, thirty-six miles above Tucson, and killed Richard Jones, Superintendent of the Sopor Mining Co., Edwin Tarbox, McCall, two Mexicans and an Indian boy. They stripped William H. Rhodes after having wounded him and allowed him to escape. (Mesilla Times, August 10, 1861)

Early in 1857, Edwin Tarbox, with a small company, came in from Maine and established a camp in the Santa Rita Mountains, and commenced to whipsaw lumber at one hundred and fifty dollars per thousand, the lumber finding a ready sale at the mines and the making of doors, furniture etc. for the presidio. This company built the Canoa Ranch at which place Apaches killed several of the company afterwards.

(Fish Manuscript, p. 278)

Gadsden Treaty and Canoa’s Beginning

After the ratification of the Gadsden Treaty, 1853, some people mainly from Texas came to the Santa Cruz Valley in search of farming and grazing lands. A number of the new arrived squatters followed the Santa Cruz River upward as far as Calabasas and settled there, while a party of about 18, including women and children continued on and stayed at place then named, as now, “La Canoa,” so called because a Mexican settler already there had built a large canoe, or flat-bottomed boat, upon which they crossed the river whenever the lower or western road leading to Tubac became flooded by the summer rains. Here they erected log houses; began to cultivate the soil, raising cattle at the same time.

As per the treaty, Cochise had orders for his men that directed them to abstain from all depredations north of the boundary line, which ran from east to west forty miles south of Canoa. All new comers were cautioned again and again, never under any circumstances to interfere with the Apaches in their doings across the line. These conditions were accepted and observed in the whole newly acquired region like an unwritten law.

In 1857, a large band of Apaches belonging to Cochise’s tribe made a raid in Sonora, and captured a large herd of horses and cattle. The Apaches stampeded the herd to the north and the owners followed the tracks and realized that the herd was headed for the boundary line toward Turkey Canyon. The large band of Apaches could not be dealt with unless help could be obtained, so the owners asked for help from people in Tubac and were unsuccessful; then they asked the settlers at Canoa who at first refused due to the cautions received as to their behavior in such cases. The owners of the herd than offered a reward for their assistance one-half of the stock recovered; the settlers abandoned their prudent hesitation and readied for the raid which they knew would involve shedding of blood.

The herd and the Apaches were within the canyon when the owners and the Canoa settlers surrounded them and a short but furious combat ensued, for which the Apaches were unprepared. The Indians were defeated and fled, leaving seven dead on the field, an unheard of action, showing that they barely escaped, as they will invariably carry off or hide their dead whenever possible.

The deed was done, the herd recaptured, and the American allies received their reward; but on that day was born a relentless feud of 30 years duration, which brought about innumerable murders of men, women and children, and destruction of hundreds of homes. Cochise might have forgiven the recapture of the herd, but never the killing of his warriors, who had observed a strict abstinence from all violence against the American population. From this date the relentless warfare that retarded for a generation the development of those regions, and which began with the complete destruction of the settlement of Canoa, their families and homes by a band led

by Cochise in person. (Tucson Ephemera files, Arizona Historical Society Library Archives)

“Hostilities became more frequent and general, and were greatly aggravated by bad management and injustice on the part of the officers, by which Cochise was made the life-long foe of the Americans.” (Bancroft’s History of Arizona and New Mexico)

Native American

The Milky Way Appears

Long ago, it is said, there was a little old man that hated his daughter's child. He never made anything for his grandson as an old man should, like making a bow and arrow, a racing ball, or telling something good to a child. A child should grow up with that and be like the people were then. This old man was not like that. He scolded his grandson and always beat the child for his faults.

So, one day, he again beat his grandson, and the boy went out and slipped away and never came back.

The old man waited for him, but he didn't come. He looked for him and couldn't find him. Then he felt very bad and went around grieving.

The child had gone away and lay down up above. From there he saw his grandfather going around looking for him. So he said, "I think I will go see my grandfather and give him something. That will make him happy so he won't be doing something uselessly." So he came down.

He sat down by his grandfather and said, "As you know, I once was a child living with you. You always scolded me, so I was very unhappy and went to live up above. From there I looked down and saw you always looking for me. I knew you were unhappy, so I pitied you and came to tell you not to grieve and be unhappy. I am going to give you something. Take care of it, and when it multiplies, eat it and it be filled and think of me. When you want to see me, go out at night and you will see me. I will be all across the sky up above."

When he had said this he gave him some seed and said, "Plant it right by your head where you sleep and keep watching it so nothing will take it out. It will come up and blossom and bear beans. When it gets dry, its seed will be scattered. Gather them all up. When a year goes by and the rain moistens the earth, bury them four together and watch them, as I said, not letting animals eat or trample them, or grass or weeds come up. When they ripen, pull them up and pile them where you've cleared a place. Then get a stick to beat them with. The seed will be removed. When the wind blows, you will take them in your hands and throw them up, and it will blow away the stalks and leave the seed. Then take it and store it away and next year do the same thing. When you have planted four times it will increase enough. Then you will eat it and be full from me. You will be alive and happy from me, your grandchild who is the white bean. That gray streak stretched across the sky is my home." After saying this he went out.

So that is why the white bean is the child of the Desert People. It is born here and grows here and endures dryness. When it doesn't rain enough, the white bean still comes up. The Desert People will always eat it and live here.

The Milky Way is said to be the white bean. He lives clear across the sky. Beans grow in abundance and we see them scattered across the sky."(Saxton: pp. 20 – 23)

The Pleiades (Homeless Women) Appear

It is said that on Baboquivari there is a cave where a man lived who knew everything. He told the people many good things and sang many beautiful songs to them, intending that the people would learn the songs and sing them for a girl who reaches puberty.

At that time there was no puberty celebration, although they say that those who have died celebrate with singing and dancing in the east. But there was no celebration here. The first time they had the celebration the people liked it. But some people did only that all the time. It wrecked their homes and no one wanted them. People called them "homeless women," because they ran around and had no home. They wandered everywhere in the country and finally went to

a powerful medicine woman. When they arrived, they told her to do something to them so they would soon find rest from their homeless condition.

The woman said, "Alright, I'll do it. I'm going to put you out in plain sight of all. Every evening your relatives will see you and tell their daughters why you are called the "homeless women" (The Pleiades). In this way women will know what a good home is. Even though a puberty celebration is enjoyable, no one should go around just doing that."

When she had said this, she sprinkled the women with water and they turned to stone. Then she took them and threw them eastward, and they landed where they are now." (Saxton: pp. 24-25)

Coyote is Good for Something

He's Appointed to Study the Stars

Elder brother has gone away. But Coyote stayed here and was happy doing various things with the people, because they always greeted him by "Uncle" and fed him.

One day the medicine men said, "Let's test Coyote to find out if he really is a powerful medicine man."

It was reported all over the earth that Coyote was a more powerful medicine man than anyone else. When something displeased him he would laugh at it and it would become like he wanted it when he laughed.

This guy, Coyote, was always appointing himself over people, wanting to show them he could do anything, however hard it was. So the medicine men wanted to find out if this was true, "Maybe he's just a fraud." So they said to him, "Uncle! Uncle! You're so fast and wise about everything that you should go and find out what those things are doing shining up there every night." As they said this, they pointed to the stars. Coyote took them seriously, because one or another would keep saying, "Uncle! Uncle! You're so fast you should fund something out for us. Maybe someday we can do something for you."

So Coyote went off and didn't return for a long time. Then suddenly he came back, singing:

Beneath the heavens above us.
There are round pools of water.
Each time Coyote drinks from one,
He sees his reflection and says,
"I'toi" (all drunk up).
But when he cathe on,
He laughs quietly at himself."

Coyote Scatters Stars

It is said that there are three habitations – above us, here, and below us. And once there were might medicine men like Coyote.

Eagle was one who lived up there. One day he became angry because Coyote was always so noisy. He came down saying he was going to take Coyote's wife away from him, "Then what will Coyote say about himself?" So Eagle came down.

When he arrived, Coyote had gone hunting. Since he hadn't killed anything, he was still out wandering around and didn't see Eagle take his wife. Later, when he couldn't find her, he went looking for her until he got hungry. He found a carcass and began eating it.

Suddenly Buzzard came and said, "I know where your wife is now. I'll tell you where she is and take you there. But from now on, when you kill something, you must always remember me and leave something for me."

Coyote kept claiming he would, saying, "Yes! Yes! I'll do as you say."

Stories and Traditions

Native American

When they had eaten their fill, Buzzard said, “Sit here on me, and we’ll go up to the heavens. But you must not turn around or you will surely fall.”

“I’ll not turn around,” Coyote declared.

So that’s what they did. They went up and up, far from earth.

Coyote thought, “Maybe I’ll never see my country again. I’ll just look this once.” Sure enough, when he looked back he fell. Then Buzzard went after him, trying to get him. They were getting close to earth when he finally got his friend.

Buzzard said, “You are not to turn around up here, so we’ll arrive safely up there in the heavens.”

Coyote really ‘yes-yes-ed’ him, but just couldn’t stand his homesickness and kept looking back toward his home and falling. He fell four times.

Then Buzzard plastered his eyes with Mesquite pitch and finally got him up there. Then he unplastered his eyes and told him, “Go over and see your wife secretly. But wait until you’re ready and tell me. Then we’ll steal her back from them again. But don’t do the wrong thing. They certainly won’t feel sorry for you. They’ll kill you.”

Again, Coyote emphatically said, “Yes! Yes!” and went off. He just gone a little way when he remembered he was hungry. He thought, “I’ll come like a gentleman. Maybe they’ll give me some food” He stood facing someone’s house and said, “You have a visitor.”

Someone spoke somewhere and said, “You all don’t feed him. This is the one that lives below us. When I go there hungry and pick something out of their field they shoo me away and throw things at me and chase me away.”

When Coyote heard this he left very quietly. He came up somewhere else and said, “You have a visitor.”

Someone said, “This is the one who lives below us. When I go there and pick the discards in his field, he chases me and shoos me away and throws things at me. You all don’t feed him. He’ll die of hunger.”

Coyote again left very quietly. He began to think that maybe it was true that he would die of hunger. Then he thought that he would just steal something, and began looking over the houses. Suddenly he noticed one standing a little distance away, with no people around it. He went stealthily over there and peeked into the doorway. The people weren’t there. He went in looking for something, and found some cornmeal.

He was about to eat this, when someone shouted, “Shoo! Shoo!” at him.

Coyote dashed out, carrying the sack in his teeth. The corn meal that was scattered when they shoos Coyote is visible up there now.

So that’s how Coyote lived among the people. The people had good homes and planted and gathered various kinds of food and stored and ate them to live. But Coyote didn’t have a home anywhere. He just wandered around, and appointed himself chief of everything, but usually almost got himself killed. Still, people didn’t criticize him, but were happy with him and kept calling him, “Uncle, Uncle.”” (Saxton: pp. 67 – 73)

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Early American

Excerpted from *Pumpelly's Arizona; an excerpt from Across America and Asia*, by Raphael Pumpelly, concerning those chapters which concern the Southwest. Paloverde Press, 1965. Story courtesy of Scott O'Mack, Statistical Research.

At Arivacca I found Colonel Poston impatiently awaiting the arrival of the agent of Colonel Colt, to whom he had transferred the lease of the Heintzelman mine, being both of us anxious to leave the country. We detained on a journey together through the principal mining districts, to the city of Mexico, and thence to Acapulco, or Vera Cruz. Before beginning this we visited Tubac, where we found the population considerably increased by American, who had been driven in by the Apaches, from the ranches of the Santa Cruz valley.

In three days we were ready to return to the Heintzelman mine, and the morning of the fourth day was fixed for our final departure from Tubac. But a circumstance occurred in the evening which interfered with our plans. Just before dark a Mexican herdsman galloped into the plaza, and soon threw the whole community into a state of intense excitement. He had gone that morning with William Rhodes, an American ranchero, to Rhodes farm, to bring in some horses which had been left on the abandoned place. The farm lay about eighteen miles from Tubac, on the road to Tucson, and to reach it they passed first through the Reventon, a fortified ranch ten miles distant, and then through the Canoa, a stockade inn, fourteen miles from Tubac. At the inn they found the two Americans who had charge of the place cooking dinner; and telling them they would return in an hour to dine, they rode on. Having found the horses, they returned, and before riding up to the house, secured the loose animas in the corral, and then turned toward the inn. Their attention was immediately drawn to a shirt, drenched in blood, hanging on the gate, and, approaching this scene of destruction confronted them. The Apaches had evidently been at work during the short hour that had passed. Just as they were on the point dismounting, they discovered a large party of Indians, lying low on their horses, among the bushes a few hundred yards off the road. At the same instant that they put spurs to their horses, to escape toward the Reventon, the Apaches broke cover, and reached the road about one hundred yards behind the fugitives.

There were not less than a hundred mounted warriors, and a large number on foot. About a mile from the inn, Rhode's horse seemed to be giving out, and he struck off the road toward the mountains, followed by all the mounted Indians. The Mexican had escaped to the Reventon, and thence to Tubac, but he said that Rhodes must have been killed soon after they parted company.

It being too late to accomplish anything by going out that night, we determined to look up the bodies and bury them the following day. Early the next morning I rode out with Colonel Poston and three others, to visit the Canoa. To our great surprise the first man we met, as we rode into the Reventon, was Rhodes, with his arm in a sling. He corroborated the story of the Mexican, and told us the history of his own remarkable escape. Finding his horse failing, and having an arrow through his arm, he left the road, hoping to reach a thicket he remembered having seen. He had about two hundred yards advantage over the nearest pursuers, and as he passed the thicket he threw himself from the horse, which ran on while he entered the bush. The thicket was very dense, with a narrow entrance leading to a small charco or dry mud-hole in the centre, lying down in this he spread his revolver cartridges and caps before him, broke off and drew out the arrow, and feeling the loss of blood buried his wounded elbow in the earth. All this was the work of a minute, and before he had finished it the Indians had formed a cordon around his hiding-place and found the entrance. The steady aim of the old frontiersman brought from his horse the first Apache who charged into the opening. Each succeeding brave met the same fate as he tried the entrance, till six shots had been fired from Rhode's revolver, and then the Indians, believing the weapon empty after each shot, and seventh ball brought down the foremost of the attacking party, and

the eighth the one behind him. During all this time the Indians fired volley after volley of balls and arrows into the thicket, in the hope of killing their hidden opponent. After the twelfth shot there came another whoop, another charge, and one more warrior fell. Then the Indians, who knew well by name, and from many former fights, called out: "Don Guiglelmo! Don Guiglelmo!-Come and join us; you're a brave man, and we'll make you a chief." "Oh, you devils, you! I know what you'll do with me if you get me," he answered. After this Rhodes heard a loud shout: "Sopori! Sopori! - The name of the ranch of a neighboring mine- and the whole attacking party galloped away.

After a few minutes, finding the Indians all gone, Rhodes left the thicket and found his way to the Reventon. Thus happened one of the most remarkable defenses and escapes, and one that could have been carried out only by a cool courage such as few men even with a long frontier experience can command.

Leaving the Reventon we rode toward the Canoa. As we approached it the tracks of a large drove of horses and cattle and of many Indians filled the road. Soon we came in sight of the inn, and two dogs came running from it toward us. With low, incessant whining they repeatedly came up to us, and then turned toward the inn, and if beseeching our attention to something there. When he entered the gate a scene of destruction of destruction indeed met us. The sides of the house were broken in and the court was filled with broken tables and doors, while fragments of crockery and iron-ware lay mixed in heaps with grain and the contents of mattresses. Through the open door of a small house, on one side of the court, we saw a body, which proved to be the remains of young Tarbox, who coming from Maine a short time before had been put in charge of the inn. Like many of the settlers, the first Apaches he had seen were his murders. Under a tree, beyond a fence that divided the court, we found the bodies of the other American and a Papago Indian, who probably driven in by the Apaches, had joined in the desperate struggle that had evidently taken place. These bodies were pierced by hundreds of lance wounds, and were already in a terrible condition.

Our small party of five took turns in keeping watch and digging the graves. Burying the Papago in one grave, and the two Americans in other, we wrote on a board- "Tarbox," and under, this: "White man, unknown" masks the history of some long-mourned wanderer from the circle at home.

We had just finished the burial, when a party of Americans, escorting two wagons, rode in sight. They were on their way to Fort Buchanan, where they hoped to discover the caches in which commissary stores had been hidden on the abandonment of the country. Happening to ask them whether Mr. Richmond Jones, superintendent of the Sopori Company's property," was still in Tucson, I was told that he had left that town for the Sopori early on the previous day.

Knowing that he had not yet reached home, we instantly suspected that he was killed. As the party had met with no signs of Indians till near the Canoa, we began a search for his body in the neighborhood, and before long a call from one of our number brought us to the spot where it lay. A bullet entering the breast, two large lances piercing the body from side to side, and a pitchfork driven as far as the very forking of the prongs into the back, told the manner of his death. Wrapping the body in a blanket, we laid it in one of the wagons and turned toward Tubac. Finding the spot where Rhodes had left the road in his flight from the Indians, Poston and myself followed the tracks till we reached the scene of his desperate fight. The place exactly as Rhodes had described it, and the charco was covered with the branches cut loose by the Apache bullets, while the ground at the entrance was still soaked with blood.

At Tubac a grave was dug and in it we buried Richmond Jones

Early American

of Providence, R.I. Like Grosvenor, a true friend of the Indians, he fell by them a victim of vengeance, for the treachery of the white man. The cry of Sopori, raised by the Indians when they left Rhodes, was now explained; they knew that in Jones they had killed the superintendent of that ranch, and they were impatient to reach the place and drive off its large drove horses and cattle before the arrival of any force large enough to resist them. This they (had subsequently) effected by killing the herdsmen.

The next morning, bidding good-bye to Tubac, Poston and myself returned to the Heintzelman mine. I was to pass a week here, for the purpose of examining and reporting on the property;" but hearing that a wagon-load of watermelons had arrived at Arivacca, and having lived on only jerked beef and beans for nearly a year, I determined to go on with Poston and pass a day at the reduction works. It was arranged that two of the Americans should come to Arivacca (from the mine) the next day, to carry the mail through to Tucson. They came; but, the letters not being ready, their departure was postponed till the following morning.

About an hour and a half after these two men had left Arivacca, they galloped back showing in their faces that something awful happened. "What's the matter?" asked Poston. "There has been an accident at the mine, sir." "Nothing serious I hope?" "Is anyone injured-is my brother hurt?" "Yes, sir, they're all hurt; and I am afraid your brother won't recover."

Silver mines, and in the neighboring Vazura mountains, the Coyote copper mine. The one of the latter is a rich brilliant black sulphuret. The Sales and Tajitos were worked with profit will the insurrection of the Indians.

The next settlement in which we encamped was Quitovav, a place which had some celebrity for its gold placers before the discovery of that metal in California. It had been our intention to take the route to the Colorado River, leading through the Sonoita gold district, in preference to that passing though San Domingo. These routes diverging at appoint a few miles beyond Quitovac, continue parallel to each other, but separated by mountains, til their reunion of the Gila river. When asked at Quitovac which route to the Colorado river, leading through the Sonoita gold district, in preference to that passing through San Domingo. These routes, diverging at a point a few miles beyond Quitovac, continue parallel to each other, but separated by mountains, till their reunion on The Gila river. When asked at Quitovac which route proposed taking, we had given that by as our choice. But as soon as we took the road in the morning it became evident that a party of horsemen had passed through Quitovac during the night, stopping for only a short time. The tracks showed them to be twelve in number, and when and when on reaching the fork of the trails we found that, after evident hesitation, they had taken the Sonoita route, we changed our plan and turned into that leading to San Domingo which place we reached in a few hours. In this settlement, containing two or three houses, the last habitations before reaching the Gila river, we found Don Remigo Rivera, a revolutionary Sonoranian general. Don Remigo had withdrawn with his small force to the United States boundary, where he was awaiting a favorable opportunity for action. Leaving his men at Sonoita, he had come to pass a few days at San Domingo. As this gentleman had frequently been a guest at the Santa Rita, and at Colonel Poston's house, we received from him a cordial reception, and dismounted to breakfast on pinole and watermelons. While thus engaged, a courier rode up at full speed, and was closeted for a few minutes with our host. This man, Don Remigo informed us, brought news of the arrival, in the neighborhood of Sonoita, of twelve men whose names he gave. It was supposed by his friends that they had come to assassinate the general. "That is not likely to be their object," said Don Renrigo, "since, thought they are cut-throats, they belong to my party, and have served under me. It is more probable," he

continued, "that they are following you, as I have heard of a plot to waylay you."

Our suspicious of the morning were thus confirmed, and the necessity of being prepared for an attack become more apparent.

Manning Era

Excerpted from *Remembering Tucson, an interview with Marjorie Manning, May 24, 1983*. Arizona Heritage Center, 1983. Story courtesy of Scott O'Mack, Statistical Research.

AHC: Sounds like he was fairly prosperous to have his own slaughterhouse and butcher shop.

M: Um huh, I can't tell you exactly when he came but it must have been in the early 70's I would say. 1870's

AHC: I heard that in 1913 there was a railroad strike and he gave the strikers free meat. Do you know anything about that?

M: No I don't. Because you see that was the year that I was born. I wouldn't have remembered it but I wouldn't have been a bit surprised. He was most generous. He would save like the livers and hearts for the poor Mexicans that didn't have any money or the Indians because at that time people wouldn't buy those pieces of beef and that was one thing that I did learn. My mother was taught to eat the liver and the heart and kidneys and brains and sweetbreads so I was taught to eat them and loved them. Of course my family won't touch them. They won't have any part of it but one of the most delicious parts of a barbecue is the cow's head. They barbecued the head and everything of course it's all cleaned well.

AHC: How can you barbecue a head?

M: Well they cut the head off and they just wrap it up like they do the rest of the beef in the muslin and in the gunny sacks and they just bury it and the meat around the jowls of the animal is without doubt the most succulent tender meat of an entire beef. Then the tongue is removed and skinned and that is just absolutely delicious. Most people just faint dead of course I thought it was fascinating when I was youngster and of course they had many of those barbecues and the person who used to give the best ones that I know of was L.H. Manning and he used to have several on them down on the Canoa Ranch and have the pits and everything else you know. The Mexican cowboys and their wives would make the best tortillas. Oh they had beans and salsa and this barbecue that wouldn't quit. It was just absolutely wonderful. He'd have one always on the Fourth of July and in those days and I'm talking back when I was maybe six or seven and on until I was high school age. He'd ask the entire town practically to these barbecues. Always the Fourth of July was the big one and there were fireworks you know and what have you. The Canoa at that time had artesian wells. The water was just bubbling up out of the ground and they would make canals in order to irrigate and so it was lush and beautiful along the river there. There was just a forest of cottonwood trees which are all gone now because the water table has dropped so. I guess maybe when you get down farther to Nogales there's still quite a few large trees but it was just like a forest of beautiful cottonwood trees, large mesquite trees and nobody thought about the heat in those days. I guess it was just as hot as could be. I die of the heat now. That's what age does to you but then it was cool and shady and there was water and nobody thought a thing about the heat. And Fourth of July is usually one of the hottest days ordinarily but oh we used to have great fun and they have horses out some of the gentler horses for the kids to ride. Of course naturally they'd have musicians and mariachis I guess you would call them. A lot of them were just the Mexican cowboys that grew up playing the guitar and singing. Everybody sang and danced and there were games and the cowboys would ride and have the bucking horses and what have you. It was really quite a fiesta. But those were common in the days back when I was a youngster. There were always lots of barbecues.

AHC: Would they last several days?

M: Some of them would last for several days other ones people would celebrate like their saint days and things like that and would have maybe just an all day big picnic type thing. They had a

marvelous time and food that just wouldn't quit. It was just out of this world and the food of course the main dish was the barbecue and it was the barbecue. They'd just butcher up the beef and put it in the pit and it would be down there for 24 to 36 hours and when they'd take it out the meat just fell off the bones. It was doused in barbecue sauce; your sauce was the salsa. That's with the green chilies and tomatoes and onions type of thing but not what we call a barbecue sauce like we think of it today with the catsup and spices and so on. It wasn't that kind of sauce at all. The sauce was not on the meat. The meat was just in its own wonderful juices. It was seasoned. They had seasonings of salt and pepper and garlic and that was about it. And then they used their own salsa. Some of the salsa was fresh salsa and some of it was cooked salsa but the main ingredient being the green Chile and onion.

AHC: What kind of wood did they cook it with?

M: Mesquite. No wonder it tasted so good.

AHC: Did everyone go out there in sort of like wagon train all together.

M: Oh yes. People would trek out there. Of course I remember there were cars, funny old cars, that would chug along and down the Canoa you see well all the way to Nogales was dirt road. Miserable. It would take you all day to get from Tucson to Nogales. They'd go out in cars, buggies, and horseback. All the ranchers around there would of course come in on horses and what have you. The local townspeople that would go out there most of them had cars such as they were in those days and they'd chug along. Of course always take along extra water because they overheated and what have you. It was a great great time and in those days in my home where I grew up people had grape arbors. That was quite the thing and they were large and of course the grape vines would grow up and over them and it would be like more or less a natural Ramada in your back yard. Then everyone kept an olla hanging particularly homes with children and my mother would grow the grass around it you know put a gunny sack around the olla and put it in grass seed and then the grass would grow and it would keep the water very cool and you had a gourd. Oh it was marvelous and you just kept an olla hanging in the shade.

AHC: With grass growing from the earthen

M: Yes

AHC: I never heard that before

M: Oh it kept the water delightfully cool. Delightfully cool and I remember the big grape arbor they had at the Canoa and the ollas in there and of course for the kids there was always a piñata. But the piñatas were not the paper mache piñatas that you see today. They were ollas and they would decorate them with tissues and colored tissue paper and streamers you know hanging off of them and then filled them with candies and then you'd have to break them. And they're a little hard. There were a few cracked heads as well as ollas. But there was always an olla at all the birthday parties I ever had there was always an olla with the candies in it.

Salcido Family

The documentary film, *Canoa*, was completed by Tomas Javier Castillo in 2003 as his final project in the BFA Program at the University of Arizona. In the film, Javier interviews his grandfather, Jesus Salcido who was a vaquero at Canoa Ranch during the Manning era. The film contains excellent historical footage of the ranch and ranching activities. Many segments of the film contain before and after footage that illustrates the changes to the ranch. This deeply personal reminiscence of life on the ranch is valuable to understanding its history and significance to the community.



Conservation Period

Fairfield Battles Nostalgia over Canoa Rezoning

The Arizona Daily Star
February 9, 1997
By Tony Davis

Canoa Ranch- For the Salcido family yesterday was full of gut-wrenching emotion as they visited a ranch they once called home but haven't seen for more than 30 years.

But it was not just an exercise in nostalgia; family members and other visitors were reliving Canoa Ranch's past because its future now stares them in the face.

A Scottsdale developer is moving ahead with plans to turn the historic area into an extension of Green Valley.

Jesus Salcido, 74 clasped his hands together in a wide circle yesterday together in a wide circle yesterday afternoon, as he recalled the thick cottonwood trees he saw while planting corn and building and building fences on the ranch.

His daughter, Amanda Castillo, 46, smiled, as she recalled seeing coyotes and dogs running over a flock of pheasants that ranch owners had released onto the property so people could hunt them.

The family joined more than 60 former ranch residents, archeologist, historic preservationist, trails advocates and other interested parties on a ranch tour led by Pima County Supervisor Raul Grijalva.

A ranch resident himself as a toddler, Grijalva was seeking to stir interest in stopping Scottsdale's Fairfield Canoa's plans to plop thousands of homes and three or four more golf courses onto the property.

First Major Rezoning to Fail Since '73

The Arizona Daily Star
January 13, 1999
By Tony Davi

Sahaurita- ++A three-year push to build a \$900 million development south of Green Valley was defeated last night by county supervisors.

Supervisor voted 4-1 to keill Fairfield Homes' plan to build more than 6,000 homes, two golf courses, offices, stores and an air-strip on Canoa Ranch.

The 11:10 p.m. vote cam after Mike Boyd, the only supervisor to support the rezoning, made a motion to approve a stripped-down version of the development. It died for lack of a second.

The vote was a milestone. This was the first big rezoning proposal any Pima County Board of Supervisors has turned down since 1973.

Supervisor Raul Grijalva, who has spent the last three years fighting the project, said the vote meant the board finally stood up to the same pressures it has faced in his 11 years at the job.

The difference this time, Grijalva said, was "this was a bad plan. There were too many conditions, there were too many blanks to be filled in, and public opinion was against it".

The decision followed a nearly seven-hour hearing at which more than 200 speakers took turns praising and blasting the project. More than 1,000 people packed Sahuarita High School Auditorium for a debate that grew more as the night wore on.



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6



7



Native People – Archaic; Early Ceramic; Hohokam; and O’odham

2000 BC

1000 BC

0

1000 AD

2000 AD

Credits for previous page

1. Adobe bricks
Accessed at <http://nrmcc.edu/elrito>, 6 April 2006
2. Excavation at Julian Wash Site, Pima County, Arizona
Photo courtesy of Desert Archaeology
3. The Blacksmith Shop at El Rancho de Las Golondrinas
Accessed at <http://www.golondrinas.org/41.htm>, 6 April 2006
4. Good Grass Cover: This growth of good grass is the result of tree and brush thinning, along with the maintenance of active soils by livestock and burning. Range Magazine, Spring, 2005
Image courtesy by Bob Sharp
5. NGC 7293 as photographed by Dean Salman on August 18, 2001 near Arizona City, Arizona
Accessed at <http://www.tucsonastronomy.org/gallery>, 6 April 2006
6. Cow Tracks: Where cow tracks accumulate, water, seeds and organic matter combine to nourish the growth of native seedlings. Range Magazine, Winter 2006
Image courtesy by Bob Sharp
7. Riparian restoration at the West Branch of Santa Cruz River, near Tucson, Arizona
Accessed at <http://www.cooperativeconservationamerica.org>, 6 April 2006

Baseline Market Evaluation

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To: Corky Poster
From: ConsultEcon, Inc.
Date: January 23, 2006
RE: BASELINE MARKET EVALUATION OF CANOA RANCH

This memorandum provides an overview of preliminary research into the viability of Canoa Ranch as a heritage education site from a market perspective. It takes into account factors such as accessibility and visibility from major population centers and travel corridors, the surrounding land uses, the components located on the site, tourism potential in the area, and opportunities for partnerships. This study assumes Canoa Ranch will be developed as a historic site and heritage education center based on the numerous points of interest the site has to offer including historic ranch structures, the historical eras represented, the diverse peoples who have inhabited the site, horseback and walking trails, and the environmental education that can be taught at the site.

SITE EVALUATION

Following is an evaluation of the Canoa Ranch site in terms of location, visitor accessibility, site visibility, and surrounding land-uses.

Accessibility and Visibility

Canoa Ranch is located on the east side of Interstate 19, almost directly across from the residential community of Green Valley (pop. 17,300). The Tucson Metropolitan Area (pop. 924,500) is located approximately 37 miles north, a drive of approximately 40 minutes. Nogales, Arizona (pop. 20,800) and its neighbor, Nogales, Mexico (pop. 160,000) are located about 35 miles to the south of Canoa Ranch. The site is in a very low density area and is currently accessible by automobile. The site is currently accessed by frontage roads at exit 56 from I-19.

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Surrounding Land Uses

The area surrounding Canoa Ranch on the east side of I-19 is generally undeveloped or lightly developed to the East and South. There are suburban developments at Green Valley to the North and West of the site, linearly along I-19. Homes and golf courses lie directly across the interstate from the ranch house complex and are visible from the ranch house site. Green Valley is a community with a large retired population. It is likely that Canoa Ranch will be of interest to Green Valley residents, and they will appreciate it as a public green-space – potentially with walking trails and opportunities for bird watching, star gazing, and other passive activities. The surrounding land uses for Canoa Ranch appear to be appropriate for the type of destination that is envisioned. It will be very important to preserve – where possible – the scenic and rural qualities that Canoa Ranch enjoys. Southern Arizona has a wealth of outdoor recreation opportunities, therefore visitors might easily dismiss an area that is considered noisy, visually unpleasant, or overdeveloped. Care should be taken to preserve scenic sightlines, manage noise, and manage new development near Canoa Ranch.

There are some very low density residential areas to the southwest of the property backing up to the Santa Rita Mountains, which serve as a scenic backdrop for Canoa Ranch, approximately 8 miles east of the site. The mountains are protected as part of the Mt. Wrightson Wilderness, a popular destination for hikers and outdoor enthusiasts. The primary access point is located within the Madera Canyon Recreation Area, where roads and parking areas are paved – visitor use the Continental Road exit (exit #63). The Smithsonian Observatory on top of Mt. Hopkins, can be seen from the Ranch. This is also a minor tourist draw, accessed through the town of Amado, 12 miles to the South.

OVERVIEW OF RESIDENT MARKET

The following is an assessment of the Resident Market Area population and demographics for Canoa Ranch. The Resident Market Area for a visitor destination is typically considered the area from which residents would be likely to visit the site as a day-trip. A preliminary Resident Market Area for a heritage education site at Canoa Ranch has been defined as Pima and Santa Cruz Counties. Further development of the business plan for the site may entail a more refined definition of the Resident Market Area incorporating Primary, Secondary, and Tertiary Market

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The ease of finding the site and distance from Tucson is considered an important asset, as attendance to heritage sites is often affected by its location and ability to be easily accessed, as well as its ability to draw unplanned visits by pass-through travelers. A positive aspect of the golf club, resort, and residential developments in Green Valley which have also assumed the name ‘Canoa Ranch’, is that drivers are increasingly familiar with the name and general location of Canoa Ranch south of Tucson. It will be important that signage distinguishes the historic ranch property from these similarly named developments. **Figure I** shows the approximate location of Canoa Ranch.

Figure I
Insert Map



Source: Google Earth.

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Areas. Data in **Table I** show 2005 population estimates and 2010 projections for the Resident Market Area.

The site was purchased by Pima County with a goal of open-space and historic preservation, thus County residents will be the chief beneficiaries of Canoa Ranch. Pima County has a 2005 population estimate of 924,500.¹ It is expected to grow by 9.3 percent by 2010. Most of Pima County's population resides to the north of Canoa Ranch in Tucson, which comprises the vast majority of the County's population.²

Canoa Ranch is located about five miles from the Santa Cruz County border, and is approximately 35 miles from the border towns of Nogales. Due to its close proximity, Santa Cruz County residents are also considered part of the Resident Market Area for Canoa Ranch. Santa Cruz County has a 2005 population estimate of 41,100, and is projected to grow 7.3 percent by 2010. Combined, the Resident Market counties have an estimated 2005 population of 965,600. This total is projected to grow 9.2 percent over the next five years to over one million, which will increase the visitor market size for Canoa Ranch.

The town of Green Valley is very close to Canoa Ranch. The residents of Green Valley can also be seen as beneficiaries of the site, and are likely to be among the most frequent users, given its proximity. Green valley had a population of 17,300 in 2000 – the most recent estimate available. Green Valley is primarily a community for retirees. According to the 2000 census, the median age is 72.2; and approximately 82 percent of its households have an occupant who is over the age of 65. There are very few children or families in Green Valley. It is expected that Canoa Ranch will provide a resource for leisure activity – and volunteer opportunities – for the residents of Green Valley and other area residents.

¹ 2005 population estimates are sourced to Sales and Marketing Management, 2005 Survey of Buying Power. The Arizona Department of Economic Security's official population estimate as of July 2004, is 931,210 for Pima County, and 41,985 for Santa Cruz County.

² The Tucson Metro Area is defined as Pima County; thus their demographic characteristics are exactly the same.

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Baseline Market Evaluation

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Table I
Estimated 2005 and Projected 2010 Residential Market Population

	2005 Population Estimate	2010 Population Projection	Percent Change
Pima County	924,500	1,010,300	9.3%
Tucson City	521,000		
Green Valley ^{1/}	17,300		
Santa Cruz County	41,100	44,100	7.3%
Nogales City	20,800		
Total Resident Market	965,600	1,054,400	9.2%

^{1/} Green Valley population estimate is from the 2000 U.S. Census.
Source: Sales and Marketing Management, 2005, Survey of Buying Power.

Data in Table 2 compare median household income (EBI)³ among the two resident market counties. Pima County is somewhat more affluent, with a household income of \$34,900; Santa Cruz County follows with \$29,400 per household. The weighted average of this market area is \$34,700. Both the median household income levels of the State of Arizona and the U.S. are about 13 percent higher, at more than \$39,000.

Table 2
Median Household Income

	Median Household Income
Pima County	\$34,900
Santa Cruz County	\$29,400
Weighted Average	\$34,700
<i>State of Arizona</i>	<i>\$39,500</i>
<i>U.S.</i>	<i>\$39,300</i>

Source: Sales and Marketing Management, 2005, Survey of Buying Power.

³ Measured as "Effective Buying Income," - personal income less personal tax and non-tax payments (disposable income). It is a proprietary measure of income developed by Sales and Marketing Management.

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state of Sonora. Pima County leads the State in expenditures by Mexican visitors with 31 percent of the total. Depending upon the way that Canoa Ranch is developed, the Mexican visitor could be an important sub-market for the project.

Travel to the Tucson Metro Area is growing strongly. According to TIA, in a report presented by Nichols Tourism Group, Tucson drew an estimated 3.5 million visitors in 2002, an increase of approximately 30 percent from the 1998-1999 estimate of 2.7 million.⁵ Of these, about 72 percent are leisure travelers. The impact of day-trip tourism (not counted in these estimates) should also be considered. With Mexico 70 miles away, and Phoenix 120 miles away, there is significant day-trip visitation potential to the Tucson area. Visitors to Tucson visit historical places/ museums at rates higher than the State of Arizona or U.S. as a whole. This indicates a market predisposed to historical and cultural topics.

Canoa Ranch is located approximately 37 miles from downtown Tucson. As most visitors to Tucson have access to an automobile, it is close enough to warrant a day-trip or a half day-trip by a visitor to Tucson. In fact many tourist attractions are located outside of the City. For example, the Arizona-Sonora Desert Museum (460,000 annual visitors) is located 20 miles from Downtown. There are several other popular historic attractions along I-19 toward Nogales. At its location, Canoa Ranch would compliment these attractions, creating more critical mass in the region as a destination for historic sites.

Tourism Along Interstate-19

I-19 is a well-traveled route for tourists heading to locations south of Tucson, or visiting Nogales. It is also well-traveled by Mexican visitors traveling northbound, and returning southbound. Following is a description of other relevant tourist attractions south of Tucson.

Figure 2 shows the approximate location of Canoa Ranch in relation to other local tourist attractions along I-19.

⁵ Source: University of Arizona study, *Tourism in the Tucson Metropolitan, 1999.*

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Data in Table 3 provide an age profile for Pima and Santa Cruz counties. Combined, the two counties have an age profile that is fairly similar to the U.S. and the State of Arizona. Southern Arizona is known as a retirement haven. This is evident in Pima County, where the ratio of residents 50+ is higher than the State or National average. Santa Cruz County, whose population is much smaller, has a much younger population, with fewer 50+ residents, and a very high 0-17 population. Given the attendance support for other attractions and historic sites in Southern Arizona, the age profile does not appear to be a detriment to the Canoa Ranch visitor market, as older citizens are more often associated with visitation to historical and heritage sites

Table 3
Age Profile

	0-17	18-24	25-34	35-49	50+
Pima County	24.8%	10.2%	13.8%	20.4%	30.8%
Santa Cruz County	33.5%	9.1%	10.3%	19.6%	27.5%
Weighted Average	25.2%	10.2%	13.7%	20.4%	30.7%
<i>State of Arizona</i>	<i>27.8%</i>	<i>9.1%</i>	<i>14.2%</i>	<i>20.5%</i>	<i>28.4%</i>
<i>U.S.</i>	<i>24.9%</i>	<i>9.9%</i>	<i>13.5%</i>	<i>22.4%</i>	<i>29.4%</i>

Source: Sales and Marketing Management, 2005, Survey of Buying Power.

OVERVIEW OF TOURIST MARKET AND AREA ATTRACTIONS

Tourists may be an important market segment for the Canoa Ranch project. Arizona is a popular travel destination, with an estimated 27.8 million overnight trips to or within the State in 2004.⁴ Leisure visitors comprise 78 percent of these trips. An estimated 14.4 percent of Arizona leisure trips were taken in the "Tucson and Southern" area of Arizona (approximately 4,003,000 trips). Overnight leisure travel in Arizona is strongest in the winter months, especially in Southern Arizona. Approximately 63 percent of leisure visitors traveled there by automobile as their primary means of transportation. In 2004, Arizona attracted more than 633,000 overseas visitors, not including visitors from Mexico and Canada. Visitors to Arizona from Mexico are also a major market, with 23 million Mexican visitors - almost exclusively from the neighboring

⁴ Source: Arizona Tourism Statistical Report, 2004

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Figure 2
Tourist Destinations Along I-19



Source: ConsultEcon

Nearby Historic Attractions

San Xavier Del Bac - a National Historic Landmark and functioning parish church, is 9 miles southwest of Tucson, Arizona, off I-19 on San Xavier Road on the San Xavier Reservation. Called the "White Dove of the Desert," San Xavier Del Bac is one of the most beautiful mission church complexes in the Southwest. The original mission was founded in 1692 by a Jesuit missionary, Father Eusebio Francisco Kino, to serve the Sobaipuri Indians (O'odham). The present church was built by the Franciscans between 1783-1797. A self-guided tour is available daily from 8:00 a.m. to 6:00 p.m. except during services. An estimated 300,000 persons visit the mission annually.⁶

Tubac Presidio State Historic Park - San Ignacio de Tubac was established in 1752 in response to the Pima Indian Rebellion. Tubac is the oldest of the three Spanish presidios founded in

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Arizona and was once considered the official capitol of the region. The Park and museum highlight the contributions of American Indians, Spaniards, Mexicans and Anglo-Americans to Arizona's history and development. The museum also has exhibit areas dedicated to the contributions of ranching to the region. The State Park has drawn 15,000 to 17,000 visitors annually in recent years. The town of Tubac is known as a center for arts and crafts and draws many more visitors than the State Park

Tumacácori National Historical Park - San José de Tumacácori was founded by Jesuit missionaries in 1691. Constructed in 1757, the original mission included a small church and compound. In 1799 a more imposing church with a painted interior was built by Franciscan missionaries. Other sites in the mission compound include a small mortuary chapel, the ruins of the convento (missionary residence), a granary, remains of an Indian village, a historic cemetery and the remains of the mission garden and orchard. The National Park Service charges an admission of \$3.00 at Tumacácori and draws approximately 50,000 visitors annually.

Other Attractions Near I-19

Madera Canyon Recreation Area – Nestled in the middle of the Santa Rita mountains in southeast Arizona, Madera Canyon is renowned for its outstanding scenic beauty, diverse plant life, and recreation opportunities for hikers, birders, and nature lovers. There are 260,000 visitors annually.⁷

Smithsonian Astrophysical Observatory – Located at the base of Mt. Hopkins in the Santa Rita Mountains, 56 kilometers (35 miles) south of Tucson and just within the boundary of the Coronado National Forest, the Fred Lawrence Whipple Observatory Visitors Center features exhibits on astronomy and astrophysics, natural science, and cultural history. Guided, reserved-seat bus tours for the general public are conducted Mondays, Wednesdays, and Fridays from mid-March through November. Approximately 5,000 visitors pass through the Visitor Center annually – about half take the tour. Many of these visitors are retired persons – often with

⁶ Source: Center for Desert Archaeology. Santa Cruz Valley National Heritage Area Feasibility Study.

⁷ Source: Center for Desert Archaeology. Santa Cruz Valley National Heritage Area Feasibility Study.

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PRELIMINARY EVALUATION OF SITE AS A POTENTIAL VISITOR DESTINATION

The Manning House and the collection of other historic structures (school house, servant's quarters, stables, corrals etc) and pre-historic archeological sites found on Canoa Ranch property provide interesting and compelling 'stories.' The site has an appropriate and coherent scale for development as a place for heritage education and recreation. Potential interpretive themes related to life on the ranch, and in the region, include the following:

- cattle ranching;
- agriculture and livestock;
- western vernacular architecture;
- traditional Sonoran architecture;
- historic interior furnishings;
- history of a prominent family;
- the historic inhabitants (Native-American, Spanish, Mexican, Anglo-Americans, etc);
- natural and managed landscapes; and
- water resource management.

There is strong potential to interpret these interesting aspects of the ranch property at the site through exhibits, living history demonstrations, and special events. Such historic sites (real or re-created) have been developed in the Southwest and throughout the country. While there are still many elements of the site plan and program to be established, the preliminary judgment is that the site does hold strong potential for development as a destination serving local residents and tourists to the region.

There are a number of ranching-oriented historic sites in Southern Arizona including the following:

Empire Ranch – Located on a remote section of Highway 83 north of Sonoita (40 miles from Tucson), the Empire Ranch is early in the process of developing a historical education center around its ranching history. The Bureau of Land Management, who manage the ranch, and the non-profit Empire Ranch Foundation are working together on preservation of the historic structures and a master plan for the site. The historic structures on the site are similar in size and scale to Canoa Ranch.

La Posta Quemada – This working ranch is located 25-miles southwest of Tucson and is part of Colossal Cave Mountain Park. The ranch portion of the site features a museum, research library, a gift shop, and open-air café serving Mexican food. The Ranch Headquarters House on La Posta Quemada Ranch was built in 1967 (the original adobe Ranch house burned to the ground

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relatives. Approximately 20 percent are from the Tucson area, 10 percent are from Phoenix, and the remainder are from Green Valley and the residential areas south of Tucson.

Titan Missile Museum – Located approximately 25 miles south of Tucson, the Titan Missile Museum is the only publicly accessible Titan II missile site in the nation. It is operated by the Pima Air and Space Museum. Admission tickets are sold separately or in a combo deal; adult admission is \$8.50. According to the American Association of Museums Directory, there are approximately 50,000 annual visitors to the Titan Missile Museum.

Mexican Visitor Market in Arizona

Mexican visitors represent a major potential source of visitation to Canoa Ranch. In 2001, the last year for which visitation data is available⁹, over 23 million Mexican visitors came to Arizona; almost exclusively from the neighboring State of Sonora. Pima County and Santa Cruz Counties garner over 55 percent of the spending by Mexican visitors. Tucson is located approximately 72 miles from Nogales, Sonora, and Canoa Ranch is about 42 miles from Nogales. The State of Sonora had a 2000 population of 2.2 million (historic growth rates would have it approaching 2.6 million in 2005). The population of Nogales, Sonora, rose from 110,000 in 1995 to 160,000 people in 2004. Local authorities say the actual number of residents in Nogales is in the 250,000 to 300,000 range.¹⁰ In 2004, approximately 11.7 million non-US citizens crossed the border from Mexico into Nogales, Arizona, according to data from the U.S. Customs & Border Protection. While there is not a precise breakout of pedestrian visitors vs. automobile traveling visitors, there is a record of 3.36 million vehicle crossings in Nogales. The volume of traffic at the Nogales border and the economic impact data of Mexican visitors to Arizona and Pima County indicate a very large potential market segment for Canoa Ranch.

⁹ From the University of Arizona's Economic and Business Research Program, *The Economic Impacts of Mexican Visitors to Arizona 2001* dated July 2002. Study has not been updated since 2002.

¹⁰Ruiz, Ruben A., Maria del Carmen Salazar and Luis Arvayo. "Growth: A mixed blessing: The booming population of Nogales, Sonora, creates stresses that the city's infrastructure is not equipped to handle." *Arizona Daily Star*. May 23, 2004.

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in 1965). Today it houses a museum with two focuses: the human history and the natural history of the caves and the Cienega region.

Roy P. Drachman-Agua Caliente Regional Park – This 101-acre Pima County park surrounds a perennial warm spring flowing into three large ponds. Interpretive signs explaining the geology and history of the warm spring and the natural and human history of the site are installed throughout the park. Several historic ranch buildings on the site have been preserved and restored. It is located on the far east-side of Tucson.

San Raphael Ranch State Park (in planning phase) – This public land, located in 60 miles from Tucson in Patagonia, features a historic pre-territorial ranch house with surround-house porches, barns, and windmills. The present land base of the ranch includes over 20,000 acres. Arizona State Parks has purchased 3,550 acres of land on the lower section of the Ranch. The Park is not yet open to the public, but plans are under way for nature walks, an historic house tour, and other activities to be offered.

Numerous 'living history' museums and other heritage centers about agricultural, ranching or rural life are found in other parts of the Southwest and in the U.S. and have operated as successful visitor destinations. Further research will include profiles of these 'comparable' sites to more fully understand and explain their relevant market and operating characteristics.

The site also holds excellent potential as a place for outdoor recreation and learning. Equestrian trails are proposed on the site. Currently there is a horse stable located on the site which will continue to operate and serve as a staging area for trail rides through the property. Walking trails will also be established through the Ranch leading to points of interest and marked with interpretive signs to inform the visitor about interesting geographic or historical features. There has also been some discussion about keeping several livestock animals on the site to preserve the feeling and character of a working ranch. These site features will provide an informative, interesting, and worthwhile experience for visitors. A full calendar of special events and programs would provide opportunities for repeat visitation by local and regional residents.

OPPORTUNITIES AND PARTNERSHIPS

Following are descriptions of potential opportunities for Canoa Ranch related to historic preservation/heritage education and regional tourism promotion.

Baseline Market Evaluation

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Juan Bautista de Anza National Historic Trail - The trail was established in 1990 and commemorates the route followed by a Spanish commander, Juan Bautista de Anza, in 1775-76 when he led a contingent of 30 soldiers and their families to found a presidio and mission near the San Francisco Bay. The Anza trail passes through Nogales, Tumacácori, Tubac, and Tucson along the Santa Cruz River. As a key site along the trail, Canoa Ranch will be involved in future promotional material, maps, and signage. It may have access to funding for Anza trail preservation projects. Association with the trail will generally boost the credibility of the site as a worthy historic site to visit.

Santa Cruz Valley National Heritage Area – In 2005, a feasibility study for the proposed Santa Cruz Valley National Heritage Area was submitted to the National Park Service in an effort to add the region to the 27 existing National Heritage Areas in the U.S. Canoa Ranch is located in a very central, well-traveled route within the proposed boundaries. The goal of this designation would be to unite this 3,300 square mile region in a strategy for voluntary, broadly participatory resource management through decision making at a local level. Heritage and environmental education would be used, rather than regulation, to build a stewardship ethic and encourage conservation. The National Heritage Area program is based upon several principals: Heritage Education, Voluntary Preservation, Security of Property Rights, and Local Management.¹¹ The direct benefit of the Heritage Area for Canoa Ranch – if approved – will be in the increased promotion and recognition of the area as a tourism region. Like the Anza National Historic Trail, the Santa Cruz Valley National Heritage Area will provide opportunities for promotion of Canoa Ranch as one of the key heritage education sites in the region. The opportunity for funding is another potential benefits to arise out of designation of the National Heritage Area.

Canoa Ranch has been proposed as the headquarters for the Santa Cruz Valley National Heritage Alliance, the local organization that will develop and manage the Santa Cruz Valley National Heritage Area. There would be a major positive impact for visitation to Canoa Ranch, as a headquarters for the Heritage Area, and one of the key heritage education sites. Project planners have suggested the site could be a key destination for heritage related conferences and events.

¹¹ Source: Center for Desert Archaeology. Santa Cruz Valley National Heritage Area Feasibility Study.

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of Green Valley (pop. 17,300) has an average age of over 70. Santa Cruz County has a lower share of 50+ residents than nationally, but a higher share of 0-17 year olds. Tucson area attractions are known to be very well supported by the resident population.

The tourism industry in Pima County, and the larger region of Southern Arizona, is strong and growing. Tucson draws an estimated 3.5 million visitors annually. The ‘Tucson and Southern’ Arizona region comprises 14.4 percent of the State’s overnight trips; or over four million trips. There is also a large Mexican visitor market in the region. With sufficient signage, advertising, and outreach, this market could be a significant component of attendance. Historic and nature related attractions are among the most popular destinations in the region. A number of these well-visited points of interest are found south of Tucson along I-19 including the Titan Missile Museum, Tubac Presidio, Tumacácori National Historical Park, and Madera Canyon which attest to the excellent location of Canoa Ranch and the level of tourist potential.

The site has a compelling array of ranching structures and architectural heritage, the ‘stories’ of the former inhabitants of the ranch, and opportunities for outdoor recreation and learning. There are numerous interpretive themes that can be taught at Canoa Ranch. The experience of other historic ranches in Southern Arizona indicates there is a great desire to preserve them and make them available to the public for heritage education. Living history museums through the U.S. also indicate that there is a public demand for this type of historic site.

There are several opportunities that will potentially add value to Canoa Ranch’s visitor appeal. The *Juan Bautista de Anza Trail* passes through the site. This provides opportunities for interpretation of the historic trail, and will make Canoa Ranch more visible through related promotional materials such as maps, brochures, and highway signage. Likewise, the designation of the proposed *Santa Cruz Valley National Heritage Area* would provide excellent benefits for Canoa Ranch. In addition to the promotional boost the whole region would enjoy, Canoa Ranch has been proposed as the headquarters for the Santa Cruz Valley National Heritage Alliance, the managing organization for the National Heritage Area. Additionally, the site would also host (on a rotating basis) the annual Santa Cruz Valley Heritage Festival. The designation of the National Heritage Area also has important funding implications, as up to \$1 million annually may be

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Additionally, an annual Santa Cruz Valley Heritage Festival held at rotating sites is planned. Canoa Ranch is envisioned as one of the locations for the festivities bringing thousands of visitors to enjoy music, food, arts and crafts, and heritage related traditions.

Funding for the National Heritage Area will be organized through a competitive program for projects and/or organizations to access match funding which will be appropriated to the National Heritage Area from Congress via the National Park Service. Each year the Santa Cruz Valley Heritage Alliance will accept proposals and create a list of priority projects for following year funding. Local sources of match funding will be identified and combined to create a total match with a limit of \$1,000,000 federal funding limit. As a preservation and heritage education site, Canoa Ranch would have the opportunity to apply for Federal funding which could be instrumental in its development.

SUMMARY OF BASELINE EVALUATION OF CANOA RANCH

Preliminary research into the potential of Canoa Ranch to serve resident and visitor markets as a heritage education site indicate that it is well-located and appropriate in size and scale. Accessibility and location are considered great advantages of the site. Canoa Ranch is located approximately 37 miles from Tucson, and is less than a mile from residential developments of Green Valley. With adequate highway signage, Canoa Ranch will be easily found by drivers. The location benefits from heavy north south traffic between Tucson and the Mexican border at Nogales. Well known points of interest such as Tubac, Tumacácori, and Madera Canyon lie south of Canoa Ranch, so with signage, it will be visible to many of the tourists driving to or from these destinations. Care should be taken to ensure nearby developments do not encroach on scenic sightlines, or cause noise and light pollution.

A preliminary definition of the Resident Market Area for Canoa Ranch, the area from which residents could visit the site as a day-trip, includes Pima County and Santa Cruz County. The total population for this area is 965,600 and is growing rapidly. The median household income for the Resident Market Area is \$34,700, which is about 13 percent lower than the National and State medians. The overall age profile is fairly similar to the U.S. Due to the high number of retirees living in the area, Pima County has a large sharer of the population age 50+. The town

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granted by the Federal Government for a number of project types including historic preservation, educational programs, or tourism promotion among others.

Overall, the preliminary research into the location, available markets, opportunities and partnerships, and the potential visitor experience at Canoa Ranch indicate strong potential for the site as a center for heritage education.

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Ranch Related Heritage Sites

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Cambridge, Massachusetts 02141Telephone: (617) 547-0100
FAX: (617) 547-0102
email: otjm@consultecon.com
website: www.consultecon.com**Memorandum**

To: Corky Poster, Poster Frost Associates
From: ConsultEcon, Inc.
Date: March 13, 2006
Re: Industry Profile of Ranch Related Heritage Sites

This memorandum discusses the concepts, visitor experience, and operations of several notable attractions that are comparable to Canoa Ranch. This memorandum provides an overview of the interpretive themes, programs, visitor markets, and operating economics of such facilities.

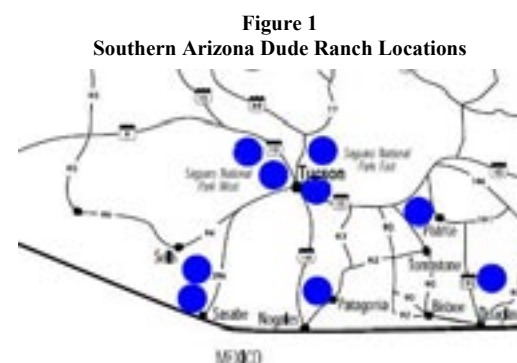
Canoa Ranch will provide opportunities for heritage education with a focus on ranching history, cultural history, and nature while offering outdoor activities such as equestrian trails, walking trails, and preservation of open space. Case studies of relevant facilities that can be considered comparable to Canoa Ranch help to inform planning parameters for the project such as attendance potential, operating budgets, staff composition, and provide a general sense of varying types of programs and operating models. It should be remembered that there are no perfect comparable projects to Canoa Ranch as each site will have its own unique circumstances.

As America entered the 21st century and left many of its rural traditions behind, there has been a demand among the public for experiences that authentically reflect the history, atmosphere, and lifestyle of prior times and historic ways of life. This has resulted in the development of 'living history' museums; the preservation of historic farms and ranches; and the procurement of open spaces for the public benefit. The benefits of these measures have been evident in a number of facets; the education provided to local school children, tourists, and the general public about these regions or localities; the enhancement to tourism and economic development provided by educational attractions; the preservation of scenic and environmentally sensitive landscapes; and

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or as an 'alternative' use. **Figure 1** shows the general location of dude ranches that are members of the ADRA in the region, indicated by large blue dots.



Source: Arizona Dude Ranch Association.

Federal Government Managed Ranch Attractions

The Federal government is the proprietor of several significant historic ranches that are preserved and interpreted for the public benefit. These ranches are managed under a number of different arrangements. Some are designated National Parks or National Monuments. Some ranches are operated by the Bureau of Land Management. One such facility is the Empire Ranch, located southeast of Tucson in Santa Cruz County. Descriptions of several federally managed historic ranches follow.

Empire Ranch – Located on a remote section of Highway 83 north of Sonoita, the Empire Ranch is early in the process of developing into an historical education center around its ranching history. Access is fairly somewhat inconvenient; a fairly long, bumpy gravel road leads from the highway to the main site. The Empire Ranch House is a 22-room adobe and wood frame building dating to 1870. From a visual perspective, its historic ranch house and corrals are similar in scale and quality to that of Canoa Ranch. **Figure 1** shows an image of the Empire Ranch site.

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the inherent benefit of preserving and interpreting culture. There are a number of examples of these types of sites which are profiled in the following section, most of which relate to the historic ranching industry.

Types of Ranching Attractions

Arizona is one of the hubs of ranching history in the U.S. Due to its scenery and its many authentic working ranches and guest ranches, it is a national and worldwide destination for visitors seeking to experience life in the 'Old West.' The Tucson area and Southern Arizona has numerous choices of ranching and cowboy related attractions for visitors to the area. Due to the interest in ranching related tourism and the wealth of ranches in the area, there has been considerable effort to develop this type of tourism. Due to a number of reasons, there have been a considerable number of ranches which have shifted their economic focus from livestock and agriculture to tourism. Following are descriptions of the governance and characteristics of ranch-related heritage education sites or historic sites including private sector models, government-operated sites, and non-profit operated sites.

Private Sector – "Dude Ranches"

Dude ranches are a private sector model by which ranches have been used for the enjoyment of tourists in an economically viable way. They are typically operated by families or companies, for profit, and usually offer accommodations, guided horseback rides, and other leisure activities. Dude ranches are found throughout the Southwest and are popular with families. They serve many markets, including international tourists. The Arizona Dude Ranch Association (ADRA) has 13 members whose ranches and facilities are diverse in size, quality, and visitor activities/amenities. Nine of the dude ranches are found near Tucson or south of Tucson. Dude ranches primarily cater to overnight visitors; though some offer facilities for 'day-riders.' The for-profit status of most dude-ranches requires relatively high lodging rates – many with meals and rides inclusive. This contrasts to Canoa Ranch which has been primarily considered a potential resource for the general public. However, the already-established market for overnight accommodation and horse-riding at dude ranches, and the position this region holds in satisfying that market, suggests that such uses could be considered at Canoa Ranch as part of its program,

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Figure 1
Main House at Empire Ranch



The ranch is operated by the Bureau of Land Management, and is part of the 42,000-acre Las Cienegas National Conservation Area. The Empire Ranch House was designated an Official Project of the White House *Save America's Treasures* initiative in 1999, and was awarded a Millennium Grant for preservation work. Successfully raising \$95,000 in matching funds for the grant was a major Foundation achievement in 1999-2000. Other funding sources for preservation have come from member support, partnership grants and cost-share grants from BLM, as well as grants from private foundations. Over the next five years, once stabilization is assured, a Master Plan jointly prepared by the Foundation and the BLM envisions development of the *Empire Ranch Western Heritage Site and Education Center*, with interdependent programs for:

- Restoration of the ranch house as a historic house museum;
- Establishment of a self-guided Heritage Trail linking the historic buildings, natural landscape and ecology of the ranch; and
- Development of educational programs for all ages, especially programs for children to augment classroom learning about the natural and cultural history of the region.

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Currently, the Empire Ranch - as a tourist attraction - is relatively early in the development process. There is no idea currently if the site would charge an admission price, or what it might be. When the preservation work has progressed, there will be more attention paid to the programmatic planning elements. There has already been some planning and physical construction of a trail system around the ranch property.

It will certainly be several years before the historic structures at Empire Ranch are developed into a full-time public site with interpretation or programming. However, when it is completed, it is likely the site will add to Southern Arizona's status as a center for historic ranches. It is not likely to 'compete' with Canoa Ranch for visitors, as its location is more remote. Instead, there will most likely be opportunities for cross-promotion or programming that will increase interest among visitors and residents of the region in historic ranches. This concept would be similar to a collection of wineries creating interest in an entire region, rather than competing with each other for visitors.

Chiricahua National Monument/ Faraway Ranch - Located northwest of Douglas, Arizona the 12,000-acre National Monument is popular for hikers and bird-watchers. Of historic interest is the Faraway Ranch, a pioneer homestead and later a working cattle and guest ranch. It is a significant example of human transformation of the western frontier from wilderness to the present settlement. Faraway Ranch offers glimpses into the lives of Swedish immigrants Neil and Emma Erickson, and their children. The house is furnished historically but also traces the development of technology during the first half of the twentieth century. The Chiricahua National Monument drew 58,200 visitors in 2005, though not all of these visitors necessarily went to the Faraway Ranch buildings.

Grant Kohrs Nat. Historic Site - Located 50 miles from Helena, Montana this National Historic Site was established by Canadian fur trader John Grant, and expanded by cattle baron Conrad Kohrs. Grant-Kohrs Ranch National Historic Site commemorates the Western cattle industry from its 1850s inception through recent times. The park was enacted in 1972, and embraces 1,500-acres and 90 structures. The site is maintained today as a working ranch. Periodic events include house tours, wagon rides, blacksmithing, children's crafts and activities, and refreshments. The National Historic Site drew 17,500 visitors in 2005.

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State Park Ranches in Arizona

A number of state parks in Arizona - and throughout the U.S., have origins as ranches. Most are family ranches (and farmsteads) that have been ceded to - or acquired by - the state for use as public parks, which make use of both their open space and historic qualities for the visitors benefit. Donated or acquired ranches have been converted into state parks in many places across the West. Following is a discussion of state parks in Arizona that have formerly been ranches.

Dead Horse Ranch State Park - This 423-acre park was once a cattle ranch, acquired by the Arizona State Parks in 1973. The Park features group camping amenities, trails for hiking, biking, equestrian use, and horse corrals available for overnight use with advance arrangements. It is adjacent to the Verde River Greenway Natural Area, and the Coconino National Forest. There are not any historic structures in the Park. There were approximately 99,000 visitors to Dead Horse Ranch State Park in 2004.

Oracle State Park Center for Environmental Education - Ranging from 3,500 to 4,500 feet in elevation, the nearly 4,000-acre park consists of oak grassland, riparian woodland, and mesquite scrub habitats which contain a diversity of wildlife and plant species. Once home to 1,100 head of cattle, the ranch was donated to the Defenders of Wildlife in 1976, who later transferred the property to the State Parks Board. Today the park provides environmental education programming, tours of a historic ranch house, and 15 miles of hiking trails. It is located approximately 45-minutes north of Tucson in the Santa Catalina Mountains. There were approximately 8,300 visitors to Oracle State Park in 2004. The town of Oracle, nearby, is also home to the Acadia Ranch Museum, a historic site that is open for several hours on Saturdays or by appointment.

San Raphael Ranch State Park (in planning phase) - This property features a historic pre-territorial ranch house with surround-house porches, barns, and windmills. The present land base of the ranch includes over 20,000 acres. The historic ranch house was built in 1900 by cattle rancher Colin Cameron. Near the house is the barn, corrals and blacksmith shop with an assortment of tools associated with ranch work. While the Nature Conservancy has purchased conservation easement for most of the property,

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Arizona State Parks has purchased 3,550 acres of land on the lower section of the Ranch. The property will protect the habitat for the many rare and unique native plants and animals. The Park is not yet open to the public, but plans are under way for nature walks, an historic house tour, and other activities to be offered to the public on the portion of the property owned by Arizona State Parks.

Local Government Ranches

Cities and counties can also be owners and/or operators of historic ranches; for example Pima County's own *Roy P. Drachman-Agua Caliente Regional Park*. This 101-acre Pima County park surrounds a perennial warm spring flowing into three large ponds. Interpretive signs explaining the geology and history of the warm spring and the natural and human history of the site are installed throughout the park. Several historic ranch buildings on the site have been preserved and restored. It is located on the far east-side of Tucson. It was opened by the County in 1985 and the historic Ranch House and Rose Cottage were restored in 2004. There is no admission fee to the Park, and no known visitor count.

Non-profit Ranches

There are quite a few historic ranches or heritage education sites operated by non-profit organizations; one of the most common management forms. Several examples in Arizona include the following:

La Posta Quemada - This working ranch is located 25-miles southwest of Tucson and is part of Colossal Cave Mountain Park. The ranch portion of the site features a museum, research library, a gift shop, and open-air café serving Mexican food. The Ranch Headquarters House on La Posta Quemada Ranch was built in 1967 (the original adobe Ranch house burned to the ground in 1965). Today it houses a museum with two focuses: the human history and the natural history of the caves and the Cienega region. Colossal Cave Mountain Park is owned by Pima County. Pima County holds an administration agreement with a charitable corporation, the Pima County Parklands Foundation. The Foundation, in turn, holds a management contract with private operators, who oversee the day-to-day management of the Park.

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Slaughter Ranch - Located in Douglas, Arizona, Slaughter Ranch is now the Johnson Historical Museum of the Southwest. It is an official National Historic Landmark. An old adobe ranch house has been meticulously restored along with the ice house, wash house, granary, commissary, and car shed to give the feeling of what ranch life was at the turn of the century. This non-profit historical attraction draws approximately 4,000 annually.

The location of these ranches is shown on **Figure 2**.

Figure 2
Map of Selected Ranch Related Attractions in Southern Arizona



Source: ConsultEcon, Inc.

PROFILED HERITAGE EDUCATION SITES

The ranch related heritage sites profiled in this report were chosen to highlight some of the different types of visitor experiences offered, and to demonstrate the different market and operating nuances of such facilities. The profiled locations include at least one or several of the following comparable characteristics:

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- Substantial outdoor acreage;
- Living history and historic interpretation;
- Proximity to a major urban area;
- Emphasis on ranching or agricultural history and education;
- Inclusion of historic ‘ranch house’ or structures;
- Prior ownership by a prominent, or historically significant family;
- Multiple perspectives (ethnicity, culture, historical era, etc) interpreted; and
- Exceptional visitor experience.

Following are the names and brief descriptions of five heritage education sites profiled to provide insights into market and operating characteristics of such places facilities.

- **George Ranch Historical Park – Houston, TX** – A living-history museum based on ranching and historical structures, near Houston, Texas. The museum drew 91,000 visitors in 2005.
- **MacGregor Ranch – Estes Park, CO** – a working ranch with historic structures and exhibits. Approximately 7,000 visitors visit the 1,200-acre ranch; a majority are school groups.
- **New Mexico Farm and Ranch Heritage Museum – Las Cruces, NM** – A large newly built museum with 24,000 sf of exhibition space spread over 47 acres of land. It draws approximately 45,000 annually.
- **El Rancho de Las Golondrinas – Santa Fe, NM** – A living history museum with historic structures and costumed docents, interpreting Spanish colonial life in New Mexico. Close to 50,000 attended in 2005.
- **Spring Mountain Ranch State Park –Las Vegas, NV** – State Park near Las Vegas that features historic structures, hiking trails, and occasional living history days. It draws approximately 200,000 visitors annually.

Data in **Tables 1** through **Table 5** provide descriptions of the comparable museum facilities, as well as their attendance and operating trends.

As shown in **Table 1**, most of the profiled sites are large in size, ranging from 47 to 1,200 acres; with an average of 489 acres. Four out of five sites have historic structures, many of which are registered historic buildings. The newly built New Mexico Farm and Ranch Heritage Museum does not feature historic buildings. All but the Spring Mountain Ranch State Park maintain live domestic

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As shown in **Table 2**, admission prices are generally moderate to low compared to many family ‘attractions,’ with most being \$5.00 or lower. Attendance is also generally moderate; several of the sites are open seasonally, thus limiting annual attendance. The ratio of attendance to metropolitan statistical area (MSA) population is a useful benchmark for examining market penetration rates. Large cities tend to have much lower ratios than lesser populated areas. This indicates that market size is not always proportionally related to attendance.

Data in **Table 3** show the number of children who visit the profiled sites as part of school groups. For many educational attractions, school groups can be a major target audience. Among the comparables, they comprise between 22 percent and 63 percent of site attendance, not including the State Park. These numbers reflect school groups only, but many children visit as part of family outings as well. School children can be expected to be an important visitor segment for Canoa Ranch, especially if programs are designed for field trip visits.

Table 3
Comparable School Groups Attendance

	School Children Served	Percent of Attendance
George Ranch Historical Park	20,000	22%
MacGregor Ranch	5,000	63%
NM Farm and Ranch Heritage Museum	8,000	18%
Rancho de las Golondrinas	12,000	24%
Spring Mountain Ranch State Park	2,000	1%

Source: facilities profiled and ConsultEcon, Inc.

Data in **Table 4** summarizes operating budget characteristics for the profiled heritage education sites. Budgets range from \$475,000 to almost \$2 million, with an average of \$1.06 million. Staff-sizes vary from 6 to 35 full-time equivalents (FTEs). Several benchmarking calculations allow comparison between the operating programs. The budget per visitor ratio simply shows the ratio of costs to visitors; a lower figure may indicate more efficient operations or less cost intensive visitor experience. The ratio of visitors-per-FTE is another efficiency benchmark.

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animals on-site such as cattle, horses, and goats. Indeed, historic structures and live animals are two of the major attractions of such facilities.

Table 1
Comparable Museum Size Summary

	Total Area (acres)	Historic Structures	Live Domestic Animals	Governance
MacGregor Ranch	1,200	Yes	Yes	non-profit
Spring Mountain Ranch State Park	520	Yes	No	state park
George Ranch Historical Park	480	Yes	Yes	non-profit
Rancho de las Golondrinas	200	Yes	Yes	non-profit
NM Farm and Ranch Heritage Museum	47	No	Yes	state operated
Average	489			

Source: facilities profiled and ConsultEcon, Inc.

Table 2
Comparable Museum Market Summary

	Admission Price	Attendance	MSA/County Pop. Size	Ratio of attendance to MSA pop.
George Ranch Historical Park ^{1/}	\$9.00	91,000	5,300,000	0.02
MacGregor Ranch ^{2/}	\$3.00	8,000	270,400	0.03
NM Farm and Ranch Heritage Museum ^{3/}	\$3.00	45,000	186,500	0.24
Rancho de las Golondrinas ^{4/}	\$5.00	49,000	139,900	0.35
Spring Mountain Ranch State Park ^{5/ 6/}	\$5.00	200,000	1,667,000	0.12
Average	\$5.00	78,600	1,512,760	0.15

1/ Houston, TX Metro Area
2/ Ft. Collins-Loveland, CO Metro Area
3/ Las Cruces, NM Metro Area
4/ Santa Fe, NM Metro Area
5/ Las Vegas, NV Metro Area
6/ \$5.00 per car, not per person

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Typically, high ratios indicate lower cost operations as personnel are usually the most expensive operating costs. The proportion of earned revenue in the budget is presented ranging between 5 percent and 75 percent. A goal of many visitor attractions is to be financially self-sufficient, but it is very typical for educational or cultural facilities to rely on gifts, grants, and other contributions to fund a portion of operations. As is evident, several of the profiled sites are heavily supported by unearned revenues. The ability to generate earned revenues is dependent on a number of important factors including marketing, retail and/or food service, site and facility rentals, and admission pricing.

Table 4
Comparable Museum Budget Summary

	Operating Budget	Budget Per Visitor	Full-Time Equivalent Employees	Visitors per FTEs	Earned Rev as a Percent of Total
George Ranch Historical Park	\$3,000,000	\$32.97	35	2,600	75%
MacGregor Ranch	\$475,000	\$59.38	6	1,333	8%
NM Farm and Ranch Heritage Museum	\$1,960,000	\$43.56	27.5	1,636	5%
Rancho de las Golondrinas	\$622,000	\$12.69	14	3,500	55%
Silver Spring Mountain State Park	\$757,000	\$3.79	7.5	26,667	14%
Average	\$1,362,800	\$30.48	18	7,147	31%

^{1/} Approximately \$1.5 million in site maintenance, utilities, and other costs are contributed by the George Foundation, a larger non-profit entity. Combined with the Historical Ranch budget, the total budget is about \$3 million.


Source: facilities profiled and ConsultEcon, Inc.

Tables 5 through **9** provide more in depth information about the individual heritage education sites profiled. Discussion of the general market and operating characteristics follows.

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Table 5
George Ranch Historical Park

Facility Name and Location	George Ranch Historical Park. Richmond, TX
Date Opened to Public	Visitor Center opened in 1999, making it a full-time attraction.
Description of Facility and Collections	 <p>The George Ranch Historical Park presents Texas's "big" stories, from cattle and cotton to oil, from the Texas revolution to World War II. The Ranch's history follows family lines and interprets its history from the time it was settled in 1824 as part of Austin's Colony through four generations of the descendants who have managed the land. Today, the George Ranch is a 23,000-acre working ranch (480-acres are dedicated to the Historical Park). The park places utmost emphasis on depicting authentic locations, historic homes, costumed presenters which tell a story of that reflects Texas's history through a number of historical periods. The 1890's Davis Mansion museum presents indoor décor illustrating the wealth created by industry in Victorian Texas. The cattle industry is reflected in the outdoor longhorn pens and an exhibit that guides guests through the process of moving cattle to market and a working chuck wagon. The farming business is reflected in the sharecropper's farm. There is an authentic blacksmiths shop, pioneer cabin, and railroad car exhibit. While the Park is self-guided, there are costumed interpreters stationed at the exhibit sites that demonstrate and discuss their daily routines. Live animals can be found on the site; additionally the park offers opportunities for bird watching and alligator viewing. The park is developed around a nearly-mile long loop and there is a tractor-drawn wagon that circles every 20 or 30 minutes. A visitor center/gift shop/café is the entry point for the historical park. There is a gift-shop and café for visitors.</p> <p>This attraction is a good example of the living history model – interpreters are a strong part of the visitor program, signage and 'self-guiding' are not emphasized.</p>
Admission	<p>\$9.00 adult \$8.00 senior (62+) \$5.00 child (5 to 15); children 4 and younger and members of the Fort Bend Museum Association are free.</p> <p>Admission prices are on the higher end of the heritage education sites profiled.</p>
Hours of Operation	9:00 a.m. to 5:00 p.m. daily.
Market Size	Houston metro area: 5.3 million. Due to size of the City, the facility's location, and marketing challenges, the market penetration rate is very low.
Attendance and Attendance Trends	Visitation can fall between 68,000 and 95,000 – it was around 91,000 in 2005. 2005 was a very strong year for site rental visitors.

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Table 5 (cont.)
George Ranch Historical Park

Commentary	<ul style="list-style-type: none"> • Corporate events, special events, weddings and site rentals are a major strength. An estimated 50 events annually. • Cash subsidy and paid site maintenance helps offset expenses. • Good school group attendance. • Houston tourism –and site location – is not beneficial. • Trail loop could use more interpretive signage, directional signs, and more information. • Live interpreters are costly, but make for a more unique experience. • More static exhibits or signage could be helpful. • Size and scale of historic structures similar to Canoa Ranch.
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Source: facility profiled, Guidestar.com, and ConsultEcon, Inc.

Table 6
MacGregor Ranch

Facility Name and Location	MacGregor Ranch. Estes Park, Colorado.
Date Opened to Public	1973
Description of Facility and Collections	 <p>The 1,200-acre MacGregor Ranch is the last remaining working cattle ranch in Estes Park and one of the few sites operating as both a working ranch (110 head) and youth education center in the northern Colorado area. The 1896 house museum has been in operation since 1973. The MacGregor Ranch Historic District is home to 43 buildings. Twenty-eight of the buildings are listed on The National Register of Historic Places. The ranch buildings, house museum and family artifacts tell a rich story of Colorado homesteading history and ranching lifestyles of the late 19th century. Visitors view family clothing and handcrafts, household furnishings, original oil paintings, rock and mineral collections, personal diaries, books and early historic photographs. Guided and self guided tours are offered of the museum, milkhouse, smokehouse, blacksmith shop and horse-drawn machinery exhibits. Historic agricultural equipment and methods continue to be part of the interpretive story. There are periodic wagon rides, agricultural activities, and interactive presentations at a nature center. There are also interpretive nature trails (3 miles), overnight camping programs (space for 100), and outdoor education sites.</p>
Admission	General admission is \$3.00 for adults. Admissions and programs for youth under the age of 18 are free.
Hours of Operation	The museum is open to the public June through August. Tuesday through Friday 10:00 a.m. to 4:00 p.m.
Market Size	The region surrounding the Ranch is very rural. It is located in Larimer County (pop. 270,400) part of the Ft. Collins-Loveland Metro Area.
Attendance and Attendance Trends	Total attendance has recently ranged from 8,000-10,000 annually, but was closer to 7,000 in 2005.

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Table 5 (cont.)
George Ranch Historical Park

Visitor Characteristics	<p>Typical Annual Attendance Breakdown</p> <p>20,000 to 25,000 students 15,000 to 25,000 general admission 25,000 to 45,000 site rental visitors</p> <p>Approximately 35-40% of visitors reside in the Houston metro area; about 10% come from other parts of Texas; 50% out of state – many foreigners (25%). The Park is not helped by the fact that Houston is a poor draw for tourists. Most of foreign visitors are living in Houston or visiting for the energy industry.</p>
Membership price/number	Membership is to the Fort Bend County Museum Association. Membership sales are rather low at about 400.
Governance and Operations	Non-profit – part of the larger George Foundation and the Fort Bend County Museum Association – two different organizations.
Sources of Funding/Budgets	<p>Expenses</p> <p>Budget was approximately \$1.5 million in 2005. Site maintenance, utilities, auto etc. is done by the land owner/George Foundation. These services are estimated \$1.5 million, which if included would push operating budget to around \$3.0 million.</p> <p>Revenue</p> <p>\$300-\$400k - Trustees contribute annual donation. \$400-\$500k - attendance revenue. \$350-\$550k - site rental. \$80-\$100k in retail sales. \$50-\$60k (net) from café.</p> <p>75%-80% of revenue is earned; the organization is aiming for 100%. Lots of site rentals in 2005. Grant money is shrinking.</p> <p>*Site rentals - \$600k gross, \$200k net, \$400k expenditure \$700-\$750k on personnel.</p>
Marketing	Marketing expenses include \$50k in personnel cost, \$75,000 in advertising. Print ads, site rental ads, niche publications, <i>Texas Highways</i> , partnerships etc; not much radio/TV. Marketing has not been all that effective.
Number of Employees	George Ranch employs 20 professional staff, 15-25 seasonal staff. There are 6-8 interpreters on a slow day, 10-12 on a normal day, and 16 on busy days. Approx. 35 FTE
Gift Shop	There is a gift shop generates approximately \$80-\$100k in retail sales. Approximately \$1.25 per-capita – not very strong.
Educational Programming	20k-25k students from 26 counties participate in programs. Admission cost for them is \$5.00. School programs hurt by rising fuel costs, school budget cuts, security issues, and testing.

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Table 6 (cont.)
MacGregor Ranch

Visitor Characteristics	Visitors to the museum include nearly 3,000-5,000 school children each year and over 3,000-5,000 summer tourists and general visitors. Non-student visitors are from Colorado as well as tourists from elsewhere. Educational groups range from kindergarten through high school students. Scout groups take overnight camping trips to the ranch.
Membership price/number	Historically, there has not been a membership program, but there are plans to create one.
Governance and Operations	The Muriel L. MacGregor Charitable Trust, a private, non-profit operating foundation, funds and manages all Ranch activities, the museum and all educational programs. The MacGregor Trust relies heavily on donations, grants and investments to operate the historic Ranch.
Revenue	More than 20 years ago, NPS bought a conservation easement from MacGregor Ranch for \$4 million. This was put into an endowment, which has nearly doubled. The dividends from this endowment provide approximately \$440,000 annually in revenue. The remaining revenue, a very small share of total, comes from admissions, beef sales, and other minor sources
Budgets	Total operating budget is approximately \$475,000. It is a working cattle ranch so excluding cattle operations (cattle feed, vet expenses, fencing etc), the budget would be approximately \$225,000. The personnel costs for 6 employees are approximately \$190,000.
Number of Employees	There are 6 full-time employees including two ranch hands.
Gift Shop	There is not a gift shop.
Educational Programming	Youth education activities are offered year-round by appointment only. 3,000 to 5,000 students are served annually. Each summer, the MacGregor Ranch hosts a history based day camp for children having just completed the 3rd and 4th grades. This camp is a 'hands-on' experience offering educational activities in areas such as homesteading, ranching and historic agriculture and local and regional history. It is held at the original homestead house on the Ranch.
Commentary	<ul style="list-style-type: none"> • Only comparable that is a working ranch (110 head). • Major emphasis on programming and education. • Many historic buildings. • Almost entirely funded from a trust; unearned revenue. • Looking to increase earned revenue. • Location is not highly visible. • Operational scale is intentionally small, but has been sustainable over long term.


Source: facility profiled, Guidestar.com, and ConsultEcon, Inc.

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Ranch Related Heritage Sites

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Table 7
New Mexico Farm and Ranch Heritage Museum

Facility Name and Location	New Mexico Farm and Ranch Heritage Museum. Santa Fe, NM
Date Opened to Public	1998
Description of Facility and Collections	 <p>The New Mexico Farm and Ranch Heritage Museum is a 47-acre site that is intended to present 'real stories about real people.' The Museum brings to life long history of farming and ranching in New Mexico. A large main building contains more than 24,000 square feet of exhibit space, along with a restaurant, gift shop and 150-seat indoor theater for special productions, presentations, and lectures. An outdoor amphitheater seats 250 people and is used for plays and outdoor programs. Visitors to the Museum can watch a cow being milked, stroll along corrals filled with livestock, enjoy several gardens or drop by the blacksmith shop or another venue to watch one of the demonstrations. Cooking classes are offered throughout the year. Live animals on-site include burros, sheep, goats, horses, and cattle. There is also a crop demonstration plot, a pond, an irrigation ditch, and stalls for milking cows. The permanent exhibit 'Generations' uses biographies of 33 people to tell the story of agriculture in the State. It also features photos, artifacts, and a full-sized reconstruction of a "Mogollon House." Another major exhibit is "tools and traditions."</p> <p>The total facility size is 75,000 square feet. When first opened, the Museum was in a rural, undeveloped area. Now suburban development has encroached all around the Museum. The Museum, while very large in size, is not finished. The master plan includes a special events pavilion, a picnic area, a 'beef barn' and a vineyard. Construction is expected to occur in 2006/2007.</p>
Admission	\$3.00 adult \$2.00 senior (60 and over) \$1.00 child ages 6 to 17 The Museum is currently considering an admission price increase of \$1.00-\$2.00
Hours of Operation	Open year-round. Monday - Saturday 9:00 a.m. to 5:00 p.m. Sunday, Noon to 5:00 p.m.
Market Size	Las Cruces metro area: 140,000. The site is located less than 50 miles from El Paso, which has a metro population of close to 1 million. Juarez, Mexico across the border has over 1 million residents.
Attendance and Attendance Trends	Visitation has hit a plateau in the range of 42,000 to 45,000 after starting in the 30,000s. Location is not considered an asset, it located off of major roads and thus misses out on pass through traffic.
Visitor Characteristics	School groups visit typically in the months of March through June, and in Oct. - Dec. Late August and September are very slow months, as well as January and February. Tourism is not as strong in Las Cruces as it is in other NM cities such as Santa Fe or Albuquerque. About 50% of visitation is from outside Las Cruces. Of that, about 50% is from outside a distance of 100 miles; i.e. about 25% of visitation is from tourists from beyond the local region.

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Table 8
El Rancho de las Golondrinas

Facility Name and Location	El Rancho de las Golondrinas. Santa Fe, NM
Date Opened to Public	1972
Description of Facility and Collections	 <p>El Rancho de las Golondrinas is a living history museum located on 200 acres in a rural farming valley 16 miles south of Santa Fe. It is dedicated to the heritage and culture of Spanish Colonial New Mexico. Original colonial buildings on the site date from the early 18th century and 19th century. In addition, historic buildings from other parts of northern New Mexico have been reconstructed at Las Golondrinas. Docents and interpreters clothed in the styles of the times show how life was lived in early New Mexico in buildings such as a hacienda, a village store, a schoolhouse, and several chapels and kitchens. There's also a working molasses mill, wheelwright and blacksmith shops, shearing and weaving rooms, a threshing ground, a winery and vineyard, and four water mills, as well as dozens of farm animals. Special festivals and theme weekends offer visitors an in-depth look into the celebrations, music, dance and many other aspects of life in the period when this part of the United States was ruled by Spain and Mexico. The Spring Festival (the first full weekend of June) and the Harvest Festival (the first full weekend of Oct) are the year's highlights at Las Golondrinas. On these festival Sundays, the museum opens with a procession and Mass dedicated to San Ysidro, patron saint of farmers. Volunteers in authentic costumes demonstrate shearing, spinning, weaving, embroidery, wood carving, grain milling, blacksmithing, tinsmithing, soap making, and other activities. Visitors have the opportunity to experience Spanish folk dancing, music, theater, and food. The site was once the last stopping place on the 1,000-mile El Camino Real from Mexico City to Santa Fe.</p>
Admission	\$5.00 adult \$4.00 senior (62+), teens (ages 13-18), military personnel \$2.00 child (ages 5-12)
Hours of Operation	Open 10:00 a.m. to 4:00 p.m. Wednesday to Sunday, June through September.
Market Size	Santa Fe MSA pop: 140,000
Attendance and Attendance Trends	Attendance has typically ranged between 40,000 and 53,000 during the last 10 years. 2005 attendance was approximately 49,000, it was 45,000 in 2000. Attendance has been stable but not really growing. The site is reportedly difficult to find, making it a hindrance for unplanned visitors. About 1/3 of visitors are from outside New Mexico. Most in-state visitors are from within an hours drive.
Visitor Characteristics	School groups comprise about 12,000 visitors; nearly a quarter of visitation. Weddings and special events visitors comprised about 4,500 - close to 9% of visitation. Most of the attendance occurs on weekends when there is programming. A large wine festival in the summer draws about 5,000.
Membership price/number	Family memberships - i.e. Amigos del Museum - cost \$50. There are 240 amigos.
Governance and Operations	Non-profit

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Table 7 (cont.)
New Mexico Farm and Ranch Heritage Museum

Visitor Characteristics (cont.)	Like Canoa Ranch, the NMFRHM is accessible to the Mexican visitor market. While the Museum is marketed in El Paso, and occasionally in Juarez, Mexican visitors do not comprise a significant portion of attendance - less than 1%. Reportedly, the Mexican visitor market has not been drawn to museum visitation. However, the festival of San Ysidro held at the Museum does draw close to 2,000 visitors, most of whom are Mexican or Mexican American. Exhibits are in English and Spanish.
Membership price/number	The non-profit foundation operates a membership program. Family memberships cost \$60. There are approximately 200 members. Total dues are approximately \$17,600.
Governance and Operations	The New Mexico Farm and Ranch Heritage Museum is a state facility under the New Mexico Office of Cultural Affairs, and state funded. A foundation which supports the Museum is a non-profit organization.
Sources of Funding/Budgets	The total budget is approximately \$1.96 million. Approximately \$1.32 million is spent on personnel costs (67%). Funding for the Museum come primarily from State Government. Less than \$100,000 is earned through admissions.
Number of Employees	26 full-time and 3 part-time employees, as well as a volunteer roster of over 100 people. 27.5 FTEs.
Gift Shop/Restaurant	There is a gift shop which is reported to perform 'ok.' The 140-seat Purple Sage Restaurant offers Southwestern Cuisine and a view of the Organ Mountains. Lately, the restaurant has been a liability, having established a bad reputation as too expensive and mediocre. It is only open during the lunch hour.
Educational Programming	Approximately 8,000 school children are served through programs. They come from as far as El Paso, TX and the western part of NM.
Marketing	The advertising budget is approximately \$60,000. Most of the advertising budget is used to pay for ads outside of the local market - primarily print ads in newspapers and travel magazines, AAA, and visitor guides. The Museum maintains 3 billboards on major highways and the State provides a free sign. They take advantage of free publicity when available.
Keys to Visitation and Operating Strategy	-Feedback generally indicates visitors enjoy the experience. -Location is a problem; poor visibility. -Site is extensive, but has a quality of being unfinished. -Management issues with restaurant. -Poor performance on earned revenue. -Festivals are popular. -State management may stunt funding and development.

Source: facility profiled, Guidestar.com, and ConsultEcon, Inc.

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Table 8 (cont.)
El Rancho de las Golondrinas

Revenue	Unearned revenue (primarily private donations) comprises 45% of total revenue, and earned revenue comprises 55%. Major sources of earned revenue are admissions (10%), interest on holdings (18%), rental income (14%), retail (5%), and film location fees (4%). The organization benefits from a generous endowment from which it earns financial benefits.
Expenses	The total operating budget is approximately \$1.1 million. Personnel costs comprise 58% of the budget. Other major expenses; grounds maintenance (6.5%), special events (6.9%), marketing (6.6%), insurance (6.3%).
Number of Employees	There are 8 full-time, 12 part-time employees; or 14 FTEs. Up to 400 volunteers. Docents are extremely helpful and valuable as they often perform the educational and interpretation for programming.
Marketing	The advertising and promotion budget is approximately \$71,000. Advertising is local as well as in regional travel guides and travel publications. The special events are well-promoted.
Gift Shop	The gift shop performs well; crafts are a popular with customers. The gift shop was recently expanded to 1,000 SF. Revenue - \$121,740. Approximately \$2.50 per capita.
Educational Programming	12,000 school children visit annually. Weekends are very program oriented.
Commentary	<ul style="list-style-type: none"> • Excellent programming and high attendance for special festivals. • Facility rentals for special events, movie shoots etc. • Generous endowment; 45% unearned revenue. • Seasonal operations keep attendance lower. • Strong school group visitation. • Heavy reliance on docents for interpretation. • Difficult to find from roadway.


Source: facility profiled, Guidestar.com, and ConsultEcon, Inc.

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Ranch Related Heritage Sites

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Table 9
Spring Mountain Ranch State Park.

Facility Name and Location	Spring Mountain Ranch State Park. Eight miles from Las Vegas, NV.
Date Opened to Public	1975
Description of Facility and Collections	Spring Mountain Ranch is located within the Red Rock Canyon National Conservation Area, beneath the colorful cliffs of the magnificent Wilson Range. This 520-acre state park was once a combination working ranch and luxurious retreat by a string of owners who have given the area a long and colorful history, including millionaire Howard Hughes. For 30 years the Park has hosted a Super Summer Theatre - a theatrical organization that performs nightly during the summer in an outdoor theater. Semi-annual living history events at the Park include costumed role playing, demonstrations and re-enactments of historic events. Each spring and fall a series of living history programs are presented depicting the lives of early settlers such as Old Bill Williams, Jim Wilson, Olive Lake and other prominent Las Vegas pioneers. Programs are presented in the first person as seen through the eyes of the character, or are narrated descriptions of events in the lives of early pioneers. Demonstrations of pioneering skills are also presented, and visitors are encouraged to participate. In addition to the Living History aspects of the Park, there are two hiking trails, nature interpretive walks, and picnic tables. For many the state park is a cool respite from the nearby urban sprawl of Las Vegas. The State Park model is one that is barebones compared to living history museums or other 'attractions' whose interest high visitation and earned revenue.
	
Admission	\$5.00 per car. This would be \$2.50 per person assuming an average of 2 persons per car.
Hours of Operation	10:00 a.m. - 4:00 p.m. Open daily. Guided tours throughout the historic area are given on weekdays at 12:00 p.m., 1:00 p.m. & 2:00 p.m. and weekends at 12 p.m., 1 p.m., 2:00 p.m. and 3:00 p.m.
Market Size	Las Vegas metro MSA: 1,677,200
Attendance and Attendance Trends	Attendance is approximately 200,000 per year, and growing at a rate of 1-2% annually – in part due to Las Vegas's booming population. Visitation to the summer theater events comprises about 40,000 visits.
Visitor Characteristics	The high season is March through October. Only about 2,000 students visit as part of school groups.
Governance and Operations	The Park is operated by the State
Sources of Funding/Budgets	The operating expenses are paid out of the State's general fund. The total operating budget is estimated at \$757,000, of which personnel costs comprise 60%. Some park expenses are hidden, as they are provided by the State. Earned revenue from admissions and gift sales is approximately \$108,000, which is paid into the State's general fund. An agreement allows the 20% of admission revenue to be kept in the park for investment. Earned revenue is equivalent to about 14% of the budget
Number of Employees	There are 6 full-time, and 3 seasonal employees. FT positions include a park supervisor, 2 park rangers, 1 interpreter, and 2 maintenance specialists. There are approximately 100 docents who are quite valuable to the interpretation.

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access to resources that are not usually available to stand alone non-profits. For example, a state or county run site may be able to borrow special equipment at no extra cost, or it might have access to technical expertise in the administrative offices. It is important that the governance established reflect the goals of the facility, its needs, and its viability.

- ◆ **Historic Sites and Interpretation** – Due to the unique history of the site, the corrals and the house found on the site, and the indigenous history on the site, Canoa Ranch will certainly be a historic site with opportunities for interpretation of a number of historic and cultural themes. Four of the profiled ranch related attractions have historic structures on site, which serve as a central point of interest. The Living History concept is one that has been used extensively at historic sites (real or re-created). This generally implies programs re-enacting life (cooking, farming, craft making etc) as it was during the historic period being interpreted.

While one museum director called Living History a 'dying industry' it still remains one of the best formats for teaching the general public (especially children) about past lifestyles. Nationwide, Living History attractions have experienced stagnant attendance and often high operating costs. Such attractions generally require a large personnel staff, which is usually the most costly budget expense. The high cost of operating living history sites results in high operating expenses, and therefore results in admission fees that are often uncompetitive with other local attractions, thus a deterrent to visitation. The George Ranch Historical Park, whose adult admission fee is \$9.00, has the highest operating cost and the highest admission fee. Some sites have maintained Living History on a special event basis (war reenactments, cultural festivities, holiday programs, weekend programs etc) to maintain visitor interest but without the day-to-day costs personnel costs of living history. Increasingly, the benefits of drawing the visitor into active participation (rather than passive 'watching') have become evident.

- ◆ **Tourist and Resident Market** – The visitor markets available to the profiled attractions are similar in that most are located in or in relatively close proximity to a metro-market. As Canoa Ranch is 37 miles from Tucson, most of these attractions are within 50 miles of cities. Most of these attractions benefit from both tourist and resident markets. However, due to the educational orientation (especially for school-children) of these attractions, they tend to draw more from local residents. Therefore, the need for new programming to draw repeat visitors is very important. Good visibility is needed for significant tourist visitation. The New Mexico Farm and Ranch Heritage Museum, like Canoa, is geographically located to benefit from potential Mexican visitors. While there has been some impact on yearly festivals and special events, they have generally not been able to draw significant attendance from the Mexican visitor market.
- ◆ **Attendance** – Annual attendance at the profiled ranch related attractions ranges from 7,000 to 200,000 visitors. A wide range was chosen to demonstrate the different type of attractions and how they are dependent on a number of factors including:
 - Available visitor (Tourist) market and resident market population
 - Location and accessibility
 - Site quality and influence of adjacent land uses

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Table 9 (cont.)
Spring Mountain Ranch State Park.

Gift Shop	There is a small gift shop (approx: 200 SF), operated by the Nevada State Park Cooperative Association, which generates approximately \$6,600 in sales.
Educational Programming	School programming is not a major function of the State Park, but the twice annual living history weekends do draw strong visitation for families with children. During these events costumed interpreters demonstrate various aspects of life on the ranch and in the Old West, during historical periods.
Commentary	<ul style="list-style-type: none"> • Close to major metro area. • Theatrical performances are a major draw. • Attendance spikes when it gets media/PR. • 2-3 living history events annually. • A simpler, more basic operation, comparatively. • State funded; little incentive for earned revenue. • State administrative structure/support

Source: facility profiled, Guidestar.com, and ConsultEcon, Inc.

SUMMARY OF CHARACTERISTICS OF PROFILED RANCH RELATED ATTRACTIONS

Following is a summary of characteristics of profiled ranch related heritage education sites, relevant trends, and lessons learned from research into such attractions.

- ◆ **Mission and Programs** – The ranch related attractions profiled have unique missions and programs. Education, preservation, and programming about heritage is a primary mission of these sites. Several, such as George Ranch Historical Park and El Ranch de Las Golondrinas are living history oriented – regularly featuring costumed interpreters demonstrating life and industry as it was in historic periods. Agriculture and cattle ranching is a primary interpretive theme as well. Another common mission is to simply preserve historic structures and teach the general public about them. Additionally, preservation of open-space is a common goal – the sites range in size from 47 to 1,200 acres.
- ◆ **Governance** – Heritage education sites can potentially be operated by a number of types of organizations including local or State government, non-profit organizations, or in some cases such as dude ranches, by private companies. The profiled attractions are typically non-profit or government operated. While non-profit organizations don't pay income taxes on revenue, they often raise a substantial portion of their revenue from unearned sources (gifts, grants etc) to carry out their mission. Examples of government operated facilities include the state-run New Mexico Farm and Ranch Heritage Museum. Government operated facilities, as well as non-profit organizations have unique sets of challenges, many of which are related to consistent funding for programs and operations. Often the facilities that are linked to County, State, or even Federal government have

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- Programs offered
- Size and quality of exhibitry
- Price/value relationships
- Marketing
- Local competition for leisure time and dollars

- ◆ **Price** – Adult admissions prices for the five profiled attractions range from \$9.00 per person to \$3.00. Some state parks charge per vehicle rather than per person. The average adult admission price among the profiled attractions is \$5.00. Generally, compared to many 'attractions' these profiled facilities are modestly priced. Admission prices should be set to be affordable for families living in the region, and should be competitive with other local attractions, while at the same time being high enough to help support the budget through earned revenue.
- ◆ **Operations and Budget** – The size of an operating budget is dependent on a number of factors including facility size and number of visitors, sources of funding, and the mission of the organization. Operating budgets vary from almost \$3 million at the George Ranch Historical Park to \$500,000 at the MacGregor Ranch. More complex operations might include extensive programming and marketing as well as facility rentals and catering. Some facilities operate on a more minimalist approach, in particular some state and county parks. More paired-down operations, such as that sometimes found in state and county parks, may include minimal staffing and maintenance costs. Often operations such as state or local parks are supported by larger administrations that provide value to the park or attraction in terms of expertise, business planning, maintenance, equipment use, and other services that may not be immediately apparent in the operating budget of the particular entity. These support structures and shared costs contrast to the non-profit model in which an organization often must support itself entirely both in terms of operating revenue as well as other types of support (operating expertise, political support, maintenance costs, bookkeeping etc).
- ◆ **Personnel** – Among the profiled sites, the number of full-time equivalent employees (FTEs) ranges from 6 to 35. Personnel costs often make up the majority of budget expenses. Living History attractions require larger staff sizes, as do other programming-heavy attractions, and thus are more expensive to operate than the smaller, less 'attraction' oriented sites. Some of the more minimalist operations are historic sites or parks where the emphasis is on self-guided tours – especially outdoor touring. Also, organizations such as MacGregor Ranch intentionally serve a small market as their budget allows, thus keeping staff-size small. The type of attraction and organization envisioned has much to do with the site's personnel profile. The importance of volunteers at the facilities profiled must be stressed. If properly organized, docents can replace personnel at certain positions, thus saving salary expenses, which could result in a more economically viable operation.

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Preliminary Concepts

Outlined below is a preliminary overview of Ralph Appelbaum Associates interpretive concepts for the Canoa Ranch project

VISITOR EXPERIENCE – Range of options for physical and interpretive access to the site.

1. Interpretive Goals

- to highlight and bring to life the unique and deep history of this Southern Arizona story
- to honor and enhance the heritage and environment of this site
- to provide a meaningful and educational experience for the public
- to establish and clarify the identity of the place for visitors
- to provide a range of experiences and programs that will attract repeat visitors from various constituencies

2. Key Themes tied to assets on the site

- The changing landscape
- The importance of water
- Family histories and cultural identities
- Ranching and its role in Southern Arizona
- Traditions and the interplay of cultures
- Architectural styles and impact on cultural identity

3. Interpretive Options

a) Themed “Trails” through the site

- A series of walks through history from prehistoric times to the present day

Journey through layers of time – events and evolutions

- View the site through the lens of the environment – geology and ecology

Discover the “turning points” in the history of this landscape

- Cultural perspectives over time and how different cultures used the place

Weave together

Native American

Spanish

Colonial

Mexican

Anglo

- Ranching and how it shows how people co-exist with the land.

Impact of cattle, breeding, horses, etc.

Answer the question – What happened to Canoa Ranch? How can we learn from it?

- Buildings and structures – What do the different buildings and their locations, construction techniques and architectural styles tell us about the different cultures that occupied this place? What is traditional, utilitarian, or decorative?

What is the role of archaeology in understanding the site?

- Food from the land – crops both native and those introduced to the site, the cycles of planting and harvesting, techniques and traditions

b) “Day in the Life” scenarios

- Access a range of stories illustrating multiple experiences from the wide variety of individuals that lived and worked at Canoa.

Create scenarios that contain multiple flashbacks and forwards

– through time and cultures and personalities.

Early travelers

Hohokam settlers

Spanish and Mexican vaqueros

Ortiz brothers

Maish and Driscoll

Manning family members

Ranch hands

The foreman

The cook

The children

c) Traditions

- Explore in detail the living traditions that are still ongoing today and those from the past. – ranching traditions / cultural traditions. How communities co-existed and kept their own traditions. How

they influenced each other. How changing use of the land impacted culture.

d) Working Ranch Activities and Demonstrations

- Focus on illustrating and explaining specific ranching tasks and link to the broader story of ranching and community life in Southern Arizona. Add a “looking to the future” component to these examples to show the development of ranching practices and traditions and how culture and technology affect these practices.

4. Programming Connections and Possibilities

- Linkages to the equestrian center, bike and pedestrian paths
- Interpretive and educational connections to Santa Cruz Valley Heritage sites including Anza trail and other ranches
- Explore the role of Canoa Ranch as the anchor for the Santa Cruz Valley Heritage programs
- Visitor experiences geared towards the range of constituencies: locals, retirement community, Mexican tourists, etc.

5. Interpretive Techniques and Strategies

a) Range of options for how the visitor navigates and experiences the site

- no impact – Ipod technology

- discrete way-finding signage

- set of installations and vignettes – finding key points/windows/icons throughout the site

- set of lenses/Peter Greenway viewpoints

- maps with trails

b) Use of the existing buildings

- feature the most important room/space within each building and create a place to reveal stories of those who lived and worked there

(e.g. the Manning living room, the blacksmith’s corner, the dining room for the ranch hands, etc.)

c) “Living History” approaches

- use of people to facilitate and enhance the experience – ranges from hosts / docents/ animators

6. Issues to explore further

- What is the appropriate role of technology in an environment like this?

- Is there a role for art/poetry here?

- How didactic and how interactive should the interpretation be at this site?

- What languages should be included to respond to the various constituencies?

- How to best use the existing buildings? What degree of interior restoration is appropriate?

- To what extent should artifacts be collected?

- What role should interpretive staff have?

- What level of physical interpretive infrastructure is appropriate?

- What are the right set of partnerships with other institutions and sponsorship opportunities?

- What is the viability of making Canoa a working ranch and how does this impact the interpretation of the site?

- What is the viability of making Canoa a travel destination/stopover place (as it was in the past)?

- Should Canoa become the regional orientation center for tourists?

Exhibits

The following exhibit ideas were provided by Tom Peterson on January 20, 2006.

I would envision several interpretive areas around the Ranch complex. Some of these may be in the form of exterior archeological sites or simulated sites with prehistoric Hohokam interpretation and artifacts. Other exterior sites may interpret food crops – native and introduced, with planting and harvesting times and techniques; uses of other plants, herbs and trees for fuel, shelter, building structure, tools and weapons, baskets and containers (“Canoa”), alcoholic drink and medicines, games, toys and ornaments such an exhibit or exhibits may also illustrate topography elevations and landscapes for the varieties of trees, shrubs, range grasses and introduced (foreign) and invasive plants.

Exterior ranch structures and features such as the corrals, the irrigation ditch, fences, trails and roads are yet other areas of possible outdoor interpretive exhibits. Such exhibits could feature a time line, changes in the course and water table of the Santa Cruz River, maps, graphics and certain associated artifacts.

Inside the several structures of the ranch compound there may be appropriate rooms and locations for exhibits of the ranch buildings from the earliest to current structures – noting dates, materials and techniques of construction, reasons for location, orientation, spacing, and details of traditional, utilitarian and decorative architecture.

Such interior exhibit spaces would also be suitable for portrayal of ranch life and character types- from the Spanish and Mexican Hacienda Vaqueros and their families, down through time to the modern day ranch hands, and the Manning Family with its political and community involvements. This may also be a place to interpret the broader ranching and community life of Southern Arizona, linked with corresponding and associated family economic and political ties and activities to the north in Tucson, and to the south across the Sonora border.

In such exhibits there are ample opportunities to combine the wealth of maps and graphic materials with artifacts from each featured area and component of the Canoa Ranch History.

Many of the suggested artifacts for the Canoa Ranch exhibits are “generic” in nature and can be acquired as “antiques”. Also, much of the appropriate period clothing and equipment can be purchased from supplies of costumes and “living history” materials. Some of the traditional early-style vaquero equipment is still available from saddle makers and other shops and craftsmen in Sonora, Northern Sinaloa, Mexico and in Arizona.

In cases where original artifacts, attributed in site or individuals, are known to exist in the hands of individuals, family or museums and libraries, it should be priority to try to acquire such items by gift or loan for exhibit. Any loans from museums are subject to compliance with strict facility conditions of security, climate and lighting control, proper handling and exhibit preparation and display. In most instances loans, from museums are made for limited time – usually one year, this will necessitate planning to replace/rotate any museum loans with similar or alternative items.

Certain artifacts, items and exhibits, by their nature and need for security, can only be displayed in a traditional museum type environment. However, many interpretive exhibits at the Canoa Ranch complex could be enjoyed and appreciated as a more enriching experience through hands on interaction with docents. This would depend upon the availability of reproduction or “prop” type artifacts, which are expendable and replaceable. It would also depend upon a corps of dedicated volunteer docents who would tour and interact with visiting adults and children. Such documents could be even more effective and exciting if they were bilingual and perhaps dressed in period costume to portray a type or particular

individual Canoa Ranch Character.

Such an interpretive program could also be further enriched by the availability of hand-outs, such as reproductions of interesting documents and graphics, and “to do” projects and exercises available in English and Spanish for children. The entire educational component would require the planning skills and coordination of an education specialist.

Documentary and graphic materials and appropriate period maps are generally available for reproduction from the library archives and special collections of the University of Arizona and the Arizona Historical Society. Family photograph already in hand can easily be copied and enlarged for use in exhibits. In the case of documents, maps, and photographs, even if original items are available through the family digital copies should always be used.

The use of artifacts, “props”, photograph images and other two and three dimensional exhibitions will necessitate the establishment of a curatorial system to properly acquire, catalogue, handle, store and exhibit these items and to negotiate loans and to execute loan forms, condition reports, facility reports, etc.

This is an essential step which needs serious consideration in establishing a bonofide interpretive exhibits program associated with the preservation and dissemination of the history of the Canoa Ranch. Attached is a list of suggested artifacts and graphics about 100-150 items and about 50-60 graphics.

Pre-Historic Period

1. Hunting
Spear and arrow points
Bow and arrows
Share net
2. Food Preparation:
Mano – Metate
Pottery, shards, Olla
Baskets
3. Clothing
Woven materials
Sandals
4. Agricultural items
?
5. Ceremonial items:
?

Preliminary Artifact List

Spanish, early Mexican period –Horse Equipment

1. Saddle Sinaloa style with “Armas?”
2. Saddle blankets
3. Bridle, bit and reins with quirt
4. “Bosal” horsehair halter
5. “Riata” rawhide rope (tow types – braided twisted)
6. “Boule” gourd canteen
7. currying brush-fiber
8. Rawhide Hobbles
9. Horse Shoes, nails and shoeing tools-Spanish
10. Media “Luna” hocking lance
11. Brand (Maybe separate or grouped with all brands)

Spanish Early Mexican Perish -Vaquero Clothing

1. Sombrero
2. Shirt, vest, under drawers, trousers
3. “Botas de Alta- leggings
4. “Tewas” shoes
5. Spurs, Straps, - “Sobre Botinas”
6. Saltille style Zarape
7. “Beldrique” – heavy knife
8. “Mecha” – strike a light

Spanish Early Mexican Period – Hacendado, Clothing, Personal Items

1. Clothing to contrast with Vaquero
2. “Escopeta” carbine/shotgun with power flash and ball
3. “Espadarcha” short sword
4. Drinking horn (?)
5. “Reales” coins

Household items – Spanish, Early Mexican Period

1. Bed, rope, rawhide
2. Chairs, benches
3. Oil & fat lamps, candles
4. Ollas, Batea Comal
5. Iron kettle range
6. Forks, knives, wooden spoons
7. Chocolatero, cuc beans, mesalador, panocha
8. Dishes, bowls, majolica
9. “Fanega” grain measure
10. Musical Instruments – flute, guitar, harp?
11. Lard, soap
12. “Petates” woven mats and tamed hides
13. Religious items –crucifix, Rosary, Bible, Guadalupe metal (?)

Anglo Ranch Hand - Cowboy Items

1. Texas type saddle (contrast to Spanish saddle)
2. Saddle blankets, rain slicker, bed roll
3. Bridle & bit
4. Lariat rope (interpretation of lariat)
5. Canteen
6. Pistol and rifle with cartridge belt, holster and seal band
7. Fence, tool
8. Branding iron – running iron

Anglo Ranch Hand – Cowboy Clothing Personal

1. Hat “Boss of the Plains” Style
2. Shirt, vest, early style levis
3. Boots
4. “Lady leg or “OK”- type spurs
5. Chaps, interpretation of “Chaps”
6. Bandana
7. Straight razor strap
8. Tin-type of mother or sister
9. Letters from home, journal, Bible
10. Playing cards?
11. Harmonica
12. Tobacco twist

Manning Family Period Home Items

1. Paperwork related to Manning operation
2. Photographs
3. Furniture original to Ranch
4. Original household items of any kind?
5. Original clothing
6. Musical instruments? or record player, records

Ranch Architecture and Structures

1. Archaeological sites – Prehistoric
2. Archaeological sites – Spanish , Mexican period
3. Adobe mold – adobe blocks
4. Pine or jar viga rafter (section) – tree ring dates
5. Mesquite door and window lintels, mesquite posts
6. Brick, stone, stone, tin and other later building materials
7. Cut lumber used in later construction?
8. Mesquite corral construction
9. Iron water pipe corral construction
10. Irrigation ditch construction Frisco scoop
11. “Canoa” wooden trough and topographical interpretation
12. Windmill water pump?

Graphics – Prehistorical Period

1. Artists’ concept of Hohokam people
2. Hohokam irrigation ditches, woven “gates”
3. Seeds, crops and farming techniques
4. Hunting techniques
5. Missionary (Kino) ministering to O’odam
6. Missionary introducing horses and cattle?

Graphics – Spanish, Mexican Period

- 1.* Vaquero with “Media Luna” Ignacio Tusch -176_?
- 2.* Vaquero “Poblanas” Carlos Nebel - 1830
- 3.* “Haciendado & Mahordomo” Carlos Nebel - 1830
4. Spanish cattle types
5. Round up – branding
6. Social events, games, dancers, “juego de gallo”
7. Any known portraits of early ranch personages
8. Any known Spanish document associated with the Ranch

* These three period illustrations and others are available from the Museum of the Arizona Historical Society contact Loraine Daily Jones. Collections Manager, 617-1179.

Graphics- Anglo Period

1. Any original printed material about the Ranch
2. Portraits
 - Levi Howell Manning
 - Howell Manning and Family
 - Family members in other settings, social, political, Mt. Lemmon
3. Ranch buildings – exteriors and decorated interior
4. Adobe making – any other construction activities
5. Ranch surroundings
6. Activities – cattle roundup, branding, shipping
7. Ranch hands on horseback
8. . Use of automobiles, trucks?
9. . Cattle modern breeds
10. Cattle brands (All – Manning & Early Spanish)
11. Brand book registry of brands

Graphic - Maps

1. Regional, Topographical
2. Native Flora and Fauna/invasive plant
3. Ranges of Native Peoples
4. Region – New Spain – Interior Provinces with location of Missions, presidios and trails
5. Original land grant
6. Gadsden purchase with Ranch location
7. Historic period development
8. Ranch complex (Original if known)
9. Ranch complex (Modern – possibly overlay)
10. Ranch – Historic preservation – including range
11. Future of Canoa Ranch – Southern Arizona (map projections of development and population)

Opportunities

Potential Local Partnerships

Agriculture and Ranching

▪Association of Living Historical Farms and Agricultural Museums
<http://www.alhfam.org/>

▪American Livestock Breeds Conservancy
<http://www.albc-usa.org/index.htm>

▪The University of Arizona Cooperative Extension, College of Agriculture and Life Sciences
<http://cals.arizona.edu/extension/>

▪Santa Rita Experimental Range, University of Arizona College of Agriculture and Life Sciences
<http://ag.arizona.edu/SRER/>

▪Native Seeds / SEARCH
<http://www.nativeseeds.org/v2/default.php>

▪Community Food Bank /Amado and Green Valley Branch Banks
<http://www.communityfoodbank.org/dynamic2/home.aspx>

▪The Southwest Vegetation Management Association (invasive species removal)
<http://www.swvma.org/>

Nature, Culture and History

▪Fred Lawrence Whipple Observatory, Mt Hopkins
<http://www.cfa.harvard.edu/flwo/>

▪Santa Cruz River Alliance
<http://www.azstarnet.com/nonprofit/scra/index.htm>

▪Friends of the Santa Cruz River, Tubac
No website

▪Tucson Audubon Society
<http://www.tucsonaudubon.org/>

▪Arizona-Sonora Desert Museum
<http://www.desertmuseum.org/>

▪Water Conservation Alliance of Southern Arizona (Water CASA)
<http://www.watercasa.org/>

▪Anza Trail Coalition of Arizona
No local website. See <http://www.nps.gov/juba/> for more info on the trail

▪Tohono O'odham Community Action
<http://www.tocaonline.org/homepage.html>

▪Arizona Historical Society
<http://www.arizonahistoricalsociety.org/>

▪Arizona State Museum, Arizona Archaeological and Historical Society
<http://www.statemuseum.arizona.edu/aahs/aahs.shtml>

▪Pimeria Alta Historical Society
http://www.sonoranborderlands.com/pimeria_alta.html

▪The Tubac Historical Society
http://www.tubacaz.com/historical_society.asp

▪Friends of Madera Canyon (FOMC),
<http://www.friendsofmaderacanyon.org/>

Heritage Tourism

▪Proposed Santa Cruz County National Heritage Area
<http://www.centerfordesertarchaeology.org/pages/heritage/scha.php>
<http://www.santacruzheritage.org/>

▪National Geographic Sonoran Desert Geotourism Mapguide
<http://sonorandesertgeotourism.org/>
<http://www.nationalgeographic.com/travel/sustainable/>

▪Civic Tourism Project
www.civictourism.org

Santa Cruz Valley National Heritage Area

Canoa Ranch Within The Interpretive Framework Of The Proposed Santa Cruz Valley National Heritage Area

The 10 themes developed for the proposed Santa Cruz Valley National Heritage Area highlight significant aspects of the natural and cultural history of the 3,300-square-mile watershed of the middle and upper Santa Cruz River (Mabry 2005). These are the nationally distinctive stories of the region, and they are unique among the 27 existing National Heritage Areas. For each theme, there is an assemblage of related and publicly accessible resources with sufficient integrities to convey the theme and its local and national significance. The themes effectively link related heritage resources for the purposes of interpretation, education, tourism promotion, and preservation planning. For all of these purposes, Canoa Ranch can be linked to three relevant themes of the Santa Cruz Valley National Heritage Area:

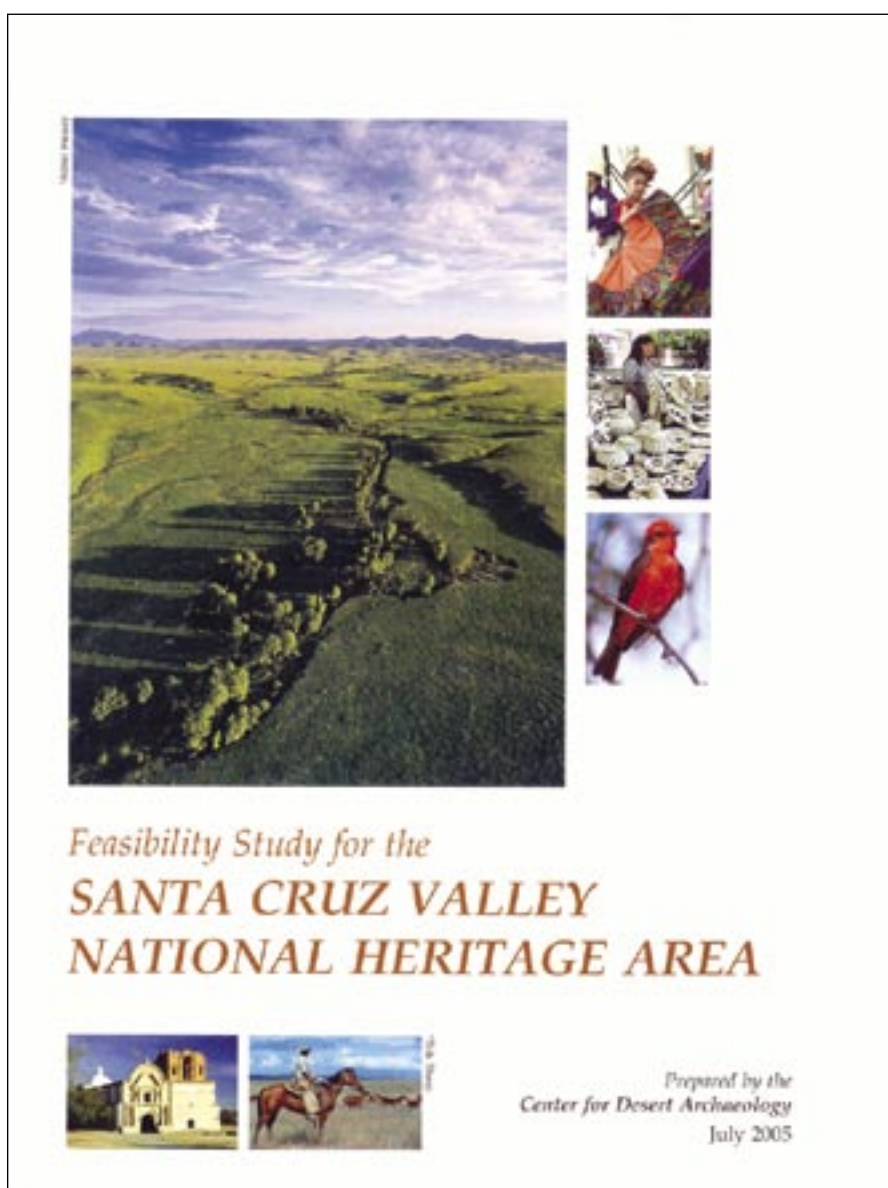
◆ Native American Lifeways (11,000 B.C. - present)

The Santa Cruz Valley is one of the longest inhabited places in North America and the homeland of two Native American tribes. There are abundant archaeological traces of prehistoric cultures whose achievements include the earliest agriculture, canals, pottery, and villages in the Southwest. Canoa Ranch has a well preserved assemblage of prehistoric archeological sites representing some 7,000 years of Native American occupation, and thus could become an important venue for interpreting the prehistoric cultures of the region. In the vicinity, exhibits about prehistoric cultures of the Santa Cruz Valley can be found at the Arizona State Museum and the Arizona Historical Society Museum. Archaeological sites with interpretive trails and outdoor exhibits include Romero Ruin at Catalina State Park, and in Tucson at the Hardy Site at Fort Lowell Park, Julian Wash Cultural Park, Vista del Rio Archaeology Park, and the planned Tucson Origins Heritage Park.

Lectures and other local events related to the ancient cultures of this region are held during Arizona Archaeology Month. Tohono O'odham baskets and other crafts can be purchased at the San Xavier del Bac Market and the annual Southwest Indian Art Fair at the Arizona State Museum. Corn, tepary beans, squashes, and other traditional Native crops can be purchased at the San Xavier District Co-op Farm. Native American dancing, drumming, and singing are showcased at the American Indian Heritage Powwow and Craft Fair, Indian America New Years Competition Powwow, Native American Heritage Month Powwow, and Waa:k Powwow. The Yaqui Easter Ceremonies in the Old Pascua neighborhood in Tucson feature a week of public events that include masked dancers and traditional music.

◆ Ranching Traditions (1680 - present)

Cattle ranching is a living tradition with a three-century, unbroken link with Spanish, Mexican, and American pioneers. Canoa Ranch has the potential of becoming the premier venue for interpreting the rich ranching heritage of the region. In addition, residents and visitors can learn about the long history of ranching in this region, and experience working ranches, by visiting the Empire Ranch in the Las Cienegas National Conservation Area and La Posta Quemada Ranch at Colossal Cave Mountain Park near Tucson. Arizona State Parks is restoring the historic Cameron ranch house at the new San Rafael Ranch State Park. The Ranchers' Heritage Center in Nogales's historic courthouse presents exhibits about the history of ranching in this region. The Sonoita Quarter Horse Show showcases the most famous horse breed of this region. The rodeo traditions of the Santa Cruz Valley are celebrated at the annual Fiesta de Los Vaqueros Rodeo and Parade as well as the Sonoita Rodeo, two of the oldest rodeos in the country.



Santa Cruz Valley National Heritage Area

◆ Spanish and Mexican Frontier (1680 - 1854)

This region was once the northern frontier of New Spain, and later it was part of Mexico. There are well-preserved missions, presidio fortresses, and ranches from those periods, and many living descendants of early Spanish and Mexican settlers. Canoa Ranch is an example of the Spanish and Mexican land grants, and exhibits at the ranch could be developed to interpret this important aspect of local history. In terms of this theme, Canoa Ranch is linked to a number of well-preserved presidio fortresses and missions in the Santa Cruz Valley which were occupied between the 1680s and 1854, and are open to the public today. The missions of Tumacácori and Guevavi were established by Father Eusebio Francisco Kino in 1691, and the visita of Calabazas was constructed in the 1750s. All three are part of Tumacácori National Historical Park. The Tubac Presidio State Historic Park commemorates the presidio established there in 1752, and includes an innovative underground archaeology display. San Xavier del Bac was a Native American village where Father Kino established a mission in 1700. This actively used church, widely considered to be the finest example of Spanish colonial architecture in the United States, is open to the public. The planned Tucson Origins Heritage Park will re-create portions of the San Agustín Mission and the Presidio of Tucson. The Juan Bautista de Anza National Historical Trail through the Santa Cruz Valley commemorates the route followed by Anza, a Spanish officer, who led an expedition of 198 settlers and 1,000 head of livestock from Sonora to found a presidio and mission at San Francisco Bay in 1775.

Throughout the year, a variety of events celebrate Spanish Colonial and Mexican period traditions in the Santa Cruz Valley. Summertime celebrations include the Día de San Juan and the Fiesta de San Agustín, two Saint's Day festivals with roots extending back to the Spanish-era Tucson Presidio. Local residents gather for these two events and listen to singers, watch folklorico dancers and processions, and enjoy Mexican food. Tucson's Birthday Celebration, the anniversary of the founding of the Tucson Presidio, is celebrated at an annual flag raising, attended by local residents dressed in historic costumes. Historic attire is required for attendance at annual traditional Latin masses held at churches in Tubac and Tumacácori during the Anza Days Cultural Celebration and at Christmas, respectively. Toward the end of the year the Nacimiento, a miniature Christmas scene, is presented at the Casa Cordova within the Tucson Museum of Art Complex.

Canoa Ranch Within The Management Framework Of The Proposed Santa Cruz Valley National Heritage Area

Congressional designation of a Santa Cruz Valley National Heritage Area will create a locally controlled framework to support the management of heritage and nature resources, without affecting property rights (Mabry 2005). A local management entity with broad representation of the region's stakeholders will select and assist voluntary efforts to preserve, restore, and interpret the heritage and nature resources that make this region unique. Opportunities for partnerships and funding for these activities will increase. A National Heritage Area will also coordinate promotion of the region's resources for heritage and nature tourism, and will provide a framework to link related resources with themes that are nationally distinctive.

Goals of the Santa Cruz Valley National Heritage Area

- Increased national and international recognition of the unique history, cultural traditions, and natural beauty of this region.
- Encouragement of a stronger regional identity and "sense of place."
- Linkage of related heritage, nature, open-space, and outdoor-recreation resources for interpretation and promotion.

- Development of a coordinated, regional approach to voluntary preservation.
- Creation of new opportunities for preservation funding and partnerships.
- Stimulation of the region's economy through increased heritage and nature tourism and other types of place-based economic development.
- Balanced promotion and preservation to best benefit local communities.
- Improved cross-border connections between the U.S. and Mexico.

Benefits

Designation of a National Heritage Area will make the region eligible for federal match funding of up to \$1 million annually over a period of 15 years. The funding is administered by the National Park Service, and cannot be spent on acquiring real property. This federal seed money has proven to be an important catalyst for local fundraising. The Alliance of National Heritage Areas reports that, for every \$1 of federal match funding, the 24 existing National Heritage Areas have leveraged an average of \$8.7 in local funding.

Some of the most important benefits of a National Heritage Area cannot be measured in economic terms. Designation will increase national and international recognition of the significant heritage, nature, open-space, and outdoor recreation resources of our region. Conservation and restoration of important natural areas will improve the quality of life in the region. Development of a stronger regional identity and a greater "sense of place" for residents will be additional outcomes. Living in a National Heritage Area, residents will find a stronger connection to the place they live, and will take greater pride in its distinctiveness.

Management

The organizational concept of the proposed management entity follows the nonprofit model used by the majority of existing National Heritage Areas. In June of 2004, an Arizona not-for-profit entity, the Santa Cruz Valley Heritage Alliance, was incorporated. Board members will eventually include a representative of the National Park Service (the Superintendent of Tumacácori National Historical Park), a representative of the State of Arizona (appointed by the Arizona State Parks department), representatives of both counties (appointed by the respective county Boards of Supervisors), and several at-large members representing a combination of municipalities, Native American tribes, tourism, economic development, ranching, agriculture, historic preservation, nature conservation, and culture/arts. This Board of Directors is responsible for planning, fundraising, staff hiring, and final selection of projects that will be supported.

The Board of Directors will be advised and assisted by a large Partnership Council that represents a broad range of local interests. Local units of the National Park Service, the National Forest Service, and the Bureau of Land Management will serve in advisory roles. Representation of the neighboring state of Sonora, Mexico, will improve cross-border connections. This council will review and recommend projects for funding and other assistance from the National Heritage Area, and will identify potential partnerships with government agencies, nonprofits, and other local stakeholders. The council will have committees for identifying long-term funding needs and priorities, planning festivals and events sponsored by the National Heritage Area, and conducting public outreach.

A Management Plan that is updated annually and fully revised every

Santa Cruz Valley National Heritage Area

five years will guide the Santa Cruz Valley National Heritage Area. The Alliance Board and the Partnership Council will work together to develop partnerships with a variety of funding sources from both the government and private sectors in order to overmatch the funds received through the National Park Service. Sources of earned income will also be developed by the Alliance.

In addition to programs identified in the Management Plan, there will be a competitive program through which local communities, projects, nonprofits, and other qualified organizations can access available federal funding. Each year the Alliance will accept proposals and the Partnership Council will review them and create a list of priority projects for funding for the next year. Local sources of match funding will be identified and combined to create a total local match.

The Role of Canoa Ranch in the Santa Cruz Valley National Heritage Area

Canoa Ranch has the potential of becoming a centerpiece of the Santa Cruz Valley National Heritage Area. It can become an important venue for interpreting the themes of Native American Lifeways, Ranching Traditions, and Spanish and Mexican Frontier, and possibly other themes of the Heritage Area. This will link it to related heritage resources in the region for the purposes of interpretation, heritage education, tourism promotion, and preservation planning.

The National Heritage Area could become an important source of match funding for Canoa Ranch. Pima County's investments and staff time related to Canoa Ranch can be used as local matches for federal funding. This match funding could potentially be used to help develop interpretive programs, restore riparian habitats, renovate historic buildings, preserve archaeological sites, underwrite special events, etc.

Canoa Ranch would also be a fitting headquarters for the Santa Cruz Valley National Heritage Area because of its central location in the Heritage Area, its significant history and natural setting, and its facilities that could serve as office space and venues for meetings, conferences, and special heritage events organized by the Santa Cruz Valley Heritage Alliance (the management entity of the Heritage Area). This role would raise the profile of Canoa Ranch, as it would become an important community center for the entire Santa Cruz Valley, and the national face of the Heritage Area.

Literature Cited

Mabry, Jonathan B. (compiler and editor)

2005 Feasibility Study for the Santa Cruz Valley National Heritage Area. Submitted to the National Park Service and the State of Arizona. Center for Desert Archaeology, Tucson.

Questions and Comments

MANNING HOUSE: FEBRUARY 22, 2006

1. In doing the Master Plan: History (phases) should be a prime guiding point from which other uses would come. Restaurants, gifts shops, interpretive places should come from the history. Is this the way we are going? Ecology has been affected by the history through time.
2. Would the public like to see cattle on the ranch? Possibility to put working cattle on the ranch. Put in particular pastures as an opportunity to use for economic and ecological benefit. By removing invasive brush. Ecological history exhibits too. What do you think?
3. Historical Consultant. New to the area. Children would benefit from a working ranch approach. Concerns about food source for cattle. Use native grasses, not invasive grasses. Proximity to Madera Canyon and Amado sewage treatment for wildlife visitors. Potential for wildlife corridor.
4. How does Canoa articulate with Sonoran Desert Conservation Plan. Invasive species issue. Can Canoa exhibit how invasive species can be dealt with?
5. Empire ranch- adaptive reuse study and educational component. Economic feasibility of Canoa and Empire Ranch. Can we learn from lessons at Empire and relationship between Empire and BLM? County may be easier client. Good job compiling resources. Positive results so far.
6. Work with Empire and Tumacacori. Concern that sense of place should be more prevalent in the presentation. Extremely important to this plan.
7. Interpretive consultants should keep in mind that many technological advances are great, but require lots of maintenance. Razzle-dazzle may not be the best choice for younger people. Simple techniques.
8. Cattle. Partners with American Farmland Trust. Endangered Domestic Livestock Trust? Breeds introduced to Canoa in 1870's. Devon and Shorthorn breed. Special hormone-free marketing strategy to supply beef to local restaurants. Nothing in Pima County like this- a few in Cochise County.
9. Santa Cruz Valley National Heritage Area- Local foods produced and grass-fed hormone-free beef. Regional Brand with Heritage Area. Heritage Foods promoted.
10. Can it be done on acreage with supply and demand? Viable and sustainable project? Bob Sharp- depends on how much water we can get. From ecological standpoint – it is possible to run 60-80 cattle there.
11. Lehmann's lovegrass seeded from airplanes in 1950's. Forage crops. Canoa used to have 1500 head feed troughs. Large pit silos. Was its own feedlot historically.
12. The interpretation of myths of Native Peoples in the area. Smithsonian would like to have programs promoting the stars in all their glory. Important because school kids, esp. in Tucson can't see night sky. Could have campouts to show how people used to live.
13. Cattle – caution – ranching was small period of time at Canoa- may use up space at expense of other opportunities. Native Seed Search and O'dham could have planting representing different plants.
14. Sense of place- people will be visit for an afternoon, but could people come for longer (overnight) and have better sense of place (concept of staying a while – immersion)
15. Good- but need to look at best use of historic buildings. Rehabilitation more expensive than new construction. Should look at possibility of new buildings for overnight accommodations and use resources for existing buildings.
16. Macchu Pichu – Different experience once day-trippers leave- lot to be said for this approach.
17. People staying over is a great idea. Historic photographs from approximately 1928. Interior shots of houses. Could recreate interiors of ranch buildings and it would be a rare experience. Historic ranch experience. Ranch at peak in 1930's but few resources from other periods. We have cultural resources from the 1930's so we should make use of them.
18. Opportunities to interpret earlier history if done appropriately. Could build pit-houses and other earlier structures if identified as reconstructions. People could compare earlier resources to remaining ranch resources. Interior square footage could be used for interpretive

exhibits. Opportunity to put in display cases. Living history was great potential with volunteers in appropriate period costumes and tools. Children and adults would both be exposed to the lifestyles and cultural aspects not possible through static exhibits.

19. The late Daniel Preston- great O'dham story-teller about the land. We will miss his contribution.

20. Not all uses associated with buildings. Landscape features can be developed to interpret other features. Many opportunities to do both buildings and landscape elements.

CONRAD JOYNER LIBRARY, GREEN VALLEY

FEBRUARY 23, 2006

1. Sense of place very important. Feeling at ranch. San Antonio-Alamo- real feeling 30 years ago, but is now more like a zoo- noisy, buses of people. More people in – lose sense of place fast if we aren't careful. People won't go back if the site is overrun with tourists.
2. Maybe sign up for certain days to visit. Like Titan Missile Museum.
3. How do we keep undocumented migrants and discarded trash out?
4. Can we get back the water rights from Phelps Dodge? Phelps Dodge has ruined some water in Green Valley.
5. Water will be affected by development between ranch and Nogales. Development upstream will affect water resources available at ranch.
6. Sense of place- some sites have been able to maintain this. How can we maintain integrity of the buildings to preserve sense of place.
7. Educational and interpretive center at Tubac uses a scheduling system that draws from Marana and Mexico.
8. What's the time frame for making the project economically sustainable?
9. At one time the Smithsonian Museum was interested in being involved. Where is that at?
10. Does the Anza Trail project dovetail into this project?
11. Can federal funding (like at Tumacacori) and Pima County Block Grants fund the projects that we want / need to get done? How will we maintain and protect the resources in the future? Pima County Parks and Recreation. No legislative jurisdiction for County to continue to fund. (General fund will provide funding. Pima County can manage however it will need to. Need to identify these tools)
12. How much will be (security) fenced in the future?
13. When Fairfield was managing there weren't the transients that are now. As we develop, don't expect as many transients because there will be lots of people there. As we repair and rework, this should control the problem.
14. Disagree that transient issue will be resolved with more occupancy.
15. ATV abuse.
16. Did Daniel Preston leave any suggestions for collecting artifacts / interpreting the land?
17. Is there a site steward program through the State for monitoring the site? (Yes)
18. Is Canoa collecting money from the horses and cattle on the property now?
19. Security issues with ATV off-road vehicles should be reported to 911. Sheriff will respond.
20. Partnerships with American Farmland Trust. American Endangered Farm Animal Trust. Cattle (heritage Devon and Shorthorn cattle) could be brought to the ranch as they do not exist in large numbers any longer.
21. Security – Las Golondrinas in New Mexico is a good example of a site with a sense of place and adequate security.
22. ADOT is the key to maintaining a sense of place. Need to be aware of the expansion plans for ADOT in the area.
23. Should we consider permanent residents for occupying / interpreting the ranch?
24. Difficult decisions in the future (Disney / preservation) issues. Anza Trail access and sequencing of the visitor experience and how this gets completed over the next few decades (2030).



Canoa Ranch Master Plan

Public Meeting #1

Please take a few minutes to answer the following questions. Your feedback is important to us and will be useful to our Team as we proceed with the Master Plan. Thank You.

1. How can we represent the lives of all the people of the Canoa?
By having different rooms (buildings) depict each of all the people's lives in life-sized dioramas, flowing in order by date or century.
2. Should the Canoa be the regional heritage orientation center?
Yes!
3. What level of interpretive infrastructure is appropriate?
As high a level as possible, making it easily understood by children, yet useful for those studying history and containing interesting, even funny, interactive exhibits.
4. How do we best use the existing buildings?
As closely as possible to their original purpose - using one area for each of the time periods as inhabitants, par building.
5. What interior/exterior building restoration is appropriate?
*Interiors as mentioned above in elev. 194
Exterior - all buildings of the same era - and made to withstand our hot sun by dry climate to minimize upkeep.*
6. How directed/interactive should the interpretation be?
The more interactive, the better. It should have little "cute" funny things interspersed.
7. What is the appropriate role of interpretive technology?
To make learning fun.
8. What languages should be used for the various constituencies?
*English!!
(You should have additional signage in Spanish and/or Navaho, for interest)*

Over

Cory Ballou

9. To what extent should artifacts be collected?
As much as possible, -- not displayed as much in cabinets on the wall, but as they were used at the time, in each room (building) depicting the different era.
10. What role should interpretive staff have?
They should be available, but not intrusive. Watchful always for damage to exhibits. Able to answer many questions.
11. What is the viability of making Canoa a working ranch and how does this impact the interpretation of the site?
I think the "working" part of the ranch should be limited to demonstration, and the activities of the farm operation should be shown by video.
12. Can the Canoa be a travel stopover place (as in the past)?
Yes, definitely, but not to sleep. Visit for a few hours or a day. Have a place to picnic or eat. Have a concession with typical food for sale (like fry bread etc.)
13. What are the right set of partnerships and sponsorships?
I have no idea! National Parks? State Parks? County Parks? Univ of AZ? Smithsonian?
14. How can the Canoa be authentic and financially sustainable?
Partnerships with major local corporations (Walmart, minim etc) Local, state and national governments.

Other comments and suggestions:
I have been to many visitor centers all over the country. The ones I liked best learned the most from good memories, not the ones that had the visitor follow a well-defined path through the rooms or buildings. Lots of pictures, dioramas, explanations, personal stories, pre-showing from the earliest to the present. It had funny little items, places to hold items (videos), a place to eat, a little gift shop.

Please address comments and questions to Corky Postler. Email: cposter@posterfrost.com
Poster Frost Associates, Inc. 317 North Court Ave. Tucson, AZ 85701



Canoa Ranch Master Plan

Public Meeting #1

Please take a few minutes to answer the following questions. Your feedback is important to us and will be useful to our Team as we proceed with the Master Plan. Thank You.

1. How can we represent the lives of all the people of the Canoa?
Pictorial, small written summaries, which can be purchased.
2. Should the Canoa be the regional heritage orientation center?
Yes.
3. What level of interpretive infrastructure is appropriate?
Pictorial, written, video.
4. How do we best use the existing buildings?
Use as history show place.
5. What interior/exterior building restoration is appropriate?
Restore complete. or desert landscape. Perhaps some one scope.
6. How directed/interactive should the interpretation be?
as much as possible -- 150 years
7. What is the appropriate role of interpretive technology?
Explain to people what went on, useful, self supporting
8. What languages should be used for the various constituencies?
English.

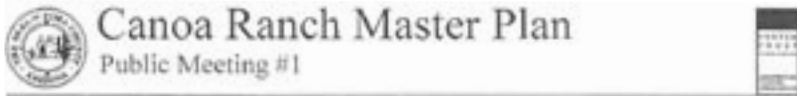
Over

9. To what extent should artifacts be collected?
As many as possible.
10. What role should interpretive staff have?
as few people as possible, like Subaru was it.
11. What is the viability of making Canoa a working ranch and how does this impact the interpretation of the site?
I don't think large scale is good.
12. Can the Canoa be a travel stopover place (as in the past)?
I don't think so.
13. What are the right set of partnerships and sponsorships?
Some volunteers, some paid.
14. How can the Canoa be authentic and financially sustainable?
Charge an entry fee. Charge for horse trails \$4 to \$5 per hour.

Other comments and suggestions:
Make the ranch a really beautiful model ranch - with food, drinks, picnic spots - Fast horse trails. Penal as much as possible to keep out illegal, theft, trespassing.

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Poster Frost Associates, Inc. 317 North Court Ave. Tucson, AZ 85701

Comment Sheets

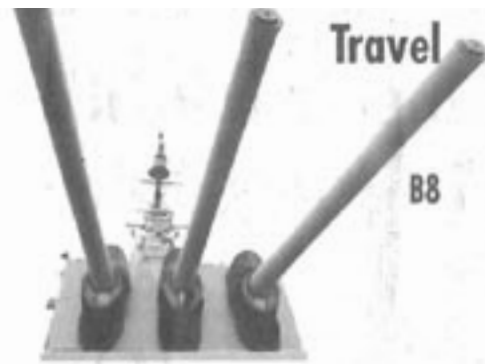


Please take a few minutes to answer the following questions. Your feedback is important to us and will be useful to our Team as we proceed with the Master Plan. Thank You.

- 1. How can we represent the lives of all the people of the Canoa?
no cattle! Minimal electricity except museum and dark areas.
Indian interpretation of "white" men coming to take
 - 2. Should the Canoa be the regional heritage orientation center?
yes over their lands, ruining their ways of life.
 - 3. What level of interpretive infrastructure is appropriate?
divided history of the land agents. Only native Indian artifacts and history. Identification of native / indigenous plants, trees and ecological niches!
 - 4. How do we best use the existing buildings?
collection of Santa Cruz valley pioneer artifacts including furniture, pots/pans, interior decor according to 1800-1800s.
 - 5. What interior/exterior building restoration is appropriate?
To maintain from rain damage, "trashing" by insects, possible fencing? maintenance of shrubs, trees (pruning) and grasslands.
 - 6. How directed/interactive should the interpretation be?
depends upon funding
 - 7. What is the appropriate role of interpretive technology?
present an understanding of why the Indians and white settlers came e.g. water
 - 8. What languages should be used for the various constituencies?
Spanish, English, French, Zuni, Navajo?
- Indian Interpretation of the animals and why/how they fit in with "Creation" story/over

- 9. To what extent should artifacts be collected?
use aerial photographs and other "technology" tools to assess. Minimal excavation unless of a significant
 - 10. What role should interpretive staff have?
To point out important features, answer questions, tell stories of characters and their accomplishments
 - 11. What is the viability of making Canoa a working ranch and how does this impact the interpretation of the site?
why have cattle grazing and degrading the grasslands if you have funds to conserve the native grasses.
 - 12. Can the Canoa be a travel stopover place (as in the past)?
Not overnight on the historical site. No hunting, fishing. Inn "off-site"
 - 13. What are the right set of partnerships and sponsorships?
?
 - 14. How can the Canoa be authentic and financially sustainable?
could have a gift shop with items made by local artists that pertain to the ranch's history + present day
- Other comments and suggestions:
obtain film maker Ken Burns to do a documentary on the area and include men such as Father Kino, De Anza, the Indians
Park - large - for local residents to walk, rest and "bird". Botany, biology, including evolution; geology, paleontology, anthropology.
Provide plenty of trash containers
Astronomy + "Dark Skies"

Please address comments and questions to Corky Potter, Email: cposter@posterfrust.com
Poster Frust Associates, Inc. 317 North Court Ave. Tucson, AZ 85701



Travel

B8

In the footsteps of royalty in the USS Salem museum.

GREEN VALLEY NEWS AND SUN

Movie Review

B10

Woody Allen's comeback, 'Match Point,' misses the point.

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VOL 40, NO. 25 FEBRUARY 26, 2006

SUNDAY

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Can Canoa keep historic feel while attracting crowds?

By Philip Franchino
Green Valley News

The challenge in developing Canoa Ranch as an educational and visitor center will be in trying to maintain a sense of history while making it economically self-sufficient.

And that would mean not having the ranch overrun by hordes of tourists, Green Valley residents and county planners agreed at a meeting Thursday at La Perla.

Members of the ranch Oversight Committee and site stewards have said they feel a sense of reverence when they spend time there, as they realize they enjoy the same unspoiled view of the Santa Rita Mountains as that seen by Hohokam and O'odham Indians for thousands of years, and shared by Spanish explorers and Mexican and American homesteaders and ranchers.

Some recent visitors have spoken of the experience of seeing the night sky there, knowing it was the same night sky seen by inhabitants and visitors for thousands of years.

Dick Roberts, president of the Green Valley Community Coordinating Council, recalled visiting Canoa Ranch several years ago, saying, "a sense of place is very important. As you walk around there, you get a feeling for it."

"Thirty years ago in San Antonio I visited the Alamo and it had a sense of place. It was like walking into a church, very reverential, very quiet. I've been back two or three times since and now it's like a zoo, with hundreds of tourists. It's very noisy and you lose the sense of history."

"I don't know how you get around it, but as you bring more people in, it seems to happen. You're going to lose a



CORKY POSTER, a Tucson architect and consultant, told members of the Canoa Ranch Oversight Committee to consider carefully how to develop the property so that it doesn't lose its historic feel.

sense of place real fast if you run into crowds of people and it's really noisy. You won't want to return," Roberts said.

Another attendee suggested that the ranch could take reservations as the Titan Missile Museum does, to control the number of people present at any one time.

Corky Poster, a Tucson architect who is consulting with Pima County on the ranch plan, said he experienced that problem during a visit to Machu Picchu, a holy site in Peru, which he found to be noisy and overrun by tourists until 4 p.m., when the tour buses departed and he felt the site

regained its spiritual feeling. "That experience for the next 12 hours was a transforming experience in my life. That's the kind of sense of place we are talking about. In our favor is the fact that this is a big place, about 4,800 acres, while the Alamo is a small place. "We have the ability to ab-

soorb large numbers in a series of interesting sites. We have a historic landscape five miles long," Poster said, referring to the Anza Trail segment that runs through the ranch. Poster did say it is important to consider carefully the question of how to develop the property so that it does not

lose its historic feel. He distributed surveys seeking suggestions from the public on how to develop the ranch and urged the public to contact members of the Canoa Ranch Oversight Committee with ideas, including chair-

SEE CANOA, PAGE 32

CANOA: Aiming to become educational experience

FROM PAGE A1

woman Sandra Stone, Nancy Williams of Elephant Head, Ellen Kirtz of Amado, or the GVCCC.

Others at Thursday's meeting noted that while some historic spots have become over-commercialized, including San Juan Capistrano, others have maintained their historic feel, including the San Fernando Mission in Los Angeles and a ranch and farm outside Santa Fe.

Poster said, "we want to make Canoa Ranch an educational experience that reflects the experience of many different cultures and brings different eras to life."

Based on research by consultants and suggestions by the Oversight Committee, Poster said, the target audience for the historic ranch should be residents of Pima and Santa Cruz counties, plus visiting friends and relatives.

He asked for ideas on providing new attractions so that people will return, as they do periodically to the Arizona-Sonoran Desert Museum, for ideas on appealing to children, and including educational components on conservation, particularly water conservation, and telling the

stories of women and children and cultural traditions.

Among the questions on which the planners seek comment are:

-How can they present the lives of all the different peoples who have lived at Canoa?

-Should the ranch become the regional heritage orientation center for the Santa Cruz Valley?

-What level of interpretive infrastructure (signs, etc.) is needed?

-How should the existing buildings, which cover about 20,000 square feet, be best used; what restoration is appropriate?

-What languages should be involved, and

-What is the best role of interpretive technology?

The latter might not have been a big concern 10 years ago, Poster said, but now museums are using IP/DK-like devices that allow visitors to walk up on sites while listening to a recorded lecture.

Other questions:

-Should artifacts be collected, and if so, how would they figure in site interpretation?

-Should Canoa become a working ranch, possibly demonstrating current conservation approaches to

ranching?.

-Should it become a travel stop-over, as the historic Canoa Inn once was?

-Who are the right partners with which the county can work?

The ranch will be operated by the Pima County Natural Resources, Parks and Recreation Department. Some potential partners suggested so far are the National Park Service, because the Anza Trail runs through Canoa; the Whipple Observatory on Mount Hopkins; the Santa Rita Experimental Range operated by the University of Arizona; ranching organizations and volunteers.

The Smithsonian Institution, which is affiliated with Whipple, has been suggested, but the Smithsonian would require Canoa to pay a fee and meet a variety of standards, so that may not be likely, county Cultural Resources Director Linda Mayo said.

Planning will continue this year and no large-scale restoration of buildings will begin until the end of this year, when the Board of Supervisors could expect to see a master plan, including a business plan, Mayo said.

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The Daily Territorial

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territorial Newspapers, P.O. Box 2

VOL. 59, NO. 45

SERVING TUCSON'S BUSINESS AND LEGAL COMMUNITY

TUES

Canoa Ranch story one of land, water, struggles

By Philip Franchine
Wick News Service

People have lived and farmed, ranched or otherwise made a living off Canoa Ranch for nearly 4,000 years. Each group of people involved in the ranch—the Hohokam and Oodham, Spaniards, Mexicans, American settlers, investors from Tucson and Wisconsin, corporate owners, and the conservationists—have left their influence on the people who came later, Tucson planner Corky Poster told audiences in Tucson and in Green Valley last week.

Poster, of Poster-Frost Associates in Tucson, has researched the ranch for Pima County in an effort to develop a master plan for future activity there.

The county hopes to create a kind of living museum there, showing the land.

The challenge, Poster said, is how to present such a complex and evolving story involving nine different eras.

The firm has amassed an eight-page, small-print historical timeline, but Poster hopes to make the story of Canoa more accessible to future visitors through the eyes of five separate stories of those who lived on the ranch.

The least-known story is that of the Apach-

es Mansos, or Apaches of Peace. They were rewarded by the Spanish with land near military posts as early as 1793. They worked as laborers and guides and spoke Spanish.

In the mid-1800s they numbered about 300 in Tubac and also in Tucson. The federal government in 1872 established four reservations for Apaches, and though several Anglo Arizonans supported a place for the Apaches Mansos, none was created and, unlike the Apaches who fought the non-Indian settlers, they were never mentioned again in historical documents.

"Their peaceful cooperation was finally rewarded with ethnic oblivion," Poster noted.

One of the best-documented stories is that of Edwin Tarbox, who was killed at the Canoa Inn in 1861. That story is recounted in the book "Pumpelly's Arizona," among other places, and describes the years shortly after Southern Arizona became a U.S. territory.

Celebrated with horse races The Manning barbecues tell of the 20th century ranch times, when Hispanic ranchers and Anglos from Tucson celebrated holidays and birthdays with horse races and other festivities.

That story is told through a 1983 interview with Marjorie Manning, among others.

The digital documentary film movie "Canoa," by Tomas Javier Castillo, who interviewed his grandfather, a former ranch hand, is another approach to telling the story.

There is also the news coverage of the efforts to preserve the ranch in the late 1990s, and how it affected the Salcido family, who lived and worked there.

Those five stories are an attempt to cover the nine eras at the ranch, Poster said.

There is archeological evidence that native people began farming there some 4,000 years ago, starting in the Archaic and Early Ceramic periods and continuing through the Hohokam and Oodham eras.

The presence of the spring there, as well as water in the Santa Cruz River, helped attract settlements.

The Spanish arrived in the 1690s, under Father Eusebio Kino and other Jesuit missionaries, following Indian trails along the Santa Cruz River to what later became San Xavier

and Tucson.

That path later became the Spanish wagon road, the Camino Real, or royal highway, and part of it later became the Anza Trail.

The Spaniards brought livestock to the area and employed the Indians as guides.

In 1821, the Mexican era began, and the Ortiz brothers, Ignacio and Tomas, who ran cattle and horses on the land, obtained a land claim with a Mexican court that kept the ranch from being split up into smaller units. Corner markers and Spanish period wells are still visible.

Apaches attacked during the 1830s and 1840s, hampering cattle operations.

The Early American period began in 1854 with the Gadsden Purchase of Southern Arizona and documents found after that time described the ranch as a palace where there had always been water.

Settlers, or squatters, showed up, building log cabins or sheds, farming and raising cattle, in hopes of establishing land claims. In 1856, Ignacio Ortiz attended a convention seeking territorial status for Arizona, but the next year he was killed by Papago Indians.

By 1860, corrals had been erected and the ranch was a major stopover on the way from St. Xavier to Tubac.

In 1869, the investors Maish and Driscoll bought the ranch and began building a canal to Tucson in hopes of selling water there. While the venture failed, it apparently changed the local eco-system, as blind fish in the river were reported in the local press to have gained their sight and grown enormously after the canal was partly built.

In 1905, a group of Wisconsin investors bought the ranch in hopes of developing the real estate and providing access to the nearby mines.

In 1908, the powerful Manning family of Tucson bought the ranch. Howell and Levi Manning and their family members operated the ranch for decades, and many local figures worked, lived or visited family members at the ranch during this era.

These include U.S. Rep. Raul Grijalva, whose father worked as a ranch hand there, and several members of the Canoa Ranch advisory

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committee, including Deezie Manning and Bill Mortimer of KUAZ radio.

In 1967, the corporate era began, as Phelps Dodge bought the ranch and considerable water rights, which it retains. The ranch buildings began to deteriorate during this time, Poster said.

Phelps Dodge has the rights to 10 wells and 22,805 acre-feet of water a year. An acre-foot is the volume of water that would cover an acre a foot deep.

What Poster calls the conservation era began in 1997, when Pima County took control of the ranch.

This week's presentations were the first public presentations on his findings, and Poster said he hopes to gather public comment to help guide the county in how to tell the story of Canoa Ranch.

Poster's firm will develop several options and present them in another public meeting in April and after taking comment will make another presentation in May, then do a feasibility/marketing, cost study and present the preferred plan in June or July, with the goal of developing a final business/management plan by October.

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Note: This article was also published in the Green Valley News and Sun on Friday, February 24, 2006

