Finding of No Significant Impact
Construction of a New Water Pipeline,
Travis Air Force Base, Solano County, California

In accordance with the National Environmental Policy Act (40 CFR Parts 1500-1508) and its implementing regulations, the U.S. Department of the Air Force has conducted an Environmental Assessment (EA) to evaluate the potential environmental consequences of the proposed construction of a new water pipeline. This Finding of No Significant Impact (FONSI) and attached EA provide an analysis of probable impacts associated with Proposed Action and its alternatives.

Description of Alternatives including the Proposed Action

The proposed action consists of construction of approximately 2.5 miles of pipe to supplement water supplies used by the installation during the summer months when water needs are greatest. The pipeline installation is a condition of a Memorandum of Understanding signed between the California Department of Health Services (CDHS) and Travis Air Force Base because of a Notice of Violation issued to Travis by the CDHS. Water is currently supplied to the installation from the City of Vallejo, California. The proposed waterline will provide increased water flows from wells located on the installation's golf course. The pipeline is located in agricultural areas located north of the base. Two alternatives are considered in the environmental assessment. The No-Action Alternative will not change the quantity of water that is available to the installation. The Preferred Alternative, which consists of construction of new 18-inch-diameter water pipeline, would provide enough water from the wells to meet current and future water needs. The project also fulfills the requirements of the Memorandum of Understanding signed between the base and the CDHS.

Summary of Environmental Consequences

The Proposed Action would not generate any significant impacts on any environmental resource. Potential for soil erosion during construction exists, but impacts would not be significant due to the short duration of ground disturbance during construction. Best Management Practices (BMPs) shall be implemented to minimize impacts associated with soil erosion and sedimentation to keep them below significant levels. Hazardous waste generated would be subject to guidelines outlined in AFI 32-7086, "Hazardous Materials Management". Implementation of these guidelines would ensure that no significant impacts occur because of hazardous materials use and hazardous waste disposal.

Decision

As a result of the analysis of impacts assessed and analyzed, it is concluded that implementation of the BMPs during the construction phase of the project, would keep the impacts below significant levels. Therefore, a determination has been made that the Proposed Action does not represent a major federal action significantly affecting the quality of environment. Therefore, a

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FONSI is warranted and the preparation of an Environmental Impact Statement (EIS) is not required.

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3 SEP 03

Date

60th Civil Engineer Squadron

Final Environmental Assessment Construction of a New Water Pipeline Travis Air Force Base, Solano County, California

June 2003
Prepared by
U.S. Army Corps of Engineers
Sacramento District

Final
Environmental Assessment

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Finding of No Significant Impact

1.0 Purpose of and Need for Proposed Action

1.1 Purpose of and Need for the Proposed Action

Travis Air Force Base (AFB), Solano County, California (Figure 1), treats and distributes potable water under a Domestic Water Supply Permit issued by the California Department of Health Services (CDHS) (Winzler and Kelly 1998). On September 20, 1995, CDHS issued a Notice of Violation (NOV) to Travis concerning their water supply. As a result of the NOV, Travis AFB and the CDHS signed a Memorandum of Understanding (January 19, 1996) (MOU) that requires Travis to increase the potable water production from the existing 3.5 million gallons per day to 5.0 million gallons per day from wells located on the base's Cypress Lakes Golf Course. To meet the requirements of the MOU, a new waterline is proposed that will transport water from wells located on the golf course to the main installation. The existing waterline will be abandoned in place once the proposed waterline is operational. To reach these wells, the new waterline will cross lands that are not owned by the installation.

The route of the new waterline was influenced by the location of the installation-owned wells and the existing waterline, which is located 25 feet to the east of the proposed waterline. The existing valve vault will also be used.

1.2 Background and Overview

Travis AFB is part of the U.S. Air Force's Air Mobility Command. The mission of the host organization, the 60th Air Mobility Wing, is to provide air transportation as part of the 15th Air Force to U.S. military forces and their equipment to any worldwide destination. Although the primary geographic focus of the Wing is the Pacific and Indian Oceans, missions may require transportation of forces and materiel to other areas (Travis Air Force Base 2001). With almost 22,000 military and civilian personnel living and/or working on base, uninterrupted access to potable water is critical to meet their air transportation mission.

1.3 Decisions That Must Be Made

To meet the requirements of the MOU to increase potable water supplies for the base, Travis AFB proposes to increase the flow of water that is pumped from wells located on the installation-owned golf course. The golf course is located approximately 2.5 miles north of the installation. The decision that needs to be made is whether to construct a new drinking water pipeline to reach these wells. Individuals within the U.S. Air Force have the authority to make such a decision.

1.4 Location of the Proposed Action

Travis AFB, Solano County, California, is located approximately 30 miles southwest of Sacramento in Fairfield, California (Figure 1). The proposed waterline will parallel Northgate Road and a dirt access road for a Solano County Irrigation District drainage

canal. It will terminate at the southwestern corner of the golf course. The waterline itself would be located in open grasslands east of Northgate Road and west of the dirt access road. The dirt access road is located north of the intersection of Northgate and McCrory Roads.

2.0 Description of the Proposed Action and Alternatives

2.1 Description of the Proposed Action

The proposed action involves the construction of a new water pipeline with a capacity of 5.0 million gallons per day as required by an MOU between Travis AFB and the CDHS. The new waterline will assist in meeting peak summer demand when water supplies from the city of Vallejo, California, must be supplemented. The pipeline will consist of an 18-inch-diameter, polyvinyl chloride (PVC) pipe located approximately 3 feet below the ground surface. The existing waterline, a 14-inch, cast iron or asbestos concrete pipe, will be abandoned in place once the new pipe is operational. The existing valve vault will be used. The vault provides a connection to an installation water tank from which water is then distributed installation-wide.

The U.S. Environmental Protection Agency's (EPA) regulations for asbestos addresses air (40 CFR 61.140-61.157) and water emissions (40 CFR 141). The regulations do not address buried asbestos concrete pipe or abandonment of this kind of pipe. Thus, unless the abandoned pipe is broken and is exposed to the air, asbestos will not be released. Once abandoned, no more water will be flowing through the pipe. California State regulations also do not address buried asbestos concrete pipe (California Code of Regulations, Title 8, Section 1529).

2.2 Alternatives Identified But Not Considered Further

2.2.1 Replace the Existing Waterline - Replacement of the existing waterline was eliminated because additional costs would be incurred to excavate and remove the existing pipeline before installing a new pipeline. In addition, water from the golf course wells to the main installation cannot be interrupted. The disruption would occur when the water supply is stopped prior to removal of the existing pipeline and continue until the new waterline is operational.

2.2.2 Access Non-Installation Owned Water Supplies - The primary source for potable water for Travis AFB is a water treatment plant owned by the City of Vallejo, California. Future water supplies may be available from the City of Fairfield. Accessing non-installation owned water supplies was eliminated because it was more cost effective to maintain the wells owned by Travis AFB, ensure that existing pumping equipment is fully operational, and install a larger capacity pipeline. These wells have the capacity to supplement the base's drinking water needs if the volume of water pumped from these wells is increased.

2.2.3 Install a New, Less Than 18-inch-Diameter Water Pipeline - This alternative involve construction of a new less than 18-

inch water pipeline parallel to the existing pipeline. The existing pipeline would remain in service until the new line is operational. The existing pipeline would not be removed, but would then be abandoned in place. This alternative was eliminated because of insufficient capacity.

Description of the Alternatives

2.3.1 No-Action Alternative - Under the no-action alternative, the existing 14-inch diameter water pipeline would continue to be used. However, the requirements to increase potable water supplies contained in the MOU signed between Travis and the CDHS would not be met.

2.3.2 Preferred Alternative - This alternative would include the construction of a new 18-inch water pipeline and abandonment of the existing water pipeline. The existing pipeline would remain in service until the new line is operational. The existing pipeline would not be removed, but would then be abandoned in place.

Affected Environment

3.1 Biological Resources

3.1.1 Vegetation and Wildlife

Travis AFB and the project area are midway between the coastal zone and the interior Central Valley of California. Native vegetation in the area is primarily grasslands. Prior to the establishment of Travis AFB, the land was used for cattle grazing and dry-land wheat and barley farming. Cattle and horse grazing is still common.

The gently sloping topography of the project area consists of grasslands of introduced species such as brome grass, whitestem filaria, fescue, and foxtail. These species were introduced as a result of grazing. The grasslands are bounded by barbed wire fences. Mowed grass and eucalyptus trees are present on the 206-acre golf course. The project area has also been affected by road and drainage canal construction.

A small stand of four nonnative eucalyptus trees are located within and just east of the proposed right-of-way along the dirt access road. Otherwise, trees are absent. A field survey for wetlands was conducted by Corps biologists in June 2002. Based on field observations, it was determined that the area in the right-of-way does not meet the three-parameter test defining a jurisdictional wetland. Soil characteristics and vegetation on the site do not meet the criteria as defined in the Corps' 1987 Wetland Delineation Manual.

Common mammals found on the base include the California ground squirrel (*Citellus beecheyl*), Suisun shrew (*Sorex sinuous*), Valley pocket gopher (*Thomomys Bottae*), striped skunk (*Mephitis mephitis*), and house mouse (*Mus musculus*). Reptiles and amphibians known to inhabit Travis AFB include the western toad (*Bufo boreas*), bullfrog (*Rana catesbeiana*), common garter snake (*Thamnophis sirtalis*), California horned lizard (*Phrynosoma coronatum*), and a reptile/amphibian, western skunk *(Eumeces skiltonianus)*. A coyote (*Canus latrans*), a Red-tailed hawk (*Buteo jamaicensis*), and kites were observed within or outside of the right-of-way of the proposed water pipeline during a an initial field visit.

3.1.2 Threatened and Endangered Species

Coordination with the U.S. Fish and Wildlife Service was initiated. The Endangered Species Division provided a list of listed and proposed endangered, threatened, and candidate species that may occur in the project area (Appendix A). The listed species include the bald eagle *(Haliaeetus leucocephalus)*, giant garter snake (*Thamnophis gigas*), California red-legged frog *(Rana aurora draytonii),* Contra Costa goldfields *(Lasthenia conjugens),* and showy Indian clover *(Trifolium amoenum).* A search was conducted on the Natural Diversity Database where at that time the Contra Costa goldfield was identified as present in the area. A field verification was conducted in the spring of 2002. Three patches of goldfields are located to the east of the project area. The nearest patch is approximately 50 feet east and outside of the right-of-way.

Swainson's hawk (*Buteo Swainsoni*) is designated by the State as a "species of special concern." Such a species is monitored for a decline in its numbers. If the population continues to decline, the species would be listed on the State's endangered species list. Projects should avoid disturbing these species and their habitat. Swainson's hawks have previously been reported east of the project area.

3.2 Cultural Resources

The project lies within the ethnographic territory of the Southern Patwin. They established villages along the freshwater marshes in the area and used a variety of resources including fish, elk, deer, and seeds. Agricultural development and settlement were trends that followed Euro-American occupation beginning in the 1700's. Homesteaders moved into the area during the 1830's and settlement continued with the establishment of Fairfield and Suisun. Travis AFB was established in 1942 and was expanded in early 1943. Another expansion in 1945 and the placement of the Strategic Air Command at the base in 1948 brought Travis AFB to its current size.

Three previous archaeological surveys have occurred near the current project area (Gaumer 1976; Osborn and Weaver 1989; Wilson 1978) (Figure 3). No archaeological materials were located during any of these surveys. A record search was performed by the Northwest Information Center to determine if any previously identified cultural resources were present in the project area. None were identified. Based on a record search of the project and surrounding area conducted by the Northwest Information Center, Sonoma State University, Northgate Road was identified as a "historic road" and assigned the "site" number, CA-SOL-383H. An archaeological survey to identify any cultural resources that are eligible for nomination to the National Register of Historic Places (NRHP) that may be in the right-of-way was conducted by a qualified archeologist from Dean Ryan Consultants. Dean Ryan is under contract to the U.S. Army Corps of Engineers, Sacramento District.

A field survey was conducted on May 23, 2002. A letter report on the survey methodology and the results of the survey is provided in Appendix B. The results of this archaeological field survey were that no other cultural resources were identified within the project area, with the exception of

North Gate Road itself and a railroad spur for the former Sacramento Northern Railway, which cross the southern end of the right-of-way. These two historic elements were recorded on appropriate Department of Parks and Recreation forms (DPR-523).

3.3 Water Quality

The primary natural drainage in the area is Union Creek located approximately 0.25 mile to the west of the southern end of the project area. The creek is fed by surface water collection systems on the base and from the watershed north of the base.

Regional groundwater flows mainly toward the south and southeast. Groundwater depths vary seasonally and by location. The water level declines during the dry summer months and rises during the wet winter months. Groundwater beneath the base varies from 8 to 40 feet in depth (Navy Facilities Engineering Command 1999).

Travis AFB receives its potable water from the Travis AFB Water Treatment Plant (WTP), which is owned and operated by the City of Vallejo, California, and from deep vertical wells at its golf course. Between 1983 and 1998, the Vallejo supplies accounted for 73 percent of available water supplies, with the golf course wells making up the difference. Between 1996 and 1998, the Vallejo supplies accounted for 89 percent of potable water supplies. However, the Vallejo supplies are unreliable. Shutdowns of up to 32 days occurred between 1996 and 1998 when the golf course wells provided all potable water. The well field consists of three wells capable of delivering between 700 and 1,200 gallons per minute. Maximum total daily capacity is 5.18 million gallons (Winzler & Kelly1998).

The WTP supplies water exclusively to the base and is located adjacent to the family housing area. The WTP has undergone a recent upgrade to increase capacity from 6 million gallons per day (mgd) to 7.5 mgd, and to improve plant reliability, efficiency, and water quality. Water from WTP and from the wells currently meet water quality requirements of the Safe Drinking Water Act Amendments of 1986, and with the proposed water pipeline upgrade, the plant is expected to meet future Federal water quality standards. The wells located on the golf course serve as a secondary supply when the Vallejo supply is out of service (Winzler & Kelly 1998).

Currently, Travis AFB monitors the quality of its surface water discharges through the National Pollutant Discharge Elimination System permitting program at five outfall locations and at the point where Union Creek leaves the base. The stormwater drainage system consists of above ground channels and underground storm drainage pipelines. The system collects surface water runoff from the base, approximately 5,000 acres, and from 2,900 acres of uplands located off the base to the north. Surface water runoff from these areas flows into a network of drainage channels, catch basins, and inlets. The water collected in these structures then flows through a system of underground pipes and culverts before discharging into the main branch of Union Creek and then into Suisun Bay (CH2M Hill 2000).

The stormwater drainage system consists of six distinct storm sewer systems. Each storm sewer system consists of a major

drainage basin and associated underground pipes and surface drainage channels. The stormwater drainage basins are not related to the basins defined for the sanitary sewer system (CH2M Hill 2000).

The base does not operate a wastewater treatment plant. The effluent leaves the base through a sewer adjacent to the south gate and is carried to the Fairfield-Suisun Wastewater Treatment Plant. The 40 miles of the sanitary sewer system includes four sewage pumps and 10 lift stations. The 40-year-old sewer system piping varies from 6 to 21 inches in diameter.

Surface water quality on Travis AFB has previously been degraded. Portions of Union Creek are being investigated under the Environmental Restoration Program (ERP). Seepage of previously disposed chemical wastes into the stormwater system may be affecting the creek.

Potable water quality will increase with the installation of a new waterline. The new waterline will also decrease the possibility of foreign material entering the water supply. Surface and groundwater, including Union Creek, will not be affected by the proposed waterline.

3.4 Air Quality

The California Air Resources Board (CARB) and the U.S.EPA have established ambient air quality standards for various pollutants (California Air Resources Board 2001). The standards are meant to define a degree of air quality that would, with an adequate margin of safety, protect the public health and welfare (Table 1).

The project area falls within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the agency responsible for the implementation and enforcement of State and Federal air quality regulations within this basin. The BAAQMD develops and enforces air quality regulations for stationary sources, issues permits for new and modified facilities, and directs air quality planning in its jurisdiction.

CARB maintains several air quality monitoring stations throughout the BAAQMD. The monitored concentrations of ozone and particulate matter (PM_{10}) under 10 microns in diameter exceed State and Federal ozone standards. State and/or Federal ambient air quality standards at stations within the basin are outside attainment with these standards. U.S. EPA and ARB thus have designated the entire basin as being in nonattainment of the State's PM_{10} standard. However, U.S. EPA has determined that the basin meets Federal ozone standards due to the improved air quality over the last 5 years. The area meets all other air quality standards.

3.5 Noise

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are designated as noise. Noise can be stationary, transient, intermittent, or continuous.

The decibel is the physical unit commonly used to describe sound levels. Sound measurement is further refined by using an "A-weighted" decibel (dBA) scale which

emphasizes the audio frequency response curve audible to the human ear. The dBA measurement more closely describes how a person perceives sound.

Commercial/retail businesses are a compatible land use without restrictions up to 70 dBA. Although discouraged, residential development is compatible with the 65- to 70-dBA and 70- to 75-dBA contours as long as noise reduction levels of 25 to 30 dBA are achieved for public areas. Industrial/manufacturing, transportation, and utility companies have a high noise level compatibility and can be located within the higher noise zones. High sensitivity land uses near the project area include residences. Moderate sensitivity land uses of the project area include agricultural/ranching activities and the golf course.

Noises produced by aircraft during takeoff and landing operations fall within a broad range of transient noises, which come and go in a finite period of time. The number of daily aircraft operations directly affect the level of noise in the vicinity of an Air Force base. Currently, the operations at Travis AFB involve heavy cargo aircraft that include the C-5, C-141, and KC-10, as well as commercial B-747, B-707, DC-10, and DC-8 aircraft. These large aircraft usually produce higher noise levels than smaller transient aircraft. Multiple types of transient attack, fighter, and training aircraft also use the runways at Travis AFB. Aircraft operations generally cause noise levels in excess of 80 dBA.

Noise during construction of the pipeline will not significantly increase existing noise levels. Existing noise levels are generated by traffic on paved roads and from aircraft. Construction noise would be consistent with other noises from aircraft and vehicular traffic within the area.

3.6 Soil

The project area is a nearly flat alluvial plain consisting of a thin layers of floodplain-deposited sand, silt, and clay mixtures. The broad valley between Cement Hill and the hills north of the project area appears to have been developed by the coalescing alluvial plains which were generated by sediment discharged from Vaca Valley and adjacent streams until the Pleistocene epoch (estimated 1.5 million to 10,000 years ago).

In general, soils in the project area consist of sporadic areas having surface and near surface deposits of sandy clay with some intermixed small gravels, typically 1 to 5 feet in thickness. Beneath this clay layer and in other surface areas are alternating layers of stiff, medium to highly plastic silty clays and very stiff, moderately plastic clayey sands. These clayey soils are generally encountered to depths of about 10 to 20 feet, where the soils are more granular in composition. The soils vary from clayey sands to silty sands to the maximum depth of 26.5 feet below existing grade.

3.7 Land Use

Existing land use in the right-of-way is predominantly agricultural/ranching with associated buildings. Paved and dirt access roads are common. The Solano County Irrigation District maintains a water tank along Northgate Road.

3.8 Hazardous and Toxic Waste

There were no visible signs of soil contamination or other indications of hazardous waste disposal in the project right-of-way. Thus, there are no known or suspected hazardous waste within the project area.

The known uses of the properties, agriculture and ranching, have the potential to generate several kinds of California or Federal regulated waste. Generally, farms or ranches have cultivated land, vehicle equipment storage areas, electrical transformers, water supply wells and pumps, supply storage areas, and homestead and out-buildings. Cultivated land may contain pesticides and fertilizers. Equipment areas may contain petroleum waste products with diesel or gasoline containing lead or methyl tertiary butyl ether. Contamination may be a result of leaks from long-term storage tanks or from spills.

A railroad spur passes perpendicular to the pipeline right-of-way near the southern end of the project near the valve vault. The spur "was constructed in 1946 as a detour around the base and has historically been used for freight. This track is considered a light density line, which is currently maintained but used infrequently. When the Bay Area Electric Railway Association (now the Western Railway Museum) bought the property in 1983, Union Pacific, the seller, was required to disclose any known hazardous waste or contamination in the [railroad spur's] right-of-way, and they indicated that there were no hazardous or toxic chemicals in the right-of-way (Naval Facilities Engineering Command 1999).

The U.S. EPA does not list any known National Priority List (NPL) sites or sites being considered for listing on the NPL within the right-of-way. The nearest NPL sites are located 1 (Travis AFB) and 4.5 miles away (Wicks Forest Industries in Elmira, California) (Environmental Protection Agency 2001). Since water flows to the south and southeast in the area, the migration of the hazardous or toxic materials from these two NPL sites is not possible.

3.9 Aesthetics

No existing structures will be affected by the proposed water pipeline. The nature of the grasslands will also not be changed. The proposed pipeline will pass by a water tank owned by the Solano County Irrigation District. The water tank will not be affected.

3.10 Transportation

Northgate Road parallels the project area for approximately 1.5 miles until it meets McCrory Road. Northgate Road is oriented north to south. McCrory Road is oriented east to west and provides access to the installation's golf course.

The pipeline will pass under the Northgate and McCrory Roads intersection. North of the intersection, the pipeline parallels an unnamed dirt access road owned by the Solano County Irrigation District located to the west.

Approximately 0.5 mile south of the project area is Travis AFB's North Gate entrance. Northgate Road continues past the entrance and into the base.

Traffic flow and volume accessing the base were monitored by the security police during November 1993. In general, there are three major inflows of vehicles during the day: (1) day shift between 6:30 and 7:45 a.m., (2) swing shift between 1:00 and 2:00 p.m., and (3) mid-shift between 10:30 p.m. and midnight.

The paved and dirt roads are capable of supporting all vehicles that will be used in pipeline construction. The vehicles are a backhoe with a 2-foot-wide bucket, 10-ton dump trucks, a 25-ton crane, and multiple 2-ton utility vehicles. Other equipment will include a field office, equipment storage boxes, 1-ton compactors, augers for horizontal boring, jackhammer, and steel trench plates to cover the trench during construction. The project area will be surveyed to locate the pipeline right-of-way within the construction easement.

Trenching will begin on the south side of the project area nearest the existing valve vault. Approximately 200 feet of pipe will be laid per day. The trench will be cut and partially filled with pipe bedding material. The pipe will be installed and covered each day until the project is complete. The pipe will then be flushed, cleaned, and placed in service when completed. Access to the project area will be accomplished using existing roads. No new roads will be constructed.

3.11 Socioeconomics

Travis AFB is the largest employer in the Fairfield-Suisun City area, with more than 10,000 full-time employees. Among military personnel, about one-third reside in on-base housing. Family housing is full, with waiting times for available units varying from 6 months to 2 years. The remaining two-thirds of military personnel live off-base. Housing costs are less expensive in the area than nearby metropolitan centers, but higher than the national average.

3.12 Public Health and Safety

Travis AFB has many programs designed to maintain public health and safety. The ERP is administered through the Environmental Management-Restoration Section. The goal of the ERP is to remediate all accident/ disposal/spill sites that may pose a threat to public health and safety. The fire department is the designated first responder in the event of a spill of hazardous material or waste. All procedures for handling such an event are contained in the base's spill prevention and response plan.

Solid waste management and wastewater systems provide adequate margins of health and safety standards. Solid waste is handled by a contract-operator. Construction waste is hauled away by a private contractor. There are no active landfills on base.

Wastewater is collected by a central wastewater system and transferred to the Fairfield-Suisun Sewage Plant for treatment.

Site safety for the construction is the responsibility of the contractor. The contractor would provide a site safety plan to Travis for approval prior to construction. Travis would provide safety guidelines to the contractor. During construction, the trench for the pipeline will be backfilled or covered with steel plates at the end of each work day.

3.13 Environmental Justice

Each Federal agency is required to determine what disproportionately high and adverse health and environmental effects its programs and activities may have on minority and low income communities (E.O. 12898). As a result, the DoD has directed that environmental justice analyses will be incorporated into National Environmental Policy Act studies, including environmental assessments (Department of the Air Force 1997).

In 2000, Solano County, California, had an estimated population of 394,542 people. Whites comprised approximately 222,387 (56.4 percent) of the population. Black or other African Americans totaled 58,827 (14.9 percent); American Indian and Alaska Natives totaled 3,110 (0.8 percent); and Native Hawaiian and Other Pacific Islander totaled 3,078 (0.8 percent). Persons of Hispanic or Latino origin totaled 69,598 (17.6 percent). For the most recent data available (1997), approximately 45,372 (11.3 percent) of the population of Solano County was living at or below the poverty level (Bureau of the Census 2001a).

The project area is located in census tracts 2523.07 and 2523.09. Census tracts are artificial geographic units limited in area and are used by the U.S. Census to characterize populations. Data from the 2000 Census are not as yet available. The 1990 population of the tracts was 5,315 and 7,246, respectively.

The two tracts had a total population of 12,561 divided into (1) Whites 8,519 (68 percent); (2) Blacks 1,263 (10 percent); (3) American Indian and Alaska Natives 107 (1 percent); (4) Asians and Pacific Islanders 2,099 (17 percent); and (5) Hispanics 1,396 (11 percent). Approximately 2.8 and 2.5 percent of the population of these census tracts, respectively, lived below the poverty level (Bureau of the Census 2001c). Part of tract 2523.09 contains the base's golf course and is thus uninhabited.

4.0 Environmental Effects of the Proposed Action and Alternatives

4.1 Biological Resources

4.1.1 Vegetation and Wildlife

No-Action Alternative - Under the no-action alternative, there would be no loss of vegetation and or wildlife.

Preferred Alternative – Nonnative grasses would be disturbed. Approximately 0.6 acre of surface vegetation loss is anticipated under this alternative across the entire length of the right-of-way. The loss will occur from the excavation needed for the trench into which the pipe will be installed. Although the grasslands would be disturbed, they provide only low quality foraging habitat for small mammals such as mice or rabbits, which in turn attract coyotes. Because these species are mobile, similar habitat is available nearby. Therefore, no adverse effects to wildlife are expected. Four eucalyptus trees that are in or adjacent to the construction right-of-way to the east will be removed. These trees are the only trees in the right-of-way and are invasive, nonnative species. Their removal will not have an adverse effect on the surrounding vegetation.

4.1.2 Threatened and Endangered Species

No-Action Alternative - Three patches of Contra Costa goldfields are located in actively grazed fields east of the right-of-way. Grazing helps maintain these populations.

Preferred Alternative – Although outside of the project area, three patches of Federally listed Contra Costa goldfields are located east of the right-of-way. To ensure that there would be no adverse effects on the plants in these patches, they would be fenced with construction fencing to restrict access by construction workers and equipment. The bottom of the fence will be provided with sufficient clearance to prevent accumulation of debris which would impede surface water flow and negatively impact the hydrology of the area. A biological assessment will be sent to the U.S. Fish and Wildlife Service asking for concurrence with the Corps' determination of no effect on the goldfields. Compliance with the Endangered Species Act must be completed prior to initiation of construction of the pipeline.

Since construction would be performed outside of the Swainson's hawk active nesting season, there would be no adverse effects on this State-listed bird.

4.2 Cultural Resources

No-Action Alternative - Even under the no-action alternative, some effects to cultural resources could occur. Natural processes such as erosion, root and rodent intrusion, and grazing could affect cultural resources by exposing them to the elements and vandals.

Preferred Alternative – As currently designed, the waterline project would not affect the North Gate Road. The Sacramento Northern Railway spur that crosses the project area appears to be either unused or subject to little use. The Sacramento Northern Railway line itself may be potentially eligible for listing in the National Register of Historic Places. Additional analysis of the entire railway is beyond the scope of this project. Coordination and consultation with the California State Historic Preservation Officer and Native Americans has been initiated. Compliance with Section 106 of the National Historic Preservation Act must be completed prior to initiation of construction of the pipeline.

4.3 Water Quality

No-Action Alternative - There would be no change in water quality under this alternative.

Preferred Alternative – The excavation of the trench into which the pipe will be installed is expected to have no significant effects to water quality. Surface drainage patterns and contours will be returned to previous conditions following the completion of construction.

4.4 Air Quality

The significance of air quality effects are based on Federal, state, and local air pollution standards and regulations. The Federal Environmental Protection Agency has determined national ambient air quality

standards (Table 1) that should not be exceeded. California also has created statewide ambient air quality standards (Table 1).

The State of California suggests that significant air quality effects occur when they (1) interfere with an air quality plan, (2) violate air quality standards, (3) result in an increase in a pollutant that is already above acceptable thresholds,(4) expose people that are particularly sensitive to air pollution, such as children and the elderly, to substantial pollution levels, and (5) create objectionable odors that affect a substantial numbers of people (California Environmental Quality Review 2001).

The BAAQMD, which includes the project area, suggests a number of increasingly stringent control measures for construction activities for particulate matter emissions less than 10 microns in diameter (PM_{10}). More stringent control measures should be used when there is a greater potential for PM_{10} emissions for a construction project (Hilken et al.1996). The control measures that are used are related to the probable quantity of emissions that are anticipated. For example, a basic control measure for all projects includes watering all active construction areas at least twice daily.

The BAAQMD has also established thresholds for certain pollutants during construction operations. These include 550 pounds per day of carbon monoxide, and 80 pounds per day or 15 tons of volatile organic compounds, nitrous oxides, or particulate material less than 10 microns in diameter (Hilken et al.1996).

No-Action Alternative - There would be no effect to air quality under the no-action alternative.

Preferred Alternative - Equipment used in construction would marginally increase local hydrocarbon pollutants. Dust could be generated during construction activities. However, the effects would be short term and intermittent over the course of construction and are of insufficient quantity to be significant. Best management practices (BMPs) will be implemented during construction to reduce fugitive dust emission. As a comparison, construction activities associated with the Burke Property Housing project, which was 101 acres in size, generated (1) 2.6 tons of volatile organic compounds (VOC), (2) 18.9 tons of carbon monoxide (CO), and (3) 28.4 tons of nitrous oxides (NO_x). These emissions would be below the 50 tons of VOC or 100 tons of NO_x or CO annual thresholds that are needed to show conformity under the 1990 Clean Air Act.

The waterline project would disturb a total of 0.6 acre and involve fewer construction related vehicles. Vehicles that will be used during construction include a backhoe with a 2-foot-wide bucket, 10-ton dump trucks, a 25-ton crane, and multiple 2-ton utility vehicles. There will be no significant change in ambient air quality. Dust suppression techniques will be used during construction. Operation of the waterline would not generate any air pollution because it will be buried under 3 feet of soil.

4.5 Noise

No-Action Alternative - There would be no effect on the environment from noise.

Sources of noise, types of noise, and levels of noise remain the same.

Preferred Alternative - Community response to noise is not based on a single event, but on a series of events over a day. Factors that have been found to affect the subjective assessment of the daily noise environment include the noise levels of individual events, the number of events per day, and the time of day at which the events occur. Most environmental descriptors of noise are based on physiological, behavioral, and subjective factors. Each factor may be considered differently when analyzing effects.

During construction of the pipeline, noise in the immediate area would increase. The increase would be short term and intermittent, and would discontinue once construction was complete. Noise related to construction would be confined to daylight hours only because no work is scheduled at night.

Construction noise would be consistent with other noises within the area from aircraft and vehicular traffic. As a result, no significant effect on the environment from noise is anticipated.

4.6 Soil

No-Action Alternative – There would be no effects on soils under the no-action alternative. No soil disturbance would occur, and soil conditions are not expected to change.

Preferred Alternative - Minimal soil disturbance, 79,200 cubic feet, is anticipated during construction. The disturbance will be a result of excavation of the trench into which the pipe will be installed. The trench will be 2 feet wide, 3 feet deep, and 2.5 miles (13,200 feet) miles long. Activities related to construction would not alter the soil conditions or characteristics. Soil removed during the construction of the trench would be replaced after the pipe is installed. The original contours would be restored.

4.7 Land Use

No-Action Alternative - There would be no effect on land use associated with the no-action alternative.

Preferred Alternative - Installation of a new water pipeline would have no effect on land use in the project area. Temporary easements for construction and permanent easements for operation are being acquired from each landowner. The permanent easement will be 20 feet wide. The temporary construction easement will extend another 20 feet beyond that distance.

4.8 Hazardous and Toxic Waste

No-Action Alternative – There are no known hazardous or toxic wastes in the project area.

Preferred Alternative – No hazardous or toxic waste is anticipated in the project area. However, all construction work would follow Federal, state, and local regulations when dealing with hazardous and toxic waste. All workers that may come in contact with hazardous material will be properly trained to prevent any accidents during construction.

Contaminated soils encountered during construction would be taken to a licensed landfill qualified to handle the particular contaminant. Any clean soils would be stored on base and used as fill material as the need arises. A Safety and Health Plan must be submitted by the contractor prior to construction and be approved by Travis AFB.

4.9 Aesthetics

No-Action Alternative – No change in esthetics would occur.

Preferred Alternative – Installation of the new water pipeline line would not permanently affect the aesthetics of the immediate area. After excavation of the trench and installation of the pipeline, the trench will be backfilled and the original contours restored. Grass will then be planted.

4.10 Transportation

No-Action Alternative - No effects to transportation would occur.

Preferred Alternative - For safety reasons, partial closure of Northgate Road will be required during construction. After construction, the Northgate Road would be fully reopened. Thus, long-term transportation effects are not expected.

4.11 Socioeconomics

No-Action Alternative - Under this alternative, existing and future water supplies during the summer may be insufficient for base employees.

Preferred Alternative – Installation of a new water pipeline will result in a temporary increase in income to the community.

4.12 Public Health and Safety

No-Action Alternative – Ensuring adequate summer water supplies will become increasing more difficult for the thousands of base personnel.

Preferred Alternative – The construction of the new water pipeline may create a temporary hazard to drivers along Northgate Road, the route along which most of the pipeline will be constructed. One lane of Northgate Road will remain open at all items during construction. A flagman and traffic devices will be used to ensure proper and safe traffic flow around the construction site. A safety plan must be submitted by the contractor prior to construction and be approved by Travis AFB. Travis AFB will have an inspector on site to ensure that all safety requirements are being met. North of Northgate Road, the pipeline will be located in a grass-covered field. Access to the field is possible from an existing dirt access road for a drainage canal. There is no traffic on the dirt road.

The new waterline will ensure continued public safety and protect future public health. There would be an increase in public confidence in the quantity and quality of the water available on base.

4.13 Environmental Justice

No adverse environmental effects have been identified as a result of the analyses in this environmental assessment since there are no

residents living within the immediate vicinity of the project construction area.

5.0 Mitigation

Any potentially significant adverse effects would be avoided. As a result, no additional mitigation would be required.

6.0 Compliance

A number of laws must be complied with prior to the construction of the new water line (Table 2).

7.0 Conclusions

The proposed action at Travis AFB to construct a new water pipeline is not anticipated to adversely affect any environmental resources in the project area. The construction will occur over a period of 4 months. The new waterline will fulfill the requirement of the Memorandum of Understanding signed by Travis AFB and the California Department of Health Services.

8.0 Persons and Agencies Consulted

following persons and agencies were consulted during preparation of this environmental assessment.

Mr. Steven Cabral, 60th CES/CECC1, Travis Air Force Base, California

Mr. Robert Holmes, 60th CES/CEVN, Travis Air Force Base, California

Lt. Josh Tyler, 60th MSG, Travis Air Force Base, California

Mr. Kesner Flores, Wintun Environmental Protection Agency, Williams, California

Ms. Leigh Jordan, Northwest Information Center, Rohnert Park, California

Dr. Knox Mellon, Office of Historic Preservation, Sacramento, California

Mr. Henry Mossman, U.S. Fish and Wildlife Service, Endangered Species Office, Sacramento, California

Ms. Elaine Patterson, Cortina Band of Indians, Williams, California

Ms. Debbie Treadway, Native American Heritage Commission, Sacramento, California

9.0 References

Bureau of the Census

2001a County Estimates for People of All Ages in Poverty for California: 1997. <http://www.census.gov/hhes/www/saipe/stcty/a97_06.htm>

2001b http://www.census.gov/hhes/poverty/threshld/thresh00.html

2001c California. <http://www.census.gov/geo/www/ezstate/CA.pdf>

California Air Resources Board

2001 http://www.arb.ca.gov/aqs/aaqs2.pdf

California Environmental Quality Act

2001 Appendix G, Environmental Checklist Form. http://ceres.ca.gov/topic/env_law/ceqa/guidelines/Appendix_G.html

CH2M Hill

2000 *Storm Water Drainage System Improvements Plan, Travis Air Force Base, California.* Prepared for HQ AFCEE/EQT, Brooks Air Force Base, Texas, Document No. DI-MISC-80508. Prepared by CH2M Hill, Sacramento

Department of the Air Force

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Wilson, Kenneth L.
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10.0 List of Preparers

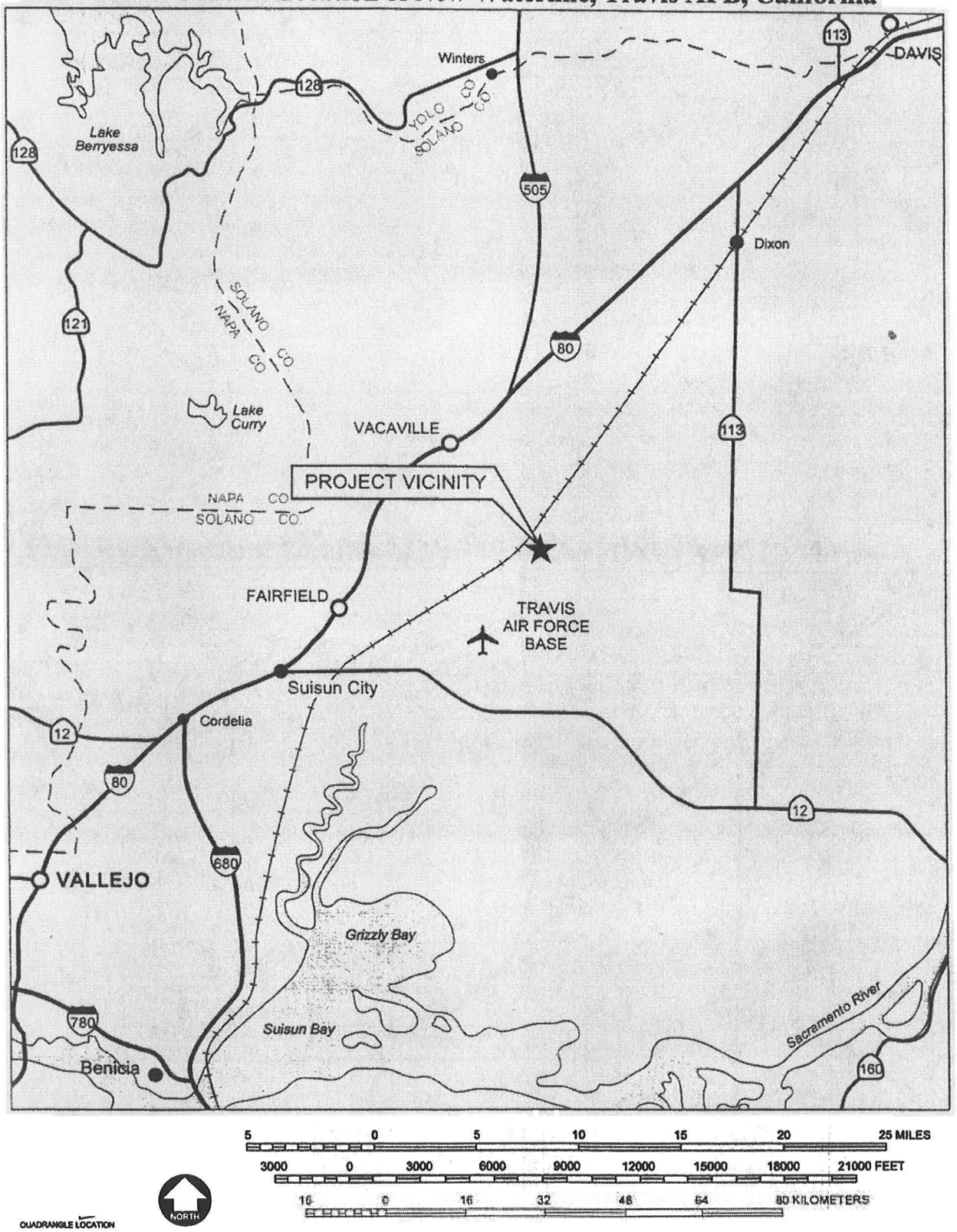
Marc Kodack Archaeologist	14 years U.S. Army Corps of Engineers, Archaeological Planning	Report Preparation
John Suazo Senior Biological Science Environmental Manager	4 years U.S. Army Corps of Engineers, Environmental Planning	Report Review

List of Reviewers

	Office	Title	Telephone Number (707)
Allen Brickeen	60th Civil Engineer Sq	Installation Restoration Program	424-3062
Bob Holmes	60th Civil Engineer Sq	Agronomist	424-3897
Troy Martinson	60th Civil Engineer Sq	Flight Chief	424-7515
Chris Krettecos	60th Civil Engineer Sq	Water Program Manager	424-3587
Wayne Williams	60th Civil Engineer Sq	Community Planner	424-0871
Rudy Pontemayor	60th Civil Engineer Sq	Environmental Planner/Programmer	424-8354

FIGURES

FIGURE 1. General Location of New Waterline, Travis AFB, California



Source: California State Automobile Association, Bay and Mountain Section 1999

FIGURE 2. Project Area for New Waterline, Travis AFB, California

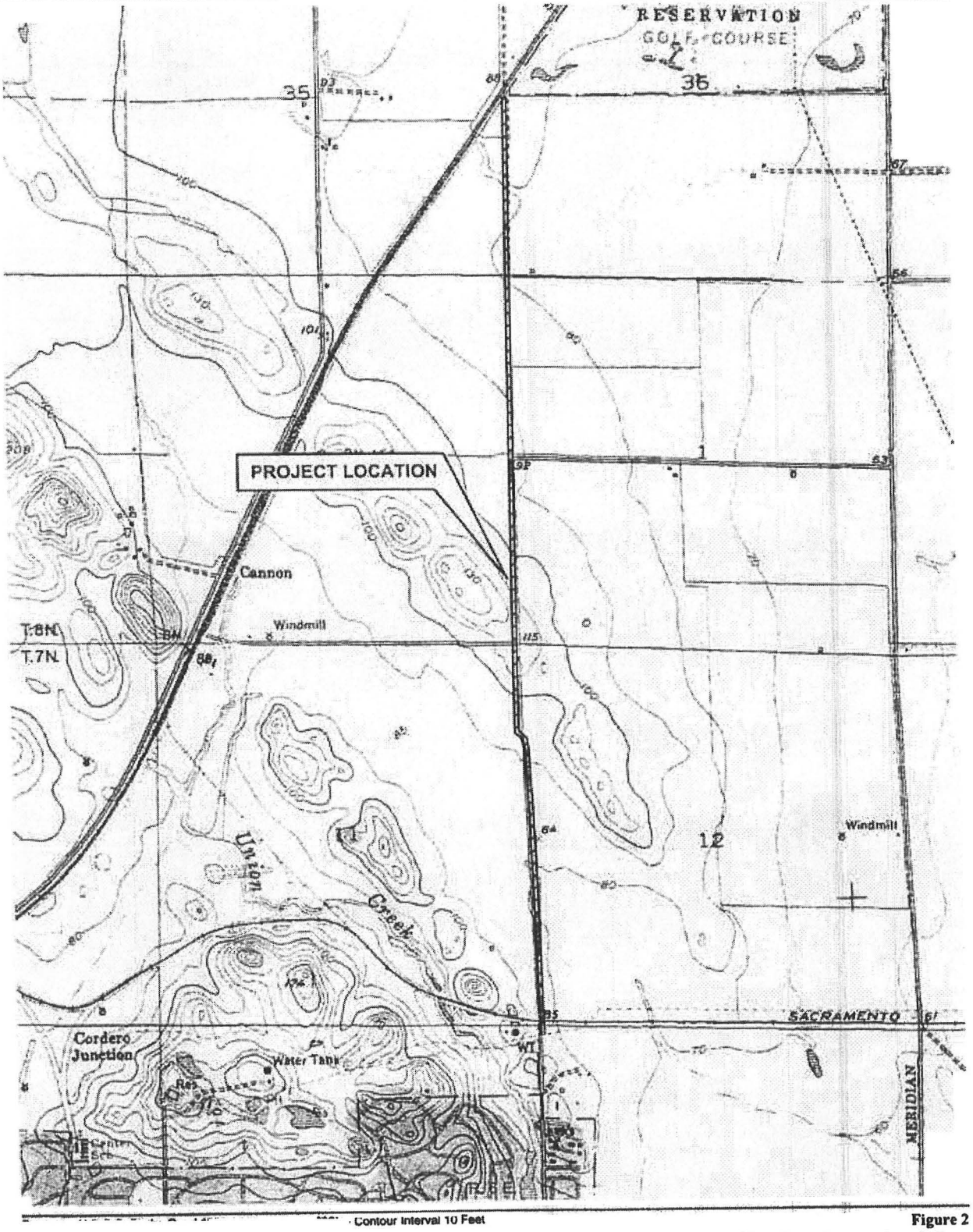
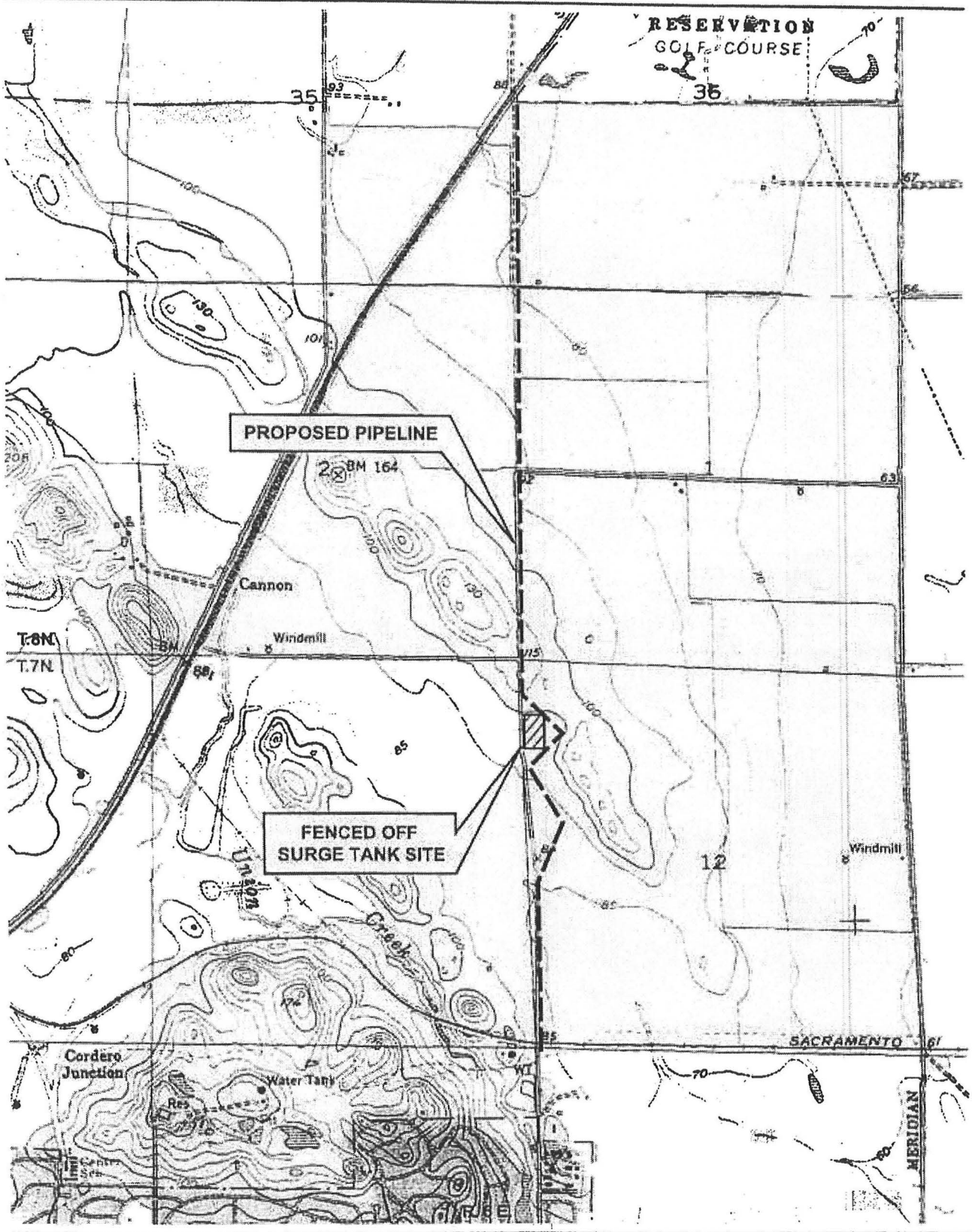


Figure 2
Project Location Map

FIGURE 3. Location of Previous Archaeological Field Work near new pipeline



Source: U.S.G.S. Elmira Quad 1953 (photorevised 1980) – Contour Interval 10 Feet

Figure 3
Proposed Pipeline Route

NORTH 0 1000 2000 Feet

QUADRANGLE LOCATION

North Gate Road Pipeline Project
Travis Air Force Base, California
1T106 Travis 9/02

EDAW

TABLES

Table 1. National and California Ambient Air Quality Standards

Pollutant	Symbol	Average Time	Standards, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	8 hours	N/A	0.08	N/A	160	N/A	If 3-year average of annual third highest daily 8-hour maximum exceeds standard
		1 hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
Nitrogen dioxide	NO_2	Annual average	N/A	0.053	N/A	100	N/A	If exceeded
		1 hour	0.25	N/A	470	N/A	If exceeded	N/A
Sulfur dioxide	SO_2	Annual average	N/A	0.03	N/A	80	N/A	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	N/A	655	N/A	N/A	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	N/A	42	N/A	If equaled or exceeded	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.01	N/A	26	N/A	If equaled or exceeded	N/A
Particular matter	PM_{10}	Annual geometric mean	N/A	N/A	30	N/A	If exceeded	N/A
		Annual arithmetic mean	N/A	N/A	N/A	50	N/A	If exceeded
		24 hours	N/A	N/A	50	150	N/A	If exceeded on more than 1 day per year
Fine particulate matter	$PM_{2.5}$	Annual arithmetic mean	N/A	N/A	N/A	15	N/A	If average exceeded on more than 3 days in 3 years
		24 hours	N/A	N/A	N/A	65	N/A	If exceeds 98th percentile of concentrations in a year
Sulfate particles	SO_4	24 hours	N/A	N/A	25	N/A	If equaled or exceeded	N/A
Lead particles	Pb	Calendar quarter	N/A	N/A	N/A	1.5	N/A	If exceeded on more than day per year
		30 days	N/A	N/A	.5	N/A	If equaled or exceeded	N/A

Table 2. Compliance

Law	Requirement	Agency	Compliance
National Environmental Policy Act	Required for approval of Federal projects	U.S. Department of the Air Force	Yes
Endangered Species Act	Required to evaluate effects of project implementation on Federally listed or proposed threatened and endangered species	U.S. Fish and Wildlife Service	Yes
Section 106, National Historic Preservation Act	Required to evaluate effects of construction on historic properties	California State Historic Preservation Office	Yes

Appendix A

U.S. Fish and Wildlife Service, Endangered Species Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-01-SP-1578

April 3, 2001

Mr. Marc Kodack
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Species Lists for EA for the Construction of a Drinking Water Pipeline, Solano County, California

Dear Mr. Kodack:

We are sending the enclosed list in response to your April 2, 2001, request for information about endangered and threatened species (Enclosure A). These lists fulfill the requirement of the Fish and Wildlife Service (Service) to provide species lists under section 7(c) of the Endangered Species Act of 1973, as amended (Act).

We used the information in your letter to locate the proposed project on a U.S. Geological Survey (USGS) 7.5 minute quadrangle map. The animal species on the Enclosure A quad list are those species we believe may occur within, *or be affected by projects within*, the following USGS quads, where your project is planned: Elmira Quad.

Any plants on the quad list are ones *that have actually been observed* in the project quad(s). Plants may occur in a quad without having been observed there. Therefore we have included a species list for the whole county in which your project occurs. We recommend that you survey for any relevant plants shown on this list.

Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern.

However you must contact the California Department of Fish and Game for official information about these species. Call (916) 322-2493 or write Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814.

ENCLOSURE A

Endangered and Threatened Species that May Occur in or be Affected by

PROJECTS IN SOLANO COUNTY

Reference File No. 1-1-01-SP-1578

April 3, 2001

Listed Species

Mammals

salt marsh harvest mouse, *Reithrodontomys raviventris* (E)

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparie* (E) *

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) *

Birds

California brown pelican, *Pelecanus occidentalis californicus* (E)

California clapper rail, *Rallus longirostris obsoletus* (E)

western snowy plover, *Charadrius alexandrinus nivosus* (T)

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)

Critical Habitat, Central Valley spring-run chinook, *Oncorhynchus tshawytscha* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

callippe silverspot butterfly, *Speyeria callippe callippe* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Critical habitat, delta green ground beetle, *Elaphrus viridis* (T)

delta green ground beetle, *Elaphrus viridis* (T)

Plants

Suisun thistle, *Cirsium hydrophilum var. hydrophilum* (E)

salt marsh bird's-beak, *Cordylanthus maritimus ssp. maritimus* (E)

Some of the species listed in Enclosure A may not be affected by the proposed action. A trained biologist or botanist, familiar with the habitat requirements of the listed species, should determine whether these species or habitats suitable for them may be affected. For plants, we recommend using the enclosed Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species (Enclosure C).
Some pertinent information concerning the distribution, life history, habitat requirements, and published references for the listed species is available upon request. This information may be helpful in preparing the biological assessment for this project, if one is required. Please see Enclosure B for a discussion of the responsibilities Federal agencies have under section 7(c) of the Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

Formal consultation, under 50 CFR § 402.14, should be initiated if you decide that a listed species may be affected by the proposed project. If you decide that a proposed species may be adversely affected, you should consider requesting a conference with our office under 50 CFR § 402.10. Informal consultation may be used before a written request for formal consultation to exchange information and resolve conflicts with respect to a listed species. If a biological assessment is required, and it is not initiated within 90 days of your receipt of this letter, you should informally verify the accuracy of this list with our office.

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as *critical habitat*. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal. Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, this will be noted on the species list. Maps and boundary descriptions of the critical habitat may be found in the *Federal Register*. The information is also reprinted in the *Code of Federal Regulations* (50 CFR 17.95).

Candidate species are being reviewed for possible listing. Contact our office if your biological assessment reveals any candidate species that might be adversely affected. Although they currently have no protection under the Endangered Species Act, one or more of them could be proposed and listed before your project is completed. By considering them from the beginning, you could avoid problems later.

Your list may contain a section called *Species of Concern*. This term includes former *category 2 candidate species* and other plants and animals of concern to the Service and other Federal, State and private conservation agencies and organizations. Some of these species may become candidate species in the future.

We appreciate your concern for endangered species. Please contact Harry Mossman, Biological Technician, at (916) 414-6674, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Mr. Mossman at this address. You may fax requests to him at 414-6712 or 6713.

Sincerely,

for Jan C. Knight
Chief, Endangered Species Division

Enclosures

soft bird's-beak, *Cordylanthus mollis ssp. mollis* (E)
Contra Costa goldfields, *Lasthenia conjugens* (E)
Solano grass, *Tuctoria mucronata* (E)
Colusa grass, *Neostapfia colusana* (T)
showy Indian clover, *Trifolium amoenum* (E) *

Proposed Species

Birds

mountain plover, *Charadrius montanus* (PT)

Candidate Species

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
greater western mastiff-bat, *Eumops perotis californicus* (SC)
small-footed myotis bat, *Myotis ciliolabrum* (SC)
long-eared myotis bat, *Myotis evotis* (SC)
fringed myotis bat, *Myotis thysanodes* (SC)
long-legged myotis bat, *Myotis volans* (SC)
Yuma myotis bat, *Myotis yumanensis* (SC)
San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)
San Joaquin pocket mouse, *Perognathus inornatus* (SC)
Suisun ornate shrew, *Sorex ornatus sinuosus* (SC)

Birds

Swainson's hawk, *Buteo Swainsoni* (CA)
little willow flycatcher, *Empidonax traillii brewsteri* (CA)
black rail, *Laterallus jamaicensis coturniculus* (CA)
bank swallow, *Riparia riparia* (CA)
Aleutian Canada goose, *Branta canadensis leucopareia* (D)
American peregrine falcon, *Falco peregrinus anatum* (D)
Black-Crowned Night Heron, *Nycticorax nycticorax* (MB)
grasshopper sparrow, *Ammodramus savannarum* (SC)
short-eared owl, *Asio flammeus* (SC)
western burrowing owl, *Athene cunicularia hypugea* (SC)
American bittern, *Botaurus lentiginosus* (SC)
ferruginous hawk, *Buteo regalis* (SC)
Vaux's swift, *Chaetura vauxi* (SC)

lark sparrow, *Chondestes grammacus* (SC)
olive-sided flycatcher, *Contopus cooperi* (SC)
white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)
Pacific-slope flycatcher, *Empidonax difficilis* (SC)
common loon, *Gavia immer* (SC)
saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (SC)
loggerhead shrike, *Lanius ludovicianus* (SC)
Suisun song sparrow, *Melospiza melodia maxillaris* (SC)
San Pablo song sparrow, *Melospiza melodia samuelis* (SC)
long-billed curlew, *Numenius americanus* (SC)
white-faced ibis, *Plegadis chihi* (SC)
rufous hummingbird, *Selasphorus rufus* (SC)
Allen's hummingbird, *Selasphorus sasin* (SC)
Bewick's wren, *Thryomanes bewickii* (SC)
California thrasher, *Toxostoma redivivum* (SC)

Reptiles

silvery legless lizard, *Anniella pulchra pulchra* (SC)
northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
southwestern pond turtle, *Clemmys marmorata pallida* (SC)
California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylii* (SC)
western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)
river lamprey, *Lampetra ayresi* (SC)
Pacific lamprey, *Lampetra tridentata* (SC)
longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

Antioch Dunes anthicid beetle, *Anthicus antiochensis* (SC)
Sacramento anthicid beetle, *Anthicus sacramento* (SC)
Midvalley fairy shrimp, *Branchinecta mesovallensis* (SC)
San Joaquin dune beetle, *Coelus gracilis* (SC)
Ricksecker's water scavenger beetle, *Hydrochara ricksecker*i (SC)
California linderiella fairy shrimp, *Linderiella occidentalis* (SC)
San Francisco lacewing, *Nothochrysa californica* (SC)

Plants

Suisun Marsh aster, *Aster lentus* (SC)
alkali milk-vetch, *Astragalus tener var. tener* (SC)

heartscale, *Atriplex cordulata* (SC)
brittlescale, *Atriplex depressa* (SC)
valley spearscale, *Atriplex joaquiniana* (SC)
hispid bird's-beak, *Cordylanthus mollis ssp. hispidus* (SC)
recurved larkspur, *Delphinium recurvatum* (SC)
fragrant fritillary, *Fritillaria liliacea* (SC)
adobe lily, *Fritillaria pluriflora* (SC)
Brewer's dwarf-flax, *Hesperolinon breweri* (SC)
Carquinez goldenbush, *Isocoma arguta* (SC)
delta tule-pea, *Lathyrus jepsonii var. jepsonii* (SC)
legenere, *Legenere limosa* (SC)
Mason's lilaeopsis, *Lilaeopsis masonii* (SC)
little mousetail, *Myosurus minimus ssp. apus* (SC)
Gairdner's yampah, *Perideridia gairdneri ssp. gairdneri* (SC)
Ferris's milk-vetch, *Astragalus tener var. ferrisiae* (SC) *
pappose spikeweed, *Hemizonia parryi ssp. congdonii* (SC) *
Northern California black walnut, *Juglans californica var. hindsii* (SC)

KEY:

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX)	*Proposed Critical Habitat*	Proposed as an area essential to the conservation of the species.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	Other species of concern to the Service.
(D)	*Delisted*	Delisted. Status to be monitored for 5 years.
(CA)	*State-Listed*	Listed as threatened or endangered by the State of California.
*	*Extirpated*	Possibly extirpated from the area.
**	*Extinct*	Possibly extinct
	Critical Habitat	Area essential to the conservation of a species.

ENCLOSURE A

Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Selected Quads Listed Below
Reference File No. 1-1-01-SP-1578
April 3, 2001

QUAD : 498C ELMIRA

Listed Species

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E)

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Critical habitat, delta green ground beetle, *Elaphrus viridis* (T)

delta green ground beetle, *Elaphrus viridis* (T)

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

Plants

Contra Costa goldfields, *Lasthenia conjugens* (E)

showy Indian clover, *Trifolium amoenum* (E)

Proposed Species

Birds

mountain plover, *Charadrius montanus* (PT)

Candidate Species

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Fish

Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugea* (SC)

Aleutian Canada goose, *Branta canadensis leucopareia* (D)

Swainson's hawk, *Buteo Swainsoni* (CA)

ferruginous hawk, *Buteo regalis* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

greater sandhill crane, *Grus canadensis tabida* (CA)

white-faced ibis, *Plegadis chihi* (SC)

bank swallow, *Riparia riparia* (CA)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

alkali milk-vetch, *Astragalus tener var. tener* (SC)

valley spearscale, *Atriplex joaquiniana* (SC) *

adobe lily, *Fritillaria pluriflora* (SC) *

delta tule-pea, *Lathyrus jepsonii var. jepsonii* (SC)

legenere, *Legenere limosa* (SC) *

KEY:

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX)	*Proposed Critical Habitat*	Proposed as an area essential to the conservation of the species.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(MB)	*Migratory Bird*	Migratory bird
(D)	*Delisted*	Delisted. Status to be monitored for 5 years.
(CA)	*State-Listed*	Listed as threatened or endangered by the State of California.
(*)	*Extirpated*	Possibly extirpated from this quad.
(**)	*Extinct*	Possibly extinct.
	Critical Habitat	Area essential to the conservation of a species.

Enclosure B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a) Consultation/Conference

Requires: (1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species; (2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the Federal agency after determining the action may affect a listed species; and (3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) Biological Assessment-Major Construction Activity[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action[2] on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA: an on-site inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat is present; a review of literature and scientific data to determine species' distribution, habitat needs, and other biological requirement; interviews with experts, including those within FWS, State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of indirect effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, and problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

---

[1] A construction project (or other undertaking having similar physical impacts) which is a major federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332(2)C).

[2] "Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

Enclosure C

GUIDELINES FOR CONDUCTING AND REPORTING BOTANICAL INVENTORIES FOR FEDERALLY LISTED, PROPOSED AND CANDIDATE PLANTS

(September 23, 1996)

These guidelines describe protocols for conducting botanical inventories for federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use, in part, the information outlined below in determining whether the project under consideration may affect any listed, proposed or candidate plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

1 Conduct inventories at the appropriate times of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.

2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations(s) is not available, investigators should study specimens from local herbaria.

3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.

4. Report results of botanical field inventories that include:

   a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species.

   b. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name.

   c. survey dates and survey methodology(ies).

   d. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made.

   e. a comprehensive list of all vascular plants occurring on the project site for each habitat type.

   f. current and historic land uses of the habitat(s) and degree of site alteration.

g. presence of target species off-site on adjacent parcels, if known.

h. an assessment of the biological significance or ecological quality of the project site in a local and regional context.

5. If target species is(are) found, report results that additionally include:

a. a map showing federally listed, proposed and candidate species distribution as they relate to the proposed project.

b. if target species is (are) associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species is (are) affected by adjacent off-site hydrological influences, describe these factors.

c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides, photos or color copies of photos of target species or representative habitats to support information or descriptions contained in reports.

d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of target habitat.

6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.

7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than 3 years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.

8 Adverse conditions may prevent investigator(s) from determining presence or identifying some target species in potential habitat(s) of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any year. An additional botanical inventory(ies) in a subsequent year(s) may be required if adverse conditions occur in a potential habitat(s). Investigator(s) may need to discuss such conditions.

9. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.

Appendix B

Results of Archeological Survey at Travis AFB

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2022 J STREET

RAMENTO CALIFORNIA

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Ms. Cherie Johnston-Waldear
U.S. Army Corps of Engineers,
Sacramento District
1325 J Street
Sacramento, California 95814-2922

September 4, 2002

RE: Results of an Archaeological Survey at Travis Air Force Base, Contract Number DACW05-99-D-0006-0014.

Dear Cherie:

This letter report presents the results of an archaeological field survey conducted along North Gate Road, immediately north of Travis Air Force Base (Travis AFB), Solano County, California, on May 23, 2002 (Figure 1). The survey was intended to determine whether there could be any project-related impacts to cultural resources during construction of a proposed waterline that will primarily run on the east side of North Gate Road for approximately 2.5 miles, from a valve vault at the northern edge of Travis AFB to the Cypress Lakes military golf course (Figure 2).

The project is contained within the U.S. Geological Survey (USGS) 7.5′ series Elmira Quadrangle. The elevation of the project area ranges from 80′-115′ above mean sea level. The survey corridor for the waterline route is a 40′ wide right-of-way (ROW) and includes horse pasture and water storage tanks, as well as agricultural fields. Two previously identified historic properties are present within the proposed route. These are North Gate Road and a spur of the former Sacramento Northern Railway. Both were recorded during the survey.

The purpose of the survey was to comply with Sections 106 and 110 of the National Historic Preservation Act, AFI 32-7065 and other applicable laws, regulations and cultural resource mandates. The historic properties recorded during the survey may be impacted by the proposed project and therefore must be evaluated for their potential eligibility for listing on the National Register of Historic Places (36 CFR 800). Evaluations of these properties will follow guidelines specified in the National Register criteria promulgated at 36 CFR 60.4.

Title 36 CFR 60.4 presents several categories of potential significance under which properties may be considered for eligibility on the National Register of Historic Places (NRHP). The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

A) that are associated with events that have made a significant contribution to the broad patterns of our history;

B) that are associated with the lives of persons significant in our past;

C) that embody distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) that have yielded, or may be likely to yield, information important in prehistory or history.

Methods

The survey consisted of a pedestrian walkover of the project corridor. It is understood that the waterline will be placed within an existing roadside ditch for much of its length; however, the full 40' wide corridor was examined. The survey was conducted by a qualified archaeologist, Charlane Gross, M.A., R.P.A. Prior to the fieldwork, EDAW performed a record search for the project at the North Central Information Center (NCIC). The purpose of the NCIC search was to determine whether there were previously recorded historic resources or archaeological surveys in the vicinity of the project area. The walkover survey was utilized to confirm findings in the record search, as well as to check for the presence of other cultural resources.

A letter was sent to the Native American Heritage Commission (NAHC) requesting background information regarding prehistoric, historic, or ethnographic land use of the area. The NAHC did not identify any resources within the project area. However, they did recommend that the Cortina Band of Indians be contacted with the same information request. Kesner Flores of the Cortina Band was contacted, but did not identify any cultural resources within the project area (see attachment).

Record Search Results

The NCIC has no record of previously identified cultural resources within the waterline project areas, and no previous surveys appear to have been conducted in the vicinity. The NCIC search included examination of background historic resources including:

OHP Historic Property Directory

Historic Spots in California (1990)

California Inventory (1996)

GLO Plat Maps for Townships 5-6 North, Range 1 West

- California Historic Landmarks (1996)
- National Register of Historic Places (1996 and 2000)

California Points of Historical Interest (1992 and updates)

Thompson and West Historical Atlas (1878)

All sources yielded negative results except the GLO Plat maps. The 1861 survey of Rancho Tolenas indicates that the project area lies near the eastern edge of that historic land grant. An 1859 GLO map depicts Rancho Los Putos immediately to the north of Rancho Tolenas. The eastern edge of

Rancho Los Putos coincides with the present-day North Gate Road, implying that North Gate road is an extension of an original grant boundary line. North Gate Road ends south of Cypress Lakes military golf course. A road beginning north of the golf course, in line with North Gate Road, is labeled as a grant boundary on the Elmira 1980 USGS 7.5′ quadrangle map, reinforcing the supposition that North Gate Road is an extension of the grant boundary line.

A portion of this same road appears to be depicted on the 1857 GLO map where it is labeled "Road from Embarcadero to Vacaville". This road seems to terminate near the southeastern border of Township 6 North Range 1 West Section 2. A series of fence posts and two houses also appear on the 1857 map. Due to changes in scale, road widths and other unknown factors, it is impossible to determine where these houses might have been in relation to the modern road alignment.

The second historic resource that falls within the project ROW consists of a segment of rail from the former Sacramento Northern Railway. This segment was originally part of the Oakland, Antioch, and Eastern Railway (OA&E), built beginning in 1913. The OA&E was purchased by the Sacramento Northern in 1928 and later was purchased by Western Pacific. The Western Pacific Railroad was completed in several segments, all built around the turn of the century. The railroad eventually ran from Oakland, CA to Salt Lake City, UT. High construction costs and low revenues forced the company into early bankruptcy. Corporate reorganization and the purchase of several small local railroads (including the Sacramento Northern) revitalized the Western Pacific (Crump 1965; Dunscomb and Stindt 1980). The segment of rail crossing the project area was constructed in 1919 to connect the Suisun-Vacaville branch of the Sacramento Northern to Western Pacific's San Francisco-Sacramento line. Regular passenger service on this line ended in 1940.

Survey Area

The survey was conducted in a single day. To begin with, the Dean Ryan Consultants & Designers, Inc. Project Manager, Hugh Miles, pointed out the proposed project route. Following that, the archaeologist, Charlane Gross, began at the northern end of the project are and walked a zigzag pattern within 20′ of North Gate Road to the southern end of the project area. At the southern end, the archaeologist turned and walked a zigzag route back, east of the first transect, approximately 35′ from North Gate Road. In this way, the entire project area was examined. In the two areas where the proposed waterline route diverged from the North Gate Road corridor (Figure 3), the archaeologist walked a zigzag pattern within 20′ of North Gate Road on the transect to the south, then followed the approximate interior route of the waterline on the return trip to the north, thus covering each possibility.

The proposed route includes a number of features. At the northern end, the route terminates in a bulldozed area approximately 50′ wide adjacent to the southwest corner of the golf course. An east-west running canal borders the southern edge of the golf course, with dirt roads on either side. The canal contains a culvert to carry the water under the southern dirt road. The waterline route parallels a north-south fence line south of this point to the far end of the route.

South of the canal crossing, the project ROW consists of plowed fields on either side of the fence, with a small drainage ditch (approximately 2′ deep) that parallels North Gate Road, approximately 20′ to

the east. Approximately 2,500′ south of the culvert, the waterline route crosses an approximately 10′ deep ditch, the Noonan Drain, partially lined with modern refuse. Beyond the Noonan Drain, the waterline ROW resumes in plowed fields. Approximately 1,500′ south of the Noonan Drain, it was planned that the ROW would briefly cross to the west side of the fence line. However, access to that parcel, at Lateral D-1-D, has been denied by the landowner. It is understood that the waterline instead will be placed within fill excavated from a ditch that parallels Lateral D-1-D on the east side of the fence line. The Lateral D-1-D parcel is approximately 1,300′ wide.

North Gate Road begins at the southern end of the Lateral D-1-D property. The fence line also continues to run to the south. A small roadside ditch lies between the fence and North Gate Road. It is understood that much of the waterline from this point to the southern terminus of the project area will be placed in this roadside ditch. From the northern end of North Gate Road, the proposed waterline will continue parallel to the east side of the road for approximately 3,200′ to the fence line for a surge tank. At this point, it is understood that the waterline route will turn eastward to go around the fenced enclosure for the surge tank and then turn back to the road (Figure 3). After reaching the road again, the proposed route will jog east a second time to bypass several small meanders in the roadbed, returning to North Gate Road approximately 3,000′ north of the valve vault. From here, the waterline will continue to parallel the east side of North Gate Road to the valve vault. The southernmost 500′ of the waterline ROW includes a series of small horse corrals.

Survey Results

The majority of the project area consisted of fallow farm fields, though some had recently been harvested of hay, particularly from the golf course to the Noonan Drain. Visibility within this portion of the survey area averaged between 30-50%. A 10-15′ wide firebreak had been cleared just east of the entire fence line, from the Noonan Drain southwards to the horse corrals, including around the fence for the surge tank. Surface visibility within the firebreak was 100%. East of the firebreak, from the Noonan Drain to the valve vault, visibility averaged 20-30%. Visibility within the horse corrals was approximately 50% due to weed growth since horses last occupied them. In areas with less than 25% visibility, the archaeologist stopped approximately every 100′ and cleared an area for better visibility.

The archaeologist conducted the field walkover as described above. Concrete and modern debris were noted in the Noonan Drain. Isolated examples of modern garbage (e.g. plastic, clear bottle glass) were sparsely scattered within the project ROW. No other cultural resources were identified within the project area, with the exception of North Gate Road itself and tracks for the former Sacramento Northern Railway, which cross the southern end of the ROW. These two historic elements were recorded on appropriate Department of Parks and Recreation forms (DPR-523). The forms are appended to this letter report.

Recommendations

With the exceptions of North Gate Road and the tracks of the Sacramento Northern Railroad, no cultural resources were identified during the background research or fieldwork phases of this archaeological survey. As currently designed, the waterline project will not impact North Gate Road.

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Therefore, the DPR forms recording North Gate Road adequately address this resource and no additional work is required.

The Sacramento Northern Railway spur that crosses the project area was originally part of the Oakland, Antioch and Eastern Railway (OA&E) which was begun in 1913. This railway was built for local use and appears to have been in operation as a passenger line for only 20 years, though there may have been a later resurgence as a freight line during WWII. The OA&E was reorganized into the San Francisco – Sacramento Railroad in 1919, and purchased by the Sacramento Northern Railway in 1928. The line was late purchased by Western Pacific regular passenger service peaked in 1940. The rail line currently appears to be either unused or subject to little use. The evaluation of the Sacramento Northern Railway as an eligible resource for listing to the NRHP would require analysis of the system as a whole, as well as the Western Pacific system. This analysis goes beyond the scope of this project, though the elements of the rail line present within the project ROW do appear to retain qualities of location, design, setting, materials, workmanship, feeling, and association that might make it eligible for inclusion on the NRHP. Therefore, it is recommended that the waterline be constructed in such a manner that it not impact the rail line, a potential contributing element to this resource.

If unanticipated discoveries are made during construction of the waterline, construction should be halted until a qualified archaeologist can examine the finds and assess their potential significance.

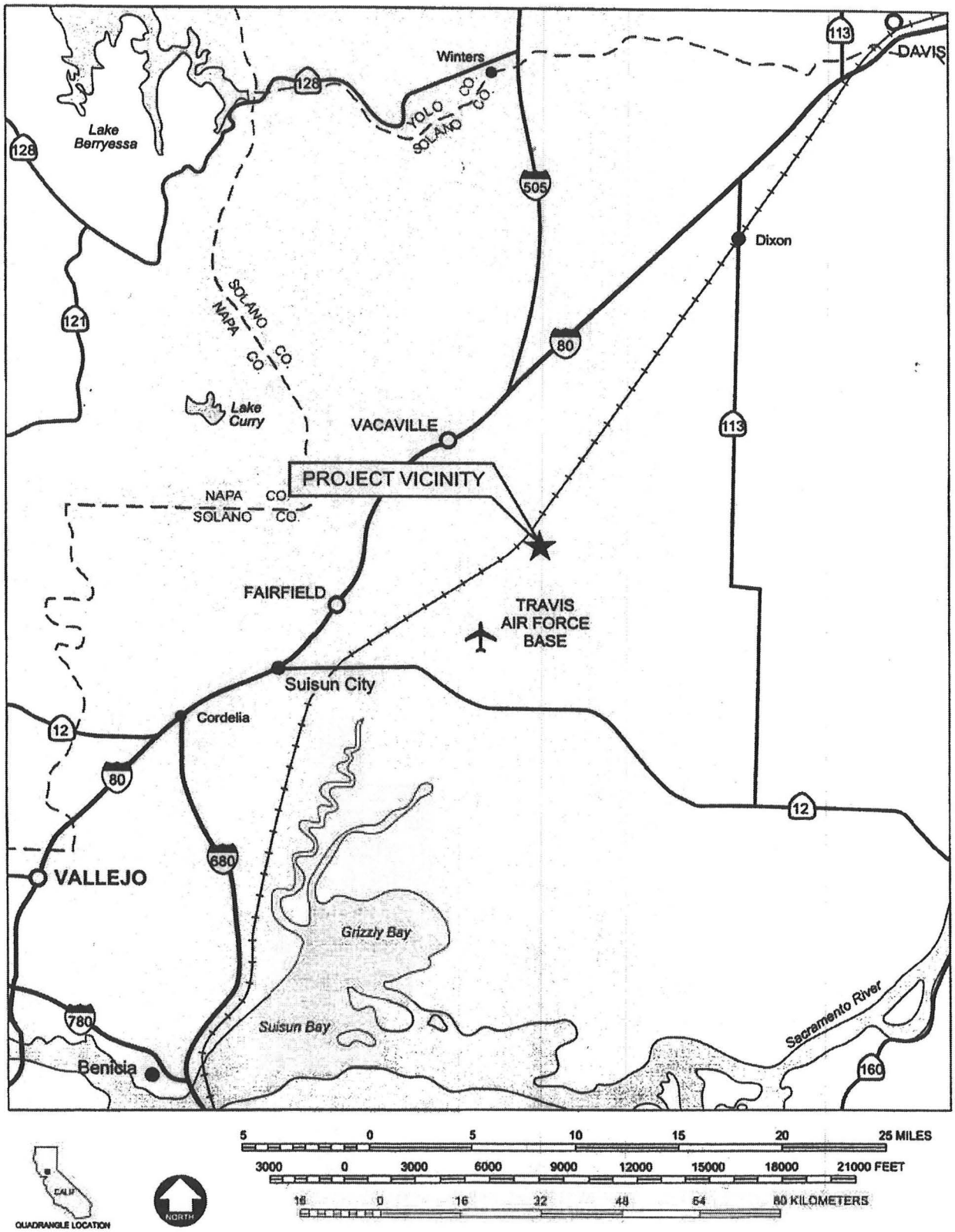
If you have any questions or comments regarding this report, please feel free to contact me.

Sincerely,

Charlane Gross
Project Manager

cc: Hugh Miles, Dean Ryan Consultants and Design, Inc.
1T106.01/Chron
P:\2001\1T106.01 Travis AFB\Submittals & Deliverables\Final Cultural Survey Results ltr rpt.doc

Attachments:
Figure 1 Project Vicinity Map
Figure 2 Project Location Map
Figure 3 Proposed Pipeline Route
Survey Letter from Kesner C. Flores Jr., Wintun Environmental Protection Agency
Department of Parks and Recreation Record Forms

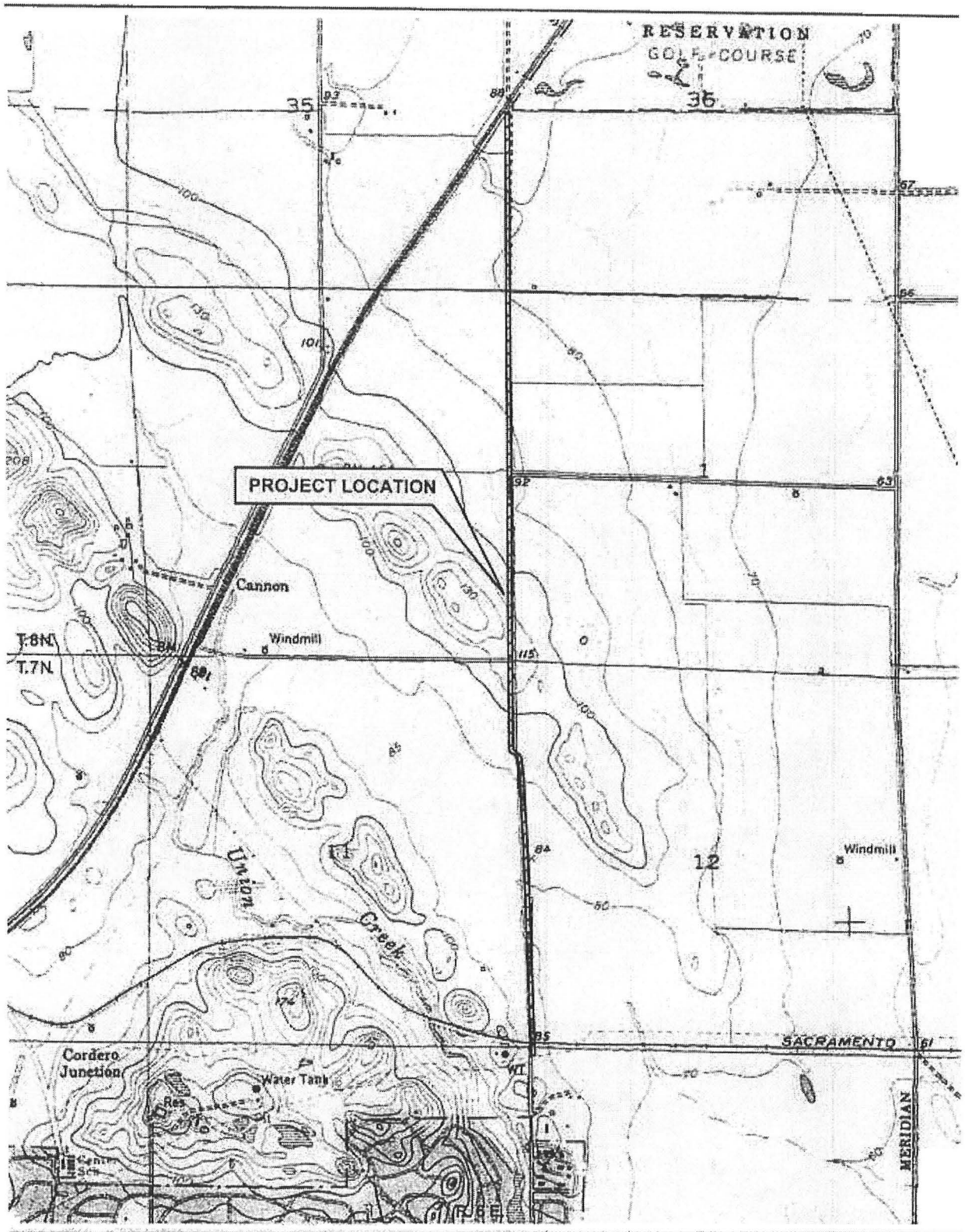


Source: California State Automobile Association, Bay and Mountain Section 1999

Figure 1
Project Vicinity Map

North Gate Road Pipeline Project
Travis Air Force Base, California
IT106 Travis 9/02

EDAW



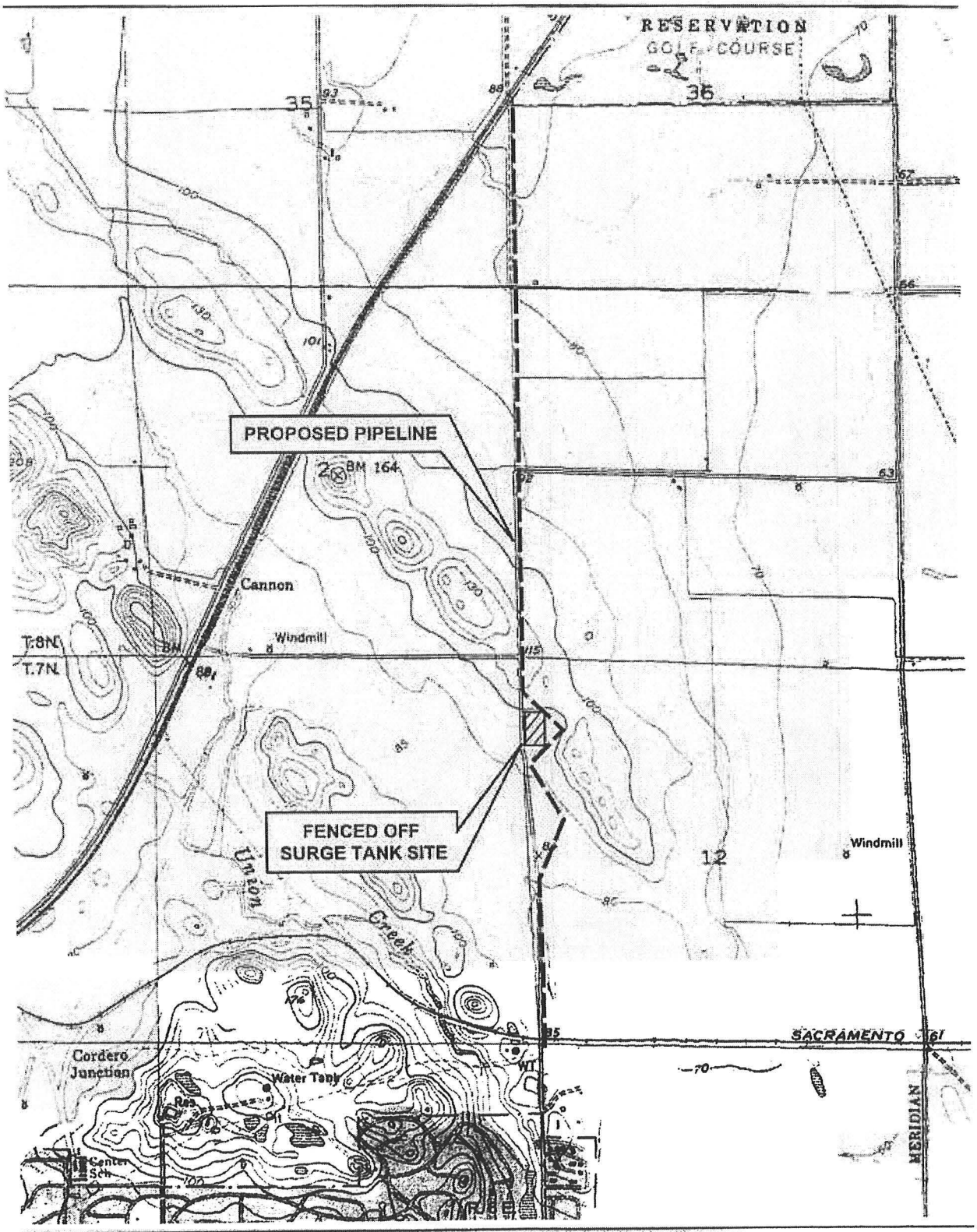
Source: U.S.G.S. Elmira Quad 1953 (photorevised 1980) – Contour Interval 10 Feet

Figure 2
Project Location Map

NORTH 0 1000 2000 Feet

North Gate Road Pipeline Project
Travis Air Force Base, California
1T106 Travis 9/02

EDAW



Source: U.S.G.S. Elmira Quad 1953 (photorevised 1980) -- Contour Interval 10 Feet

Figure 3
Proposed Pipeline Route

NORTH 0 1000 2000 Feet

North Gate Road Pipeline Project
Travis Air Force Base, California
1T106 Travis 9/02

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WINTUN ENVIRONMENTAL
PROTECTION AGENCY

April 26, 2002

TO: Charlene Gross

FROM: Kesner C. Flores Jr.

PROJECT NAME: Travis-North Gate Road Project # 1T106.01

SUBJECT: Survey Pages: 4

Dear Ms. Charlene Gross

After reviewing the maps and the brief description which had been faxed to our office on this date.

I do know that there are or have been archeological finds in the area. Since archeology has been done at times poorly, it is hard to say that there are nothing of significance in the project area.

I am attaching our process for the Patwin Wintun territory for archeological sites. Please feel free to contact me, if you any questions in this matter.

Sincerely,

Kesner C. Flores Jr
MLD, Patwin Wintun
Cortina Indian Rancheria
Director Wintun EPA/ Environmental Inspector

P.O. Box 1839
570 Sixth Street, Suite F
Williams, California, 95987

Phone: 530-473-3318
Fax: 530-473-3320
Email: corweps@hotmail.com

Recommended Methods for Burial Recovery

(I) Management Plan

We strongly advise all parties to develop in consultation with affected tribes a written management plan for handling human remains. The plan will dictate a set of procedures and responsibilities to be implemented in the field, lab, repatriation, and actions to be taken on further discovery. All parties to the plan, including the Pa-Twin Most Likely Descendent, Archaeological Consultant, and Project Lead, should provide input, support, and endorse the plan.

(II) CEQA Compliance

No physical action should be taken at the site of discovery until implementation of the lawful procedures mandated by CEQA, Appendix K, Section VIII "Discovery of Human Remains," as follows: "In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:" 1. (the discoverer) contacts the County Coroner (CC), 2. (CC) contacts the Native American Heritage Commission (NAHC), 3. (NAHC) identifies and contacts the Most Likely Descendent (MLD), and 4. (Lead) initiates consultation with MLD and landowner.

(III) Comportment

All parties to the action are strongly advised to treat the remains with appropriate dignity, as provided in Public Resources Code Section 5097.98. We further recommend that all parties to the action treat tribal representatives and the event itself with appropriate respect. For example, jokes and antics pertaining to the remains, or other inappropriate behavior such as loud music, smoking, etc., are ill-advised.

(IV) Training and Experience

Project directors and crew chiefs shall have thorough training and a working knowledge of skeletal anatomy and a demonstrated knowledge of Native California prehistoric burial practices. The primary archaeological consultant will be responsible for providing up-to-date CVs or resumes for all field personnel on request.

(V) Blessings

Prior to any physical action related to the remains, a designated Pa-Twin tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers.

(VI) Excavation Methods

A number of different burial exposure techniques have a history in the discipline and reasonable adaptations of methods to special circumstances are expected. Ideally, an initial exposure of the bones will be done to confirm they are human and to determine the position, posture, and orientation of the remains. At this point, we recommend the following procedure:

(A) Tools. Ideally, all excavation in the vicinity of the remains will be conducted using fine hand tools and fine brushes to sweep loose dirt free from the exposure.

(B) Extent of Exposure. In order to determine the nature and extent of the grave and its contents, controlled excavation should extend to a full buffer zone around the perimeter of the remains.

(C) Perimeter Balk. To initiate the exposure, a perimeter balk (essentially, a shallow trench) should be excavated, representing a reasonable buffer a minimum of 10 cm around the maximum extent of the known skeletal remains, with attention to counter-intuitive discoveries or unanticipated finds relating to this or other remains. The dirt from the perimeter balk should be bucketed, distinctly labeled, and screened for cultural materials.

(D) Exposure Methods. Excavation should then proceed inward from the walls of the balk as well as downward from the surface of the exposure. Loose dirt should be scooped out or brushed off into a dustpan or other collection device. Considerable care should be taken in the direct exposure of the bones, and a number of investigators have had success using dental tools or fine-pointed bamboo or wood skewers, the latter preferred because they are less likely to damage the bone.

(E) Provenience. Buckets, collection bags, notes, and tags should be fully labeled per provenience, and a distinction should be made between samples collected from: (1) **Perimeter Balk** (described above), (2) **Exposure** (dirt removed in exposing the exterior/burial plan and associations, and (3) **Matrix** (dirt from the interstices between bones or associations). Thus, each burial may have three bags, "Burial 1 Perimeter Balk," "Burial 1 Exposure," and "Burial 1 Matrix."

(F) Records. At a minimum, the following records should be compiled in the field: (1) a detailed scale drawing of the burial, including the provenience of and full for all bones, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, and intrusive disturbance, (2) complete a formal burial record using the consultants proprietary form or other standard form providing information on site #, Unit or other provenience, level depth, depth and location of the burial from a fixed datum, workers, date(s), artifact list, skeletal inventory, and other pertinent observations, (3) crew chief and worker field notes that may supplement or supercede information contained in the burial recording form, and (4) photographs, including either or standard photography or high-quality (>300 DPI) digital imaging.

Please note the provisions below with respect to handling and conveyance of records and samples.

(G) Association. Association between the remains and other cultural materials is to be determined in the field in consultation with a Pa-Twin representative, and may be amended per laboratory findings. Records of provenience and sample labels should be adequate to determine association or degree of likelihood of association of human remains and other cultural materials.

(H) Samples. For each burial, all **Perimeter Balk** soil is to be 1/8"-screened. All **Exposure** soil is to be 1/8"-screened, and a minimum of one 5-gallon bucket of excavated but unscreened Exposure soil is to be collected, placed in a plastic garbage bag in the bucket. All **Matrix** soil is to be carefully excavated, screened as appropriate, and then collected in plastic garbage bags placed in 5-gallon buckets.

(I) The remains are not to be cleaned in the field.

VII Lab Procedures

Lab Methods will be determined on a project-specific basis in consultation with Pa-Twin representatives. However, the following procedures are recommended:

(A) Responsibility. The primary archaeological consultant will be responsible for insuring that all lab procedures follow stipulations made by the Pa-Twin representative.

(B) Blessings. Prior to any laboratory activity related to the remains, a designated Pa-Twin tribal representative may conduct prayers and blessings over the remains. Further, the laboratory consultant will be responsible for insuring that pertinent personnel and lab facilities will be available for traditional blessings and prayers.

(C) Physical Proximity of Associations. To the extent possible, all remains, associations, samples, and original records are to be kept together throughout the laboratory process. In particular, **Matrix** dirt is to be kept in buckets and will accompany the remains to the lab. The primary archaeological consultant will be responsible for copying all field records and images, and insuring that the original notes and records accompany the remains throughout the process

(D) Stipulations for Acquisition and Use of Imagery. Photographs and images may be used only for showing location or configuration of questionable formations or for the position of the skeleton. They are not to be duplicated for publication unless a written release is obtained from a Pa-Twin representative.

(E) Additional Lab Finds. Laboratory study should be done making every effort to identify unanticipated finds or materials missed in the field, such as objects encased in dirt. In the event of discovery of additional remains, materials, and associations, the Pa-Twin representative is to be contacted immediately.

GW/KF 08-10-01

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

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: North Gate Road

P1. Other Identifier:

*P2. Location: ☐Not for Publication X Unrestricted *a. County: Solano
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Date: 1980
Elmira T 5-6N ; R 1W ; Western border of Sec 13, 12, 1 ; M.D.B.M.

c. Address: City: Fairfield Zip:

d. Zone: 10

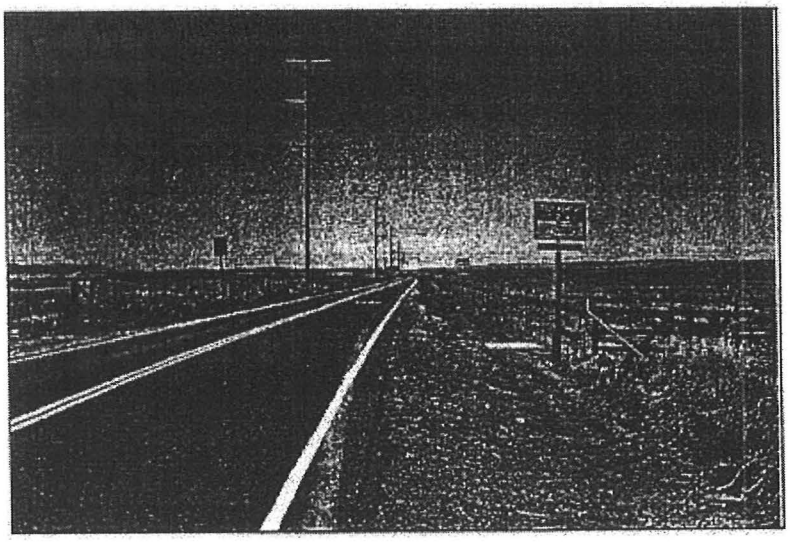
e. Other Locational Data:
UTM: 593440 mE/ 4237690 mN; 593335 mE/ 4240418 mN

*P3a. Description:
The resource consists of a north-south running road, approximately 9000' in length and 20' in width, that goes from the north gate of Travis AFB to Cannon Road.

*P3b. Resource Attributes: HP 37

*P4. Resources Present: ☐Building X Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo:
(View, date, accession #) Lkg
May 23; Lkg N



*P6. Date Constructed/Age and Sources: X Historic ☐Prehistoric ☐Both
Possibly 1850's

*P7. Owner and Address:
Travis AFB
Fairfield, CA

*P8. Recorded by:
Charlane Gross
EDAW, Inc.
2022 J Street
Sacramento, CA 95814

*P9. Date Recorded:
May 23, 2002

*P10. Survey Type: (Describe)
Reconnaissance

*P11. Report Citation: Letter Report "Results of an Archaeological Survey at Travis Air Force Base, Contract Number DACW05-99-D-0006-0014", by Charlane Gross, August 2002

*Attachments: ☐NONE X Location Map ☐Sketch Map ☐Continuation Sheet
☒Building, Structure/Object Record Archaeological Record ☐District Record X Linear Feature Record
☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record
☐Other (List):

*Resource Name or #: (Assigned by recorder) North Gate Road

B1. Historic Name:
n/a

B2. Common Name:
North Gate Road

B3. Original Use:
road

B4. Present Use:
road

*B5. Architectural Style:

n/a

*B6. Construction History: (Construction date, alterations, and date of alterations)

ca. 1850

*B7. Moved? ☒No ☐Yes ☐Unknown Date: Original Location:

Related Features:

none

B9a. Architect: n/a

B9b. Builder: n/a

*B10. Significance: Theme
n/a Transportation

Area
Fairfield

Period of Significance
n/a

Property Type
n/a

Applicable Criteria
n/a

(Discuss importance in terms of historical or architectural context as defined by theme, period and geographic scope. Also address integrity.)

The eastern edge of historic Rancho Los Putos coincides with present-day North Gate Road, implying that it is an extension of an original grant boundary line. A road beginning north of the Cypress Lakes Golf Course, in line with North Gate Road, is labeled as a grant boundary on the Elmira 1980 USGS 7.5' quadrangle map, reinforcing the supposition that North Gate Road is an extension of the grant boundary line. The road is now covered in asphalt, with a center painted line. Originally it would have been dirt, therefore while the context remains the same, the resource itself has been altered to a marked degree.

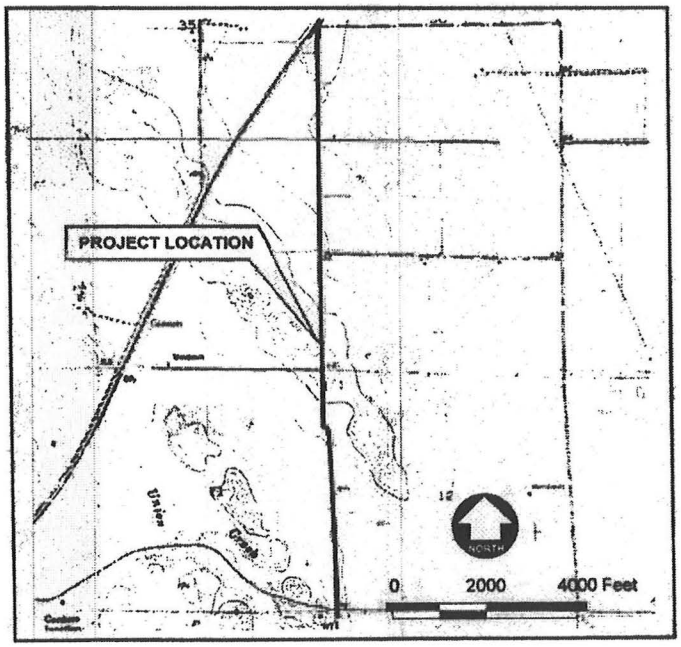
B11. Additional Resource Attributes: (List attributes and codes)
HP-37

*B12. References:
General Land Office Plat of the Rancho Los Putos – 1857, T 6N R 1 W.
United States Geological Survey – 1980 Elmira, Calif. 7.5' Quadrangle.

B13. Remarks:

*B14. Evaluator:
Charlane Gross

*Date of Evaluation:
May 23, 2002



(This space reserved for official comments.)

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LINEAR FEATURE RECORD**	Primary # HRI # Trinomial

 *Resource Name or #: North Gate Road

L1. Historic and/or Common Name: North Gate Road

L2a. Portion Described: X Entire Resource ☐Segment ☐Point Observation Designation:

b. Location of point or segment:
593440 mE/ 4237690 mN; 593335 mE/ 4240418 mN

L3. Description: Resource consists of an asphalt paved road with a painted centerline, and minimal road base

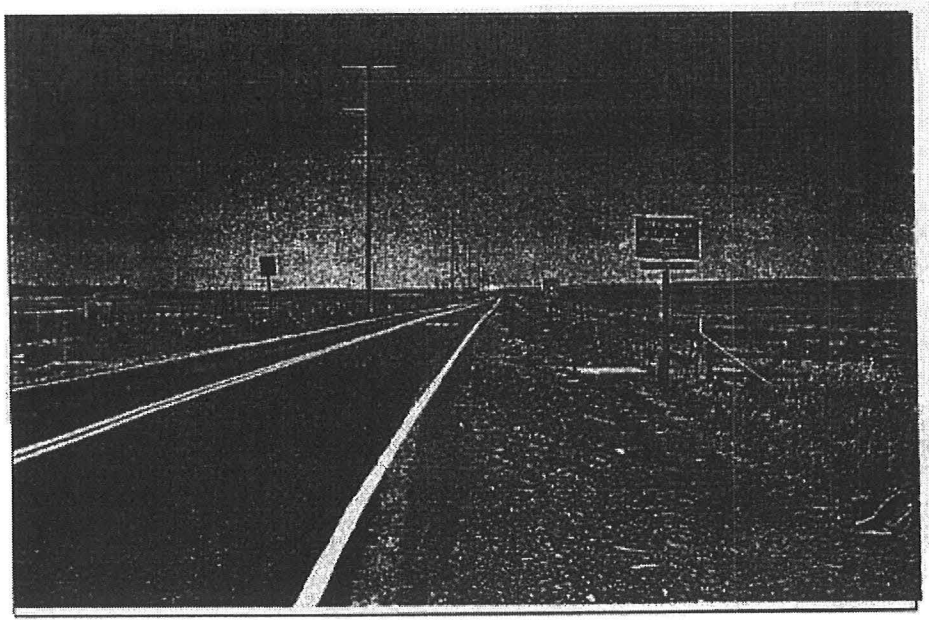
L4. Dimensions:
a. Top Width: Approx. 20'
b. Bottom Width:
c. Height or Depth:
d. Length of Segment: Approx. 9000'

L4e. Sketch of Cross-Section (include scale) Facing: N

L5. Associated Resources: None

L6. Setting: Relatively level agricultural fields or open grassland on either side fo the road.

L7. Integrity Considerations:
This roadway is now covered in asphalt, with a center-painted line. Originally would have been dirt, therefore while the context remains the same, the resource itself has been altered to a marked degree.



L8B. Description of Photo, Map, or Drawing (View, scale, etc.)
Lkg N

L9. Remarks:

L10. Form Prepared by:
(Name, affiliation, and address)

Charlane Gross
EDAW, Inc.
2022 J Street
Sacramento, CA 95814

L11. Date:
May 23, 2002

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

LOCATION MAP

Primary # _____
HRI# _____
Trinomial _____

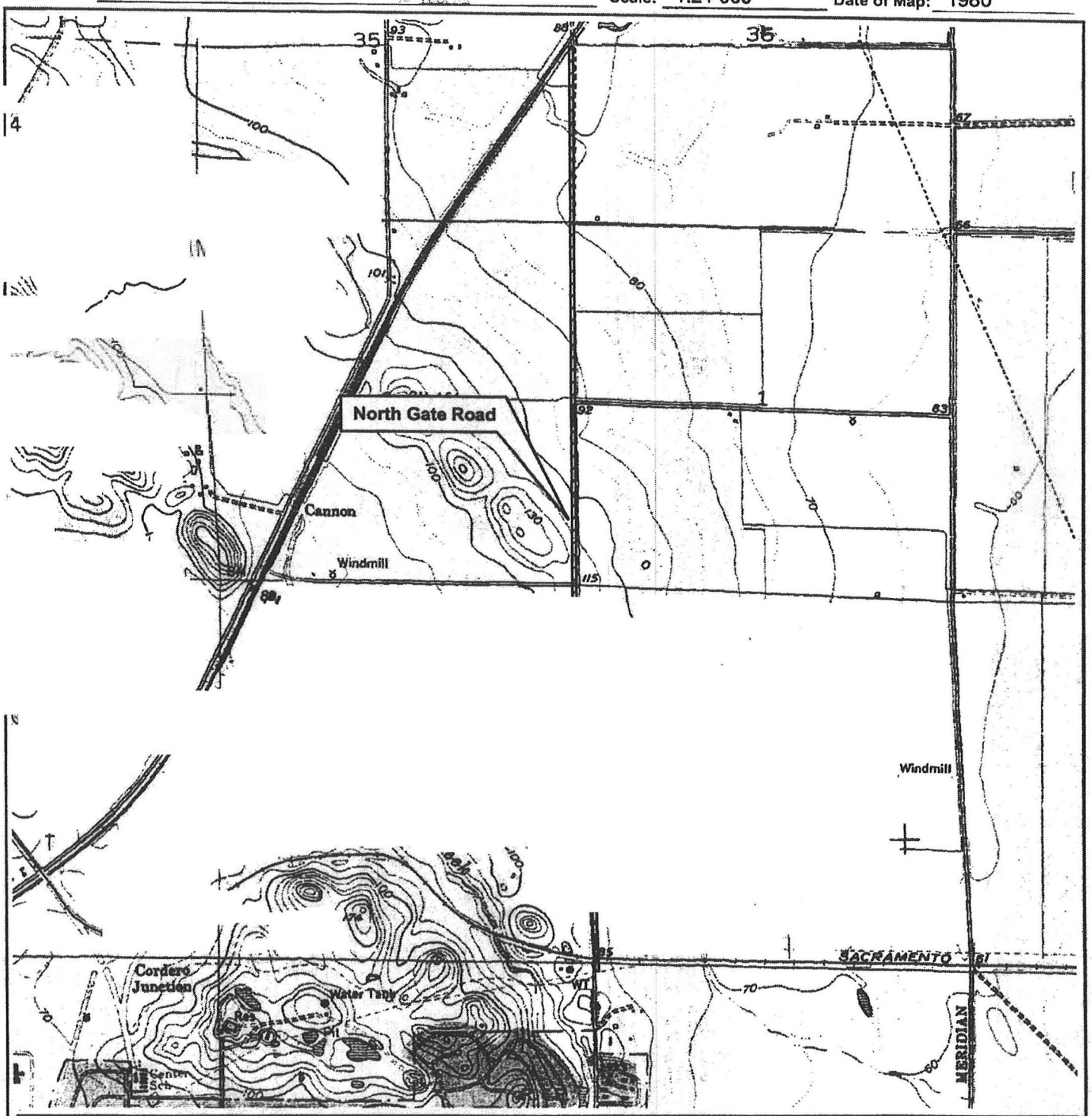
Page 4 of 4

*Resource Name or # (Assigned by recorder) North Gate Road

*Map Name: U.S.G.S. Elmira Quad

*Scale: 1:24 000

*Date of Map: 1980



Source: U.S.G.S. Elmira Quad 1953 (photorevised 1980) -- Contour Interval 10 Feet

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1. .5 0 1 KILOMETER

NORTH

CALIF

QUADRANGLE LOCATION

DPR 523J (1/95)

*Required Information

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

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: Sacramento Northern Railway

P1. Other Identifier:

*P2. Location: ☐ Not for Publication X Unrestricted *a. County: Solano
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Date: 1980
Elmira T 5N ; R 1W ; ¼ of SW ¼ of SW ¼ of Sec 12 ; M.D.B.M.

c. Address: City: Fairfield Zip:

d. Zone: 10 ; UTM: 593440 mE/ 4238018 mN

e. Other Locational Data:

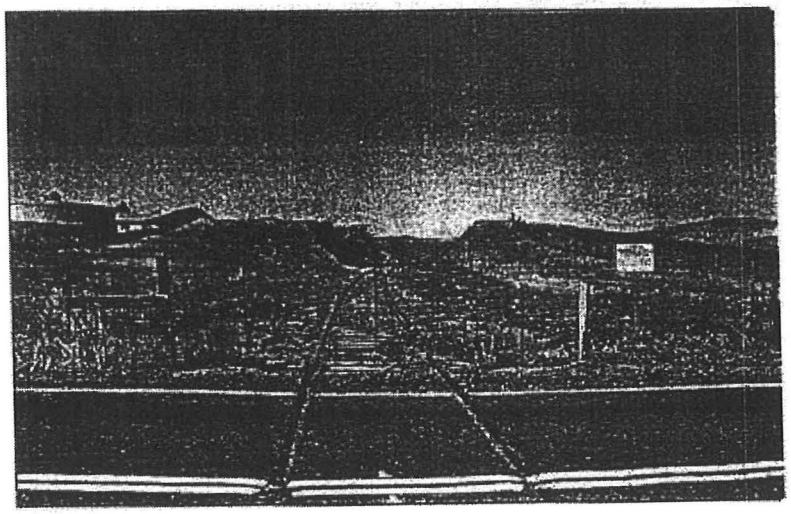
From the North Gate of Travis Air Force Base, proceed approximately 1000' north on North Gate Road. The tracks of the Sacramento Northern cross North Gate Road at this point.

*P3a. Description:

The resource consists of a spur, 40' in length, 8' in width, of the former Sacramento Northern Railway.

*P3b. Resource Attributes: AH 7

*P4. Resources Present: ☐ Building X Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo:
(View, date, accession #) Lkg
May 23, 2002; Lkg W

*P6. Date Constructed/Age and Sources: X Historic ☐ Prehistoric ☐ Both
1913

*P7. Owner and Address:
Travis AFB
Fairfield, CA

*P8. Recorded by:
Charlane Gross
EDAW, Inc.
2022 J Street
Sacramento, CA 95814

*P9. Date Recorded:
May 23, 2002

*P10. Survey Type: (Describe)
Reconnaissance

*P11. Report Citation: Letter Report "Results of an Archaeological Survey at Travis Air Force Base, Contract Number DACW05-99-D-0006-0014", by Charlane Gross, August 2002

*Attachments: ☐ NONE
☒ Building, Structure/Object Record
☐ Milling Station Record
☐ Other (List):
X Location Map
Archaeological Record
☐ Rock Art Record
☐ Sketch Map
☐ District Record
☐ Artifact Record
☐ Continuation Sheet
X Linear Feature Record
☐ Photograph Record

*Required information

B1. Historic Name:
Sacramento Northern Railway

B2. Common Name:
Sacramento Northern Railway

B3. Original Use:
Railroad spur

B4. Present Use:
Unused spur

*B5. **Architectural Style:**

n/a

*B6. **Construction History:** (Construction date, alterations, and date of alterations)

Constructed ca. 1913

*B7. **Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**

*B8. **Related Features:**
none

B9a. Architect: n/a

B9b. Builder: n/a

*B10. **Significance:**

Theme	Area
Railroad	Fairfield

Period of Significance	Property Type	Applicable Criteria
n/a	n/a	n/a

(Discuss importance in terms of historical or architectural context as defined by theme, period and geographic scope. Also address integrity.)
This segment of rail crossing the project area was constructed in 1913 to connect the Suisun-Vacaville branch of the Sacramento Northern Railway to Western Pacific's San Francisco-Sacramento line. Lack of recent use has led to the rails becoming rusted. Soil and gravels have built up along the edges of the ties in some locations, or have eroded away in others. The asphalt of North Gate Road has partially covered the rail line. Although the rail retains integrity of location, the physical integrity of the resource has been compromised.

B11. Additional Resource Attributes: (List attributes and codes)
AH-7

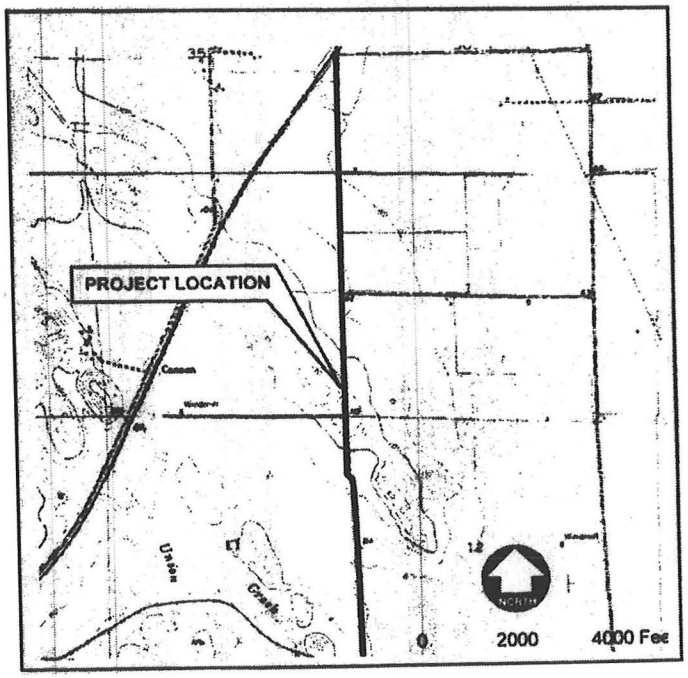
*B12. **References:**

B13. Remarks:

*B14. **Evaluator:**
Charlane Gross

***Date of Evaluation:**
May 23, 2002

(This space reserved for official comments.)



L1. Historic and/or Common Name: Sacramento Northern Railway

Portion Described: ☐Entire Resource X Segment ☐Point Observation Designation:

b. Location of point or segment: 593440 mE; 4238018 mN

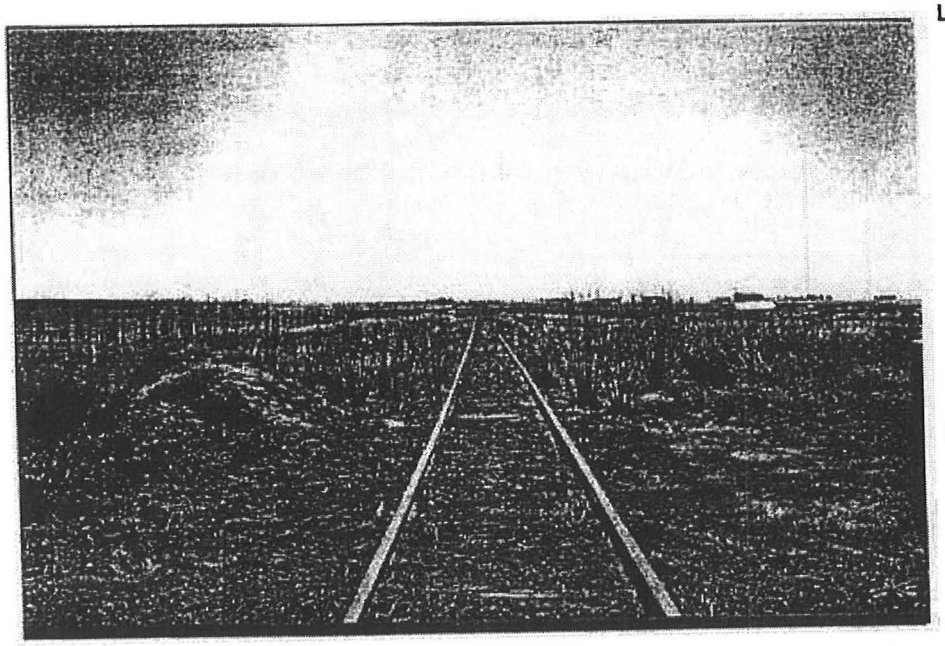
Description: Typical railroad tracks with steel rail laid over creosote-treated 8' wooden ties. Rails are 4' 11" apart, center to center.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)
a. Top Width: 8'
b. Bottom Width: 8'
c. Height or Depth: 14'
d. Length of Segment: 40' (width of right-of-way)
L5. Associated Resources:

L4e. Sketch of Cross-Section (include scale) Facing: _____

L6. Setting: Rail line is laid over relatively level ground, bordered by agricultural land.

L7. Integrity Considerations: Little or no use in several years at least. Soils building up around tracks.



L8B. Description of Photo, Map, or Drawing (View, scale, etc.)
Lkg W

L9. Remarks:

L10. Form Prepared by:
(Name, affiliation, and address)

Charlane Gross
EDAW, Inc.
2022 J Street
Sacramento, CA 95814

L11. Date:
May 23, 2002

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

LOCATION MAP

Primary #
HRI#
Trinomial

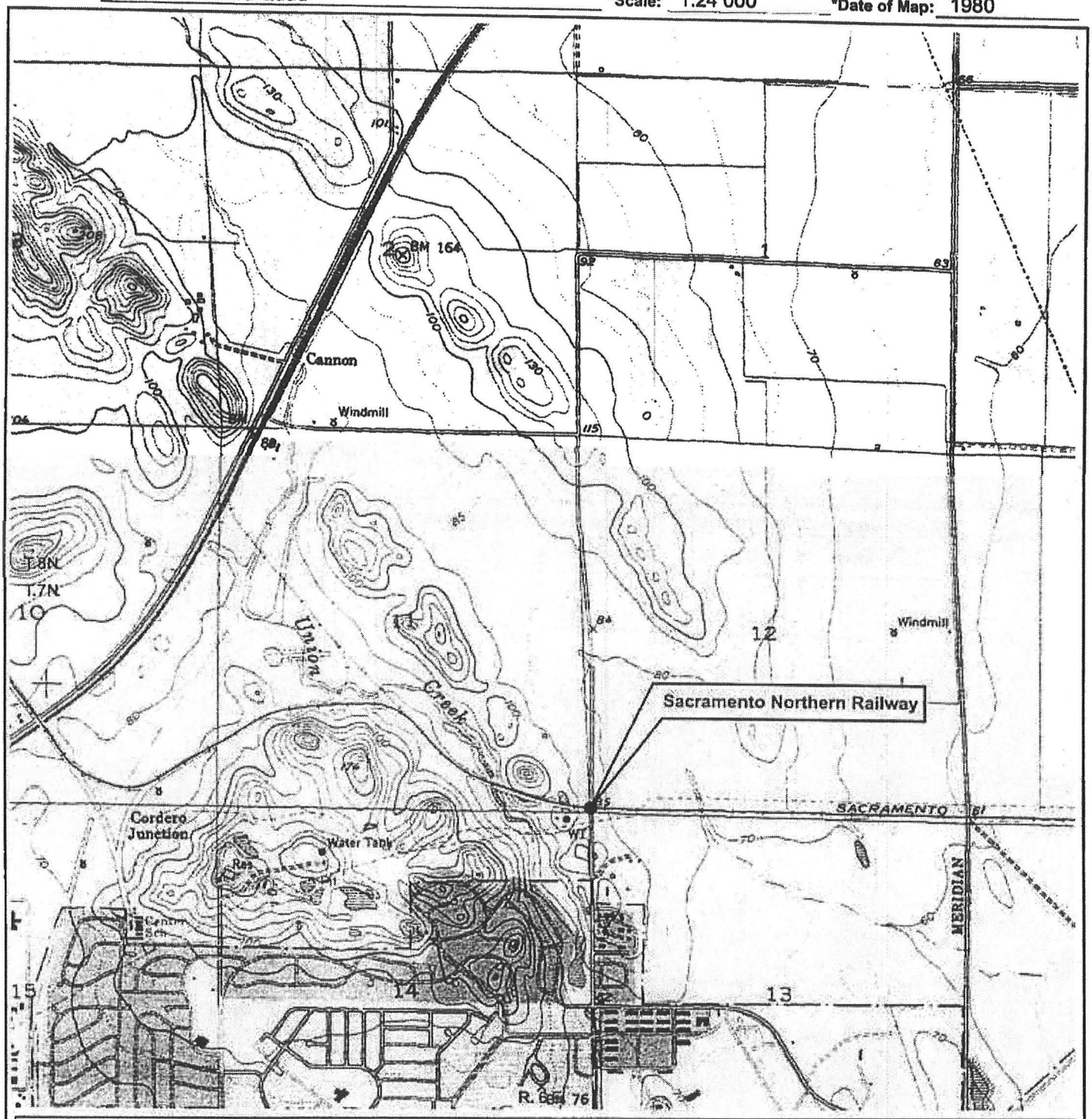
Page 4 of 4

*Resource Name or # (Assigned by recorder) Sacramento Northern Railway

*Map Name: U.S.G.S. Elmira Quad

*Scale: 1:24 000

*Date of Map: 1980



Source: U.S.G.S. Elmira Quad 1953 (photorevised 1980) – Contour Interval 10 Feet

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1. .5 0 1 KILOMETER

NORTH

QUADRANGLE LOCATION

DPR 523J (1/95)

*Required Information