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8.3 Cultural Resources

This section determines whether cultural resources are present and could be affected adversely by the CPP project. The significance of any potentially affected resources is assessed, and measures are proposed to mitigate potential adverse project effects. This study was conducted by Dr. James C. Bard and Mr. Jim Sharpe, M.S. (CH2M HILL Cultural Resource Specialists who meet the *Standards and Guidelines for Archaeology and Historic Preservation* National Park Service, 1983) with the assistance of Ms. Alicia Bergstad, B.S. (CH2M HILL Cultural Resource Specialist).

This section is consistent with both federal and state regulatory requirements for cultural resources pursuant to Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (as amended) (16 USC 470f) and its implementing regulations 36 CFR Part 800 and the California Environmental Quality Act (CEQA). The study scope was developed in consultation with the CEC's cultural resources staff and complies with *Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification* (CEC, 1992) and *Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 1997).

Cultural resources include prehistoric and historic archaeological sites;¹ districts and objects; standing historic structures, buildings, districts and objects; and, locations of important historic events, or sites of traditional/cultural importance to various groups.²

Section 8.3.1 discusses the LORS applicable to the protection of cultural resources. Section 8.3.2 describes the cultural resources environment that might be affected by CPP. Section 8.3.3 discusses the environmental consequences of construction of the proposed

1 "Site" - "the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure . . . where the location itself possesses historic, cultural, or archeological value" (USNPS-IRD 1991:15).

2 The "federal" definitions of *cultural resource*, *historic property* or *historic resource*, *traditional use area*, *sacred resources* are reviewed below and are typically applied to non-federal projects.

A *cultural resource* may be defined as a phenomenon associated with prehistory, historical events or individuals or extant cultural systems. These include archaeological sites, districts and objects; standing historic structures, districts and objects; locations of important historic events; and, places, objects and living or non-living things that are important to the practice and continuity of traditional cultures. Cultural resources may involve *historic properties*, *traditional use areas* and *sacred resource areas*.

Historic property or *historic resource* means any prehistoric district, site building, structure or object included in, or eligible for, inclusion in the National Register of Historic Places. The definition also includes artifacts, records and remains that are related to such a district, site, building, structure or object.

Traditional use area refers to an area or landscape identified by a cultural group to be necessary for the perpetuation of the traditional culture. The concept can include areas for the collection of food and non-food resources, occupation sites and ceremonial and/or sacred areas.

Sacred resources applies to traditional sites, places or objects that Native American tribes or groups, or their members, perceive as having religious significance.

development. Section 8.3.4 determines whether there are any cumulative effects from the project. Section 8.3.5 presents mitigation measures that will be implemented to avoid construction impacts. Section 8.3.6 lists the agencies involved and agency contacts, and Section 8.3.7 discusses permits and the permitting schedule. Section 8.3.8 provides a list of reference materials used in preparing this section.

If possible, all recorded cultural resources will be avoided by CPP. However, if avoidance is not possible through project redesign, the significance of the affected resources will be evaluated formally using appropriate federal and/or state and local cultural resource significance evaluation criteria and guidelines. If a resource is determined to be significant, a data recovery program or some other appropriate mitigative effort will be undertaken in consultation with the CEC.

The CPP project is subject to CEC and CEQA permitting requirements. If the project becomes subject to federal agency involvement (permitting, licensing, etc.), additional authorities related to cultural resources may be triggered, including the National Environmental Policy Act and the Archaeological and Historic Preservation Act (AHPA) of 1974 (16 USC 469), among others. The AHPA includes requirements to coordinate with the Secretary of the Interior for notification, data recovery, protection, and/or preservation when a federally licensed project may cause the irreparable loss or destruction of significant scientific, prehistoric, historic, or archaeological data. In 1983, the Secretary of the Interior established standards for gathering and treating data related to cultural resources in *Standards and Guidelines for Archaeology and Historic Preservation*.

8.3.1 Laws, Ordinances, Regulations, and Standards

A summary of applicable LORS is provided in Table 8.3-1.

8.3.1.1 Federal LORS

The National Historic Preservation Act of 1966 (as amended) established the federal government's policy on historic preservation and the programs, including the National Register of Historic Places (NRHP), through which that policy is implemented. Under the NHPA, historic properties include ". . . any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (16 USC 470w (5)).³ The NHPA of 1966 (as amended) and its implementing regulations (16 USC 470 et seq., 36 CFR Part 800, 36 CFR Part 60, and 36 CFR Part 63) require the agency(ies) to consider the effect of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation

³ The National Register criteria for evaluation include: (1) is at least 50 years old; (2) retains integrity of location, design, setting, materials, workmanship, feeling, and association; and (3) has one or all of the following characteristics of association: (a) ". . . with events that have made a significant contribution to the broad patterns of our history;" (b) ". . . with the lives of persons significant in our past;" (c) ". . . that embody the 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) ". . . have yielded, or may be likely to yield, information important in prehistory or history."

Officer (SHPO) a reasonable opportunity to comment on any undertaking that could adversely affect cultural properties listed or eligible for listing on the NRHP.

TABLE 8.3-1
Applicable Cultural Resources Laws, Ordinances, Regulations, and Standards

Law, Ordinance, Regulation, or Standard	Applicability	Project Conformity?	AFC Reference
CEQA Guidelines	Project construction may encounter archaeological resources	Yes	Section 8.3.1
Health and Safety Code Section 7050.5	Construction may encounter Native American graves, Coroner calls NAHC	Yes	Section 8.3.1
Public Resources Code Section 5097.98	Construction may encounter Native American graves, NAHC assigns Most Likely Descendant	Yes	Section 8.3.1
Public Resources Code Section 5097.5/5097.9	Would apply only if some project land were acquired by the state (currently no state land)	Yes	Section 8.3.1
National Historic Preservation Act	Issuance of a Clean Water Act Section 404 permit is a federal undertaking	Yes	Section 8.3.1
Archaeological Resources Protection Act	Protects archaeological resources from vandalism and unauthorized collecting on federal land	Yes	Section 8.3.1
Native American Graves Protection and Repatriation Act	Assigns ownership of Native American graves on federal land to Native American descendants or culturally affiliated organizations	Yes	Section 8.3.1
Conservation and Public Facilities Elements of the Sacramento General Plan (Dec. 1993 and Aug. 1998)	Sets policies to preserve historically and archaeologically significant structures, sites, districts, and artifacts	Yes	Section 8.3.1

If a Clean Water Act (CWA) Section 404 permit is required for construction (wetland fills or crossings), the NHPA of 1966 (as amended) and its implementing regulations (16 USC 470 et seq., 36 CFR Part 800, 36 CFR Part 60, and 36 CFR Part 63) also apply. The U.S. Army Corps of Engineers (USACE), as lead federal agency for issuing the CWA Section 404 permit, would be the lead agency for NHPA Section 106 compliance and consultation with the SHPO and ACHP would be required.

8.3.1.2 State LORS

CEQA requires a review to determine if a project will have a significant effect on archaeological sites or a property of historic or cultural significance to a community or ethnic group eligible for inclusion in the California Register of Historical Resources (CRHR) (CEQA *Guidelines*).

Other state-level requirements for cultural resources management appear in the California Public Resources Code Chapter 1.7, Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Chapter 1.75, beginning at Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code, and falls within the jurisdiction of the Native American Heritage Commission (NAHC).

If human remains are discovered, the Sacramento County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the Coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98 will immediately notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment or disposal (See Appendix 8.3A, Proposed Native American Burial Protection Plan for the CPP Construction Program).

8.3.1.3 Local LORS

8.3.1.3.1 Sacramento County

The Sacramento County General Plan Conservation Element (December 15, 1993) declares its goal to promote the inventory, protection, and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, landings, features, artifacts, and/or areas of ethnic, historical, religious, or socio-economic importance. Section VI of the Conservation Element deals with Cultural Resources and describes policies and programs under six objectives:

1. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

Archaeologic Site Protection During Development. The County's objective is: Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to cultural and ethnic values of all affected. It is addressed in the following policies:

Policy CO-155 – Use the California Archaeological and the Sacramento History and Science Division to assist in determining need for survey.

Policy CO-156 – Refer projects with identified archaeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission in development recommendations.

Policy CO-157 – Significant archaeologic, prehistoric, or historic sites shall be protected as open space for potential future excavation.

Policy CO-158 – Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archaeologic significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

Policy CO-159 – The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

Policy CO-160 – Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

Policy CO-161 – Not used; next Policy is CO-162.

Policy CO-162 – As a condition of approval for discretionary projects that are in areas of cultural resource sensitivity, the following procedure shall be included to cover the potential discovery of archaeological resource(s) during development or construction:

Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work shall be suspended and the Sacramento County Department of Environmental Review and Assessment shall be immediately notified. At that time, the Department of Environmental Review and Assessment will coordinate any necessary investigation of the site with appropriate specialists, as needed. The project proponent shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.98 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

2. Structures with architectural or historical importance preserved to maintain exterior design elements.

Historic Structure Preservation. The County's objective is: Structures such as buildings, bridges, or other permanent structures with architectural or historical importance preserved to maintain exterior design elements. It is addressed in the following policies:

Policy CO-163 – Conduct surveys and designate structures with architectural or historic importance on community plan maps. Where appropriate, plans shall designate significant historical architectural districts.

Policy CO-164 – Develop local architectural preservation standards drawing from state and federal guidelines.

Policy CO-165 – Refer projects involving structures or within districts having historical or architectural importance to the Cultural Resources Committee to recommend appropriate means of protection and mitigation.

Policy CO-166 – Development surrounding areas of historic significance shall have compatible design in order to protect and enhance the historic quality of the areas.

3. Known archaeological and historic sites protected from vandalism, unauthorized excavation, or accidental destruction.

Destruction of Cultural Resource Sites. The County's objective is: Protect any known cultural resources from vandalism, unauthorized excavation, or accidental destruction. It is addressed in the following policies:

Policy CO-167 – Restrict the circulation of cultural resource locational information to prevent potential site vandalism. This information is exempt from the "Freedom of Information Act."

Policy CO-168 – Cooperate with other agencies to enforce laws and aggressively prosecute illegal collection of artifacts.

Policy CO-169 – Design and implement interpretive programs about known archaeological or historical sites on public lands or in public facilities. Interpretation near or upon known sites should be undertaken only when adequate security is available to protect the site and its resources.

4. Comprehensive knowledge of archaeologic and historic site locations.

Cultural Resource Surveys. The County's objective is: Comprehensive knowledge of archaeologic and historic site locations. No specific policies are provided.

5. Properly stored and classified artifacts for ongoing study.

Artifact Study and Storage. The County's objective is: Properly stored and classified artifacts for ongoing study. No specific policies are provided.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

Public Awareness of Cultural Resources. The County's objective is: Increase public education, awareness, and appreciation of both visible and intangible cultural resources. It is addressed in the following policies:

Policy CO-170 – Provide historic and cultural interpretive displays, trails, programs, living history presentations, and public access to the preserved artifacts recovered from excavations.

Policy CO-171 – Interpretive elements involving Native American cultural resources shall be located at village sites (provided any unexcavated resources are properly protected) representative of different physical environments found in the County.

The Sacramento County General Plan Public Facilities Element (August 12, 1998) declares its general energy facility policy object is to minimize the health, safety, aesthetic, cultural, and biological impacts of energy facilities in Sacramento County.

Policy PF-7.1 – Locate and design production and distribution facilities so as to minimize visual intrusion problems in urban areas and areas of scenic and/or cultural value, including recreation and historic areas, scenic highways, landscape corridors, state or federal designated wild and scenic rivers, visually prominent locations such as ridges, designated scenic corridors and open viewsheds, and Native American sacred sites.

Policy PF-7.3— Minimize the potential adverse impacts of energy production and distribution facilities to environmentally sensitive areas by, when possible, avoiding siting in wetlands, permanent marshes, riparian habitat, vernal pools, oak woodlands, and historic and/or archaeological sites and/or districts.

With respect to cogeneration projects, the County states that “cogeneration land use issues are typically minor in most urban locations; however, displacements caused by cogeneration projects may significantly impact existing biological and cultural resources in rural areas.” With respect to electric transmission and subtransmission delivery systems, the County declared the following policy:

Policy PF-8.9— Locate and design new transmission towers in urban areas in a manner that minimizes visual and environmental impacts, including impacts to historic buildings and viewsheds.

With regard to electric transmission facility siting and design, the County declared its objective to plan and design transmission facilities to minimize visual impacts, preserve existing land uses, and avoid biological and cultural resources using the following policies:

Policy PF-9.5— Transmission lines should avoid to the greatest extent possible, cultural resources and biological resources such as wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands.

Policy PF-9.3— Transmission lines should avoid paralleling recreation areas, historic areas, rural scenic highways, landscaped corridors, and designated federal or state wild and scenic river systems.

The County also states its policy objective (PF-118) to encourage siting gas mains near existing corridors to minimize disturbance to biological and cultural resources, and exposure to human populations. The County also recommends amending its Zoning Code Section 301-12 (Mitigation Measures for Transmission Facilities) to read as follows:

Overhead electrical transmission lines of 100,000 volts or greater capacity shall be installed in a manner so as to minimize adverse health, safety, biological, archaeological, visual, and aesthetic impacts. When possible, SMUD shall relocate and combine existing overhead transmission poles and lines with new installation.

The County also recommends amending the Zoning Code to be consistent with California Government Code Section 53091 with respect to the County’s regulatory authority (i.e., use permit is not required) for power plants, cogeneration facilities, and solar electric facilities, including mitigation measures for minimizing adverse health, safety, biological, historical, and archaeological impacts.

8.3.2 Affected Environment

As described by Hart, Jenks, and Dore (2001) in their cultural resources inventory of 220 acres at the Rancho Seco Plant, California’s Central Valley was inhabited as early as 12,000 years ago; prehistorically and historically, the Miwok Indians occupied the CPP area hunting big and small game and gathering important vegetal resources like acorns.

Beginning in the late 1700s, the Indian population located in the Sacramento Valley came into contact with an entirely foreign (European) culture. Traditional life-ways were not drastically altered until the mid-1800s as Spanish colonization, Mexican land grants, and finally the American takeover and settlement pushed Indians into the rugged California interior. The California Gold Rush of 1849 and the influx of Euro-Americans into formerly remote regions of California was the final cultural blow for many California Indians, including the Miwok bands located in the CPP vicinity. Both mining and agriculture/ranching activities later dominated the project vicinity.

8.3.2.1 Natural Environment

CPP is located within the Central Valley of California – a huge basin characterized by broad alluvial plains dominated by annual grasslands and fresh emergent wetland habitats. The Central Valley is an elongated trough about 400 miles long and 50 miles wide, which between the Mesozoic and Cenozoic eras was a shallow marine embayment containing numerous lakes. The upper levels of the valley floor are composed of alluvium and flood materials. The topography of the project, like much of the valley, is flat with elevations ranging between 10 feet above mean sea level (asl) in the west and 150 feet asl in the east. Hydrological features within the CPP area include Laguna Creek, the Cosumnes River, Badger Creek, and Willow Creek.

The environmental setting has been largely altered by human modification over the past 150 years. The introduction of non-native grasses, slough channelization, creation of elaborate levee systems to control the Sacramento River, and agricultural activities have all changed the pre-1850 environment. Prior to the development of valley agriculture, marshy wetlands surrounding sluggish waterways supported marshy or aquatic communities of tule (*Scirpus* sp.), cottonwood (*Populus fremontii*), sycamore (*Platanus racemosa*), and willow (*Salix* sp.) (Wallace, 1978a). Oak groves occurred along some waterways and likely included interior live oaks (*Quercus wislizeni*) and valley oaks (*Q. lobata*); thus, providing a portion of the vegetal food sources used by prehistoric populations. In the Cosumnes River Preserve, habitat and vegetation similar to that which was once present in the pre-1850 environment can still be found.

Euro-American settlement has probably altered the variety of nondomesticated animal species found in the project area. Larger mammals such as black bear (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus*), mule deer (*O. Heminous hemionus*), and mountain lion (*Felix concolor*) are now limited to the surrounding foothills and mountain ranges. Tule elk (*Cervus elaphus nannoides*) and pronghorn (*Antilocapra americana*), once common throughout the valley, now exist in limited locations around the state (Jameson and Peeters, 1988).

The marshy wetlands once common in the area provided a rich habitat for migratory waterfowl such as the mallard duck (*Anas platyrhynchos*), northern pintail (*A. acuta*), and green-winged teal (*A. crecca*) currently found in the valley. Other birds include the northern flicker woodpecker (*Colaptes auratus*), great blue heron (*Ardea herodias*), red-tailed hawk (*Buteo jamaicensis*), belted kingfisher (*Ceryle alcyon*), and red-winged blackbird (*Agelaius phoeniceus*). The Cosumnes and Sacramento rivers once supported anadromous and freshwater fish including salmon (*Oncorhynchus* sp.), golden trout (*Salmo aguabonita*), river lamprey eel (*Lampetra ayresi*), and white sturgeon (*Acipenser transmontanus*).

In areas of historic homesteads, non-native trees are common such as English and black walnut, pecan, acacia, fruit trees, eucalyptus, and shrubs and flowers such as roses, wisteria, lilac, and azalea. Homesteads now present a sharp contrast to the modern intensive agricultural use that has created dramatic changes in the regional vegetation. Where native oaks and grasslands were once common, now lands are dedicated to row crops, grain fields, and pasture (Maniery, Baker and Maniery, 1994).

8.3.2.2 Prehistoric Background

The CPP project area is situated in an area of moderate to high archaeological sensitivity. As described by Hart, Jenks, and Dore (2001), only a few archaeological sites have been found in the Sacramento Valley that date prior to 5,000 years ago (even though the project area and the greater Sacramento Valley have been occupied for about 12,000 years). Much of the evidence for human occupation is probably buried beneath alluvial sediments that accumulated quickly during the later Holocene epoch. Moratto (1984) estimated that as much as 10 meters of sediment accumulated along the lower stretch of the Sacramento Drainage over the past 5,000 to 6,000 years.

Three general patterns of prehistoric Indian resource exploitation have been identified for the time period 2500 B.C. to A.D. 1500 (Moratto, 1984). The earliest is the Windmill Pattern that lasted from about 2,500 B.C. to 1,000 B.C., during which time it is thought that there was a mixed economy of both game procurements as well as the exploitation of wild plant foods. The archaeological record contains numerous projectile points with a wide variety of faunal remains. The Windmill toolkit contains fishing hooks and spears, and the remains of sturgeon, salmon, and other fish are found in middens dating to this period (Moratto, 1984). Windmill Pattern settlement patterns reflect seasonal adaptation; habitation sites in the valley were occupied during the winter with populations moving into the foothills during the summer (Moratto, 1984).

Over a 1,000 year period from about 1500 B.C. to 500 B.C., the Windmill Pattern began to shift to a more specialized type of adaptive pattern called the Berkeley Pattern. A decrease in the number of manos and metates and an increase in mortars and pestles indicates a shift in resource use to greater reliance upon acorns - mortars and pestles were used to break the tough outside shell of acorns and grind the nut while manos and metates were used mainly for grinding grains from different grasses. Berkeley Pattern sites located near water are found to have large shellmounds indicating intensive use of marine and estuarine resources. Hunting was still an important activity in the Berkeley Pattern (Fredrickson, 1973).

After about 500 A.D., the Berkeley Pattern shifts to the Augustine Pattern with changes in subsistence and land use patterns beginning to reflect the use pattern known from historic period Native American groups in the area. This pattern demonstrates a shift to more elaborate ceremonial and social organization and the development of social stratification. Exchange networks were developed and more intensive emphasis was placed on acorn use. Other elements of the material culture include flanged tubular smoking pipes, clam shell disk beads, small projectile point types known as Gunther Barbed (associated with bow-and-arrow use), harpoons, and elaborate baked clay figurines and pottery vessels known as Consumnes Brownware. Other traits include introduction of pre-interment burning of offerings in a grave pit during the mortuary ritual, increased village sedentism, population

growth, and an incipient monetary economy in which beads were used as a medium of exchange (Moratto, 1984).

The broad adaptive patterns described above (Windmiller, Berkeley, and Augustine) are recognized here as being an important interpretive framework for understanding local prehistory. Also important are several taxonomic schemes that have been used over the past few decades to explain culture change through time – as seen in the archaeological record of Central California.

A three-part cultural chronological sequence, the Central California Taxonomic System (CCTS) was developed by archaeologists to explain local and regional cultural change in prehistoric central California from about 4,500 years ago European contact times (Lillard, Heizer, and Fenenga, 1939; Beardsley, 1948, 1954). In 1969, several researchers who met at UC Davis worked out several substantive taxonomic problems that had developed with the CCTS. Table 8.3-2 summarizes David Fredrickson's (1994) cultural periods model and provides CCTS classification nomenclature (such as "Early Horizon," etc). Another scheme proposed by Chartkoff and Chartkoff (1984), shown in Table 8.3-3, is also used.

TABLE 8.3-2
Hypothesized Characteristics of Cultural Periods in California

1800 A.D. Upper Emergent Period Phase 2, Late Horizon	Clam disk bead money economy appears. More and more goods moving farther and farther. Growth of local specializations relative to production and exchange. Interpenetration of south and central exchange systems.
1500 A.D. Lower Emergent Period Phase 1, Late Horizon	Bow and arrow introduced, replace atlatl and dart; south coast maritime adaptation flowers. Territorial boundaries well established. Evidence of distinctions in social status linked to wealth increasingly common. Regularized exchanges between groups continue with more material put into the network of exchanges.
1000 A.D. Upper Archaic Period Middle Horizon Intermediate Cultures	Growth of sociopolitical complexity; development of status distinctions based on wealth. Shell beads gain importance, possibly indicators of both exchange and status. Emergence of group-oriented religious organizations; possible origins of Kuksu religious system at end of period. Greater complexity of exchange systems; evidence of regular, sustained exchanges between groups; territorial boundaries not firmly established.
500 B.C. Middle Archaic Period Middle Horizon Intermediate Cultures	Climate more benign during this interval. Mortars and pestles and inferred acorn economy introduced. Hunting important. Diversification of economy; sedentism begins to develop, accompanied by population growth and expansion. Technological and environmental factors provide dominant themes. Changes in exchange or in social relations appear to have little impact.
3000 B.C. Lower Archaic Period Early Horizon Early San Francisco Bay Early Milling Stone Cultures	Ancient lakes dry up as a result of climatic changes; milling stones found in abundance; plant food emphasis, little hunting. Most artifacts manufactured of local materials; exchange similar to previous period. Little emphasis on wealth. Social unit remains the extended family.
6000 B.C. Upper Paleo-Indian Period San Dieguito Western Clovis 8000 B.C.	First demonstrated entry and spread of humans into California; lakeside sites with a probable but not clearly demonstrated hunting emphasis. No evidence for a developed milling technology, although cultures with such technology may exist in state at this time depth. Exchange probably ad hoc on one-to-one basis. Social unit (the extended family) not heavily dependent on exchange; resources acquired by changing habitat.

TABLE 8.3-3**Chartkoff and Chartkoff (1984) Model of Cultural Periods in California**

11,500-9,000 B.C. Pre-Archaic Period	Pre-Archaic populations were small and their subsistence included big game hunting of now extinct mammoth and mastodon. Research indicates that the Pre-Archaic economies were based on a wide-ranging hunting and gathering strategy, dependent to a large extent on local lake-marsh or lacustrine habitats.
9,000-4,000 B.C. Early to Middle Archaic Period	During the Early and Middle Archaic periods, prehistoric cultures began putting less emphasis on large-game hunting. Subsistence economies probably diversified somewhat, and Archaic era people started using such ecological zones as the coast littoral more intensively than before. Advances in technology (milling stones) indicate that new food processing methods became important, enabling more efficient use of certain plant foods, including grains and plants with hard seeds.
4,000-2,000 B.C. Late Archaic Period	An important technological advance was the discovery of a tannin-removal process for the abundant and nutritious acorns. Prehistoric trade networks developed and diversified, bringing raw materials and finished goods from one region to another. Resource exploitation, as during the Early and Middle Archaic, was generally seasonal. Bands moved between established locations within a clearly defined/defended territory, scheduling resource harvests according to their availability. Clustering of food resources along the shores of large lakes or the banks of major fish-producing rivers allowed for larger seasonal population aggregates. Dispersed resources, such as large and small game, during the winter prompted small family groups to disperse across the landscape for more efficient food harvesting. The spear thrower (atlatl) may have been introduced or increased in importance, accounting for a change in projectile point styles from the Western Stemmed to the Pinto and Humboldt series. Seed grinding increased in importance.
2,000 B.C.-A.D. 500 Early and Middle Pacific Periods	The Pacific Period is marked by the advent of acorn meal as the most important staple food. Increasing population densities made it desirable and necessary for Indian populations to produce more food from available land and to seek more dependable food supplies. The increasing use of seed grinding and acorn leaching allowed for the exploitation of more dependable food resources; increased use of previously neglected ecological zones (the middle and high Sierran elevations) may also have been part of this trend.
A.D. 500-1400 Late Pacific Period	Around A.D. 500 – 600, a cultural watershed was triggered by the introduction of the bow and arrow, which replaced the spear thrower and dart as the hunting tool/weapon of choice. The most useful time markers for this period tend to be small projectile points/arrow tips. Another trend is the marked shift from portable manos/metates to bedrock mortars/pestles (Moratto, 1984). Moratto, et al. (1978) demonstrated that this was a time of cultural stress, during which trading activity abated, warfare was common, and populations shifted away from the Sierra Nevada foothills to higher mountain elevations. They explain these changes in terms of rapid climatic fluctuations, including a drier climate and a corresponding shift of vegetation zones.
A.D. 1400-1789 Final Pacific Period	Populations became increasingly sedentary and depended more on staple foods, even as the diversity of foods exploited increased. Permanent settlements with high populations were more common. Every available ecological niche was exploited, at least on a seasonal basis. Other trends included the resurgence of long-distance trade networks and the development of more complex social and political systems.

Moratto (1984) suggested the Early Horizon dated to circa 4,500 to 3,500/3,000 years ago with the Middle Horizon dating to circa 3,500 to 1,500 years ago and the Late Horizon dating to circa 1,500 to 250 years ago. The Early Horizon is the most poorly known of the periods with relatively few sites known or investigated. Early Horizon traits include hunting, fishing, use of milling stones to process plant foods, use of a throwing board and spear ("atlatl"), relative absence of culturally affected soils (midden) at occupation sites, and elaborate burials with numerous grave offerings.

Middle Horizon sites are more common and usually have deep stratified deposits that contain large quantities of ash, charcoal, fire-altered rocks, and fish, bird and mammal bones. Significant numbers of mortars and pestles signal a shift to plant foods from reliance on hunted animal foods. Middle Horizon peoples generally buried their dead in a fetal position and only small numbers of graves contain artifacts (and these are most often utilitarian). Increased violence is suggested by the number of burials with projectile points embedded in the bones or with other marks of violence.

The Late Horizon emerged from the Middle Horizon with continued use of many early traits and the introduction of several new traits. Late Horizon sites are the most common and are noted for their greasy soils (midden) mixed with bone and fire-altered rocks. The use of the bow-and-arrow, fetal-position burials, deliberately damaged ("killed") grave offerings, and occasional cremation of the dead are the best known traits of this horizon. Acorn and seed gathering dominated the subsistence pattern with short and long-distance trade carried out to secure various raw materials. Compared to earlier peoples, Late Horizon groups were short in stature with finer bone structure, evidence perhaps of the replacement of original Hokan speaking settlers by Penutian speaking groups by circa 1,500 years ago.

8.3.2.3 Ethnographic Background

The CPP area is located in an area historically occupied by the Eastern Miwok (see Figure 8.3-1), of which there once existed seven language divisions. Each division belonged to the Miwokan subfamily of the Utian family, Penutian stock (Shipley, 1978). Each of the primary Miwok divisions included various dialects. Eastern Miwok included five separate groups: the Bay, Plains, Northern Sierra, Central Sierra, and Southern Sierra. The Bay division ranged over the area around Walnut Creek and the Sacramento-San Joaquin Delta while the Plains division occupied the lower Mokelumne and Cosumnes rivers and the Sacramento River from Rio Vista to Freeport. The CPP area falls within the Plains Miwok subdivision (Hart, Jenks, and Dore, 2001).

Few Plains Miwok were alive when ethnographers began working with Native Americans in the early 1900s; as a result, the most comprehensive study of the Miwok was compiled using Spanish mission records, diaries, and journals (Bennyhoff, 1977). The Plains Miwok relied on the rich resources of the Delta and surrounding areas for food and material needs. Tules provided material for woven matting and for house and canoe construction and clothing; tule roots were pounded and used for food. Pronghorn antelope, elk, deer, and other large game were sought in the tule marshes of the Delta (Kroeber, 1925). It was the acorn, however, that provided the main dietary staple for the Miwok. Acorns were stored in granary bins and were complemented by the abundant waterfowl, fish, shellfish, and large

game that lived in or visited the Cosumnes River region (Bennyhoff, 1977; Levy, 1978). Hart, Jenks, and Dore (2001) describe the Miwok as seasonally mobile hunter-gatherers with semi-permanent villages; acorns were the main food staple but other foods included buckeye, seeds, bulbs, pine nuts, deer, elk, rabbits, squirrels, fowl, salmon and other fish, bear, and insects.

Exotic items such as obsidian, steatite, and shell were obtained in trade from coastal groups to the south and west and from mountain tribes (Levy, 1978). The Delta islands were also used regularly for hunting and fishing base camps. Social structure centered around the tribelet with small satellite villages radiating from a main tribelet center (Kroeber, 1925). The Plains Miwok placed their permanent settlements on high ridges or knolls near watercourses or on the sandy islands in the Delta.

Native life ways changed after 1790 with increased Spanish incursions into the Sacramento Valley as soldiers searched for potential mission neophytes. The main river groups of the region were forced into the Spanish mission system between 1806 and 1814; natives not removed to the missions succumbed to introduced diseases that spread through the Delta between the late 1700s and circa 1835 (Cook, 1955; Levy, 1978). By the time ethnographers began gathering data in the early 1900s, there were only a few survivors of the Plains Miwok (Levy, 1978; Merriam, 1907, 1955). Today, Native Americans related to Miwok ancestry are living in Ione, Galt, Stockton, near Wilton, and Sacramento. These groups and individuals are interested in preserving and protecting vestiges of their past (Maniery, Baker and Maniery, 1994).

8.3.2.4 Historical Background

Recorded history in Central California can be divided into the Spanish Period (1769-1821), the Mexican Period (1821-1848), and the American Period (1848-present).

8.3.2.4.1 Spanish Period

The first recorded penetration of the CPP area was accomplished in 1772 by Pedro Fages whose written record describes the Valley as “a labyrinth of lakes and tulares in the middle of a great plain” (Wedel, 1941). In 1776, Spanish Army Colonel Juan Bautista De Anza, accompanied by Spanish settlers, soldiers, and Franciscan Fray Pedro Font left Monterey bound for northern California with orders to locate sites for a presidio and mission. Anza traveled through the Bay Area, finally stopping in the Carquinez Strait region.

The next most important penetration of Euro-Americans were Spanish explorers led by Lieutenant Gabriel Moraga in 1808. Moraga was to locate suitable locations for missions and to capture runaway Mission Indians. He followed waterways inland and his caravan crossed the Mokelumne, Cosumnes, and American Rivers in early October 1808 and explored up the Feather River. The first river-based expedition took place in 1811 when Spanish explorers briefly surveyed the San Joaquin and Sacramento Rivers (Grunsky, 1989).

In 1817, a more substantial exploration occurred when Luis Arguello (later a Mexican governor of California, but then the Spanish commander of the San Francisco Presidio) traveled up the Sacramento River and continued onto the Feather River. This was the last Spanish expedition into the Alta California interior before the 1822 Mexican revolution against the Spanish crown. The interior of the Sacramento Valley, located away from the

easily defended and more accessible chain of coastal missions and pueblos, was left largely untouched by the Spanish and “Californios” (Hoover, et al., 1990).

8.3.2.4.2 Mexican Period

The Mexican revolt of 1822 resulted in independence as well as possession of both Baja and Alta California. Mexico abandoned colonization through presidio, pueblo, and mission building and instead began an era of extensive land grants to Mexican citizens who lived in California (the “Californios”). The Mexican emphasis on inland grants was designed to build a population base away from the settled coast in hopes of staving off foreign intrusion (Hart, Jenks, and Dore, 2001). Part of CPP passes through part of one such large land grant - Sanjon de los Moquelumnes (see below).

Beginning in 1826, Jedediah S. Smith, an American “mountain man” began a period of exploration of the western Sierra Nevada and foothill valleys based on a search for valuable furs and pelts. In 1827, Smith spent months trapping in and around the Sacramento Valley, camping near Wilton and the Rosemont section of modern-day Sacramento, and traveling along the nearby Cosumnes and American Rivers.

In late 1832 to early 1833, disease (“fever and ague” or “remittent fever”) struck among the Indian inhabitants of the Sacramento Valley (probably cholera or typhus). A second epidemic struck in 1837, further reducing the Sacramento Valley indigenous population. These significant losses severely impacted California Indians’ ability to cope with, and even resist, the tens of thousands of miners, entrepreneurs, and settlers drawn to the Sacramento Valley by the discovery of gold in 1849. Despite this dramatic loss of human life, traditional inhabitants are still represented near the Rancho Seco Plant project area by the Wilton Rancheria - a Miwok reservation established by the U.S. government in 1916. Since the 1960s, this Miwok band has owned the land set in the heart of their traditional territory (Elk Grove History Club, 1975).

Mexican Governor Jose Figueroa issued the first land grant in the Sacramento area in 1833 to John Rogers Cooper (an English-born sea captain married into a prominent Californio family). The two largest land grants in the Sacramento Valley belonged to John Sutter who founded New Helvetia - a trading and part-time military post (in 1839)(Jones and Stokes, 1997). New Helvetia was the only settlement in this part of California and became the area’s social, commercial, and political center. Three smaller Mexican-era land grants were located closer to the CPP area. Rancho Omochumnes was granted to William Sheldon and William Daylor in 1844 and encompassed 18,662 acres. The area around Sloughhouse and the Cosumnes River includes some of the oldest Anglo American settlements in the Central Valley. As early as 1848, modern-day Jackson Road was established as the main route to and from Sacramento and the Cosumnes River area.

In the mid-1840s, Rancho Zanjon (Sanjon) de los Moquelumnes was created around modern-day Elk Grove and was owned by the Anastacio Chabolla family. Nearby Rancho Cosumnes was centered around Wilton and along the Cosumnes River to the north (and was owned by the Heleno family); and the existing Rancho Seco Plant is located on the far-eastern edge of the Rancho Arroyo Seco land grant (owned by Teodosio Yorva) (Hart, Jenks, and Dore, 2001). Increasingly bad relations between the United States and Mexico led to the Mexican-American War of 1847, which resulted in Mexico releasing California to the United States under the Treaty of Guadalupe Hidalgo in 1848. Under the Treaty, “. . . all

grants of land made by the Mexican government . . . shall be respected as valid.” However, one of the first acts of Congress after California statehood in 1850 was to pass the California Land Act by which each Spanish and Mexican land grant had to be reviewed by a land court and the U.S. Attorney General for legal title.

8.3.2.4.3 American Period

In the early 1850s, most of Sacramento County’s population was concentrated either in the growing city of Sacramento or in the numerous gold camps that dotted the foothills. The CPP site was located within the Alabama Township, established in 1856 (with an estimated population of 250, which probably did not include Chinese, African-Americans, or Indians).

Gold mining occurred at Dry Creek, Deer Creek, and the Cosumnes River. Mining included placer mining and hydraulic mining. Large-scale hydraulic mining was generally confined to areas along the Cosumnes River until it was outlawed in the 1880s because of the environmentally destructive nature of this mining method (Marvin and Fryman, 1994). Mining near the project area continued until the 1950s, but was greatly reduced in scale. Chinese miners often worked abandoned diggings around the project area until the early 20th century, and gold dredging activities were conducted on the American and Cosumnes rivers. A small dredging site may have been located north of Clay Creek during the 1930s and 1940s (Marvin and Fryman, 1994).

During the 1860s and 1870s the rural project area mostly lacked improved transportation systems that were becoming more common in urbanized areas like Sacramento. During the 1860s, the area’s single stage line followed Laguna Creek to the Stockton road (about 7 miles west of Rancho Seco). An east-west road connected the stage line and Camino del Sacramento (Marvin and Fryman, 1994). In 1877, the Central Pacific Railroad completed construction of the Amador Branch Railroad that connected the small communities of Galt and Ione. The Central Pacific controlled the huge Arroyo Seco land grant since 1863, but then purchased the tract from Californio owner Teodosio Yorva after Yorva’s grant was confirmed by the U. S. Land Commission. The Central Pacific immediately evicted the small farmers who had squatted the land grant since statehood. The Central Pacific used Arroyo Seco lands for stock grazing while the Amador line was used to move coal mined in adjacent Amador county. The Southern Pacific Railroad took over the Central Pacific holdings in the 1890s (Marvin and Fryman, 1994).

The Central Pacific permitted access to markets that were formerly unreachable by local residents, and towns such as Galt grew along the rail line. While stock raising continued to dominate local farming practices, hay and barley for stock feed were also cultivated. During the early 20th century, the agricultural industries in the project area grew to include fruit orchards, hops production, and vineyards (Costello, 1993). Poultry farms were also common and one dairy farm – the Scully Dairy – operated in the project area (Marvin and Fryman, 1994).

Agriculture dominated the project area for most of the 20th century and continues to do so now. In 1966, SMUD acquired 2,480 acres to begin construction of the proposed Rancho Seco Plant; operations began in 1971. The power plant has had a controversial history including numerous “shut downs,” explosions, and fires. On June 6, 1989, Sacramento County voters agreed to permanently close Rancho Seco (Hart, Jenks, and Dore, 2001).

8.3.2.5 Resources Inventory

The CPP site was subject to cultural resources inventory by Garcia and Associates (Hart, Jenks, and Dore, 2001) while the linear facilities were subject to cultural resources inventory by both Garcia and Associates and CH2M HILL. This resources inventory is based on both archive/ background research and surface pedestrian reconnaissance survey. A detailed discussion of the results of the resource inventory is presented in the subsections below. Contacts with the NAHC did not result in the identification of traditional cultural properties in the project area (see Appendix 8.3B).

8.3.2.5.1 Archival Research

Previous cultural resource studies conducted by Garcia and Associates (GANDA), which included the project areas plus a 0.5 mile radius were reviewed (Hart, Jenks, and Dore, 2001) (see Confidential Appendix 8.3C). A discussion of the cultural resources sites in conflict with, or in potential conflict with, project elements (plant site, natural gas supply lines, etc.) are addressed in Section 8.3.3. The following elements are included in CPP and its area of potential effect:

- CPP generation plant site
- Natural gas supply line

As explained by GANDA in its management summary (Hart, Jenks, and Dore, 2001):

Garcia and Associates conducted a cultural resources inventory of 220 acres at the Rancho Seco nuclear facility for the Sacramento Municipal Utilities District (SMUD) to assist the California Energy Commission in their compliance with the California Environmental Quality Act. As a result of the inventory, two historic period archaeological sites, CA-SAC-500H and CA-SAC-504H, and one prehistoric period archaeological resource, ARS 85-15-1, were identified. The status of the historic period archaeological resources as significant historical resources to be considered under CEQA is currently unknown. Further studies to determine if these resources meet the significance criteria are recommended. The prehistoric archaeological resource, ARS 85-15-1, while it has not had its significance formally evaluated, was determined not to be a significant resource by SMUD in 1985. A paleontological study of the project area undertaken by LaRamie Soils Service did not find any significant vertebrate fossil localities.

GANDA, in addition to its inventory of the proposed CPP site, also conducted an alternatives screening analysis for their direct client, Davis Environmental Consulting of Davis, California (Dore, 2001):

Garcia and Associates conducted a cultural resources record search at the California Historical Resources Information System (CHRIS) for two main gas line alternatives (Northeast and Southwest) and a number of sub-alternatives. The alternatives run between the Carson Ice-Gen facility and the Rancho Seco Plant in southern Sacramento County.

The record search was conducted between March 27, and April 10, 2001. CHRIS was asked to check all available records for the alignments and a one-quarter-mile radius. These records include the National Register of Historic Places, the

California Register of Historical Resources, California Historical Landmarks, and California Historical Points-of-Interest. The search also included additional sources for portions of the project area when these sources were available. The record search included the identification of areas previously surveyed for cultural resources as part of other research and compliance investigations.

Work by paleontologist Dr. Michael Cassiliano, that included background research and field inspection, has determined that all pipeline corridors and alternatives have equal and low probability for paleontological resources.

Garcia and Associates' were not commissioned to conduct any field reconnaissance surveys of the various gas line alternatives and sub-alternatives.

CH2M HILL was commissioned by SMUD in July 2001 to conduct a cultural resources field reconnaissance of the selected gas line route (see Figures 8.3-2a - 8.3-2e), which is substantially the Southwest alternative subject to GANDA's literature search conducted earlier in 2001 (see above). CH2M HILL has not been authorized to conduct any further investigations or evaluations of the 220-acre CPP site investigated earlier in 2001 by GANDA (Hart, Jenks, and Dore, 2001).

CH2M HILL's examination of the results of GANDA's archive and literature search for the Southwest alternative resulted in the determination that some known/recorded cultural resources might be affected by construction of the gas line route. These are described below.

Elliot Ranch

As illustrated in Confidential Appendix 8.3D, on Map 1 of 6, the gas line passes within 400 to 500 feet of the location of Elliot Ranch Isolated Find No. 1 and within 1,400 feet of Elliot Ranch No. 2. Neither of these resources will be affected by the project and they lie well away from the construction zone.

Elliot Ranch Isolate Find No. 1 (CHRIS has not issued a "trinomial" for this isolated find) is an isolated windmill foundation with no associated artifacts that is located near the Elliot Ranch Complex. The foundation is of concrete and has a probable 1927 date inscribed into the cement (Maniery, 1985). Elliot Ranch No. 2 (CHRIS has not issued a "trinomial" or Primary Record number for this resource) is the actual Elliot Ranch Complex. The original house and barracks were constructed in 1925 and the existing two houses, barracks, barns, outbuildings, corral, and sheds are serving as the headquarters for the Elliot Cattle Ranch. Archaeologically, the site has been impacted by ongoing use for decades and does not meet CEQA guidelines (Maniery, 1985). However, the historic architectural value of the buildings was not evaluated at this time (1985) and may meet CEQA criteria for historic resources (Maniery, 1985).

Knopfel Dairy

As illustrated in Confidential Appendix 8.3D, on Map 2 of 6, the gas line passes within about 800 feet of the Knopfel Dairy. The Knopfel Dairy, which is ineligible for listing in the National Register of Historic Places (National Register Status 6Z2), will not be affected by the project and lies well away from the construction zone. The Knopfel Dairy Complex is located at 4831 Bilby Road; the following description is provided by Peak and Associates (1999):

The building record for this residence indicates a date of construction of 1920, which is consistent with the style of still another Craftsman bungalow. The side gabled roof is extended, without a change in pitch, to cover a full width entry porch on the front (south) elevation, but there is also a cross gable to further emphasize the entry. Four plain, square wooden pillars support the porch roof and a plain wooden balustrade runs between pillars and from corner pillars to wall. The front windows, which appear original, are fixed and consist of a large main pane and transom. Other windows have been replaced with aluminum framed versions. Roofing is composite shingles. Typical Craftsman elements include the exposed rafter ends and the narrow lapped siding. There are corner brackets of sorts on the gable ends, consisting of a single piece of lumber extending at a sharp angle from the wall just below the roof line to the roof edge and slightly beyond. East of the houses are the utility buildings of the Knopfel Dairy. These consist of a frame barn, metal sides and roofed shed and a cinder block shed. The first two were probably built in about the same era as the residence. The cinder block structure is obviously much newer, as is the mobile home that sits behind and to the east of the residence. There does not appear to be anything unusual in the architecture of this house. If the 1920 date is correct, then it was built rather late in the period of greatest popularity for this style. It does not appear to be architecturally significant. The associated barn and shed are also entirely standard structures and in poor repair as well. Interestingly, this structure appears on the 1968 Florin USGS map but disappears on the photorevised version of 1980, although the barn and outbuildings appear on the later. There does not appear to be a reason for this.

CA-SAC-68

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line passes within 100 to 200 feet of the mapped location of prehistoric archaeological site CA-SAC-68. As described on the Archaeological Site Survey Record (JM/MB 1949), CA-SAC-68 is a "mound in old waterway of Cosumnes River, flood waters have probably destroyed most of site." No other information is available. This prehistoric archaeological site, if still extant, might be affected by project construction. Mitigation measures recommended for CA-SAC-68 are described later.

CA-SAC-93

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line may affect prehistoric archaeological site CA-SAC-93, whose actual location is not well understood. As illustrated in Confidential Figure 8.3-3, the site is mapped as being located some 1,000 feet south of the proposed gas line. Its "alternative" locations are either on top of the proposed gas line or about 100 to 200 feet north of the proposed gas line. The only information provided on the Archaeological Site Survey Record (prepared by Robert F. Heizer and R. Massey in 1937) is that it is a "village site on [a] mound in [the] middle of [a] cultivated field, north of Allyn-Valensin line fence" and "surface indications [exist] of artifacts [and] burials." This prehistoric archaeological site, if still extant, might be affected by project construction. Mitigation measures recommended for CA-SAC-93 are described later.

Arno Townsite (ca. 1910)

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line passes with 200 to 300 feet of the Arno Townsite (ca. 1910). As described by Nelson (2000), the ca. 1910 Government Land Office (GLO) maps place the location of the historic town of Arno just south of Badger Creek, adjacent to the railroad tracks. Nelson's (2000) field survey located the town site on the edge of agricultural fields adjacent to the railroad and noted that the farmers appear to be avoiding impacts to the site. The site includes old non-native trees and a complex of corrals. Some debris were noted on the ground; however, visibility was limited. According to Gudde (1969), a post office was established at Arno around 1890 and was named after the river in Italy. Julio Valensin, an Italian, and Alice McCauley, daughter of the owner of the land, were married in Florence, which is situated on the Arno River. This historic townsite and its associated archaeological remains (if present), might be affected by project construction. Mitigation measures recommended for Arno Townsite are described later.

Hicksville (1910 map)

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line passes within 200 to 300 feet of Hicksville (1910 map). No other information is available at CHRIS on this historic townsite. The Hicksville Cemetery is illustrated on the USGS map as located just north of Arno Road. This historic townsite, historic cemetery, and associated archaeological remains (if present), might be affected by project construction. Mitigation measures recommended for Hicksville and Hicksville Cemetery are described later.

Arno School

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line passes within 100 feet of the Arno School (1910). No other information is available at CHRIS on this building located just south of Arno Road. This historic schoolhouse and its associated archaeological remains (if present), might be affected by project construction. Mitigation measures recommended for the Arno School are described later.

Hadselville Creek Bridge

As illustrated in Confidential Appendix 8.3D, on Map 6 of 6, the gas line passes within 200 feet of the Hadselville Creek Bridge (24C0276). This bridge was constructed in 1960 and has been determined by Caltrans to be eligible for listing in the National Register of Historic Places (Caltrans 2000). This bridge would not be affected by project construction.

Western Pacific Railroad

As illustrated in Confidential Appendix 8.3D, on Maps 1, 2, and 3 of 6, the gas line would be constructed alongside the Western Pacific Railroad tracks. As noted by Maniery, Baker, and Maniery (1994), Joseph Sims, an early rancher, sold a right-of-way easement through his property to the Western Pacific Railroad sometime between 1904 and 1907 (Butler, 1923). CHRIS has no records on file indicating that the Western Pacific Railroad has ever been recorded (or evaluated) as a historic resource. As explained below in reference to the Southern Pacific Railroad, it is unlikely that the Western Pacific Railroad would be found eligible for listing in the National Register of Historic Places.

While it is possible that historic archaeological remains associated with railroad construction or operation might be discovered during construction adjacent to the railroad tracks, the gas line construction itself will not affect the tracks or railroad grade. Mitigation measures

recommended for construction adjacent to the Western Pacific Railroad tracks are described later.

Southern Pacific Railroad

As illustrated in Confidential Appendix 8.3D, on Map 4 of 6, the gas line would be constructed beneath the Southern Pacific Railroad tracks using directional boring techniques. CHRIS has no records on file indicating that the Southern Pacific Railroad has ever been recorded (or evaluated) as a historic resource. As explained by Nelson (2000), the railroad played an important role in the development of towns and agriculture in the Central Valley. Construction of the San Joaquin Valley branch of the Central Pacific Railroad (later Southern Pacific – and now Union Pacific) began in 1870. Nelson (2000) notes:

Placement of the railroad line was based on town promotion and town site acquisition by the railroad, in addition to engineering considerations such as bridging waterways. Many of the larger cities in the valley were laid out as isolated railroad towns in the 1870s and 1880s and shared a common plan of a central depot with the surrounding uniform plat. These railroad towns were laid out on a rectangular grid aligned with the tracks rather than with those established by traditional government survey. Due to the construction of the railroad, the population in the San Joaquin Valley grew by 45 percent between 1870 and 1880. By the 1880s, the railroad established 50 stations in six San Joaquin Valley counties. Town sites were built at 24 stations; of these, eight became major towns. Much of the railroad construction was built with Chinese labor; as a result, Chinatowns were established in several towns along the route, such as Hanford in Kings County.

Historic site CA-STA-350H is the Southern Pacific San Joaquin Valley Mainline was documented by Nelson (2000). Nelson's evaluation of the historic significance and National Register of Historic Places eligibility of the Southern Pacific Mainline is relevant to all the railroad tracks that will be crossed by CPP construction or where CPP construction will take place adjacent to railroad tracks:

The resources that would be significant and eligible for the National Register would be those that were related to the original construction of the Southern Pacific main line through the San Joaquin Valley during the period 1869-1876, or which exhibit important characteristics (construction techniques, engineering features, etc.) of that period. Like most heavily used main railroad routes, this line has aspects that are more similar to a machine than a structure. As with all pieces of heavy equipment, over time parts become worn out or break and are then replaced. The technology of railroad construction has also undergone significant evolution in the past 100 years with respect to rail manufacturing. The iron rails laid in the 1870s were far different from the modern rails rolling out of steel plants today. In the case of the 35 mainline sites (SPM-1 through SPM-35), the major resource related to the period of significance (1869-1876) is the ROW itself; all other resources – rails, tie plates, ties, ballasting, signals, warning arms, road crossings, etc. – have been replaced and exhibit either dates or characteristics that place their installation well after the period of significance.

While it is possible that historic archaeological remains associated with railroad construction or operation might be discovered during construction while boring beneath the Southern Pacific tracks, the gas line construction itself will not affect the tracks or railroad grade. Mitigation measures recommended for construction beneath the Southern Pacific Railroad tracks are described later.

Central California Traction Railroad

As illustrated in Confidential Appendix 8.3D, on Map 5 of 6, the gas line would be constructed beneath the Central California Traction Railroad tracks using directional boring techniques. As described above for the Southern Pacific Railroad, only the ROW itself for the Central California Traction Railroad would be related to the period of significance of the Central California Traction Railroad (CHRIS has no records on file related to the inventory or evaluation of this railroad facility in the CPP area).

While it is possible that historic archaeological remains associated with railroad construction or operation might be discovered during construction beneath the railroad tracks, the gas line construction itself will not affect the tracks or railroad grade. Mitigation measures recommended for construction beneath the Central California Traction Railroad tracks are described later.

Union Pacific Railroad

As illustrated in Confidential Appendix 8.3D, on Maps 5 and 6 of 6, the gas line would be constructed alongside the Union Pacific Railroad tracks. As described above for the Southern Pacific Railroad, only the ROW itself for the UPRR would be related to the period of significance of the UPRR (CHRIS has no records on file related to the inventory or evaluation of this railroad facility in the CPP area).

While it is possible that historic archaeological remains associated with railroad construction or operation might be discovered during construction beneath the railroad tracks, the gas line construction itself will not affect the tracks or railroad grade. Mitigation measures recommended for construction beneath the UPRR tracks are described later.

Previous Investigations (Surveys)

Cultural resource investigation reports, relevant to the Southwest Corridor, provided by CHRIS to GANDA were also provided to CH2M HILL by CHRIS. As illustrated in Figures 8.3-2a – 8.3-2e, certain segments of the Southwest Corridor had been surveyed by previous investigations unrelated to this project. The segment of the Southwest Corridor illustrated on Map 1 of 6 has been completely surveyed previously by Maniery, Baker and Maniery (1994), and Heipel (1990). Similarly, the segment illustrated on Map 2 of 6 has been completely surveyed previously by Heipel (1990) and Peak and Associates (1981 and 1997). The segment illustrated on Map 3 of 6 has been almost completely surveyed previously by Peak and Associates (1981 and 1997) with the exception of the area shown as being surveyed in 2001 by CH2M HILL. The segment illustrated on Map 4 of 6 has been partly surveyed previously by Nelson (2000) and Peak and Associates (1979), with the balance being surveyed in 2001 by CH2M HILL. The segment illustrated on Map 5 of 6 has been only partly surveyed by Peak and Associates (1982); the majority of this segment was surveyed in 2001 by CH2M HILL. Finally, the segment illustrated on Map 6 of 6 has been only partly surveyed by Peak and Associates (1982), Ritter (1971), and Flynn (1985); the balance was surveyed in 2001 by CH2M HILL.

8.3.2.5.2 Field Survey

As explained immediately above, several segments of the gas line corridor have been covered by previous investigations; these segments were not re-surveyed by CH2M HILL. Those segments not otherwise surveyed previously were surveyed in 2001 by CH2M HILL (see Figures 8.3-2a-8.3-2e) employing a “complete general reconnaissance” for archaeological resources as described by King, Moratto, and Leonard (1973). The survey was completed by CH2M HILL (Dr. James C. Bard, RPA; Mr. Jim Sharpe, M.S., and Ms. Alicia Bergstad, B.S.) on July 11 and 12, 2001. With the exception of a historic archaeological site discovered just east of the Southern Pacific Railroad tracks southeast of Badger Creek (see Confidential Appendix 8.3E), no archaeological sites or isolates (prehistoric or historic) were found by CH2M HILL.

Plant Site

The proposed CPP site has been investigated by GANDA (Hart, Jenks, and Dore, 2001); SMUD has not authorized CH2M HILL to conduct any further cultural resources investigations at the plant site. Hart, Jenks, and Dore (2001) recommended further studies to determine if CA-SAC-500H and -504H meet CEQA significance criteria.

Gas Line

With one exception (an alfalfa field with zero surface visibility), all of the natural gas pipeline corridors were surveyed. With the exception of newly discovered archaeological site (see Confidential Appendix 8.3E), no archaeological sites or isolates (prehistoric or historic) were found. Figures 8.3-2a – 8.3-2e illustrate the areas surveyed by CH2M HILL and the alfalfa field not available for inspection due to lack of any surface visibility.

CA-SAC-###-H (P-34-000###)

This newly discovered archaeological site is located in the Cosumnes River Preserve; it contains both a prehistoric and historic component (see Primary Record – Confidential Appendix 8.3E). A fine grained basalt chopper was found in a dirt road in association with historic materials. This chopper is considered to be an isolated find due to the lack of any other associated prehistoric materials. It is possible, however, that additional subsurface prehistoric materials may be present. Historic era items observed included a sickle section (used to cut hay or grain), a spike tooth harrow, colored glass, burned pottery, white crockery, and the metal base of a 1901, 12-gauge Repeater shotgun shell. All historic items are visible in the dirt road. Additional cultural materials are likely to be present in the grassy areas located on both sides of the dirt road and beneath the surface. About 100 yards west of the historical items in the road are several trees near the point where the road crosses the Union Pacific Railroad Tracks. Concrete debris and an irrigation mainline ditch are present along with some chicken wire. One or more structures may have been present; at the time of this survey, ground visibility was poor due to heavy grasses. This site may be associated with the historic townsite of Arno.

Archaeological High Probability Areas

Several high probability areas (HPAs) for prehistoric and historic archaeological sites are present along the gas line corridor. Designation of HPAs is necessarily a subjective judgement on the part of CH2M HILL’s cultural resource staff. HPAs are determined by the presence of known/recorded archaeological sites or the presence of terrain features believed to have been more favorable locations for prehistoric Native American occupation/use.

On Map 3 of 6, the presence of CA-SAC-68 suggests that a portion of Eschinger Road, is a HPA. This HPA continues onto Map 4 of 6 as justified by the presence of CA-SAC 93, the Arno Townsite, the newly discovered archaeological site CA-SAC-###-H, the Hicksville Cemetery, the Hicksville townsite, Arno School, and the confluence of Badger Creek and the Cosumnes River. This HPA continues onto Maps 5 and 6 of 6 as justified by the presence of Willow Creek, Laguna Creek, and Hadselville Creek.

8.3.2.5.3 Architectural Reconnaissance

Homes, farmsteads, and commercial/industrial facilities older than 45 years are potentially significant historic resources in the project area. CH2M HILL did not observe any potentially significant historic buildings or structures within the surveyed gas line corridor (which consisted of a narrow corridor immediately adjacent to paved and/or graveled roads).

8.3.2.5.4 Native American Consultation

GANDA (Hart, Jenks, and Dore, 2001) contacted the NAHC on March 22, 2001 to request information about traditional cultural properties such as cemeteries and sacred places in the CPP area. The NAHC responded that there were no known Native American sacred lands in the project area. Local Native American contacts identified by the NAHC were also notified about the project on May 4, 2001 and asked to contribute cultural resources information. One reply was received from the United Auburn Indian Community of the Auburn Rancheria (Miwok/Maidu) on May 21, 2001, which reported that the Tribal Historic Preservation Committee had no information regarding sacred sites in the project area. Another reply was received from the Ione Band of Miwok Indians on June 20, 2001 and reported that the Tribe is unaware of any information regarding existing sites in the area.

The record searches conducted at the North Central Information Center of the California Historical Resources Information System for GANDA (IC# SAC-01-29 and SAC-01-41) failed to indicate the presence of Native American traditional cultural properties.

8.3.3 Environmental Consequences

This section describes the environmental consequences of proposed CPP construction.

8.3.3.1 Significance Criteria

CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (Section 21084.1 of the Public Resources Code) and defines substantial adverse change as demolition, destruction, relocation, or alteration that would impair historical significance (Section 5020.1). Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the California Register of Historical Resources⁴ is presumed to be historically or culturally significant.⁵

⁴ The California Register of Historical Resources is a listing of ". . . those properties which are to be protected from substantial adverse change." Any resource eligible for listing in the California Register is also to be considered under CEQA.

⁵ A historical resource may be listed in the California Register of Historical Resources if it meets one or more of the following criteria: "(1) is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of

Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in, or determined to be eligible for listing in the CRHR, is not included in a local register of historic resources, or not deemed significant in a historical resource survey, may nonetheless be historically significant (Section 21084.1; see Section 21098.1).

CEQA requires a Lead Agency to identify and examine environmental effects that may result in significant adverse effects. Where a project may adversely affect a unique archaeological resource,⁶ Section 21083.2 requires the Lead Agency to treat that effect as a significant environmental effect and prepare an EIR. When an archaeological resource is listed in or is eligible to be listed in the CRHR, Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

8.3.3.2 CPP Plant Site

GANDA (Hart, Jenks, and Dore, 2001) conducted a cultural resources inventory of 220 acres at the Rancho Seco Plant for the District to assist the California Energy Commission in its compliance with the California Environmental Quality Act. As a result of their inventory, two historic period archaeological sites, CA-SAC-500H and CA-SAC-504H, and one prehistoric period archaeological resource, ARS 85-15-1, were identified. The status of the historic period archaeological resources as significant historical resources to be considered under CEQA is currently unknown. Further studies to determine if these resources meet the significance criteria are recommended by GANDA. The prehistoric archaeological resource,

California or the United States; (2) is associated with the lives of persons important to local, California or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or, (4) has yielded or has the potential to yield information important in prehistory or history (. . . of the local area, California or the nation)" (Public Resources Code SS5024.1, Title 14 CCR, Section 4852). Automatic CRHR listings include National Register of Historic Places (NRHP) listed and determined eligible historic properties (either by the Keeper of the NRHP or through a consensus determination on a project review); State Historical Landmarks from number 770 onward; Points of Interest nominated from January 1998 onward. Landmarks prior to 770 and Points of Historical Interest may be listed through an action of the State Historical Resources Commission.

⁶ Public Resources Code 21083.2 (g) defines a unique archaeological resource to be: An archaeological artifact, object, or site, about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: (1) contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information; (2) has a special and particular quality such as being the oldest of its type or the best available example of its type; or, (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

ARS 85-15-1, while it has not had its significance formally evaluated, was determined not to be a significance resource by the District in 1985.

8.3.3.3 CPP Gas Line

The CH2M HILL field survey of those portions of the CPP gas line that were not otherwise inspected by previous investigators resulted in the discovery of an archaeological site (CA-SAC-###-H) and designation of archaeological HPAs. No historically or architecturally significant buildings or structures will be affected by gas-line construction.

8.3.4 Cumulative Effects

The CPP project might affect known/recorded cultural resources and subsurface archaeological resources that might be present. The significance of these known/recorded resources has not been determined and the significance of any subsurface archaeological resources that might be present is unknown. If construction was to encounter a large, stratified, buried prehistoric archaeological site, or discrete filled-in historic period features, the possibility of cumulative impacts would arise because such sites might be highly significant, and many have been destroyed or damaged by agricultural activity and/or commercial/industrial/residential development in the region. Given the relative low level of impact to such a site that the project would cause, it is also possible that proposed project activities would not lead to significant cumulative impacts, depending on the extent of project impact to any such discovered archaeological deposits. Any potential impact to an unknown site would be minimized by monitoring during construction (Section 8.3.5) and by stop-work procedures if a site were uncovered.

8.3.5 Mitigation Measures

CEC's cultural resource staff believe the best mitigation strategy is to avoid impact to cultural resources that may be located in a given project area. Avoidance can be accomplished by having the archaeologist and project engineer demarcate cultural resource site boundaries on the ground to ensure that proposed project improvements do not impinge on the resource(s). Where a project facility must be placed within 100 feet of a known archaeological site, the site can be temporarily fenced or otherwise marked on the ground as an Environmentally Sensitive Area (ESA). Construction equipment can then be directed away from the ESA, and construction personnel directed to avoid entering the ESA.

Prior to starting construction near a designated ESA, the construction crew should be informed of the resource values involved and of the regulatory protections afforded to the resources through an employee training program.

Though only one archaeological site was found during the survey conducted by CH2M HILL, it is possible that subsurface construction could encounter buried archaeological remains. Since several prehistoric archaeological sites have been found in the project vicinity, CH2M HILL recommends that construction monitoring take place in high probability areas and in proximity to the cultural resources listed below. In certain locations, preconstruction subsurface testing is also recommended (see below).

TABLE 8.3-4
Recommended Mitigation

Cultural Resource	Mitigation Measure
Elliot Ranch	Resources not affected, no mitigation measures needed
Knopfel Dairy	Resource not affected, no mitigation measures needed
CA-SAC-68	Preconstruction subsurface testing followed by construction monitoring
CA-SAC-93	Preconstruction subsurface testing followed by construction monitoring
Arno Townsite (ca. 1910)	Construction monitoring
Hicksville (1910 map)	Construction monitoring
Arno School	Avoid structure, construction monitoring
Hadselville Creek Bridge	Resource not affected, no mitigation measures needed
Western Pacific Railroad, Southern Pacific Railroad, Central California Traction Railroad, UPRR	Construction monitoring
CA-SAC-###-H (P-34-000###)	Preconstruction subsurface testing followed by construction monitoring
CA-SAC-500H and CA-SAC-504H	Avoid resources, construction monitoring
High Probability Areas	Construction monitoring

8.3.5.1 Pre-construction Subsurface Testing

Pre-construction testing is a form of enhanced survey in that surface survey cannot, in normal circumstances, result in reliable detection of buried archaeological sites. Subsurface testing, therefore, completes the survey by compensating for the presence of site-obscuring overburden. Pre-construction subsurface testing is recommended in the proximity of CA-SAC-68, CA-SAC-93, and newly discovered site CA-SAC-###-H.

8.3.5.2 Monitoring During Construction

If the CEC determines that monitoring is required, qualified personnel consisting of a Project Archaeologist (PA) and an Archaeological Monitor (AM), should conduct the required monitoring. A PA and AM can be a single person, if properly qualified. Proper qualifications for a PA are the minimum qualifications for Principal Investigator on federal projects under the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. The AM should have 5 years of experience in conducting archaeological field projects or hold a bachelor's degree in anthropology, with an emphasis in archaeology, and have at least 1 year of experience in conducting archaeological field projects. The AM should be qualified to detect archaeological deposits in the field. In addition to site detection, the PA should be qualified to evaluate the significance of the deposits, consult with regulatory agencies, and plan site evaluation and mitigation work.

To ensure participation by interested members of the Plains Miwok Indian community, it is recommended that a Plains Miwok Indian monitor be present during any needed pre-construction archaeological site testing and/or data recovery operations triggered as a consequence of archaeological remains being discovered during construction. The Plains Miwok Indian monitor can be retained either directly by the project applicant or through the subconsultant conducting the actual archaeological fieldwork.

A six-point archaeological monitoring program should be implemented as follows:

1. ***Preconstruction Assessment and Construction Training*** – The PA and AM will visit the project area before construction begins to become familiar with site conditions. As construction begins, the PA will conduct a worker education session for construction supervisory personnel to explain the importance of, and legal basis for, the protection of significant archaeological resources. This worker education session can take place at the same time as the paleontological training session because both disciplines will involve the monitoring of excavation activities.
2. ***Construction Monitoring*** – The AM should be present at the construction site at all times when excavation is taking place within the zone of archaeological sensitivity. The AM's role will be to watch for buried archaeological deposits during subsurface excavations.

If the AM identifies archaeological remains during construction, the AM should immediately notify the PA and site superintendent, who should halt construction in the immediate vicinity of the find, as necessary. The superintendent and AM will use flagging tape, rope, or other means to delineate the area of the find within which construction will halt. This area should include the excavation trench from which the archaeological finds came and any piles of dirt or rock spoil from that area. Construction should not take place within the delineated find area until the PA, in consultation with CEC staff, can inspect and evaluate the find.

3. ***Site Recording and Evaluation*** – The PA and/or AM should follow accepted professional standards in recording any find and should submit the standard Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and location information to the North Central Information Center of the California Historical Resources Information System (California State University, Sacramento).

If the PA determines that the find is insignificant, construction will proceed. If the PA determines that further information is needed to evaluate significance, the CEC and SHPO will be notified, and the consultant will prepare a plan and a timetable for evaluating the find in consultation with the CEC and SHPO.

Under CEQA, a find would be considered significant (would be classified as an "important archaeological resource") if it:

- Is associated with an event or person of:
 - Recognized significance in California or American history
 - Recognized scientific importance in prehistory

- Can provide information that is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions
- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind
- Is at least 100 years old and possesses substantial stratigraphic integrity
- Involves important research questions that historical research has shown can be answered only with archaeological methods

Under the NHPA, a find is significant if it meets the NRHP listing criteria at 36 CFR 60.4:

- 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:
 - That are associated with events that have made a significant contribution to the broad patterns of our history, or
 - That are associated with the lives of persons significant in our past, or
 - That embody the 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
 - That have yielded, or may be likely to yield, information important in prehistory or history.

If human remains are found during construction, project officials are required by the California Health and Safety Code (Section 7050.5) to contact the County Coroner. If the Coroner determines that the find is Native American, he/she must contact the NAHC. The NAHC, as required by the Public Resources Code (Section 5097.98), determines and notifies the Most Likely Descendant (MLD), and requests the MLD to inspect the burial and make recommendations for treatment or disposal.

4. **Mitigation Planning** – If the PA and the consulting parties (the CEC, SHPO, Sacramento County, NAHC-designated LD, etc.) determine that the find is significant, they should prepare and carry out a mitigation plan in accordance with state (and federal if applicable) guidelines. This plan should emphasize the avoidance, if possible, of significant archaeological resources. If avoidance is not possible, the recovery of a sample of the deposit from which the archaeologist can derive scientific data to address archaeological research questions should be considered an effective mitigation measure for damage to or destruction of the deposit.

The mitigation program, if necessary, should be carried out as soon as possible to avoid construction delays. Construction should resume at the site as soon as the field data collection phase of any data recovery effort is completed. The PA will verify the

completion of field data collection by letter to the District and the CEC so that the District can resume construction.

5. *Curation* – The PA will arrange for the curation of archaeological materials collected during the monitoring and mitigation program at a qualified curation facility. A qualified curation facility is a recognized, non-profit, archaeological repository with a permanent curator. The PA shall submit field notes, stratigraphic drawings, and other materials developed as part of the archaeological excavation program to the curation facility along with the collection.
6. *Report of Findings* – If buried archaeological deposits are found during construction, the PA will prepare a report summarizing the monitoring and archaeological investigation program implemented to evaluate the find or to recover data from an archaeological site as a mitigation measure. This report should describe the site soils and stratigraphy, describe and analyze artifacts and other materials recovered, and explain the site’s significance. This report should be submitted to the curation facility with the collection.

Following these mitigation measures would lower any potential project effects on archaeological resources below the threshold of significance. Though it is possible that the project would encounter significant archaeological deposits, the monitor would be present to detect, evaluate, and recover them. Therefore, monitoring and mitigation program would be effective.

Emergency maintenance and repair could cause impacts to cultural resources. In developing specific mitigative measures to address impacts for any site that cannot be avoided during construction. The potential for ongoing impacts to any resource that cannot be avoided through project redesign must be considered. Any mitigative data recovery should be properly scoped in conjunction with the appropriate agencies to address potential long-term ongoing impacts.

8.3.6 Involved Agencies and Agency Contacts

Table 8.3-5 lists the state agencies involved in cultural resources management for the project and a contact person at each agency. These agencies include the California NAHC and, for federal lands, the California Office of Historic Preservation.

TABLE 8.3-5
Agency Contacts

Issue	Contact	Title	Telephone
Native American traditional cultural properties	Ms. Debbie Pilas-Treadway NAHC	Associate Government Program Analyst	(916) 653-4040
Federal agency NHPA Section 106 compliance	Mr. Knox Mellon California Office of Historic Preservation	SHPO	(916) 653-6624

8.3.7 Permits Required and Schedule

In addition to the CEC site certification, the CPP project may require federal, state or local permits that include provisions protecting cultural resources. If a CWA Section 404 permit is required for construction (wetland fills or crossings), consultation with the SHPO and ACHP (under Section 106 of the NHPA) would be required (even though no federal land is involved in the project because federal permitting or licensing requires the USACE to consider whether the project would affect historic properties listed on or meeting the criteria for listing in the NRHP).

Similarly, use of state or public lands or acquisition of discretionary development permits are subject to CEQA. Consultation with the SHPO and/or the state or local lead agency or agencies is required if the project would affect historic properties listed on or meeting the criteria for listing in the CRHR. If a previously undiscovered archaeological site is found during construction on state land, the newly discovered site would require CRHR eligibility evaluation.

If the project becomes subject to federal involvement, some or all of the following Section 106 compliance procedures would be followed as appropriate:

1. If the federal agency finds no historic properties that the undertaking might affect, the agency informs the SHPO, documents the finding, and proceeds with the undertaking.
2. If the agency finds historic properties and determines that the project would not affect them, then the agency informs the SHPO and documents the finding. The SHPO has 15 days in which to object to the finding, after which the agency may proceed with the undertaking.
3. If the agency finds historic properties that the project would affect, the agency and SHPO consult to determine whether the effect would be adverse. If the agency and SHPO find that the effect would not be adverse, the agency informs the ACHP, documents the finding, and the ACHP has 30 days in which to object to the finding. If there is no objection, the agency proceeds with the undertaking.
4. If the agency finds historic properties and determines that the project effects would be adverse, the agency and SHPO consult to determine how to mitigate these effects. This consultation culminates in a Memorandum of Agreement (MOA) between the agency, SHPO, and ACHP. The ACHP and SHPO are allotted 30 days in which to review and comment on a draft MOA. If the parties agree, the agency proceeds with the undertaking after signing and executing the MOA. If the agency does not agree to prepare an MOA, the ACHP must provide its comments on the undertaking within 60 days.

The Section 106 regulatory compliance process thus takes a minimum of 15 days if historic properties are found. This process can take from 60 to 90 days or more, depending on the complexity of the issues involved, the necessity of preparing a MOA, and other factors.

If Native American burials were discovered on federally owned land, the NAGPRA would require that the federal land management agency halt construction in the immediate vicinity of the find and contact a lineal descendant of the buried person or culturally affiliated organization. The regulations implementing NAGPRA (43 CFR 10) require that the federal

agency notify the appropriate Native American persons or organizations within 3 days of the find. These regulations also require that construction activity in the immediate vicinity of the find stop for 30 days or until a written agreement is executed to adopt a recovery plan for the treatment or removal of the human remains.

It would be incumbent upon the District and its contractors to immediately notify these federal agencies if Native American burials and/or other archaeological remains are discovered on federal land.

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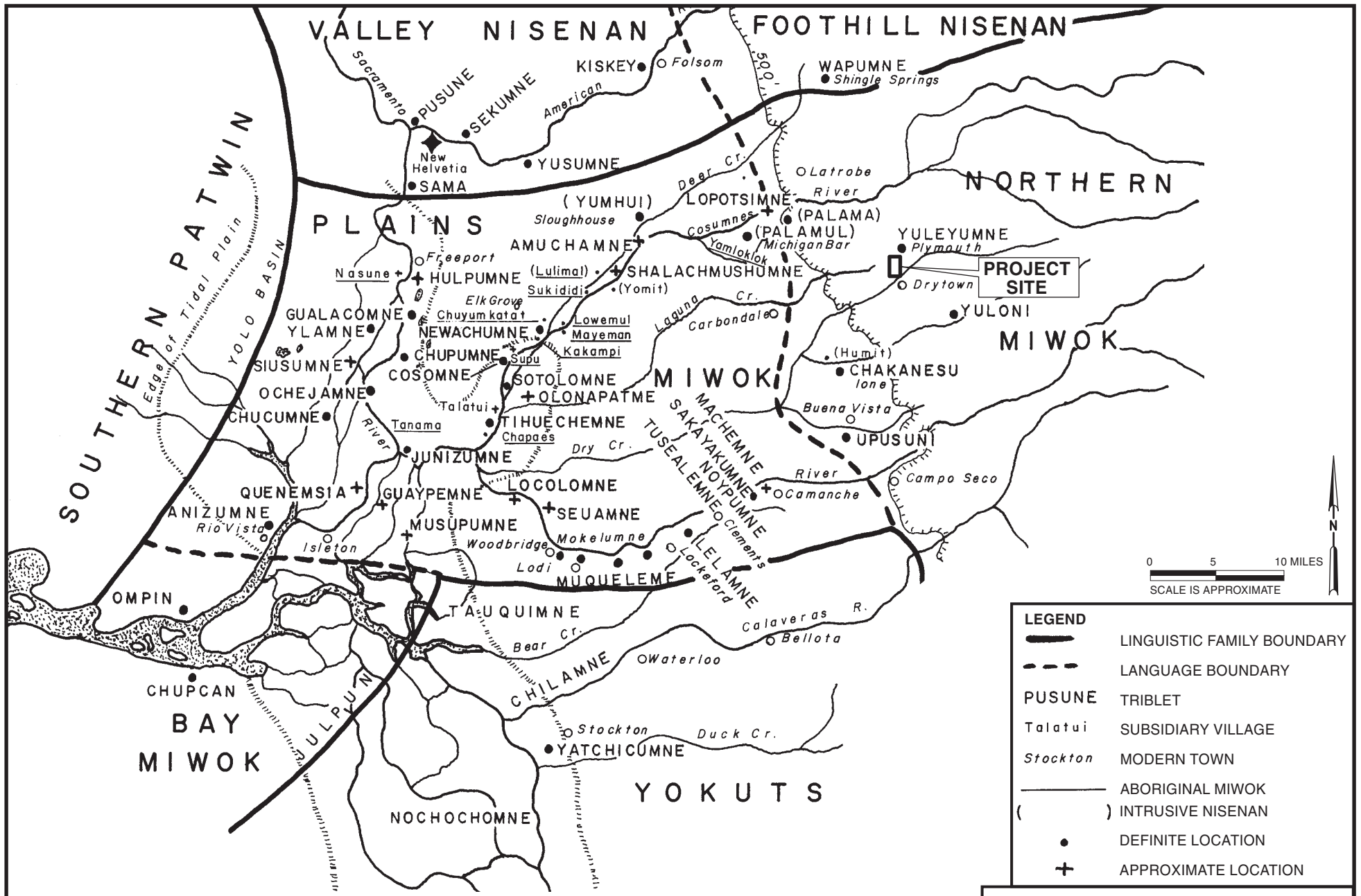
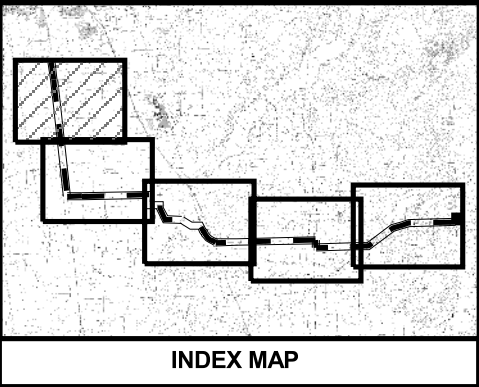
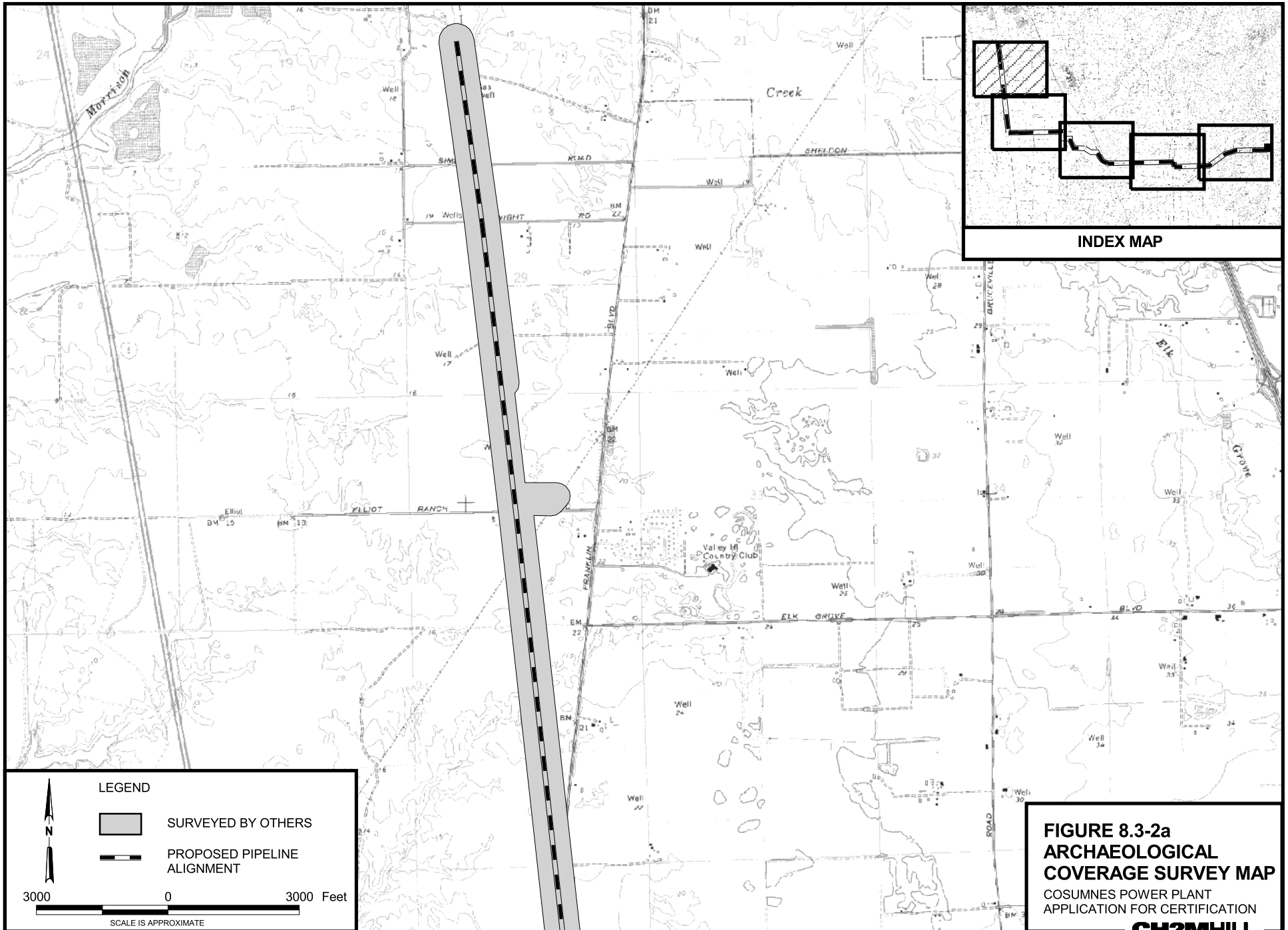


FIGURE 8.3-1
ETHNOGRAPHIC OCCUPATIONS
 COSUMNES POWER PLANT
 APPLICATION FOR CERTIFICATION
CH2MHILL

Source: Bennyhoff, J.A. 1977. *Ethnogeography of the Plains Miwok*. Center for Archaeological Research at Davis Publication Number 5. University of California, Davis.
 D062001002RDD_07(8/28/01)



INDEX MAP

**FIGURE 8.3-2a
ARCHAEOLOGICAL
COVERAGE SURVEY MAP**
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION
CH2MHILL

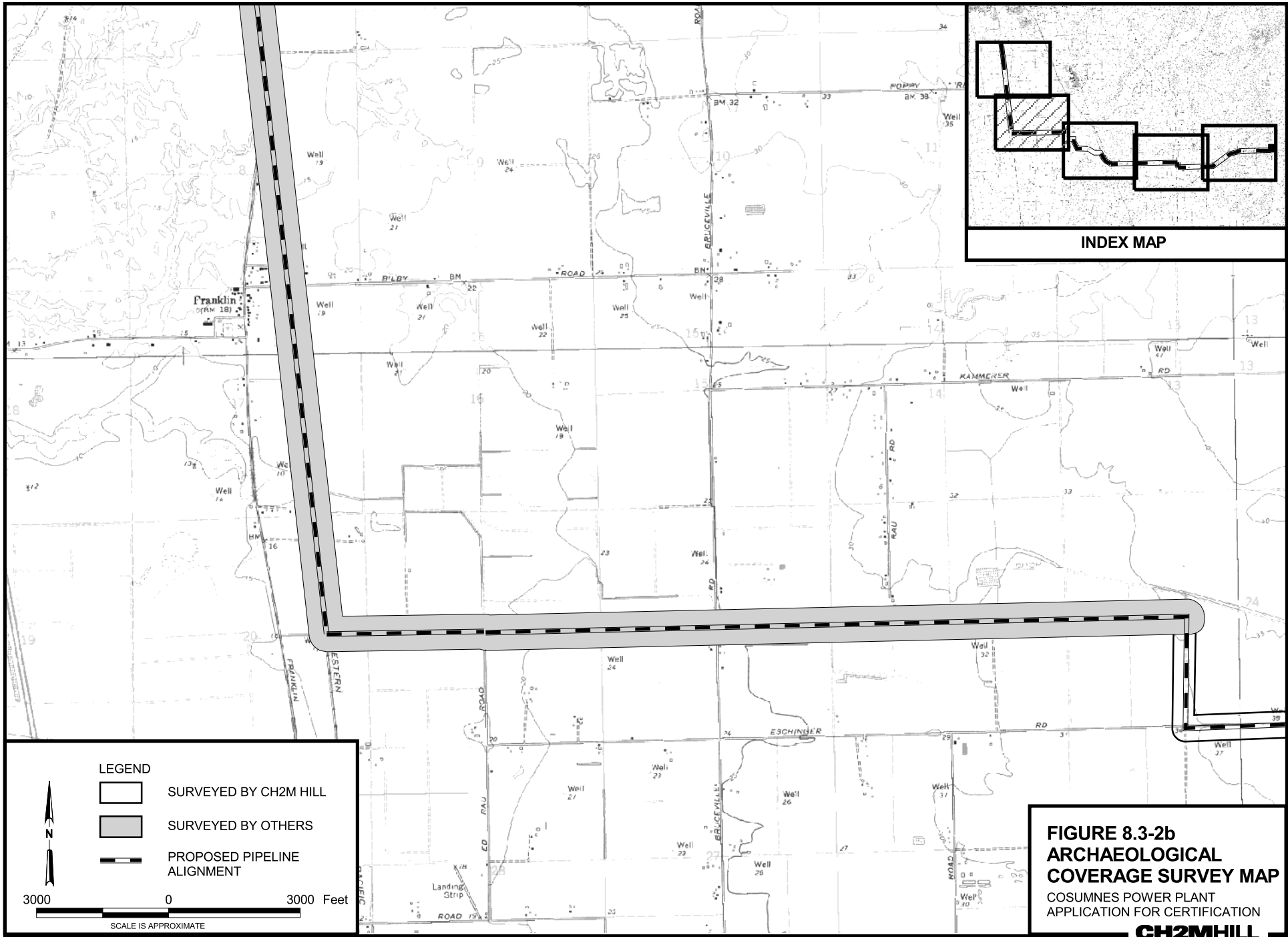
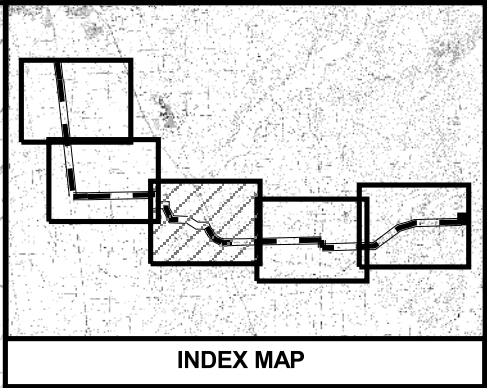
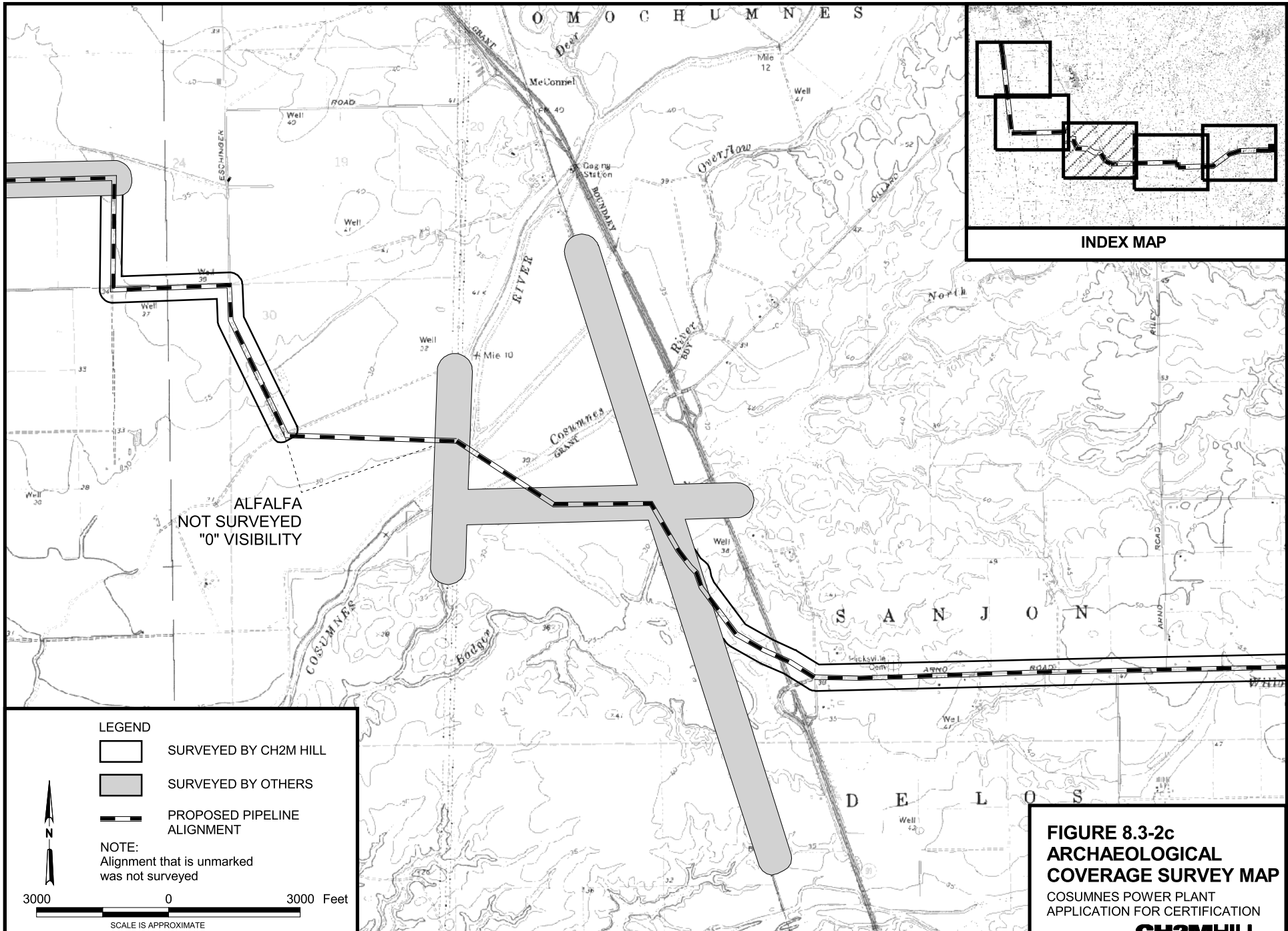


FIGURE 8.3-2b
ARCHAEOLOGICAL
COVERAGE SURVEY MAP
 COSUMNES POWER PLANT
 APPLICATION FOR CERTIFICATION
CH2MHILL



ALFALFA
NOT SURVEYED
"0" VISIBILITY

- LEGEND**
- SURVEYED BY CH2M HILL
 - SURVEYED BY OTHERS
 - PROPOSED PIPELINE ALIGNMENT

NOTE:
Alignment that is unmarked
was not surveyed

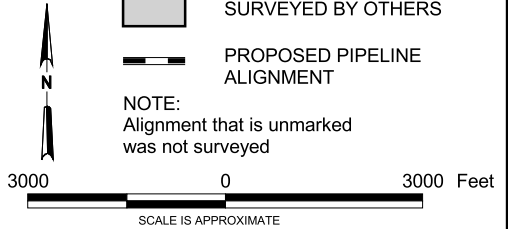
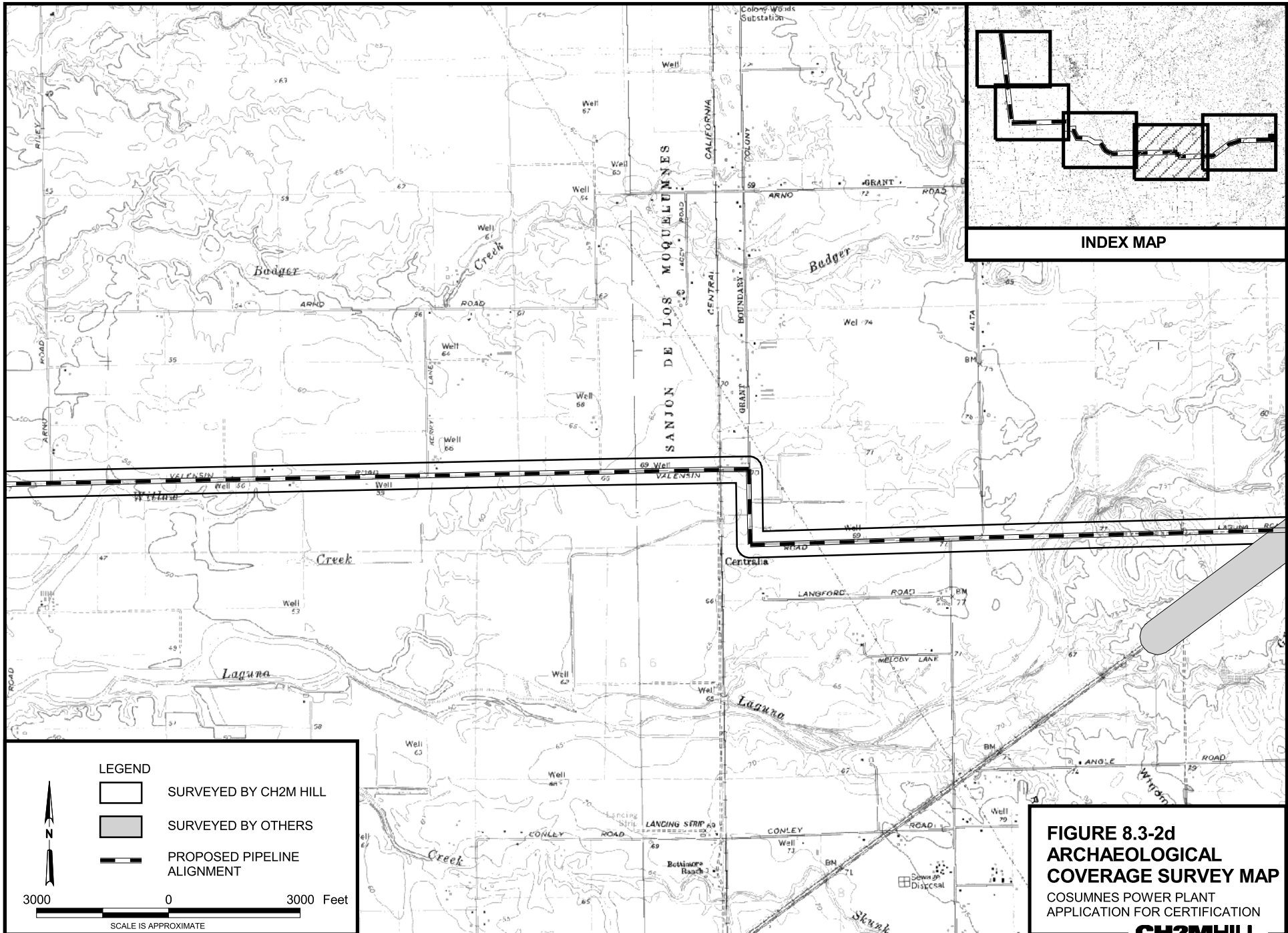
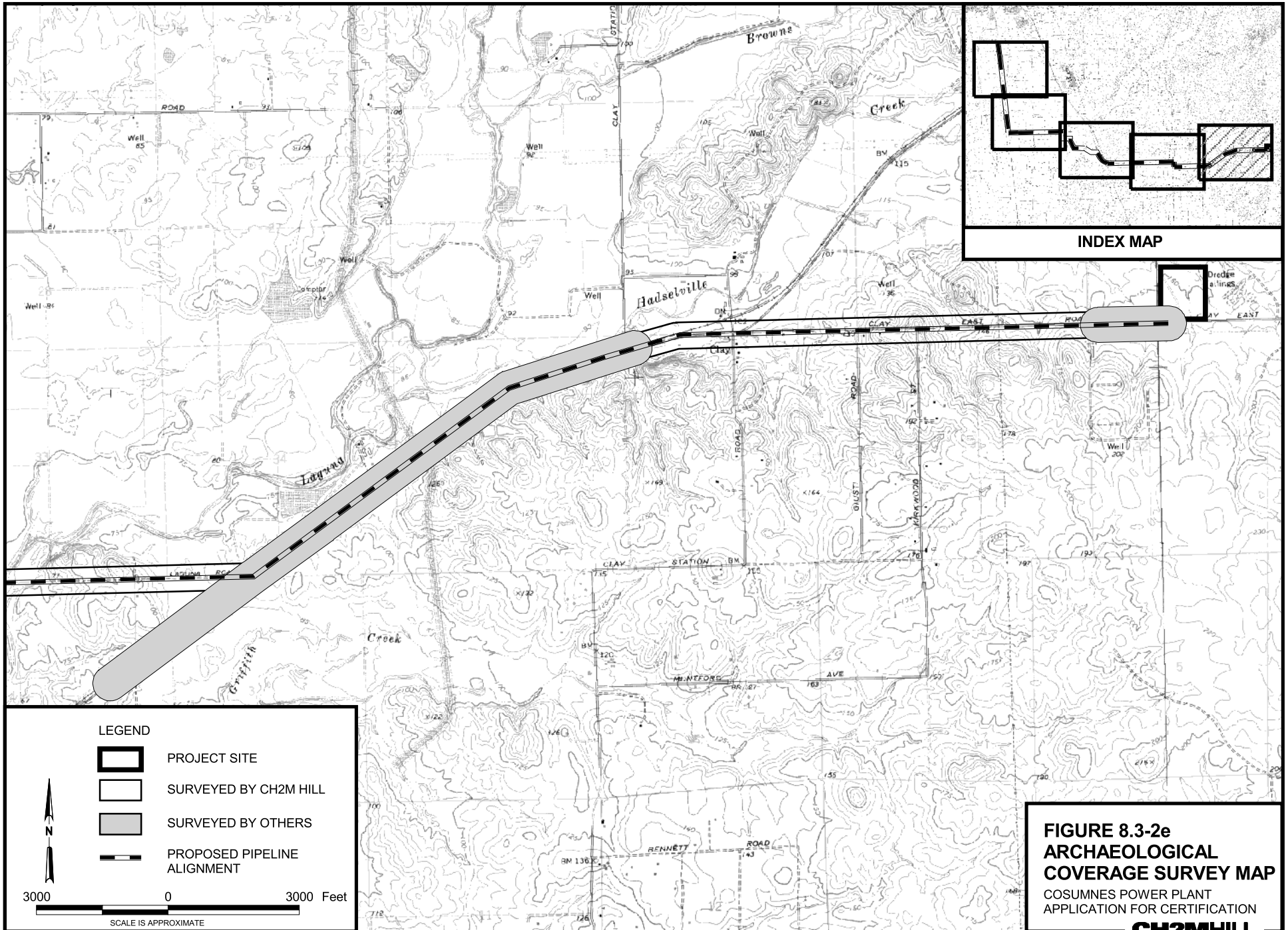


FIGURE 8.3-2c
ARCHAEOLOGICAL
COVERAGE SURVEY MAP
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION
CH2MHILL





**CONFIDENTIAL FIGURE 8.3-3
Known Archeological or Historical Sites**