

**CULTURAL RESOURCES
INVENTORY AND EVALUATION**

**Humboldt Bay Power Plant Decommissioning
Canal Remediation Project
Humboldt County, California**

Prepared by



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Table of Contents

Section No.	Description	Page No.
1.0	INTRODUCTION	2
1.1	Project Location and Description.....	2
1.2	Area of Potential Effect	3
1.3	Regulatory Context	4
1.3.1	National Historic Preservation Act.....	4
1.3.2	California Environmental Quality Act.....	4
2.0	CULTURAL RESOURCE IDENTIFICATION	5
2.1	Literature Review	5
2.2	Native American Coordination	8
3.0	FINDINGS	9
3.1	Intake/Discharge Canals	10
3.2	Effects to Historic Properties.....	11
3.3	Inadvertent Discovery	11
3.4	Human Remains	11
4.0	REFERENCES CITED	12

Appendices

A	Project Location and Area of Potential Effects
B	Previous Studies (Confidential)
C	HAER Documentation (Select Images)
D	Archaeological Resource Protection Plan

1.0 INTRODUCTION

Pacific Gas and Electric Company (PG&E) proposes to remove contaminated sediments from the intake and discharge canals and demolish and remove the intake and discharge structures associated with the Humboldt Bay Power Plant (HBPP) as part of the decommissioning and license termination for the power plant. The project is subject to permits and approvals from Nuclear Regulatory Commission (NRC), the California Coastal Commission (CCC), the U.S. Army Corps of Engineers (USACE), the North Coast Regional Water Quality Control Board (NCRWQCB) and the California Department of Toxic Substances Control (DTSC). This report was prepared to satisfy the cultural resources identification and evaluation efforts outlined by Section 106 of the National Historic Preservation Act (NHPA), as set forth in 36 CFR 800.16(y) and the California Environmental Policy Act (CEQA Guidelines, Title 14, CA Code of Regulations §15064.5 and Title 14, CA Code of Regulations §4850 et seq). The report was prepared by PG&E Cultural Resource Specialist Stephanie Cimino, who has a Bachelor's degree in Anthropology and Master of Science in Historic Preservation, and meets the Secretary of the Interior Standards for archeology and architectural history.

The decommissioning and license termination at HBPP has been a multi-phase, multi-year endeavor by PG&E. From 2003 to present, several successive projects have been completed, including the construction of the Independent Spent Fuel Storage Installation (ISFSI); the construction of the Humboldt Bay Generating Station (HBGS) and associated wetlands restoration; and the decommissioning of HBPP, including the removal of all generation components from the older natural gas units (Units 1 and 2), the inoperable nuclear unit (Unit 3), two Mobile Emergency Power Plants (MEPPs), and associated appurtenances.

As a result of these efforts, PG&E has undertaken numerous studies of the project area that have thoroughly identified and evaluated impacts to cultural resources within the HBPP Campus, including the Area of Potential Effect (APE) for the Canal Remediation Project. These studies represent the most up-to-date body of work for the HBPP Campus and provide a thorough characterization of prehistoric and historic settlement, historic significance of the HBPP Campus, a depositional and stratigraphic context, and all recently discovered cultural resources within the Campus. The information provided by these studies is adequate for the inventory and evaluation purposes of this undertaking; therefore, a separate survey was not conducted for this project.

This report summarizes previous cultural resource identification and evaluation efforts and discusses the potential effects to cultural resources as a result of the proposed action. Standard background sections (environment, history, ethnography, etc.) are not included as the information has been thoroughly discussed in previous reports. Relevant reports are included as confidential attachments for agency reference, with additional documents available upon request. Based on the findings of this and previous efforts, this project is expected to have no adverse effect to historic properties.

1.1 Project Location and Description

Pacific Gas and Electric Company (PG&E) is in the process of full decommissioning and license termination for its Humboldt Bay Power Plant (HBPP). HBPP is located at 1000 King Salmon Way, Humboldt County, California on 71 acres within a 143-acre parcel (Appendix A: Figure 1). HBPP occupies a landform known locally as Buhne Point and historically as Red Bluff. Prior to the start of decommissioning, the HBPP consisted of two operating natural gas units (Units 1 and 2), an

inoperable nuclear unit (Unit 3) that has been shut down since 1976, two diesel-fired combustion turbine Mobile Emergency Power Plants (MEPP 2 and MEPP 3), and related appurtenances.

Units 1-3 used a power plant cooling design called once-through cooling that involved piping marine water through steam turbine power plants to cool the circulating water and then returning the water to the marine environment. PG&E constructed an intake canal to bring Humboldt Bay water from a waterway called the Fisherman's Channel, and from which pipes carried cooling water separately to each of the power generation units and then to a constructed discharge canal for return through outfall pipes to Humboldt Bay (Appendix A: Figure 2).

As part of the program to decommission Units 1-3 and terminate the Nuclear Regulatory Commission (NRC) license for Unit 3, PG&E proposes a remediation project to remove contaminated sediment from the intake and discharge canals and to prepare the canals for final site restoration after the remediation. PG&E has determined that the HBPP intake and outfall canals are contaminated with low levels of radionuclides from the operation of Unit 3 and potentially other contaminants associated with past operations. PG&E is additionally seeking authorization for temporary use of the discharge canal for storage of clean soils generated by the decommissioning project. Clean soils temporarily stored within the discharge canal would be removed at conclusion of the project or may be used to establish final site restoration conditions.

The proposed Canal Remediation Project will consist of preparation of pre-project plans and surveys, installation of water control measures, sediment removal, demolition of the intake and discharge structures, recontouring and restoration for the intake canal area, restoration of the discharge canal for temporary soil storage, and restoration of the discharge canal levee in preparation for final site restoration. Final site restoration, including any developments or permanent improvements to the Unit 3 area, is not included in this description. PG&E is currently developing its final site restoration plan for the overall site, which will be addressed in a separate permitting action.

1.2 Area of Potential Effect

The Area of Potential Effect (APE) is defined as “the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties (36 CFR 800.16[d]).” The APE for this project consists of the HBPP Campus boundary, and includes access, staging areas and soil removal and disposal sites (Appendix A: Figures 2-4).

Access to the construction area would use the existing site access routes off King Salmon Avenue. No new access routes into the site are planned (Appendix A: Figure 3). Staging and laydown areas LA-1 through LA-11 were previously approved in CDP E-09-010 for staging equipment and materials (Appendix A: Figure 4). Amendment CDP E-09-010 A3 for the Reactor Caisson and Spent Fuel Pool Removal Project authorized the use of additional laydown areas LA-12, LA-13, and LA-14. For the Canal Remediation Project, PG&E also proposes using LA-15, which is located adjacent to and south of the intake canal. As previously authorized by CDP E-09-010, surface improvements to the staging areas, including placement of paving and any necessary best management practices (BMP), may be performed to accommodate all-weather use during construction and facilitate surface water management. Soil removal and storage will take place within the canal footprint (Appendix A: Figure 2).

1.3 Regulatory Context

The HBPP decommissioning project is being performed as authorized by the Nuclear Regulatory Commission (NRC) and California Coastal Commission (CCC). The proposed Canal Remediation Project also requires a permit under Section 404 of the Clean Water Act (CWA) from the U.S. Army Corps of Engineers (USACE) and associated water quality certification under Section 401 of the CWA by the North Coast Regional Water Quality Control Board (NCRWQCB). Management of soils generated incidentally by the decommissioning project is also governed by existing approvals by the California Department of Toxic Substances Control (DTSC). As both a Federal and State undertaking, the project is subject to Section 106 of the National Historic Preservation Act (NHPA), as set forth in 36 CFR 800, and the California Environmental Quality Act (CEQA).

1.3.1 National Historic Preservation Act

Section 106 of the NHPA and its implementing regulations require federal agencies to consider the effects of undertakings on historic properties. An effect is defined as an “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16[i]).” In the event that an undertaking will have an effect on a historic property, the nature of the effect must be assessed. Historic properties are defined as a buildings, structures, sites, objects or districts of exceptional historical, architectural, archaeological, engineering or cultural significance that are over 50 years old and exhibit integrity of location, design, setting, materials, workmanship, feeling and association. They must also meet at least one of the National Register criteria for evaluation. These criteria include resources that a) are associated with events that have made a significant contribution to the broad patterns of our history; or b) are associated with the lives of persons significant in our past; or c) embody the distinctive characteristics of 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.

1.3.2 California Environmental Quality Act

CEQA requires that the Lead Agency must identify and examine the significant adverse environmental effects which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (CA PRC Sections 15064.5(b) and 21084). A substantial adverse change is defined as “demolition, destruction, relocation, or alteration activities which would impair historical significance” (CA PRC Sections 15064.5(b) (1) and 5020.1). Any historical resource listed in or eligible to be listed in the CRHR, including archaeological resources, is considered to be historically or culturally significant. Resources which are listed in a local historic register or deemed significant in a historical resource survey as provided under Section 5024.1(g) are presumed historically or culturally significant unless “the preponderance of evidence” demonstrates they are not. Finally, a resource that is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historic resources, or not deemed significant in a historical resource survey may nonetheless be historically significant, pursuant to Section 21084.1. The criteria for significance outlined by the CRHR mirror those of the NRHP.

2.0 CULTURAL RESOURCE IDENTIFICATION

This section summarizes the cultural resources identification efforts conducted for all phases of decommissioning work at HBPP. Documents reviewed include cultural resources records from the North Coastal Information Center, archaeological surveys and inventories, NRHP evaluations for Units 1, 2, and 3, and cultural resource monitoring reports for the HBPP Campus.

2.1 Literature Review

Previous records searches identified four previous cultural resource studies within one mile of the APE (Montizambert 1985; Roop, et al 1985; Sullivan & Allan 1994; Sandelin 1995). Five previously recorded sites were identified within one mile of the APE; all are ethnographic villages associated with the Native American Wiyot tribe (CA-HUM-79; CA-HUM-80; CA-HUM-81; CA-HUM-82; CA-HUM-83). Village sites associated with this tribal group are typically characterized by extensive shell midden within close proximity to the navigable waterways of Humboldt Bay, and the Eel and Mad Rivers. CA-HUM-79 was recorded at a location relatively near the Humboldt Bay Power Plant. However, no visible remnants remain and records indicate that this site was badly damaged or destroyed by erosion. The Cultural Resources Monitoring Report, Humboldt Bay Power Plant Decommissioning, Humboldt County, California (CH2M HILL 2013) provides a detailed summary of records search results (Appendix B).

The multi-phase work conducted for the ISFSI, HBPP and HBGS generated ten new cultural resources reports directly related to the HBPP Campus. The reports are summarized in Table 1 and described below.

Table 1. Previous Investigations within the APE

Author	Year	Report Title	Type of Study
PAR Environmental	2003	Cultural Resources Study for the PG&E Humboldt Bay Power Plant ISFSI Licensing Project Archaeological Inventory Survey	Cultural Resource Inventory and National Register Evaluation of Unit 3
PG&E	2003	Environmental Report for the Humboldt Bay Independent Spent Fuel Storage Installation (NRC Docket No. 72-27)	Environmental Impact Study
CH2M HILL and Pacific Legacy, Inc.	2006	Application for Certification, Cultural Resources, Humboldt Bay Repowering Project, Humboldt County, California	Cultural Resources Inventory and Evaluation Technical Study
Pacific Legacy, Inc.	2006	Addendum Cultural Resources Survey for the PG&E Humboldt Bay Repowering Project Humboldt County, California.	Cultural Resources Inventory and Evaluation
PAR Environmental	2008	Cultural Resources Inventory	Cultural Resources

		and National Register of Historic Places Evaluation for the Humboldt Bay Power Plant Fuel Line Removal Project Humboldt County, California	Inventory and National Register Evaluation of HBPP Fuel Line
CH2M HILL	2008	Cultural Resources Monitoring and Mitigation Plan, Humboldt Bay Repowering Project, Humboldt County, California.	Monitoring and Mitigation Plan
JRP Historical Consulting	2009	Mitigation Plan, Humboldt Bay Power Plant. Prepared in Response to HBRP California Energy Commission CUL-10 for Demolition of Units 1, 2 & 3	Historic Resources Evaluation and Mitigation Plan
CH2M HILL	2011	Humboldt Bay Generating Station Cultural Resources Monitoring Report	Technical Report of Construction Monitoring Results
JRP Historical Consulting	2011	Historic American Buildings Survey Humboldt Bay Power Plant, HAER No. CA-2293	HAER Documentation for HBPP
CH2M HILL	2013	Cultural Resources Monitoring Report, Humboldt Bay Power Plant Decommissioning, Humboldt County, California	Technical Report of Construction Monitoring Results

The 2003 Cultural Resources Study for the PG&E Humboldt Bay Power Plant ISFSI Licensing Project performed by PAR Environmental found no scenic or natural landmarks, and no previously recorded cultural resources within the APE. The APE included the entire HBPP campus, along with a 5-mile and 10-mile study radius. The study included a pedestrian survey performed by Lynn Compass and Glenn Caruso that covered the two liquid fuel oil tank areas (LFO Tanks #1 and #2) and the open and previously unused area at the top of the Buhne Point hill where the ISFSI was to be sited. The survey did not identify any new cultural resources within the APE. A National Register Evaluation was also conducted for Unit 3 that included a detailed context statement. Unit 3 was determined to be exceptionally significant under Criterion G in the history of the nuclear power industry, and under Criteria A and C at the National Level.

The 2003 PG&E Environmental Report for the Humboldt Bay ISFSI (NRC Docket No. 72-27) was a standard EIS. The cultural resource component was based on the 2003 PAR Environmental study. The determination regarding the construction of the ISFSI was a Finding of No Significant Impact. The SHPO concurred with this finding.

The cultural resources inventory conducted as part of the AFC for the Humboldt Bay Repowering Project (HBRP) now referred to as the Humboldt Bay Generating Station (HBGS), was completed by CH2M HILL, and accepted by the California Energy Commission (CEC) in 2006. The literature search conducted for the report noted that three ethnographic Wiyot villages had been identified within a half-mile of the APE, and two additional sites are recorded within a mile of the project area. CH2M HILL also checked for sites and Eligible Properties at the Office of Historic Preservation's California Historic Property Inventory and the Office of Historic Preservation's California

Inventory of Historic Resources. None of these sources indicated the presence of cultural resources within the HBRP's APE. The field survey conducted for the report also did not identify any cultural resources within the APE of the HBRP. The HBRP APE included the HBRP project site and all of the HBPP site not covered in water or salt marsh, including the construction laydown areas, contractor parking areas, and new access road (Alpha Road).

In 2006, an Addendum Cultural Resources Survey for the PG&E Humboldt Bay Repowering Project, Humboldt County, California was prepared by Pacific Legacy, Inc. A systematic survey was conducted by William Shapiro in order to capture portions of the HBPP Campus that were not previously covered during the AFC survey. The APE for this project included the area encompassing the Buhne Point Wetland Preserve and wetland areas near the railroad tracks east of the HBPP facilities. The survey did not identify any new prehistoric or historic resources within the APE.

In 2008, PAR Environmental conducted a cultural resource inventory and assessment of NRHP eligibility of the Humboldt Bay Power Plant pipeline, Olson's Wharf, and the King Salmon Avenue Bridge. The APE included 50 meters [164 feet] on either side of the pipeline, extending from the intake manifolds at Olson's Wharf to the Humboldt Bay Power Plant fuel tank as well as three small staging areas of less than one-half acre each near Olson's Wharf, King Salmon Avenue Bridge and the Cooling Water Intake Canal. The pipeline, wharf and bridge were determined not to be eligible for inclusion in the National California Registers. The study identified three additional resources within the APE that were not evaluated in the report, including the King Salmon Drainage Canal, Buhne Point-Fields Landing Levee and the Cooling Water Intake Canal.

In 2008, CH2M HILL completed the Cultural Resources Monitoring and Mitigation Plan, Humboldt Bay Repowering Project, Humboldt County, California in preparation for the construction of Humboldt Bay Generating Station (HBGS). This document detailed the process and procedures for cultural resources monitoring during HBGS construction.

In 2009, JRP Historical Consulting completed the Mitigation Plan for the Humboldt Bay Power Plant, prepared in response to CEC Condition of Certification CUL-10 for Demolition of Units 1, 2 & 3. This report evaluated the entire HBPP Campus as a whole, including Units 1 and 2, whereas the previous evaluation did not. It provided recommendations for the mitigation of the Units that were to be decommissioned which included a full Historic American Building Survey and Historic American Engineering Record (HABS/HAER) recordation and the retention of select elements to be used in interpretive historic displays.

In 2011, JRP Historical Consulting, with photographic support from Mesa Technical, completed Historic American Engineering Record (HAER) documentation for the Humboldt Bay Power Plant, including Units 1, 2 and 3 and all appurtenant structures. All major facility components, including the intake and discharge canals, were documented as part of this effort.

The 2011 Humboldt Bay Generating Station (HBGS) Cultural Resources Monitoring Report reported on the results from monitoring for the installation of HBGS. There were several discoveries during the construction of the HBGS which is immediately adjacent to the HBPP. These finds included one human tooth, one lithic scatter, one historic refuse scatter, one historic road, and three combination sites consisting of both a sparse lithic scatter and an historic refuse scatter. None

were determined eligible for either the NRHP or the CRHR. In addition, the Humboldt County Coroner determined the tooth was not prehistoric.

In 2013, CH2M HILL prepared the Cultural Resources Monitoring Report, Humboldt Bay Power Plant Decommissioning, Humboldt County, California. This report summarizes all previous compliance efforts, the monitoring of cultural resources, and the findings of the monitoring activities associated with the decommissioning of HBPP from August 2010 through January 2013. One resource was discovered during monitoring, consisting of a burnt historic trash scatter and remnant of an unpaved road bed. The resource was determined not eligible for the NRHP or CRHR. In November of 2012, the level of monitoring was reduced by recommendation of the designated Cultural Resources Specialist, who concluded that all areas of HBPP that were potentially sensitive for cultural resources had been tested and that the research potential of the site had been exhausted.

2.2 Native American Coordination

The Native American Heritage Commission and local Native American groups were consulted during previous investigations (PAR Environmental 2003; CH2M HILL 2006; PAR Environmental 2008). No concerns were raised by the consulted parties as a result of those efforts. Because the previous work encompasses the current APE and because no impacts to cultural resources were identified, additional correspondence with these entities was not undertaken for this project.

3.0 FINDINGS

PG&E proposes to remove contaminated sediments from the intake and discharge canals and demolish and remove the intake and discharge structures associated with the Humboldt Bay Power Plant. In compliance with Section 106 of the NHPA, PG&E conducted an inventory to determine if historic properties exist within the APE that could be adversely affected by the proposed Project.

As a result of the numerous studies completed for the various decommissioning projects at HBPP, only one NRHP eligible resource was identified within the HBPP Campus: the nuclear generating Unit 3, which was determined eligible for listing on NRHP through survey evaluation in 2003 (PAR 2003). The fossil fuel generating Units 1 and 2 and appurtenant structures were determined ineligible for the NRHP in 2006 (Pacific Legacy 2006; CH2M HILL 2006), and have since been removed. The new HBGS was constructed 2010 and, being less than 50 years old, is not qualified for consideration as a historical resource. Furthermore, no significant archaeological resources have been identified within the APE.

Section 106 of the NHPA stipulates that historic properties eligible for inclusion in the NRHP are provided the same consideration as those that are listed (80 Stat. 915, 16 U.S.C. 470f, as amended). PG&E prepared a Mitigation Plan as part of the CEC's approval for construction of HBGS that aimed to mitigate the adverse effects caused by demolition of the historic power plant structures (JRP 2009). This plan encompassed Units 1, 2, 3 and their supporting facilities, including the intake and discharge canals subject to the current undertaking. The plan included provisions for documenting the power plant facilities to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards as well as the preparation of an illustrated history, interpretive display, artifact and document donation, and public art piece. Implementation of the plan resulted in the following:

- Full HABS/HAER documentation of the entire Humboldt Bay Power Plant consisting of over 200 photographs and drawings of Units 1, 2 and 3 and appurtenant structures. The documentation was originally completed under the auspices of the CEC, and as a non-federal undertaking, the National Park Service declined to review the initial documentation; however, the documentation was subsequently accepted as a donation in 2012 by the NPS Heritage Documentation Program for inclusion in the Library of Congress HABS/HAER collection. The Humboldt Bay Power Plant is HAER No. CA-2293. An additional set of original prints will be donated to the Humboldt State University Special Collections, and scanned copies will be housed with the Humboldt County Historical Society and the California State Historic Preservation Office.
- Interactive museum exhibit at the Clarke Historical Museum in Eureka, California. The exhibit examines the history of electrical power generation in Humboldt County from the first sawmills to the decommissioning of HBPP. The display includes interpretive panels, historic photographs, dioramas and models, artifacts from Units 1, 2 and 3, and a full scale, interactive reproduction of the nuclear unit control panel. The exhibit will leave the Clarke Museum in September 2013 to be installed at the College of the Redwoods through the end of decommissioning. The exhibit materials will ultimately be donated to a historical or scientific institution in California.

- Preparation of an illustrated coffee table-style history book about the history of electrical generation in Humboldt County. The book is titled *From Sawdust to Uranium: The History of Electrical Power Generation in Humboldt County and Pacific Gas and Electric Company's Humboldt Bay Power Plant, 1883-2015*. The book will be available for sale in local bookstores and museums by the end of 2013.
- Donation of archival materials to the Humboldt State University Special Collections. In addition to the HAER documentation, PG&E is donating primary sources about PG&E's predecessor companies and the Humboldt Bay Power Plant to the HSU archives for future research access.
- Installation of a mural on the administration building at the Humboldt Bay Power Plant. The mural depicts the history of the Humboldt Bay Power Plant, showing the evolution from fossil to nuclear to new clean generation, and from an active plant to storage and site restoration.

All of the items specified in the Mitigation Plan have been completed or are expected to be complete by summer 2013.

3.1 Intake/Discharge Canals

The 2008 report by PAR Environmental identified and recorded the Cooling Water Intake Canal as an individual cultural feature but did not evaluate the canal as a historic resource. The canal was described as, "an historic-era canal that was constructed by PG&E in 1956 to bring in cooling water for its steam power plant on Humboldt Bay...The cooling water intake canal was constructed by extending the east end of the King Salmon Slough to the power plant...The canal measures 120 feet wide at the top, 25 feet wide at the bottom and is 18 feet deep. A 330-foot-long segment was recorded..." (PAR 2008; see Appendix B). More specifically, the portion of the intake structure to be removed is a concrete-lined canal approximately 67 feet long by 52 feet wide by 26 feet tall.

The 2006 survey by CH2M HILL encompassed the APE for the discharge canal, but did not record it specifically as a cultural or historical resource. The discharge canal is lined with rip rap, and is of similar dimension and construction as the intake canal. The discharge canal also contains a headworks structure that formerly discharged cooling water to the discharge canal. This structure is located at the southernmost end of the discharge canal and is 27 feet long by 13 feet wide by 18 feet tall. The outfall for the canal consists of four 60-foot-long 48-inch-diameter asbestos-bonded pipes, which will also be removed as part of this project.

PAR recommended additional evaluation of the intake canal should it be impacted by future construction activities. Both the intake and discharge canals were originally constructed as part of the cooling system for Units 1 & 2 which were determined not to be eligible as historic properties. While the canals later served the once-through cooling system for Unit 3, the canals were not designed specifically for the facility and do not contribute to its significance as the first privately funded commercial nuclear power plant in the country, nor are they associated with Unit 3's unique caisson construction. As non-contributing features, the canals do not require further evaluation. In addition, the canals have been documented as part of the Historic American Engineering Record conducted as part of the Mitigation Plan for the decommissioning process (Appendix C).

3.2 Effects to Historic Properties

There is one historic property within the APE for the project, consisting of the nuclear generating Unit 3. Although associated with Unit 3, the intake and discharge canal structures do not contribute to the significance of Unit 3 as a historic property. Furthermore, this property has been thoroughly documented as part of earlier decommissioning efforts and will not be adversely affected by the project. This undertaking will therefore have no adverse effect to historic properties or significant cultural resources.

3.3 Inadvertent Discovery

In 2010 PG&E developed an Archaeological Resources Protection Plan (ARPP) as part of the Development Permit (CDP) application for the decommissioning of the HBPP (Appendix D). Special Condition 4 of CDP E--09--010 required that an Archeological Resources Protection Plan (ARPP) be prepared that includes the procedures to be implemented in the event of an unanticipated discovery as well as monitoring and training requirements. Some provisions of the plan may not be applicable to the current undertaking (e.g. monitoring recommended suspended in 2012 [CH2M HILL 2013]). However, PG&E will follow all applicable procedures for discovery and treatment of previously unidentified cultural resources as outlined in the ARPP.

3.4 Human Remains

Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial. If human remains are encountered during any Project-related activity, all work shall halt within 100 feet and the Project Cultural Resource Specialist should be contacted immediately to evaluate the situation, who will then notify the County coroner. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification. No work is to proceed in the discovery area until consultation is complete and procedures to avoid and/or recover the remains have been implemented.

4.0 REFERENCES CITED

CH2M HILL

- 2006 Application for Certification: Humboldt Bay Repowering Project. Submitted to the California Energy Commission. On file, Pacific Gas and Electric Company, San Ramon, CA.
- 2008 Cultural Resources Monitoring and Mitigation Plan for the Humboldt Bay Repowering Project. On file, Pacific Gas and Electric Company, San Ramon, CA.
- 2011 Humboldt Bay Generating Station Cultural Resources Monitoring Report. On file, Pacific Gas and Electric Company, San Ramon, CA.
- 2013 Cultural Resources Monitoring Report, Humboldt Bay Power Plant Decommissioning, Humboldt County, California. On file, Pacific Gas and Electric Company, San Ramon, CA.

JRP Historical Consulting, LLC

- 2009 Mitigation Plan, Humboldt Bay Power Plant. Prepared in Response to California Energy Commission CUL-10 for Demolition of Units 1, 2 & 3. On file, Pacific Gas and Electric Company, San Ramon, CA.
- 2012 Historic American Engineering Record: Humboldt Bay Power Plant, HAER No. CA-2293. On file, Pacific Gas and Electric Company, San Ramon, CA.

Montizambert, Eric

- 1985 An Archaeological Investigation of the Proposed Humboldt Bay Dike Repair Project, Fields Landing Vicinity, Humboldt County, California (S-7246). On file, North Coastal Information Center.

Pacific Gas & Electric Company

- 2003 Environmental Report for the Humboldt Bay Independent Spent Fuel Storage Installation (NRC Docket No. 72-27). On file, Pacific Gas and Electric Company, San Ramon, CA.

Pacific Legacy, Inc.

- 2007 Addendum Cultural Resources Survey for the PG&E Humboldt Bay Re-Powering Project. On file, Pacific Gas and Electric Company, San Ramon, CA.

PAR Environmental, Inc.

- 2003 Cultural Resources Study for the PG&E Humboldt Bay Power Plant ISFSI Licensing Project, Final Report. On file, Pacific Gas and Electric Company, San Ramon, CA.
- 2008 Cultural Resources Inventory and National Register of Historic Places Evaluation for the Humboldt Bay Power Plant Fuel Line Removal Project Humboldt County, California. On file, Pacific Gas and Electric Company, San Ramon, CA.

Roop, W., et al.

- 1985 An Evaluation of the Archaeological Potential within the North Coast Railroad, Eureka to Willits, California and a Field Inspection of 23 Repair Points Along the Route. On file, Northwest Information Center, Rohnert Park, CA.

Sandelin, L.

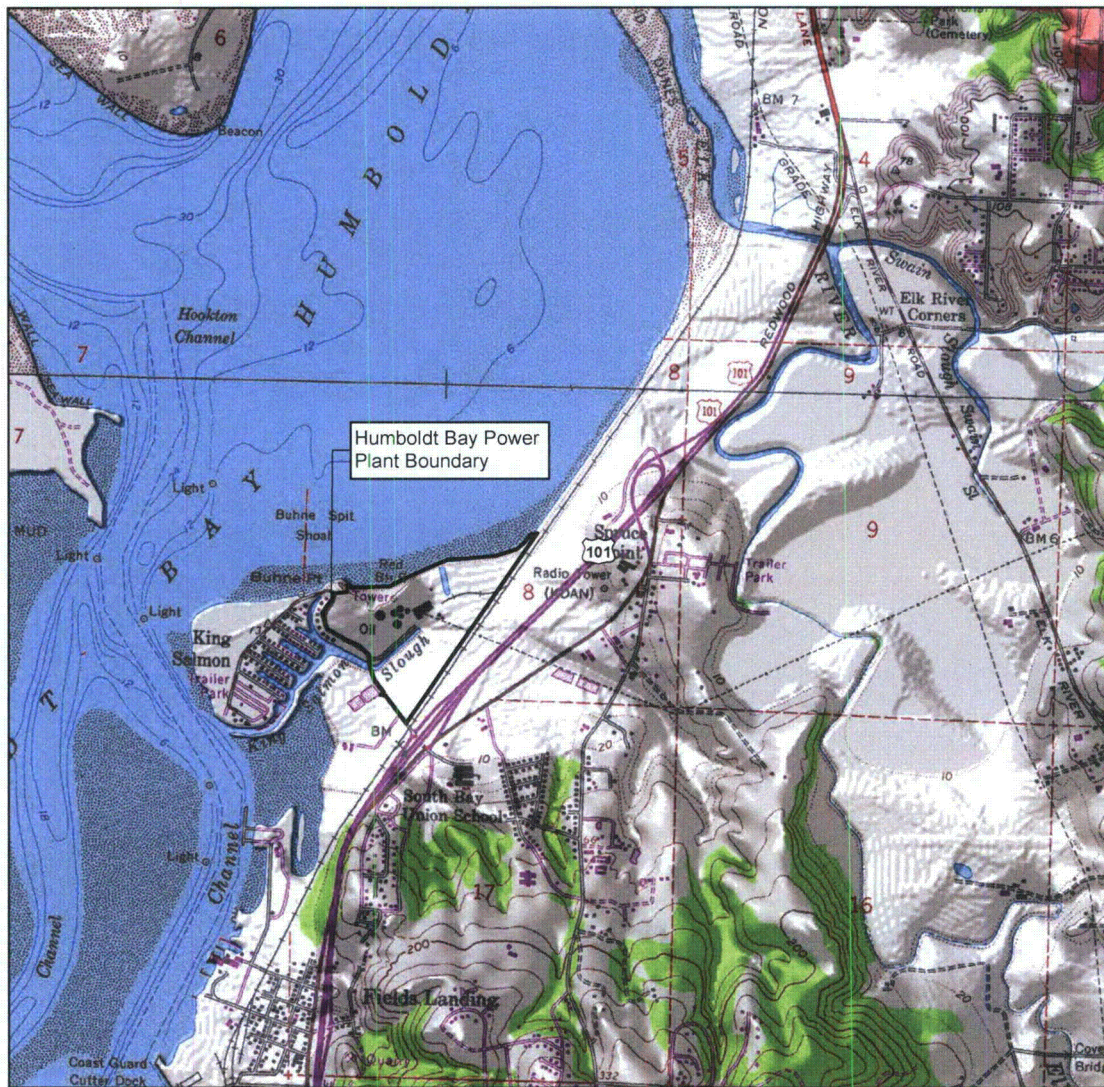
1995 Phase I Archaeological Study Reprop Investments, Inc. APN 306-041-07 and 10 and 306-052-05 and 06 Proposed Goldan Lot Line Adjustment Fields Landing, Humboldt County, California. On file, Northwest Information Center, Rohnert Park, CA.

Sullivan, S., & J. Allan

1994 Report on Marine Archaeological Survey Conducted for Widening of Humboldt Bay Navigation Channels. On file, Northwest Information Center, Rohnert Park, CA.

Appendix A

Project Location and Area of Potential Effects



LEGEND
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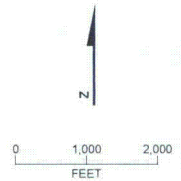
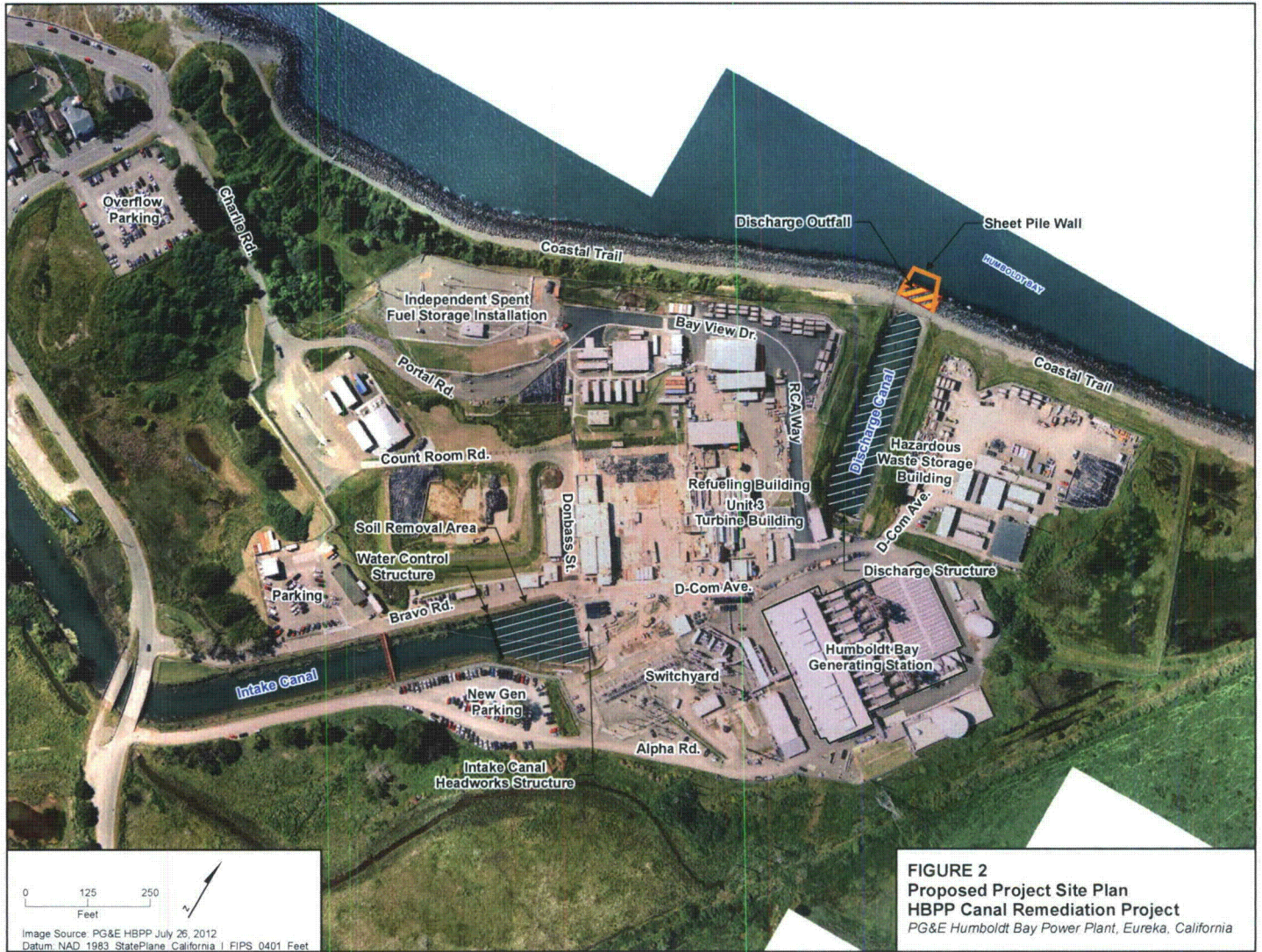
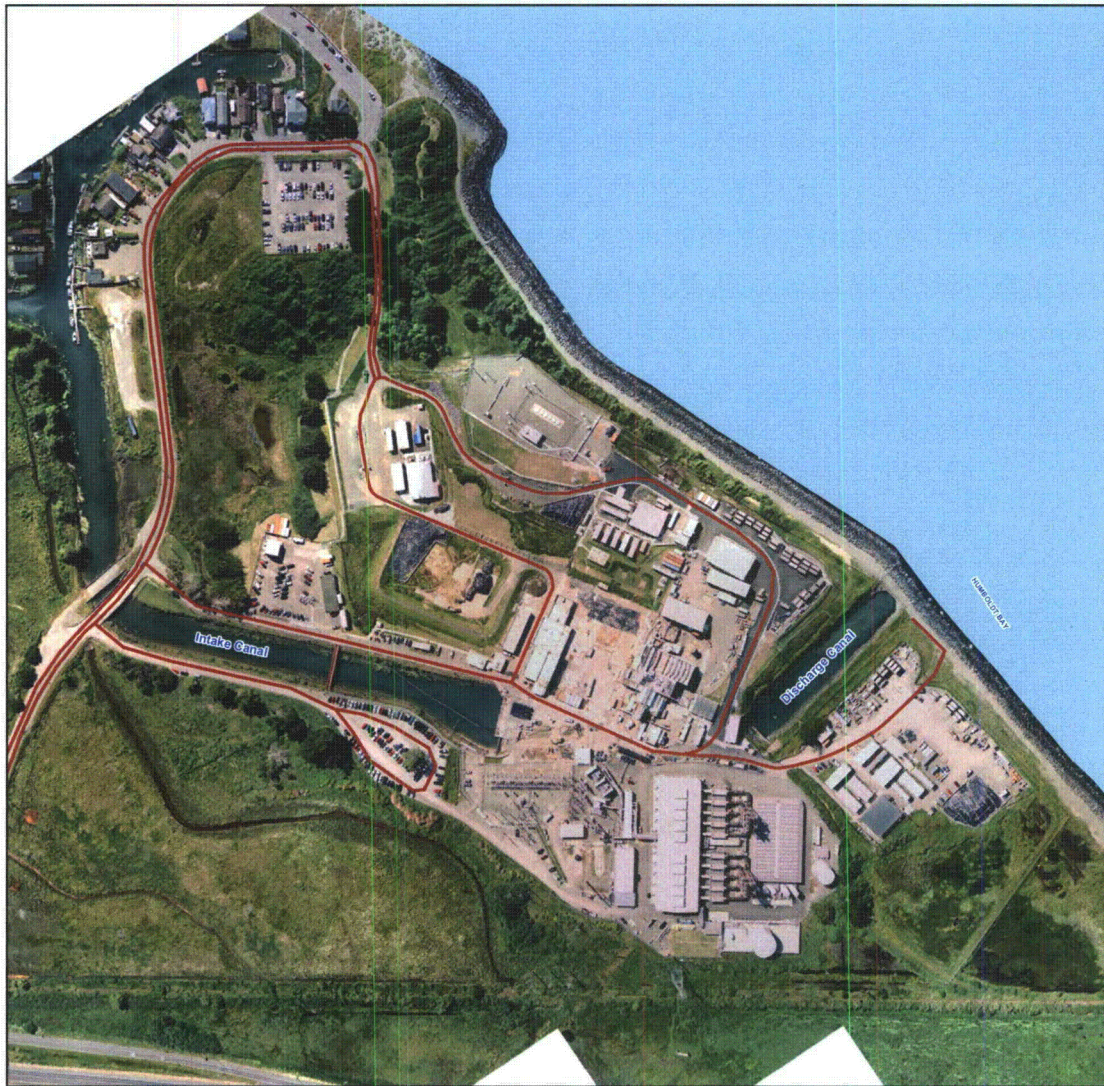


FIGURE 1
Location Map
 PG&E Humboldt Bay Power Plant, Eureka, California



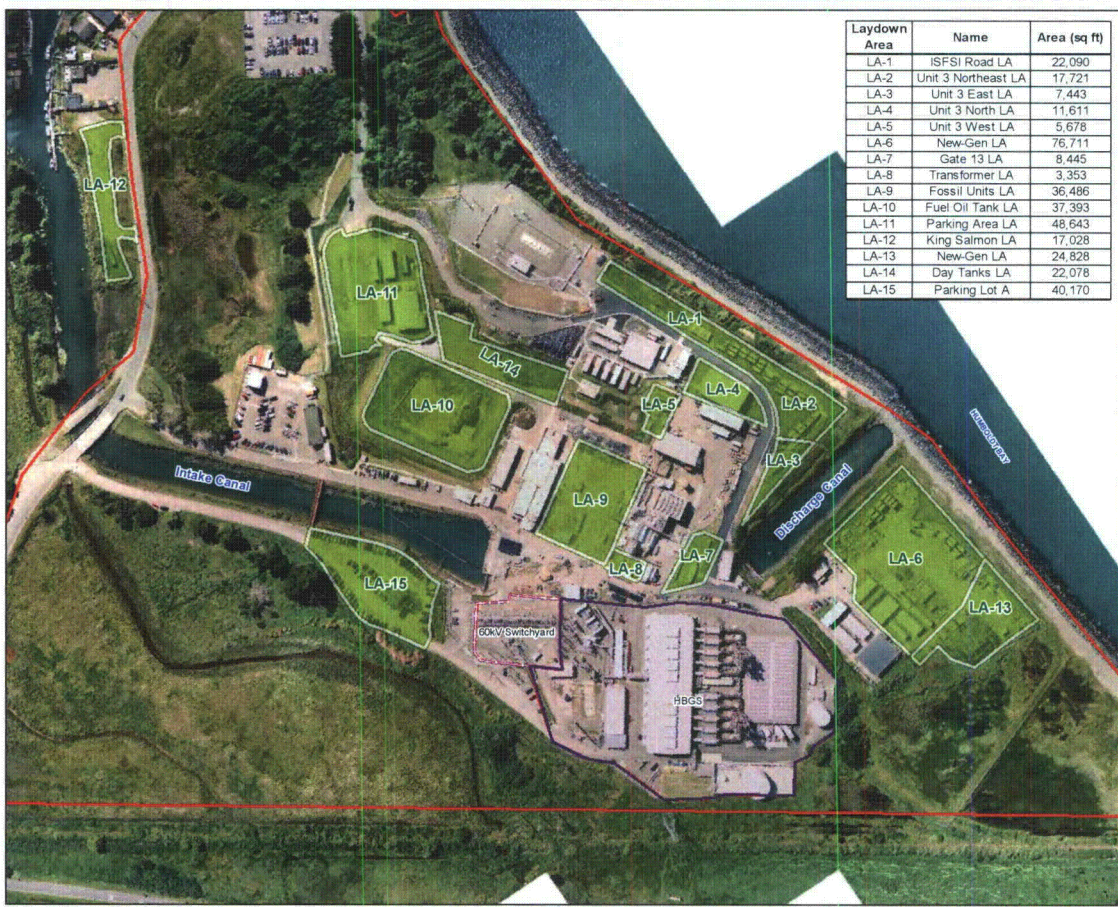


LEGEND
 — Access Route

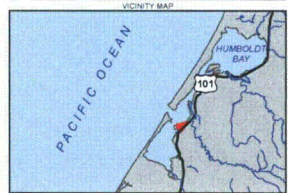


FIGURE 3
Project Access Routes
 PG&E Humboldt Bay Power Plant, Eureka, California

CH2MHILL



Laydown Area	Name	Area (sq ft)
LA-1	ISFSI Road LA	22,090
LA-2	Unit 3 Northeast LA	17,721
LA-3	Unit 3 East LA	7,443
LA-4	Unit 3 North LA	11,611
LA-5	Unit 3 West LA	5,678
LA-6	New-Gen LA	76,711
LA-7	Gate 13 LA	8,445
LA-8	Transformer LA	3,353
LA-9	Fossil Units LA	36,486
LA-10	Fuel Oil Tank LA	37,393
LA-11	Parking Area LA	48,643
LA-12	King Salmon LA	17,028
LA-13	New-Gen LA	24,828
LA-14	Day Tanks LA	22,078
LA-15	Parking Lot A	40,170



LEGEND
 60kV SWITCHYARD
 HBGS
 PROPERTY BOUNDARY
 PROJECT LAYDOWN AREA

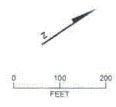


FIGURE 4
 Decommissioning Staging and Laydown Areas
 PG&E Humboldt Bay Power Plant, Eureka, California

V:\HUMBOLDT\MAPS\FE\GROUP_ASSESSMENT\0202_02_A_FIGURES\SECTION_4_VIOLATION_AND_DISCHARGE\FIG_4_DECOMMISSIONING\LAINGRID_LAYOUT\LAYDOWNAREAS_8.XMT MKD TUEBROOM 7/15/2013 9:21:18 AM

Appendix B
Previous Studies
(Confidential)

Appendix C

Historic American Engineering Record Documentation

(Select Images)

HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

HUMBOLDT BAY POWER PLANT
1000 King Salmon Avenue, Fields Landing
Eureka vicinity
Humboldt County
California

HAER CA-2293

Photographs 156 through 185 are 8x10 inch contact prints from copy negatives of original ink on vellum drawings. These materials are held at the Pacific Gas and Electric Company archives in San Francisco, California.

INDEX TO BLACK AND WHITE PHOTOGRAPHS

David G. De Vries, photographer,

- | | |
|-----------|--|
| CA-2293-1 | Landscape context view of the power plant complex, looking southwest from the Highway 101 Humboldt Hill off ramp. April 17, 2009. |
| CA-2293-2 | Main entrance to the complex. Gate and guard shack, with Units 1 and 2 beyond. View to northeast. May 29, 2009. |
| CA-2293-3 | Main entry road looking southwest with the security building (formerly the training building) and Building 7, the former drawings control building on the far right. May 27, 2009. |
| CA-2293-4 | Power plant complex, looking to the west, showing the Unit 3 transformer lines at left center, Units 1 and 2 power buildings, and Unit 3, the low white structure at right. May 8, 2008. |
| CA-2293-5 | Units 1 and 2, looking to the east. Mid-size fuel oil tanks at right. May 9, 2008. |
| CA-2293-6 | Context view to the northeast, from the pipeline road. Mid-size fuel oil tanks on the left, and the fresh water tank on the right, in front of Unit 1. May 9, 2008. |

HUMBOLDT BAY POWER PLANT
HAER CA-2293
INDEX TO PHOTOGRAPHS

- CA-2293-7 Perspective view to south-southwest, showing northeast side (at left) and northwest rear (at right) of Unit 3 refuel building, in relation to Units 2 and 1 in the background. May 8, 2008.
- CA-2293-8 Units 1, 2, and 3, looking to northwest. Unit 3 transformers are at right. May 9, 2008.
- CA-2293-9 The gates on the cooling water discharge structure. Looking southwest towards Unit 3, and Unit 2 beyond. April 17, 2009.
- CA-2293-10 Unit 1, context view of the southwest elevation. The administration building is in the lower right foreground. View is to the northeast. May 28, 2009.
- CA-2293-11 Context view to the east, from the berm near the oil tanks, showing Building 8 at right (security, formerly the training building), Building 7 at center (formerly the drawing control building), and Building 5 at left (warehouse/shops). Also visible is the 60-kilovolt switch yard. May 28, 2009.
- CA-2293-12 Context view to northwest showing the northeast part of the 60-kilovolt switch yard, at left. The small building in the middle distance is the relay building (Building 31). Units 1 and 2 are beyond. May 28, 2009.
- CA-2293-13 Overview to the southeast from the +100 foot elevation of Unit 1 power building. Unit 2 exciter house is at the lower left corner of the photo. Also visible are the transformer bank, the 60-kilovolt switch yard, and the cooling water intake pumps on the far right. May 28, 2009.
- CA-2293-14 Oblique view of the southeast front and northeast sides of Units 1 and 2. View is to the west. May 29, 2009.
- CA-2293-15 Oblique view to the north, showing the southeast front and southwest sides of Units 1 and 2. May 29, 2009.
- CA-2293-16 Northwest rear of Units 1 and 2 with the distilled water tanks in the foreground. May 29, 2009.
- CA-2293-17 Detail of the southwest elevation of Unit 1. May 28, 2009.

HUMBOLDT BAY POWER PLANT
HAER CA-2293
INDEX TO PHOTOGRAPHS

- CA-2293-92 Unit 3 turbine generator room: view to the northeast showing Unit 3 turbine generator, from the south corner of the room. April 16, 2009.
- CA-2293-93 Unit 3 turbine generator room: view to the northwest showing detail of control panel at south corner of turbine generator. April 16, 2009.
- CA-2293-94 Unit 3 turbine generator room: view to the south from the north corner. April 16, 2009.
- CA-2293-95 Unit 3, second floor. Condenser unit valves at the northeast access door, looking northwest. May 26, 2009.
- CA-2293-96 Southwest side of the Unit 3 condenser, looking northeast. May 26, 2009.
- CA-2293-97 Unit 3, looking toward the northwest wall of the pipe tunnel room adjacent to the refuel room. May 26, 2009.
- CA-2293-98 Southeast part of the pipe tunnel room, showing the main steam stop valve in the center. May 26, 2009.
- CA-2293-99 Unit 3 exciter room, looking toward the northwest wall from the south corner. April 14, 2009.
- CA-2293-100 Unit 3 exciter, south end, looking southwest from the east corner of the exciter room. April 14, 2009.
- CA-2293-101 Unit 3 chemistry sample laboratory, with exhaust hoods at center on far wall. View to southwest. April 16, 2009.
- CA-2293-102 The intake canal at low tide, with a floating boom to divert seaweed, looking southwest from a point just east of the east corner of Building 7. May 27, 2009.
- CA-2293-103 Overview of the cooling water intake system, looking south from near the south corner of the welding shop. Note 60-kilovolt switch yard in distance. May 27, 2009.
- CA-2293-104 Cooling water intake screen motors (4, black, at center and near right). The pump at far right pumps water into the condensers of Units 1 and 2. View to the north. May 27, 2009.

HUMBOLDT BAY POWER PLANT
HAER CA-2293
INDEX TO PHOTOGRAPHS

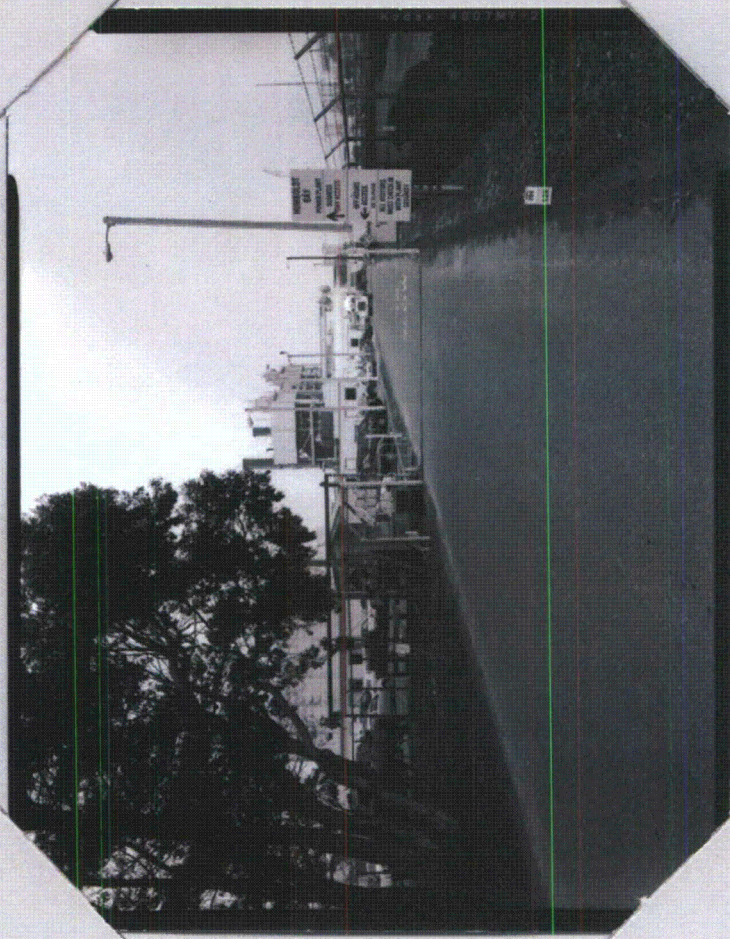
- CA-2293-159 HUMBOLDT BAY STEAM PLANT - POWER BUILDING
STEEL STACK UNIT NO. 1. Bechtel Corporation job no.
2200. Various Scales. Structural plan. Dated 4/8/55. Drawing
No. 417163. 26.5 inches by 44.75 inches.
- CA-2293-160 HUMBOLDT BAY STEAM PLANT - GROUND FLOOR
PLAN AND EQUIPMENT LOCATION - UNIT NO. 1.
Bechtel Corporation job no. 2200. Scale 1/8 inch to 1 foot.
Drawing shows an elevation of 12 inches to 0 feet. Dated
1/6/56. Drawing No. 417252. 26.25 inches by 45 inches.
- CA-2293-161 HUMBOLDT BAY STEAM PLANT - SCHEMATIC
DIAGRAM OF BOILER AND GENERAL STATION
SERVICE SYSTEM ANNUNCIATORS – UNIT NO. 1.
Bechtel Corporation job no. 2200. No scale. Stamped by
registered electrical engineer, Karl M. Bausch. Dated 6/30/55.
Drawing No. 417325. 26.5 inches by 45 inches.
- CA-2293-162 HUMBOLDT BAY STEAM PLANT - RELAY BUILDING
AND FIRE PUMPHOUSE - PLAN AND ELEVATIONS -
UNIT NO. 1. Bechtel Corporation job no. 2200. Various
scales. Dated 3/24/55. Drawing No. 417076. 26.5 inches by
45.25 inches.
- CA-2293-163 HUMBOLDT BAY POWER PLANT - COOLING WATER
SYSTEM INTAKE STRUCTURE GRATING PLAN - UNIT
NO. 1. Bechtel Corporation job no. 2200-3. Scale 1/4 inch to 1
foot. Dated 8/24/55. Drawing No. 17685. 11.75 inches by 17.5
inches.
- CA-2293-164 HUMBOLDT BAY POWER PLANT - COOLING WATER
SYSTEM COMPOSITE PLAN - UNIT NO. 1. Bechtel
Corporation job no. 2200. Various Scales. Dated 3/29/55.
Drawing No. 417026. 26.5 inches by 45 inches.
- CA-2293-165 HUMBOLDT BAY POWER PLANT - COOLING WATER
SYSTEM INTAKE STRUCTURE CONCRETE OUTLINE -
UNIT NO. 2. Bechtel Corporation job no. 2200-2. Scale 1/4
inch to 1 foot. Dated 5/24/56. Drawing No. 417045. 26.5
inches by 45.5 inches.

HUMBOLDT BAY POWER PLANT
HAER CA-2293
INDEX TO PHOTOGRAPHS

- CA-2293-172 HUMBOLDT BAY POWER PLANT - 115KV OIL CIRCUIT BREAKER STRUCTURE ARRANGEMENT. Scale 1/8 inch to 1 foot. Stamped by registered electrical engineer, WM. R. Johnson, No. 163. Dated 3/14/62. Drawing No. 427530. 26.5 inches by 45 inches.
- CA-2293-173 HUMBOLDT BAY POWER PLANT - LANDSCAPING MASTER PLAN. Scale 1 inch to 100 feet. Drawing shows plant schedule. Stamped by registered civil engineer, Barton W. Shackelford. Dated 4/11/70. Drawing No. 500568. 30 inches by 48.5 inches.
- CA-2293-174 HUMBOLDT BAY POWER PLANT - PIPING AND MECHANICAL AREA LOCATIONS - UNITS NO. 1 AND 2. Scale 1 inch to 40 feet. Dated 5/20/57. Drawing No. 418888. 26.5 inches by 45 inches.
- CA-2293-175 HUMBOLDT BAY POWER PLANT - BARRIER WALL AND ENTRANCE TO INTAKE CANAL - UNITS NO. 1 AND 2. Various scales. Drawing includes typical elevations, navigation beacon details, typical joint, dolphin detail, and profile of barrier wall. Stamped by registered civil engineer, J.D. Worthington, No. 6247. Dated 6/26/59. Drawing No. 422570. 26.5 inches by 45.75 inches.
- CA-2293-176 HUMBOLDT BAY POWER PLANT - SITE PLAN - UNIT NO. 2. Bechtel Corporation job no. 2535. Scale 1 inch to 100 feet. Stamped by registered civil engineer, J. George Thon, No. 8397. Dated 7/31/56. Drawing No. 418701. 26.5 inches by 45.5 inches.
- CA-2293-177 HUMBOLDT BAY POWER PLANT - POWER BUILDING SOUTH AND WEST ELEVATIONS - UNIT NO. 2. Bechtel Corporation job no. 2535. Scale 1/8 inch to 1 foot. Stamped by registered civil engineer, J. George Thon, No. 8397. Dated 3/29/57. Drawing No. 418731. 26.75 inches by 46 inches.

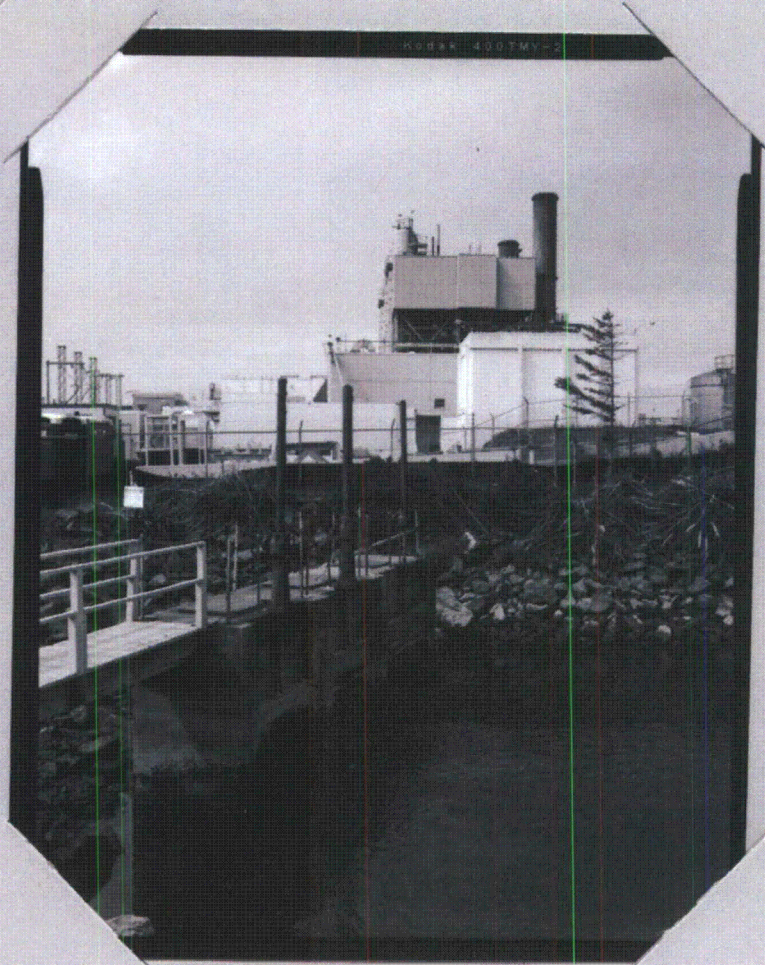
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SEE INDEX TO PHOTOGRAPHS FOR CAPTION

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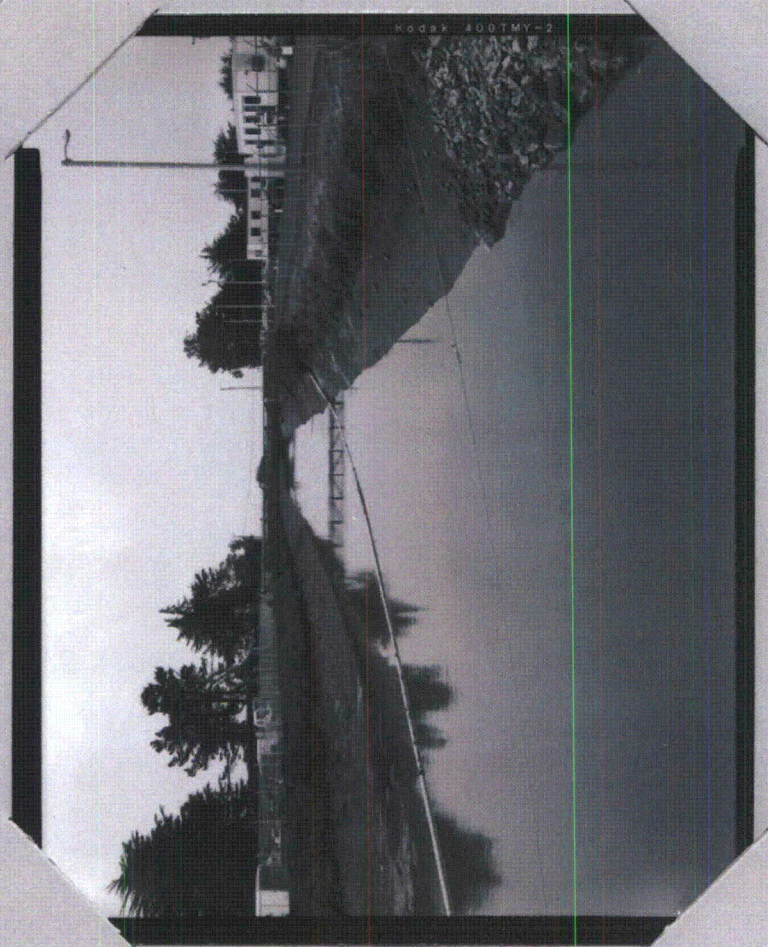
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SEE INDEX TO PHOTOGRAPHS FOR CAPTION

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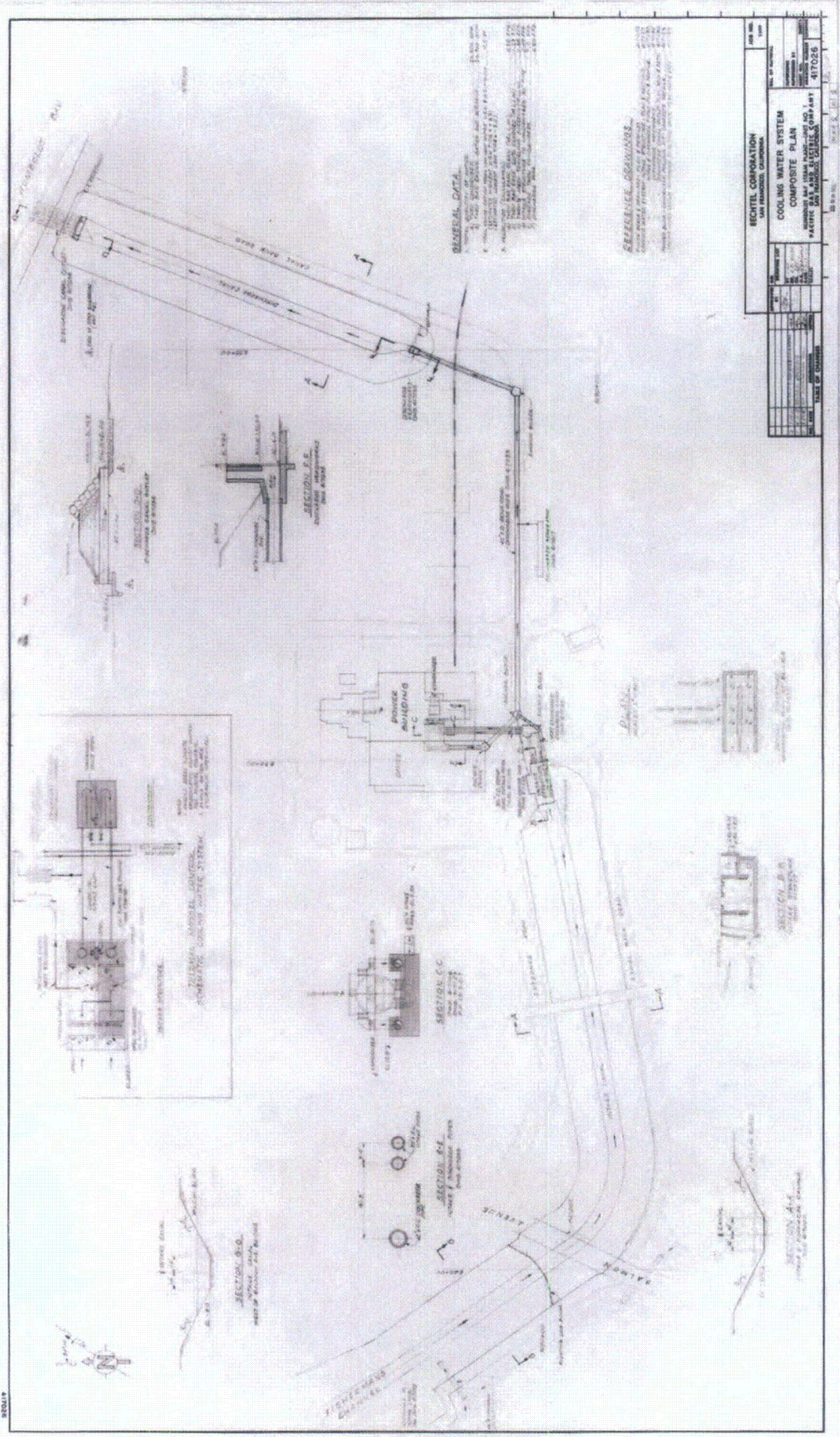
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SEE INDEX TO PHOTOGRAPHS FOR CAPTION

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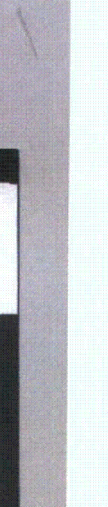
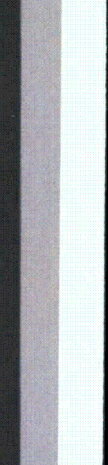
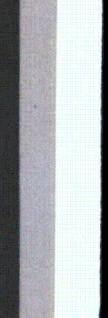
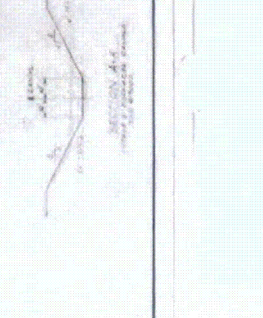
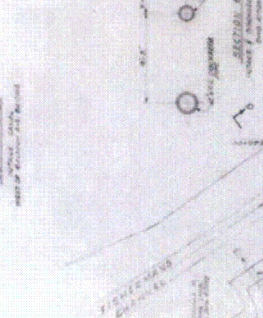
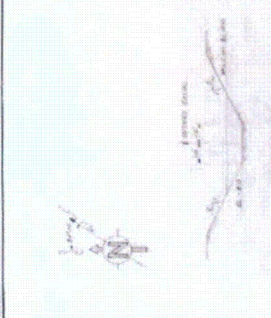
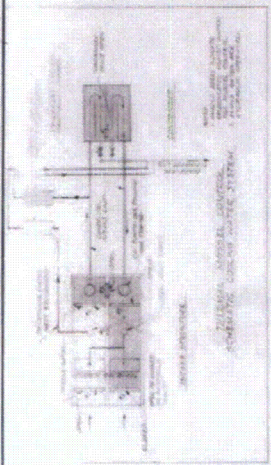


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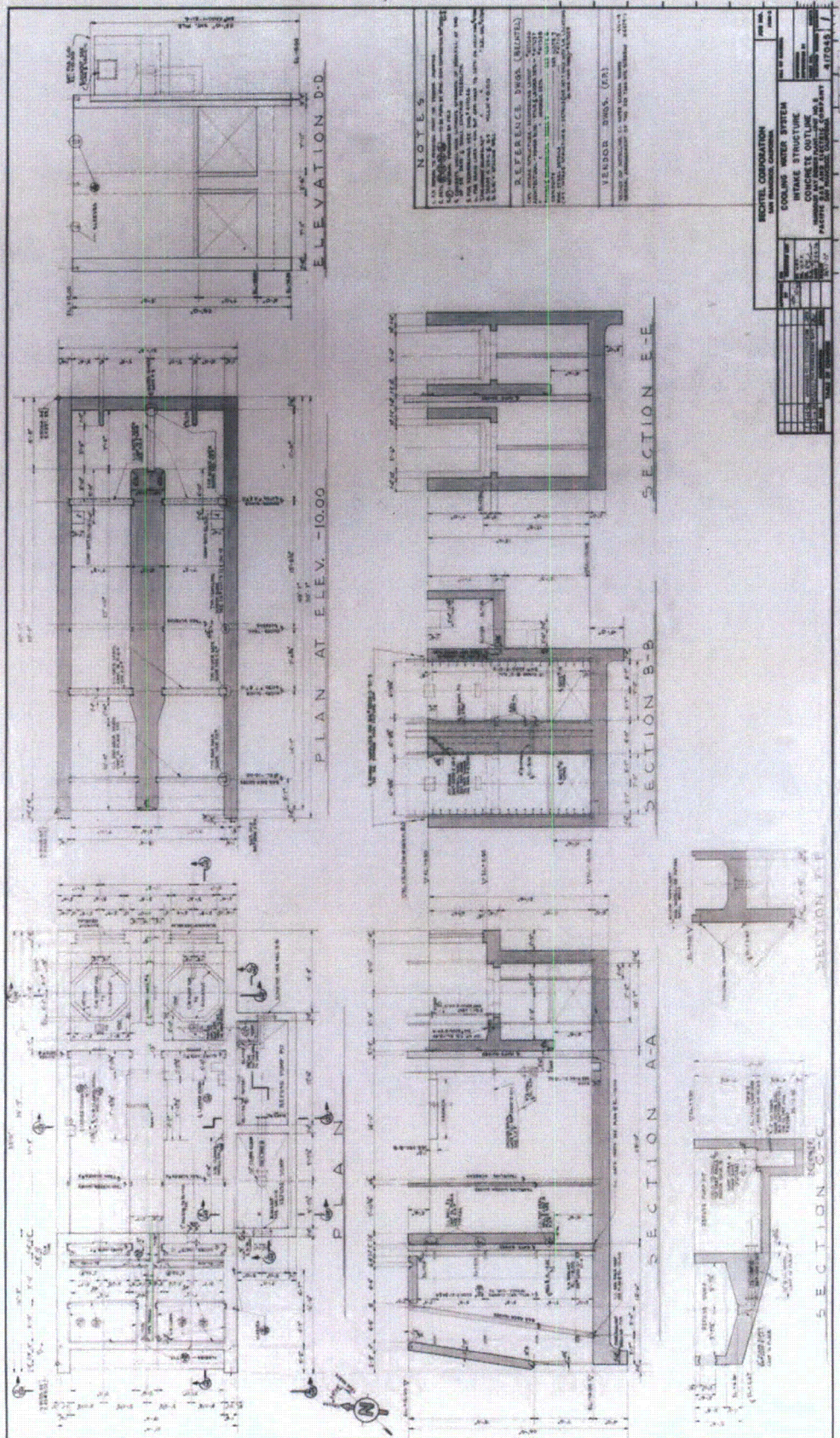
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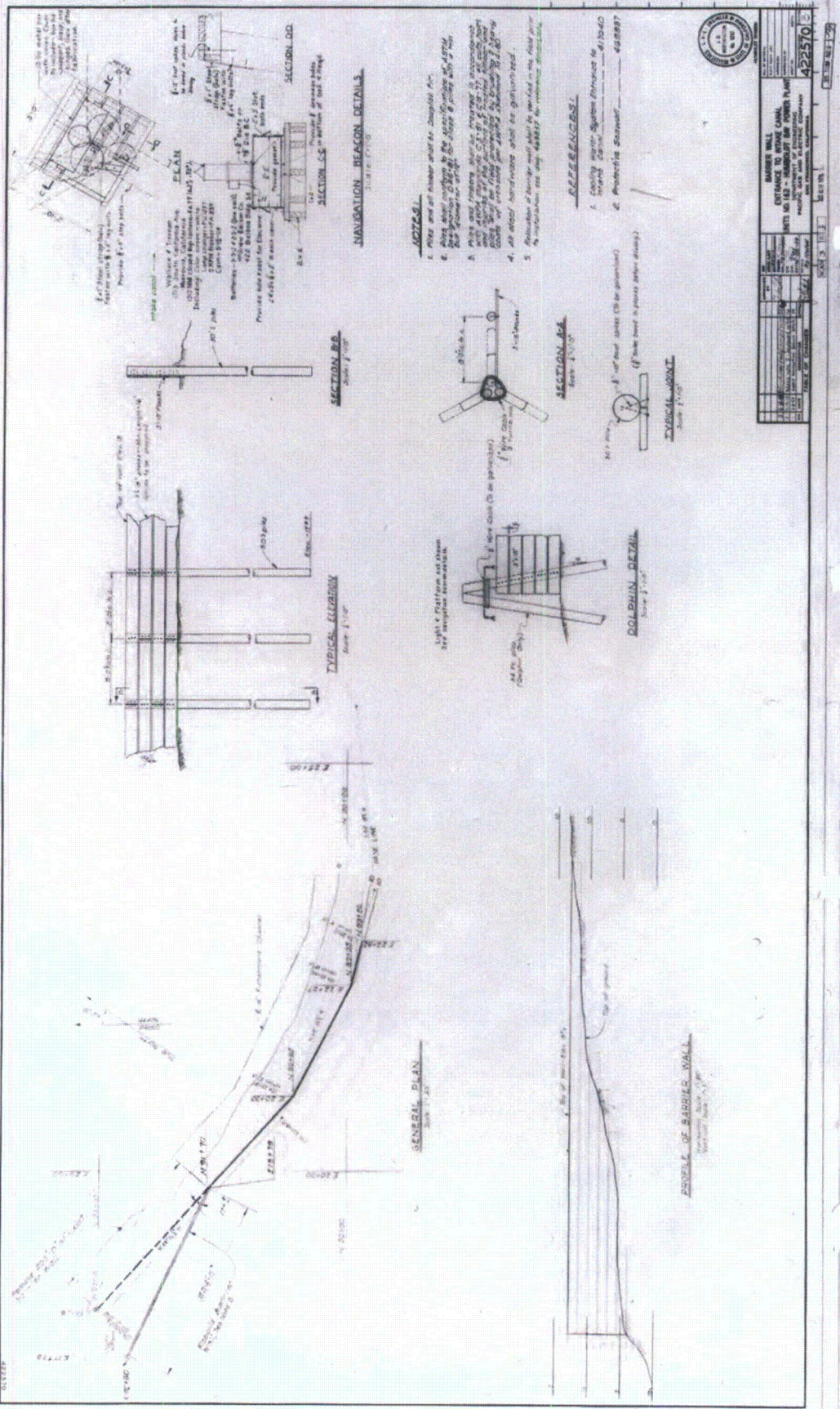
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NO.	DESCRIPTION	DATE	BY
1
2
3
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5
6
7
8
9
10

**COOLING WATER SYSTEM
 COMPOSITE PLAN**
 DRAWING NO. ...
 SHEET NO. ...



HAER No. CA-2293-165





NOTES:

1. All work shall be done in accordance with the specifications for the construction of the beacon.
2. The beacon shall be constructed of concrete and shall be finished in the field.
3. The beacon shall be constructed of concrete and shall be finished in the field.
4. All steel hardware shall be galvanized.
5. The beacon shall be constructed of concrete and shall be finished in the field.

REFERENCES:

1. Coastal Water Signal Structures to Standard Plans No. 1000 - 417040
2. Standard Plans No. 1000 - 417040

PROJECT NO.	HAER No. CA-2293-175
DATE	1952
BY	J. H. ...
CHECKED BY	J. H. ...
APPROVED BY	J. H. ...
SCALE	AS SHOWN
PROJECT TITLE	NAVIGATION BEACON
PROJECT LOCATION	...
PROJECT NUMBER	422570

Appendix D

Archaeological Resources Protection Plan

**Archaeological Resources
Protection Plan**

for the

**Humboldt Bay
Power Plant
Decommissioning Project**

Humboldt County, California

Submitted by:



***Pacific Gas and
Electric Company™***

Submitted to:

California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

April 2010

Table of Contents

Table of Contents.....	ii
1.0 Introduction.....	1
2.0 Worker Training Program.....	1
3.0 Cultural Resources Monitor.....	1
4.0 Cultural Resources Specialist.....	2
5.0 Procedures on Halting Construction and Evaluating Discovered Resources.....	2
6.0 References.....	4
Appendix A.....	5

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is currently in the process of full decommissioning and license termination for its Humboldt Bay Power Plant (HBPP). This plant includes two operating natural gas units (Units 1 and 2), an inoperable nuclear unit (Unit 3) that has been shut down since 1976, and two diesel-fired combustion turbine Mobile Emergency Power Plants (MEPP 2 and MEPP 3).

On December 10, 2009, the California Coastal Commission approved PG&E's Coastal Development Permit (CDP) application for the decommissioning of the HBPP. Special Condition 4 of CDP E-09-010 requires that an Archeological Resources Protection Plan be prepared that includes the following:

- A description of the worker training program to be implemented to assist workers in identifying potential cultural resources;
- Monitoring to be conducted to identify potential resources that may be detected during clearing, trenching, and excavation activities;
- Identifying the cultural resources specialist to be retained on call to investigate any potential cultural resources found during project activities; and
- Procedures to be implemented for halting construction and evaluating resources should they be discovered.

Each of the requirements identified in Special Condition 4 is addressed in this Archeological Resources Protection Plan.

2.0 Worker Training Program

PG&E has developed a Worker Environmental Awareness Program (WEAP) which will be given to all decommissioning workers. This program includes training on the identification of cultural resources. It also provides information on the protection of biological and paleontological resources and storm water management. A description of the training program has been submitted to the California Coastal Commission under separate cover.

3.0 Cultural Resources Monitor

PG&E will have a qualified Cultural Resources Monitor (CRM) on-site to monitor clearing, trenching, and excavation activities in areas that have been previously undisturbed or undeveloped. The CRM will observe all activities involving native soil disturbance in areas where buried cultural resources may exist.

4.0 Cultural Resources Specialist

In July 2010, Ms. Zalarvis-Chase will complete her Masters degree in Archaeology and will meet the State Historic Preservation Office qualifications for Cultural Resources Specialist (CRS). In the interim, Clint Helton, a Cultural Resources Specialist with CH2M HILL will be available. Once Ms. Zalarvis-Chase receives her Masters degree, she will serve as the on-call CRS for HBPP decommissioning. Mr. Helton will serve as an alternative CRS, if Ms. Zalarvis-Chase is not available.

5.0 Procedures on Halting Construction and Evaluating Discovered Resources

The CRS and CRM will have the authority to temporarily halt clearing, trenching, or excavation activities within the immediate vicinity of a find or exposed resource as necessary for resource protection, to evaluate whether significant cultural resources are present and, if so, whether or not they will be adversely affected by continuing construction operations. The CRM will use flagging tape, rope, or some other means as necessary to delineate the area of the find within which construction will halt. The monitor will work with the Environmental Coordinator and determine proper handling of the find and operational impacts. The CRS will also be contacted, if not already on-site. Clearing, trenching, or excavation activities will not take place within the delineated find area until the monitor and PG&E have consulted with the CRS regarding the recommended eligibility of the discovery and proposed data recovery and mitigation, if necessary, has been completed.

If archaeological resources are discovered, the CRM will record and map the isolated find or archaeological site to the standards of the California Historic Resources Information System (CHRIS) on California Department of Parks and Recreation forms (Form DPR-523) and additional forms, as appropriate.

The area in which the resource is located will be recorded and evaluated as to whether it requires further testing or other mitigation measures.

The CRM will also photograph the site and record standard site information about the topography, physiography, vegetation, location, and artifacts and features (mapped in plan view and/or profile, as appropriate), and produce stratigraphic profiles of selected trench walls in which cultural materials are exposed for the archaeological site form. Soil colors will be recorded using the Munsell soil color charts. Any potential human remains must be treated as described in accordance with state law, the recommendations of the Most Likely Descendant as identified by the Native American Heritage Commission (NAHC) and the policies of the NAHC. The site form, along with maps and photos, will be submitted to the North Coastal Information Center of the CHRIS. Information on the location of Native American burials will also be provided to the NAHC.

Site avoidance will be the preferred method of dealing with cultural resources. However, if a newly discovered resource is potentially significant as identified by the CRS and if avoiding the resource proves infeasible (as determined through consultation between the CRS and PG&E), then site evaluation will proceed.

The following evaluation methods for a site will be used to identify potential resources. These methods consist of assessing the integrity of the site, inventorying and collecting surface artifacts (if any) to gather a representative sample of artifacts for analysis, conducting test investigations to determine whether the site has subsurface artifact component, and if necessary, conduct data recovery excavations. Site investigations under this plan will take place in two stages. The first stage, test investigations, will help determine the extent, depth, and contents of the site. The purpose of the test investigation phase will be to recover information about the site and whether or not it would meet National Register of Historic Places (NRHP) and California Register of Historic Resources (CRHR) criteria for a significant site. Test units consist of shovel test units (STUs) and test excavation units (TEUs). If the archaeological site is exposed within a construction trench, then test units may consist of column samples. Further discussion on STUs and TEUs can be found in Appendix A.

Based on the results of the test excavation, the CRS will determine either that full-scale data recovery is necessary or that test investigation has exhausted the research potential of the site. If data recovery excavations are warranted, information gathered during the test investigations will be used to develop a Data Recovery Plan.

A description of the evaluation procedures that would be used to examine newly discovered sites, including surface investigations, test investigations, and data recovery, can be found in Appendix A. If there is a discovery, the procedures and field methods outlined in Appendix A will be followed.

References

Helton, C. and Bard, J. 2008. California Energy Commission Compliance - Cultural Resources Monitoring and Mitigation Plan, Humboldt Bay Repowering Project. CH2MHill, Sacramento, CA.

Appendix A

Below is a description of the evaluation procedures that would be used to examine newly discovered sites. These procedures include surface investigations, test investigations, and data recovery. Also included are the procedures and field methods which would be followed in the event of a discovery.

Surface Collection – The CRM would first attempt to gather as much information as possible without formal excavation. Surface sample collections often provide considerable information about the site’s artifactual constituents. A systematic square grid pattern will be established over the area of the finds. Cultural material will be provenanced and identified on a site map, and the surface artifacts will be collected for curation under the state guidelines mentioned above.

Auger Testing – Auger testing may be used to examine and retrieve subsurface material and determine the depth of deposits or features. Further, augering can provide stratigraphic information, particularly when coupled with phosphate analysis of soil samples taken at various depths in the auger cores. Soil phosphate analysis assesses the quantity of phosphate chemicals in soils, which is a strong correlate, under most conditions, of artifact density. Auger holes 10 centimeters in diameter will be excavated with a screw type auger, in 10 or 20 centimeters lifts up to 1 meter or to the depth of the deposit. The auger lifts will be closely inspected for evidence of artifacts or anthrosols (midden), and will be screened through 1/8-inch mesh. The use of this technique must be considered in relation to the potential benefits and cost.

Shovel Test Units (STUs) – The CRM will excavate STUs to determine the depth and artifact density of the deposit. STUs are systematic units excavated in discrete, arbitrary levels. Initial STUs will be 50 cm squared and will be evenly distributed at corners and intersections on a square grid pattern where the squares are 10 meters on a side so that the intervals between STUs will be 10 meters. Additional STUs may be placed near the perceived center of the site, and others near the probable site boundaries, until no debitage is recovered. Shorter intervals, both along and between transects, may be necessary to confirm the subsurface site boundary. STUs will be excavated in levels 20-cm thick, to a depth at least 20 cm below surface for STUs which do not contain subsurface artifacts, or to a depth one level (20 cm) below the last level in which artifacts are found for STUs which contain subsurface artifacts. If the site deposits are sufficiently deep that excavation in an STU becomes impractical, the excavators will use a bucket auger from the lower limit of feasible excavation to gauge the deposit’s depth.

All excavated materials will be screened using ¼-inch or finer mesh for prehistoric sites. Material will be sorted into cultural classes: flaked stone, groundstone, bone, shell, charcoal, etc., for historic artifacts: glass, metal, ceramic, etc. The material will be collected and catalogued by level. The field crew will record the soil, stratigraphy, site disturbances, and artifact contents of the STU levels on standard STU level forms. They will describe soil color using the Munsell Soil Color Chart and will describe soil texture using standard U.S. Department of Agriculture Soil Conservation Service (SCS) terminology.

Test Excavation Units (TEUs) – TEUs will be excavated if the site exhibits subsurface midden or concentrations of material. The stratigraphy will be assessed to evaluate the integrity of the

deposit, and a profile will be drawn if stratigraphy is apparent. For the preliminary excavation phase, the field crew would first establish a grid of Cartesian coordinates relative to the site's permanent datum so that crew members can accurately describe any location on the site in terms of metric units east and north of the grid's off-site origin (relative to the site's baseline). Next, they will choose TEUs from within the areas greatest concentration, placing the units in relatively undisturbed areas. The number of units will depend upon site size, following the formula of one unit per 2,000 square meters of site. The units would be 1x1 meter squares excavated in 10-cm levels.

The field crew will excavate, keeping detailed notes on each level's contents, and collecting each level's artifacts and materials separately. The notes will be taken on standard level-note forms, printed on acid-free paper. The CRS or CRM will also keep a notebook for recording general observations and impressions about the site and excavation. Excavation will proceed using sharpened shovels and masonry trowels. The crew will screen all dirt through ¼-inch mesh and will collect all artifacts and possible ecofacts such as animal bones, shell, and charcoal, and will bag each material type separately, with a separate catalog number. The crew will photograph each excavation and draw a scale map of each level's floor. They will count and weigh fire-affected rock (FAR) from each level, but will discard in the field. Excavation will continue to and beyond the boundary with the culturally sterile site soil matrix. Each unit will be back-filled after completion.

If an archaeological deposit is identified in a built area within a construction trench, access to the ground surface around the find will be taken into consideration for testing procedures and locating site boundaries. If access to the archaeological deposits is limited within the construction trench right-of-way, excavation strategies must be adjusted and testing for cultural boundaries would be confined to the non-excavated linear portion of the trench. Shovel probe tests placed 5 meters apart will be implemented to locate the linear boundary of the deposit within the trench, and if the deposits are deeply buried, hand auguring procedures will be implemented. Placement of TEUs will be confined within the linear trench and will be dependent upon the boundary length of the archaeological deposit. Column sampling may be appropriate if an archaeological deposit is exposed in a construction trench. The field crew would first use trowels and other implements to smooth the trench profile and reveal the natural and cultural stratigraphy. The crew would then lay out an excavation unit on the surface, 100 cm wide (or the width of the trench if less than 100 cm) and 50 cm deep or to the depth of the deposit. Any non-cultural overburden would be visible in the trench profile and would be removed without screening. The remaining cultural stratigraphy would be removed from the profile by natural levels, if apparent, and screened through ¼-inch mesh. This sample would be analyzed to determine the density, contents, and integrity of the deposits.

Sites that qualify as sparse lithic scatters under SHPO's identification and data acquisition program (Jackson et al. 1988), will be evaluated in accordance with the guidelines for this site type. Sparse lithic scatters are sites that lack artifact types other than stone tool waste, that lack a substantial subsurface deposit, and that have a surface artifact density of three pieces of debitage or less per square meter. The SHPO guidelines provide a simplified method for evaluating these sites that frequently satisfies requirements for mitigation.

For sites of the historic era, test excavation would be most appropriate within ruined structures, refuse pits, and privy types. Otherwise, test excavation methods used would be similar to those

used for prehistoric sites, except that ¼"-inch screen would be more appropriate with a 1/8 - inch screen used at times for sampling.

Data Recovery Excavation— Planning for full-scale data recovery excavation to mitigate the loss of substantial and significant archaeological deposits will be guided by data gathered during the test investigations and by the research design. The CRS will consult, if necessary, with the NAHC and concerned regional Native Americans regarding data recovery excavations.

Sampling for data recovery excavations will follow standard statistical sampling methods, but will be confined to the direct impact area. The CRS may choose the units for excavation by consulting a table of random numbers, or the first unit may be chosen at random and the remainder located at some regular interval in relation to this unit (systematic sample). If structural features are present or are found, additional units will be placed non-randomly to expose the features. Depending on the site, the site-specific research design, and data needs to address specific research questions, different sampling techniques might be appropriate.

Excavation, collection, and cataloging methods will be similar to those used for the TEUs. All structural features discovered during excavation will be carefully excavated. After profiling the feature (excavating one-half of it), the feature will be drawn and photographed. If the feature is a hearth, storage pit, or ash dump, the field crew will collect its contents for flotation to recover floral samples.

The field crew will make every attempt to locate and collect datable carbon. Charcoal features will be carefully excavated to preserve and document the association of separate pieces so that the laboratory can use the standard method of radiocarbon assay. Very small pieces will also be collected, however, so that these can be submitted for dating using the more expensive Accelerator Mass Spectroscopy (AMS) method, if necessary, for prehistoric sites.

For sites of the historic era, very similar techniques would apply, except that large-scale excavations would take place in and around ruined structures and refuse deposits.

All artifacts and other archaeological samples or materials collected during test excavations or data recovery will be cataloged, prepared for curation, and curated at a qualified facility as specified in the "Guidelines for the Curation of Archaeological Collections" by the State Historical Resources Commission, May 7, 1993.

Expansive Exposure of Discovered Resources Is Not Possible - When discoveries possibly over 50 years of age are made in trenches within public roadways or areas where access is restricted, the possibility of completing a thorough evaluation of a discovery may be limited. Safety considerations may constrain excavation or testing of a cultural resource. Access to resources discovered at depth in a trench should not automatically be considered restricted. In cases where exposure of the resource is limited, evaluation of a portion of a deposit for the CRHR may not be sufficient to allow an eligibility recommendation for the entire resource. When expansive exposure is possible, the following information will be gathered:

1. The horizontal and vertical boundaries of the deposit or resource will be defined to the extent possible.
2. The stratigraphic relationships and the depth of the deposit will be identified by using subsurface testing. The content of the deposit, i.e., the date range and information potential, will be investigated. Where access is limited, the content and the date of the

deposit (if possible) will be described, and the information potential will be evaluated, utilizing the research design.

3. The site will be recorded on a DPR 523 form, including a location map, a scaled drawing, and a photograph of the resource.
4. If horizontal excavation is extremely limited, and the find cannot clearly be recommended as eligible or ineligible for the CRHR, the deposit will be assumed eligible. The deposit will be treated by preparing a DPR 523 Primary form to provide a record of the find, including a location map, a scaled drawing, and a photograph of the resource.

Construction-related excavations near the find will remain halted until all suspected cultural finds have been properly evaluated and any required mitigation is completed. All ambiguous materials, including suspected yet unfamiliar and/or not readily identifiable cultural materials, will be considered **significant** by the crew and foreman, until the CRS/CRM can observe the finds. If significant cultural resources are present and cannot be avoided, then impacts will be mitigated through data recovery or other means consistent with the research design.

In The Event Of A Discovery - If there is a discovery, the following collection procedures are recommended. Materials to be curated may include artifacts and archaeological samples of animal bone, charred seeds, charcoal, and other items, along with drawings, maps, level forms, photographs and photographic records, notes, and other records of excavation. Curation and laboratory processing of artifacts and materials collected will begin in the field. Archaeologists collecting artifacts from the surface or excavation screen will sort them into artifact and material classes, such as stone tools waste, groundstone, animal bone, shell, beads, chipped stone tools, cores or cobbles tools, charcoal, seeds, etc. They will label each bag with the site number, unit designation, level, date, and recorder's name. All bags from a single level will go into a larger level bag. All bags from a single unit will go into a unit bag or box before transport to the laboratory.

Recognizing the inherently destructive nature of archaeological excavation, the curation strategy will involve collecting a representative sample of all major artifact types. Fire-modified rock, however, will not be collected and curated. It will, however, be weighed, counted, and discarded in the field. One-liter samples of midden and fill in association with human remains will be collected for curation, if present.

In the laboratory, each lot of artifacts will receive a master catalog number. A lot consists of a group of similar items from the same location (a feature, unit level, or controlled surface collection grid unit). For example, all pieces of stone tool waste from the 20-30 cm level of a given excavation unit would be given a single, unique catalog number. Individual pieces of groundstone and chipped stone artifacts, however, will be given unique numbers. Other material assigned individual catalog numbers by unit and level lot will include mammal bone, sorted shell, charcoal, charred seeds, and miscellaneous artifacts.

The master catalog list will be entered on computer with the site number, excavation date, catalog date, provenience, artifact or material class, and pertinent comments. The final catalog list will be printed on acid-free paper to accompany the collection into storage. The laboratory crew will print the catalog information (catalog number, site number, provenience, date collected, and the excavator or company name) on acid-free paper catalog slips. They will place

these inside the appropriate bag. The laboratory crew will also write the catalog number on each artifact using permanent ink, sealed with acetate. They will not write the catalog number on each individual specimen in large lots (such as lithic debitage), however. Though some of the artifacts may require washing and drying prior to labeling, washing will be kept to a minimum to avoid removing blood, pollen, and other residues that may be subject to future analysis.

Cultural material and associated documents will be curated at a regionally appropriate qualified curation facility that meets the requirements of the US Secretary of the Interior standards for the curation of cultural resources.

All archaeological collections resulting from monitoring, site recording, test investigation, or archaeological data recovery excavations will be curated at a qualified facility pursuant to the "Guidelines for the Curation of Archaeological Collections" by the State Historical Resources Commission, May 7, 1993.