DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us/planning

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

April 14, 2000

1999/SMA-54(ask)

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

SPECIAL MANAGEMENT AREA ORDINANCE
CHAPTER 25, ROH
Environmental Assessment (EA)/Determination
Finding of No Significant Impact

Recorded Owner/ Applicant	:	Hawaiian Electric Company, Inc.
Agent	:	Jon Yanagida
Location	:	92-200 Farrington Highway, Kahe, Oahu
Tax Map Key	:	9-2-3: 27
Request	:	Special Management Area Use Permit
Proposal	:	Installation of a Water Storage Tank
Determination	:	A Finding of No Significant Impact is Issued

Attached and incorporated by reference is the Final EA prepared by the applicant for the project. Based on the significance criteria outlined in Chapter 200, State Administrative Rules, we have determined that preparation of an Environmental Impact Statement is not required.

We have enclosed a completed Environmental Notice Publication Form and four copies of the Final EA. If you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,

For RANDALL K. FUJIKI, AIA
Director of Planning and
Permitting

RKF:lg
Enclosures
DN 32936

MAY 8 2000

FILE COPY

2000-05-08-OA-FEA-

FINAL ENVIRONMENTAL ASSESSMENT
for the
Kahe Power Plant Water Storage Tank

at the
Kahe Power Plant
89-900 Farrington Hwy
Waianae, HI. 96792

RECEIVED
MAR 30 2000
DEPT. OF PLANNING AND PERMITTING
650 SOUTH KING ST.
HONOLULU, HI 96813

Applicant:
Hawaiian Electric Company Inc.

Prepared by:
Hawaiian Electric Company Inc.

March 2000

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Appendix A. Comments and Response Letters

Appendix B, Sketches and Photographs:

A. Exhibit I – Vicinity Map
B. Exhibit II – Kahe Station Plot Plan
C. Exhibit III – Plan and Elevation of Water Tank
D. Exhibit IV – Photos of a similar 320,000 gallon water tank on Molokai

Appendix C, Plans and Details of the Water Tank

A. Exhibit V – Drawing T-1, SK-2, SK-2, and SK-3 which show the water tank site and proposed interconnection piping and details.
B. Exhibit VI – Drawing 87702 which shows the power plant storm drains closest to the water tank and the K5 and K6 Discharge Tunnels.

FINAL ENVIRONMENTAL ASSESSMENT
Kahe Power Plant Water Storage Tank

I. General Information

A. Applicant: Hawaiian Electric Company Inc.
P.O. Box 2750
Honolulu, HI. 96840

B. Recorded Fee Owner:
Hawaiian Electric Company Inc.
P.O. Box 2750
Honolulu, HI. 96840

C. Agent : Jon J. Yanagida
Hawaiian Electric Company Inc.
P.O. Box 2750
Honolulu, HI. 96840
Phone number: 543-7005

D: Tax Map Key: 9-2-3:27

E: Lot Area: 454.390 Acres

F: Agencies Consulted in making this Assessment: None

G: Site Address: Kahe Power Plant
89-900 Farrington Hwy.
Waianae, HI. 96782

II. Description of the Proposed Action

A. General Description:

(1) Brief Description of Proposed Project: Hawaiian Electric Company, Inc. (HECO) proposes to modify the existing Kahe Power Plant facilities with the addition of a cylindrical water storage tank, which covers an area of approximately 1,700 square feet. The proposed water tank will be approximately 40 to 44 feet in diameter. The sidewall of the tank will be about 32 to 36 feet tall. The conical roof will rise about 3 feet to 5 feet above the sidewall. The anticipated total height of the water tank will be 35 to 41 feet above grade. HECO plans to select a tank based on bids from various water tank erectors. There are variations in the standard sizes for 300,000 to 350,000 gallon water tanks offered by the various water tank manufacturers. Therefore ranges of dimensions have been provided.

The proposed water tank will provide additional water storage for the Kahe Power Plant. This will supply the Power Plant with water for daily operations and for conversion to demineralized water. The Kahe generating units are oil fired steam units so these units require a continuous supply of demineralized water.

Ordinarily, the Kahe Power Plant uses municipal water as provided by the Board of Water Supply. However, in the event of water main breaks, hurricanes, or other emergencies, this municipal water may not be available. In order to continue operating, the Kahe Power Plant would rely on stored water. Approximately 40% of the generating capacity on this island is located at Kahe, so the generation at the Kahe Power Plant is essential to provide adequate electrical power to the island.

As part of the future improvements, HECO intends to install afire water pump and piping in the valley to provide additional fire protection. This water tank can supply water to this pump. This future fire system will provide protection for the Kahe Power Plant that is independent of the municipal system.

HECO has not determined the exact site for the future fire pump and therefore, the pump pad and piping is not included in this Environmental Assessment. Permits for the pump pad and piping will be obtained prior to construction.

(2) The entire project site is located within the Special Management Area, (SMA).

(3) Included in Appendix A is Exhibit I, a plan showing the Kahe Power Plant location, property lines, and the approximate SMA boundary. The approximate location of the proposed water tank is also shown.

(4) No land use approvals are required since the parcel is zoned as Industrial I-2, for which utility installations for power generation are allowed.

B. Technical Characteristics:

(1) Use Characteristics: The proposed water tank will store water for use in the power generation process, in the event that the municipal water is not available. The water tank will also provide back up fire protection with the future addition of a fire pump.

Physical Characteristics: The proposed water tank will be situated at an approximate elevation of 63.0 feet. The closest property line will be about 960 feet away. Included in Appendix B, Exhibit II is a plot plan of the developed area of the Kahe Power Plant property showing the existing structures and the location of the proposed structure.

(2) Construction Characteristics: Included in Appendix B, is Exhibit III which is a plan view and elevation of the proposed water tank. Included in Appendix B is Exhibit IV which consists of two photographs of a 320,000 gallon bolted water tank at MECO's power plant on Molokai. The Kahe water tank will be similar in appearance and it may be either a bolted or welded tank.

The site was previously graded, probably as a result of the civil infrastructure improvements for the Kahe Power Plant in the early 1960's. It is presently covered with grass and kiawe. Approximately 1700 square feet of the site will be cleared. About 235 cubic yards of expansive soil would be removed and replaced with non-expansive fill. The expansive fill will be used at other construction projects at the Kahe site where lesser quality fill is acceptable. Grading permits will be obtained.

It is anticipated that the water tank will be between 35 to 41 feet tall. The steel water tank will be painted, to blend in with the adjacent surroundings.

The proposed water tank will be connected to the existing water system within the Kahe Power Plant with 6" diameter ductile iron piping. The tank inflow line will be about 650 feet long. The tank outflow line will be about 780 feet long. The water tank site, inflow, and outflow lines are shown in drawings T-1, SK-1, SK-2, and SK-3. These drawings are included as Exhibit V, located in Appendix C.

(3) Utility Requirements: This new water tank will store water for use in the event of rare emergencies. These emergencies include large brush fires and prolonged BWS water main breaks.

In the typical year of service, there will be no additional new water demand caused by the construction of the water tank. There will be new water demand when the tank is first filled, and when the tank is drained and refilled, but this will probably occur once or twice a decade. There will be new water demand when large brush fires occur or during a prolonged water main break, because the water tank will make water available that would otherwise not be on hand. Such brush fires occur about once a decade. Prolonged water main breaks which require the use of water in the storage tank to keep operating may occur once in two decades. Because the events that would cause new water demand are rare, in the typical year, there will be no new water demand.

To keep this water fresh, Kahe Power Plant will use the water in this tank to feed the existing demineralizer, which purifies water for use in the power generation process. The amount of water used by the demineralizer will not be changed by the addition of the water tank, so on a daily basis the new water tank will not create additional water demand.

The water storage tank will not require any electricity or gas.

(4) Liquid Waste Disposal: The new water tank will not require any new sewer connection or other new liquid waste disposal system.

The water tank will provide water for existing uses at the Kahe Power Plant. These existing uses range from water for demineralizer feed, boiler washes, landscape irrigation, and for typical needs of employees. Since these are all existing uses no additional liquid waste will be created by the construction of this new water tank.

If the tank is drained for maintenance, for the sake of economy, the first choice would be to use the water in the tank to feed existing plant uses. If this is not possible, the water will be used for landscape irrigation. This landscape irrigation water will not be allowed to enter the storm drain system or other power plant water systems. Therefore, the offshore water discharge from the Kahe Power Plant will not be affected when the tank is drained for maintenance. Also when the tank is drained, the water in the tank will not be disposed of in the sewer system or any other waste disposal system.

(5) Solid Waste Disposal: The daily operation of this water tank will not generate solid waste. Construction of this project will generate construction debris consisting of mostly paper, wood, and plastic packing materials. This construction debris will be disposed of locally in accordance with regulations.

(6) Site Access: The Kahe Power Plant has two access driveways that connect to Farrington Highway. Within the power plant, existing private roads provide access to the site.

(7) Uses of Water at the Kahe Power Plant: The generating units at the Kahe Power Plant are oil fired steam units so these units require a continuous supply of demineralized water. Demineralized water production is the most important and the largest use of water at the Kahe Power Plant. Other principal uses of water are listed below:

- Irrigation and landscaping, especially the landscaping on both sides of Farrington Highway.
- Ordinary human drinking and sanitation needs for the approximately 150 employees at the Kahe Power Plant.
- Water to wash equipment. This water is contained and processed in accordance with regulations.
- Water to lubricate the bearings of the circulating water pumps, if the brackish lubricating water system is out of service.
- Water for fire brigade training.

HECO does not sub-meter the internal processes that use water. Therefore, it is not possible to precisely determine how much water is consumed by each process.

C. Economic and Social Characteristics.

(1) Estimated Costs:

The cost breakdown for this water tank improvement follows:

Foundation ring and replacement of expansive soil -------$25K.
with non-expansive fill.

Water tank 320,000 gallon capacity, erected in place -- $110K.
without painting or cleaning.

Sandblasting, painting, ladders, railings, ----------$40K.
instrumentation, water tank engineering by the
contractor, and other accessories.

Piping, 6" ductile iron supply and return line. ----------$49K.

Total construction cost ----- $224K.

The project is scheduled for construction in about 4 to 5 months after permits are obtained. We anticipate that the necessary permits will be obtained by June 2000 and the water tank will be constructed by December 2000.

(2) Considerable funds will be expended for piping, concrete, fill, and paint to be purchased locally and for the services of local contractors.

D. Environmental Characteristics:

(1) Soils: The U. S. Department of Agriculture, Soils Conservation Service's Soil Survey classifies soils in the project site as Lualualei extremely stony clay, (LPE). Soil borings taken near the area show that the soil consists of approximately 8 to 12 feet of stony clay over a coral layer.

The project site was previously graded. This grading was probably completed in the early 1960's when the basic civil infrastructure was constructed for the Kahe Power Plant. Presently, the site is partially covered by grass and some kiawe trees. The existing subgrade consists of cobbles, boulders, and expansive soil over a coral layer. The expansive soil can expand and soften when wetted. The water tank may leak. Therefore, the expansive soil will be removed and replaced with non-expansive imported material. This may involve removal of 235 cubic yards of expansive soil. The removed expansive soil will be used in projects elsewhere on the Kahe Power Plant property where a lesser quality fill is adequate. Grading permits will be obtained for the work.

(2) Topography: The project site is located within the Kahe Power Plant Station which is located within a valley bounded by the ocean and mountains on the other three sides. The specific site for the water tank has been previously graded and is relatively flat. The adjacent area has roughly a 5% to 10% slope toward the ocean.

(3) Surface Runoff, Drainage, and Erosion Hazard: Surface run-off from the proposed water tank and adjacent areas will sheet flow into an existing storm drain. This storm drain empties into the K5 and K6 discharge tunnel that connects to the ocean. This storm drain and the discharge tunnels are shown in Drawing 87702 which is included in Appendix C.

The water tank covers a small area in compared with the existing paved areas. There will not be any significant increase in surface runoff due to the proposed project.

(4) The proposed site is located within the Federal FIRM Insurance Zone D and does not lie in any LUO Flood Hazard District. The City Development Plan designation is Public Facility.

III. Affected Environment

A. Brief Description of the Project Site and Surrounding Area: The project site is located within the existing perimeter fence of the Kahe Power Plant. Refer to Exhibit I, Vicinity Map, for details

Most of the Kahe Valley is undeveloped and is vegetated. About 1/6th of the Kahe Valley is used to support power plant functions and is fenced. The proposed water tank is will be constructed within the existing fencelines, on a site that has previously been graded.

This water tank is development that is consistent with the Industrial I-2 zoning. The proposed development will be used to benefit the public in the case of emergencies. This is consistent with the City Development Plan, which designates the Kahe Power Plant as a Public Facility.

B. Project Site in Relation to Public Recreation Areas: The proposed water tank will be sited about 1060 feet from the shoreline, on the Mauka side of Farrington Highway. The project site is not a wildlife preserve, wetland, lagoon, or tidal land. This water tank will be built within the existing fenced areas of the Kahe Power Plant so no public recreation areas are involved.

C. Relation to Historic, Cultural, and Archeological Resources: The site was previously graded and filled, probably about 40 years ago. The State Department of Land and Natural Resources, Historic Preservation Division has determined that "it is unlikely that any historic site would be found in the project area, we believe that this action will have "no effect" on historic sites." Refer to the Department of Land and Natural Resources' letter dated August 17, 1999 contained in Appendix A of this Environmental Assessment.

D. Effect on Coastal Views: The proposed water tank will be built about 1060 feet from the shoreline on the Mauka side of Farrington Highway. This water tank will not affect the view of the shoreline from Farrington Highway.

The proposed water tank will not block views of the shoreline of the adjacent inland property owners. The proposed site is on the valley floor, away from the shoreline. The inland property lines are at a much higher elevation, on the valley rim.

The views of the mountains from Farrington Highway will not be significantly affected. Natural topography, existing kiawe trees, and the existing generating units will conceal the water tank from view along most of Farrington Highway in front of the Kahe Valley. The water tank will be painted to visually blend in with the surroundings.

E. Effect on Receiving Waters and Groundwater: The existing site is drained by sheet flow into swales. These swales drain to storm drains, which in turn drains into the K5 and K6 discharge tunnel that connects to the ocean. Drawing 87702 shows the location of these storm drains and the discharge tunnels. A copy of this drawing is attached as Exhibit VI in Appendix C.

During construction, In order to protect the adjacent shoreline from sediment-laden runoff, the contractor will be required to provide erosion controls in accordance with best management practices. Controls will include diversion swales and silt fences.

After construction, the new water tank will not measurably increase the quantities of storm runoff since the water tank covers less than 1% of the area tributary to the storm drains that enter the K5 and K6 Discharge Tunnel.

The operation of the water tank will generally not increase the volume of water sent to the Kahe Power Plant's offshore outfall. A byproduct of power plant operations is wastewater. This wastewater is treated and discharged in the offshore outfall. The amount of wastewater generated is basically a function of the needs of the generating units.

The water tank stores water, and in the rare emergencies when no municipal water is available, this will provide water to keep the Kahe Power Plant operating. In these rare events, the power plant will continue to operate using the water in the storage tank. In that case, water would be used that would otherwise not be used. Since the water tank will allow limited continued operations, there will be a corresponding limited amount of wastewater generated. This may occur once every two decades.

The maintenance of this water tank will not increase the volume of water sent to the Kahe Power Plant's offshore outfall. On rare occasions, the water tank will be drained for maintenance. For the sake of economy, the first choice will be to use the water stored in the tank to feed existing plant uses. If that is not feasible, then the water will be used for landscape irrigation. This landscape irrigation water will not be allowed to enter the storm drain system or other power plant water systems.

There are no public water wells in the Kahe valley. There are no known sources of potable groundwater in the valley. All groundwater lenses that have been discovered by HECO are brackish. Even if the tank were to leak in significant quantities, the water stored in the tank is potable. Therefore, given the absence of potable groundwater lenses and the high quality of the stored water, it is unlikely that the construction of this water tank could have an adverse affect on groundwater sources.

F. Site Maps, Photographs, and Drawings: The following site maps, photographs, and drawings are included in Appendix B:

- Exhibit I – Vicinity Map
- Exhibit II – Kahe Station Plot Plan
- Exhibit III – Plan and Elevation of Water Tank
- Exhibit IV – Photos of a similar 320,000 gallon water tank on Molokai

Included in Appendix C are the following larger format sketches and drawings.

- Exhibit V – Drawing T-1, SK-2, SK-2, and SK-3 which show the water tank site and proposed interconnection piping and details.
- Exhibit VI – Drawing 87702 which shows the power plant storm drains closest to the water tank and the K5 and K6 Discharge Tunnels.

IV. Project Impacts

A. Since the project site is located within the developed areas of Kahe Power Plant and is surrounded by other industrial structures, the cumulative effect of this addition within the SMA is insignificant.

B. The proposed addition is part of the utility installation and therefore an allowed use within the Industrial I-2 zoning.

C. Since the project site is not located on any beach or public area, the addition of the proposed equipment will not reduce the size of any beach or other area usable for public recreation.

D. Since the project site is located within existing property lines and away from the shoreline, the addition of the proposed equipment will not reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams.

E. Since the project site is located mauka of Farrington Highway, the proposed water tank will not detract from the line of sight toward the sea from the nearest State highway. The proposed water tank from is visible from only a few locations along Farrington Highway fronting the Kahe Power Plant property.

V. Mitigation Measures

A. The proposed water tank site is located mauka of the existing generating units. The selected site will reduce the visibility of the water tank from Farrington Highway. Natural terrain, vegetation, and the existing units will obscure the water tank from view along most portions of Farrington Highway in front of the Kahe Power Plant.

B. The water tank will be painted to blend in with the surroundings.

APPENDIX A

COMMENTS AND RESPONSE LETTERS

FINAL ENVIRONMENTAL ASSESSMENT
for the
Kahe Power Plant
Water Storage Tank

Summary of Comments and Responses
Kahe Water Storage Tank

1. **Agency:** **State Department of Land and Natural Resources**
Historic Preservation Division

   Comment: It is unlikely that any historic sites would be found in the project area. This action will have "no effect" on historic sites.

   Response: None Required.

2. **Agency:** **State Department of Land and Natural Resources**
Land Division

   Comment: Project site in accordance with FEMA maps is in Zone D in which the flood hazard is undetermined.

   Response: None Required. The Draft Environmental Statement acknowledged that the project site is in Zone D. The water tank may be constructed in Zone D so the zonation is not an issue.

3. **Agency:** **State Department of Health**

   Comment: No comments at this time.

   Response: None Required.

4. **Agency:** **Board of Water Supply**

   Comment: No objections to proposed project. However, approved backflow prevention devices are required to be installed after all domestic meters serving the Kahe Power Plant.

   Response: None Required. The required backflow prevention devices are installed. Information will be furnished for the BWS records when this project is routed for Building Permits routing, if necessary.

5. **Agency: Life of the Land**

Verbal question raised during a presentation at the Office of Environmental Quality Control on August 13, 1999:

> Life of the Land asked about the research methodology used by the State Historic Preservation Division in regards to an EIS at the Kahe Site many years ago.

Response: In a follow up phone call, the Historic Preservation Division stated that they use many sources of information depending on the situation and for information regarding a specific past instance, they should be contacted.

HECO's written response to the Life of the Land relayed the State's suggestion. A copy of the correspondence is included in Appendix A.

6. **Agency: Office of Hawaiian Affairs**

Verbal question raised during a presentation at the Office of Environmental Quality Control on August 13, 1999:

> The Office of Hawaiian Affairs asked a question regarding the search for historical artifacts at the project site.

Response: State Historic Preservation Division has stated in a letter to the Department of Planning and Permitting that it is unlikely that the would be any historic sites would be found in the project area. They believe that this project would have "no effect" on historic sites.

HECO's written response to the Office of Hawaiian Affairs cited the State's letter. A copy of the correspondence is included in Appendix A.

7. **Agency: Department of Planning and Permitting**

Comment: The Final EA should describe in greater detail the processes that require water.

Response: The Final Environmental Assessment will include the detailed description. The inserted text was described in a letter to the DPP. A copy of the correspondence is included in Appendix A.

Comment: Clarify that the volume of water used will not exceed current levels and that offshore discharge volumes will not increase.

Response: Clarification paragraphs were inserted in the Final Environmental Assessment. The inserted text was described in a letter to the DPP. A copy of the correspondence is included in Appendix A.

Comment: The Draft EA mentions future fire protection improvements. If possible, the Final EA should describe the improvements and include it as part of the permit application.

Response: Preliminary planning for the future fire pump has not started. Permits for the fire pump will be obtained when and if the fire pump project proceeds. The water tank alone is a useful and desirable reliability improvement. To allow the water tank project to proceed, permits will be obtained separately for the water storage tank and the possible fire pump project. This explanation has also been included in the Final Environmental Assessment.

Comment: The Final EA should describe the locations and dimensions of underground utilities such as water lines that connect the water tank to the power generating facilities.

Response: Drawings T-1, SK-1, SK-2, and SK-3 were prepared to show the proposed improvements on a topographic map. Details of the pipe supports are included. These drawings are included as Appendix C of the Final Environmental Assessment.

Comment: The Final EA should identify the location of the "K5 and K6" discharge tunnels discussed on page 4 of the Draft EA.

Response: Drawing 87702 which shows the location of the K5 and K6 discharge tunnels has been included in Appendix A of the Final Environmental Assessment. A copy of the correspondence with the DPP is included in Appendix A.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO

99 AUG 30 AM 8:46

CITY & COUNTY

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

August 17, 1999

Jan Naoe Sullivan, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

LOG NO: 23957 ✓
DOC NO: 9908EJ02

Dear Ms. Sullivan:

SUBJECT: Chapter 6E-42 Historic Preservation Review -- Environmental Assessment
Kahe Power Plant Water Storage Tank
Kahe, Honouliuli, 'Ewa, O'ahu
TMK: 9-2-3:27

Thank you for the opportunity to review this project which proposes the addition of a cylindrical water storage tank, 40 to 44 feet in diameter. The tank will cover an area approximately 1,7000 square feet.

Aerial photographs from the late 1970s show that this parcel has been cleared and graded probably during development of the existing power plant. Because it is unlikely that any historic sites would be found in the project area, we believe that this action will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

RECEIVED

'99 SEP 7 AM 8:51

DEPT. OF PLANNING
& PERMITTING
C & C OF HONOLULU

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

September 3, 1999

LD-NAV
REF.:DEASMA54.RCM

PSF/99-288

Honorable Jan Naoe Sullivan
Director of Land Utilization
City and County of Honolulu
650 S. King Street 7th Floor
Honolulu, Hawaii 96813

Dear Ms. Sullivan:

SUBJECT: Review Environmental Assessment for Kahe Storage Tank
92-200 Farrington Highway, Waianae, Oahu TMK:1st/9-2-3:27

Thank you for the opportunity to review and comment on the proposed project.

The Department of Land and Natural Resources' Land Division submitted the Environmental Assessment on the proposed project to our Land Division's Engineering Branch and Oahu District Land Office for their review and comments.

Our Engineering Branch has informed us that the project site according to FEMA Community Panel Number 150001 0130C, is located in Zone D, areas in which flood hazards are undetermined.

We have no other comments to offer on the subject matter. Should you have any questions, please contact Nicholas Vaccaro of our Land Division's Support Services Branch at 587-0438.

Very truly yours,

DEAN Y. UCHIDA
Administrator

c: Oahu District Land Office

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

99 AUG 30 AM 8:41

In reply, please refer to:
File:

August 26, 1999

99-175/epo

Ms. Jan Naoe Sullivan, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Sullivan:

Subject: Environmental Assessment
Project Name: Kahe Water Storage Tank
Location: 92-200 Farrington Highway
Waianae, Oahu
TMK: 9-2-3: 27

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time.

Sincerely,

GARY GILL
Deputy Director for
Environmental Health

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

99 AUG 19 PM 1:01

DEPT OF PLANNING
and PERMITTING
CITY & COUNTY OF HONOLULU

August 18, 1999

TO: MS. JAN NAOE SULLIVAN, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF JULY 29, 1999 OF THE DRAFT ENVIRONMENTAL ASSESSMENT, CHAPTER 25, ROH FOR THE HAWAIIAN ELECTRIC COMPANY'S KAHE WATER STORAGE TANK, WAIANAE, OAHU, TMK: 9-2-03: 27

Thank you for the opportunity to review and comment on the document for the proposed water tank.

We have no objections to the proposed project. However, Board of Water Supply approved Reduced Pressure Principle Backflow Prevention Assemblies are required to be installed after all domestic water meters serving Kahe Power Plant.

If you have any questions, please contact Barry Usagawa at 527-5235.

CONSTPR 9365
BA/G

September 14, 1999

Mr. Henry Curtis
Life of the Land
1111 Bishop St. Suite 503
Honolulu, HI 96813

Dear Mr. Curtis:

Subject: Kahe Water Storage Tank
Follow up to Question Regarding Practices of the
State DLNR Historic Preservation Division

During our August 13, 1999, presentation at the OEQC office, there was a question regarding the methodology used by the State Historic Preservation Division. The questions were in reference to an EIS filed at the Kahe site some years ago.

I made a follow up phone call. The State staff indicated that they use multiple sources of information, depending on the situation. For information regarding the methods employed in a past instance, the best source is probably the State Historical Preservation Division.

If there are questions or comments, please call me at 543-7005.

Sincerely,

Jon J. Yanagida
Project Engineer

JJY:dnk

cc: Genevieve Salmonson
State Office of Environmental Quality Control

CONSTPR 9365
BA/G

September 14, 1999

Ms. Lynn Lee
Office of Hawaiian Affairs
711 Kapiolani Blvd. Suite 500
Honolulu, HI 96813

Dear Ms. Lee:

Subject: Kahe Water Storage Tank
Follow up to Question Regarding Historical Artifacts

During our August 13, 1999, presentation at the OEQC office, there was a question regarding historical artifacts at the site of this water tank. We have conferred with the State Office of the Department of Land and Natural Resources, Historic Preservation Division. Attached is a copy of their response to the City on this issue.

If there are questions or comments, please call me at 543-7005.

Sincerely,

Jon J. Yanagida
Project Engineer

JJY:dnk
Enclosures

cc: Genevieve Salmonson
State Office of Environmental Quality Control

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

99 AUG 30 AM 8:46

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

August 17, 1999

Jan Naoe Sullivan, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

LOG NO: 23957 ✓
DOC NO: 9908EJ02

Dear Ms. Sullivan:

SUBJECT: Chapter 6E-42 Historic Preservation Review -- Environmental Assessment
Kahe Power Plant Water Storage Tank
Kahe, Honouliuli, 'Ewa, O'ahu
TMK: 9-2-3:27

Thank you for the opportunity to review this project which proposes the addition of a cylindrical water storage tank, 40 to 44 feet in diameter. The tank will cover an area approximately 1,7000 square feet.

Aerial photographs from the late 1970s show that this parcel has been cleared and graded probably during development of the existing power plant. Because it is unlikely that any historic sites would be found in the project area, we believe that this action will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

JJY

CONSTPR 9365
BA/G

March 27, 2000

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City & County of Honolulu
650 S. King Street
Honolulu, HI 96813

Dear Mr. Fujiki,

Subject: Environmental Assessment for the
Kahe Water Storage Tank Project
Kahe Power Plant -- Tax Map Key 9-2-3:27
Department of Planning and Permitting Comment Letter
Dated September 9, 1999

This letter is in response to comments made by the Department of Planning and Permitting on the Kahe Water Storage Tank Draft Environmental Assessment. For ease of reference, a copy of DPP's letter is attached. In order to address these comments, a topographic survey was prepared and detailed drawings were created.

These comments and the responses follow.

1. DPP Comment: The Final EA should describe in greater detail the processes that require water.

   Response: The following paragraphs were added to page 4 of the Final Environmental Assessment:

   (7) Uses of Water at the Kahe Power Plant: The generating units at the Kahe Power Plant are oil fired steam units so these units require a continuous supply of demineralized water. Demineralized water production is the most important and the largest use of water at the Kahe Power Plant. Other principal uses of water are listed below:

   - Irrigation and landscaping, especially the landscaping on both sides of Farrington Highway.
   - Ordinary human drinking and sanitation needs for the approximately 150 employees at the Kahe Power Plant.
   - Water to wash equipment. This water is contained and processed in accordance with regulations.
   - Water to lubricate the bearings of the circulating water pumps, if the brackish lubricating water system is out of service.
   - Water for fire brigade training.

HECO does not sub-meter the internal processes that use water. Therefore, it is not possible to precisely determine how much water is consumed by each process.

2. DPP Comment: Clarify that the volume of water used will not exceed current levels and that offshore discharge volumes will not increase.

Response: Regarding the volume of water used not exceeding current levels, the following paragraphs will be added to page 3 of the Final Environmental Assessment:

(3) Utility Requirements: This new water tank will store water for use in the event of rare emergencies. These emergencies include large brush fires and prolonged BWS water main breaks.

In the typical year of service, there will be no additional new water demand caused by the construction of the water tank. There will be new water demand when the tank is first filled, and when the tank is drained and refilled, but this will probably occur once or twice a decade. There will be new water demand when large brush fires occur or during a prolonged water main break, because the water tank will make water available that would otherwise not be on hand. Such brush fires occur about once a decade. Prolonged water main breaks which require the use of water in the storage tank to keep operating may occur once in two decades. Because the events that would cause new water demand are rare, in the typical year, there will be no new water demand.

To keep this water fresh, Kahe Power Plant will use the water in this tank to feed the existing demineralizer, which purifies water for use in the power generation process. The amount of water used by the demineralizer will not be changed by the addition of the water tank, so on a daily basis the new water tank will not create additional water demand.

Response: Regarding the offshore discharge volume not increasing, the following paragraphs were added to page 7 of the Final Environmental Assessment:

The operation of the water tank will generally not increase the volume of water sent to the Kahe Power Plant's offshore outfall. A byproduct of power plant operations is wastewater. This wastewater is treated and discharged in the offshore outfall. The amount of wastewater generated is basically a function of the needs of the generating units.

The water tank stores water, and in the rare emergencies when no municipal water is available, this will provide water to keep the Kahe Power Plant operating. In these rare events, the power plant will continue to operate using

the water in the storage tank. In that case, water would be used that would otherwise not be used. Since the water tank will allow limited continued operations, there will be a corresponding limited amount of wastewater generated. This may occur once every two decades.

The maintenance of this water tank will not increase the volume of water sent to the Kahe Power Plant's offshore outfall. On rare occasions, the water tank will be drained for maintenance. For the sake of economy, the first choice will be to use the water stored in the tank to feed existing plant uses. If that is not feasible, then the water will be used for landscape irrigation. This landscape irrigation water will not be allowed to enter the storm drain system or other power plant water systems.

3. DPP Comment: Page 2 of the Draft EA indicates that a planned fire protection system will use water from the proposed tank. If possible, the fire protection system should be described in the Final EA and included as part of the current permit application.

   Response: Preliminary design on the future fire pump and pad has not started. This pump has not been located. Furthermore, It is possible that funding for this pump may be deferred. However, the fire pump installation is not necessary for this water tank to be useful. So HECO would like to proceed with the installation of the water tank.

   The additional water storage is useful to the Kahe Power Plant to maintain generation in the event that the BWS can no longer supply Kahe with water. Approximately 40% of the electrical generation capacity on Oahu is at Kahe so the operation of Kahe Power Plant is necessary to provide adequate electricity on Oahu.

   A similar explanation has been provided on page 2 of the Final Environmental Assessment.

4. DPP Comment: The Final EA should describe the location and dimensions of underground utilities such as water lines that will connect the water tank to power generating facilities.

   Response: Drawings that show the proposed improvements with details of the pipe supports will be included in the Final EA in Appendix C. These drawings consist of four blueprints, T-1, SK-1, SK-2, and SK-3. Copies of these drawings are attached.

5. DPP Comment: The Final EA should identify the location of the "K5 and K6" discharge tunnels discussed on page 4 of the Draft EA.

   Response: Drawing 87702 which shows the K5 and K6 discharge tunnels will be included in the Final EA in Appendix C. A copy of this drawing is attached.

The Final EA is nearly complete and 20 copies will be returned shortly. Please contact me at 543-7067 or Jon Yanagida at 543-7005, if there are comments or questions.

Sincerely,

Roy Noda
Lead Engineer
Power Plant Structural

JJY:sa
Enclosures

cc: G. Ednie

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743

JEREMY HARRIS
MAYOR

JAN NAOE SULLIVAN
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

1999/SMA-54(ASK)

September 9, 1999

Mr. Jon J. Yanagida
Hawaiian Electric Company, Inc.
P.O. Box 2759
Honolulu, Hawaii 96840

Dear Mr. Yanagida:

Draft Environmental Assessment
Kahe Power Plant Water Storage System
89-900 Farrington Highway - Waianae
Tax Map Key 9-2-3:27

We are forwarding copies of comments we received, as well as our comments, relating to the Draft Environmental Assessment (EA) for the Kahe Power Plant Water Storage Tank. In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, you must respond to these comments and any others which were received during the 30-day public comment period. The Final EA must include these comments and responses, as well as revised text, if appropriate.

This is also to notify you that the project is subject to a minor modification to the existing Conditional Use Permit, 89/CUP1-46. Action on the minor modification can occur subsequent to approval of the Special Management Area Use Permit.

Our comments on Draft EA are as follows:

1. The Final EA should describe in greater detail the processes that require the water.

2. Clarify that the volume of water used will not exceed current levels and that off shore discharge volumes will not increase.

3. Page 2 of the Draft EA indicates that a planned fire protection system will use water from the proposed water tank. If possible, the fire protection system should be described in the Final EA and included as part of the current permit application.

4. The Final EA should describe the location and dimensions of underground utilities such as water lines that will connect the water tank to power generating facilities.

5. The Final EA should identify the location of the "K5 and K6" discharge tunnels discussed on page 4 of the Draft EA.

Should you have questions regarding the above, you may contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

for JAN NAOE SULLIVAN
Director of Planning and
Permitting

JNS:lg
Attachments
DN 7161

APPENDIX B

SKETCHES AND PHOTOGRAPHS

FINAL ENVIRONMENTAL ASSESSMENT
for the
Kahe Power Plant
Water Storage Tank

Appendix B
Sketches and Photographs

Table of Contents

Item	Page
Exhibit I – Vicinity Map	B-1
Exhibit II – Kahe Station Plot Plan	B-2
Exhibit III – Plan and Elevation of Water Tank	B-3
Exhibit IV – Photos of a similar 320,000 gallon water tank on Molokai	B-4

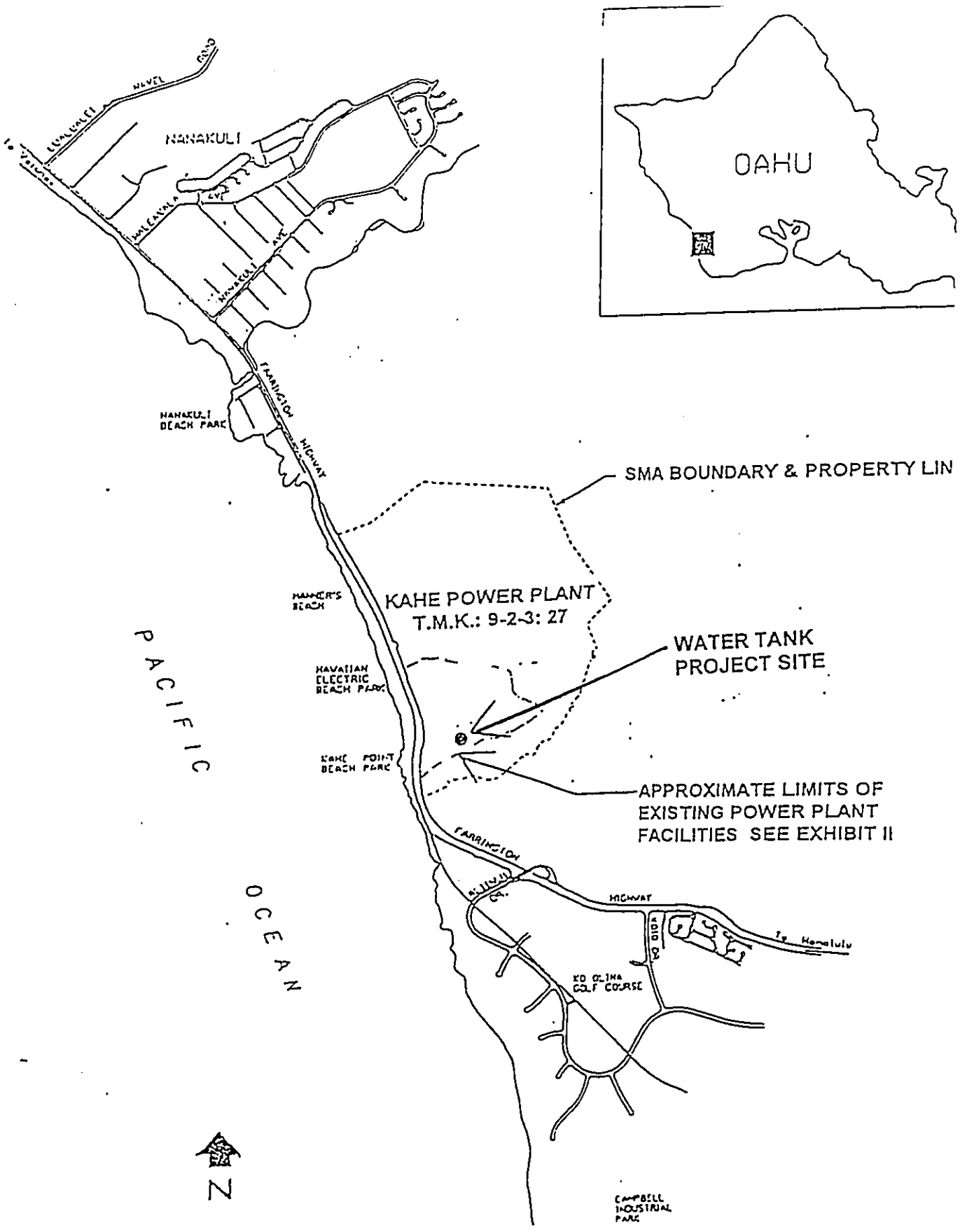


EXHIBIT I. - VICINITY MAP

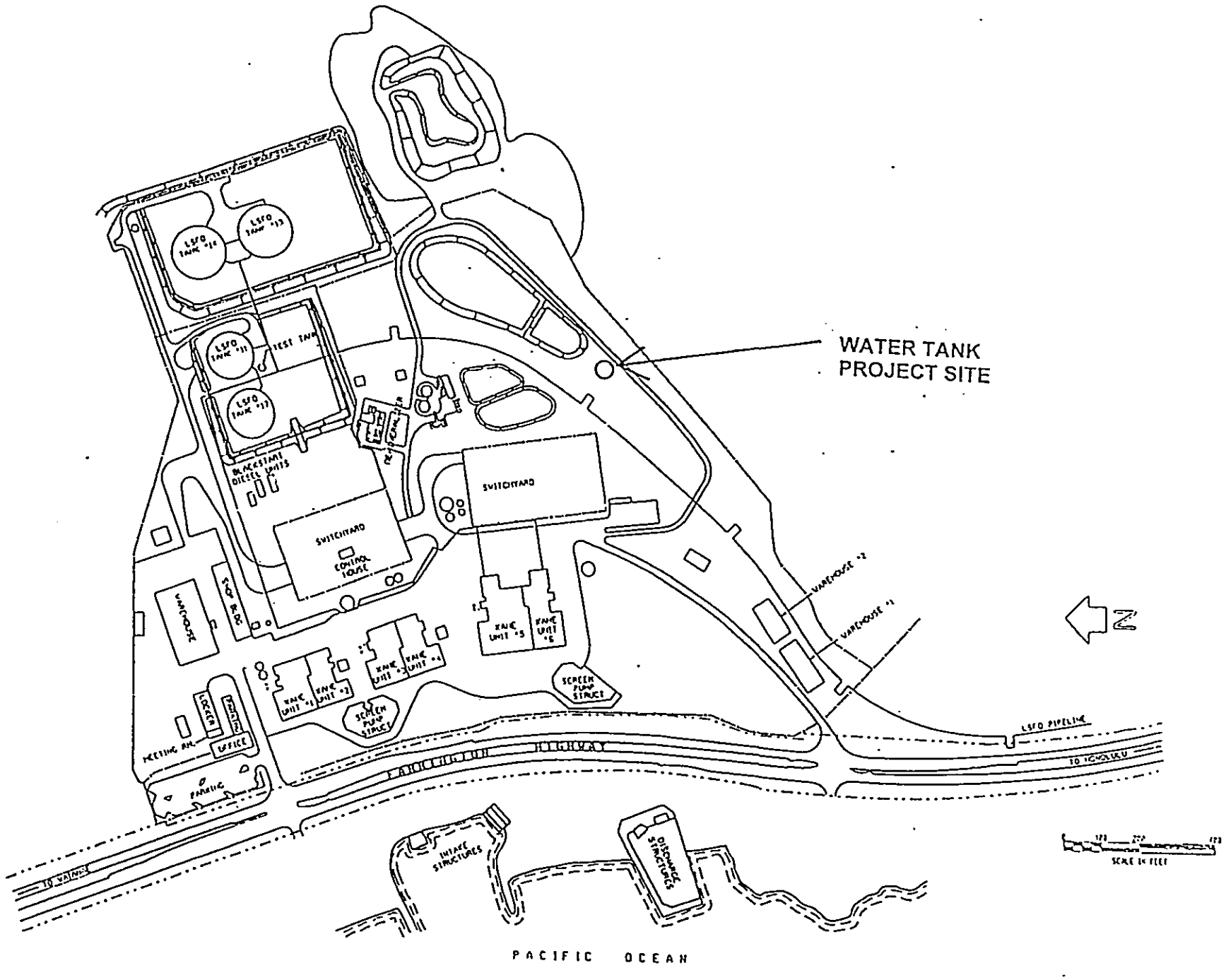
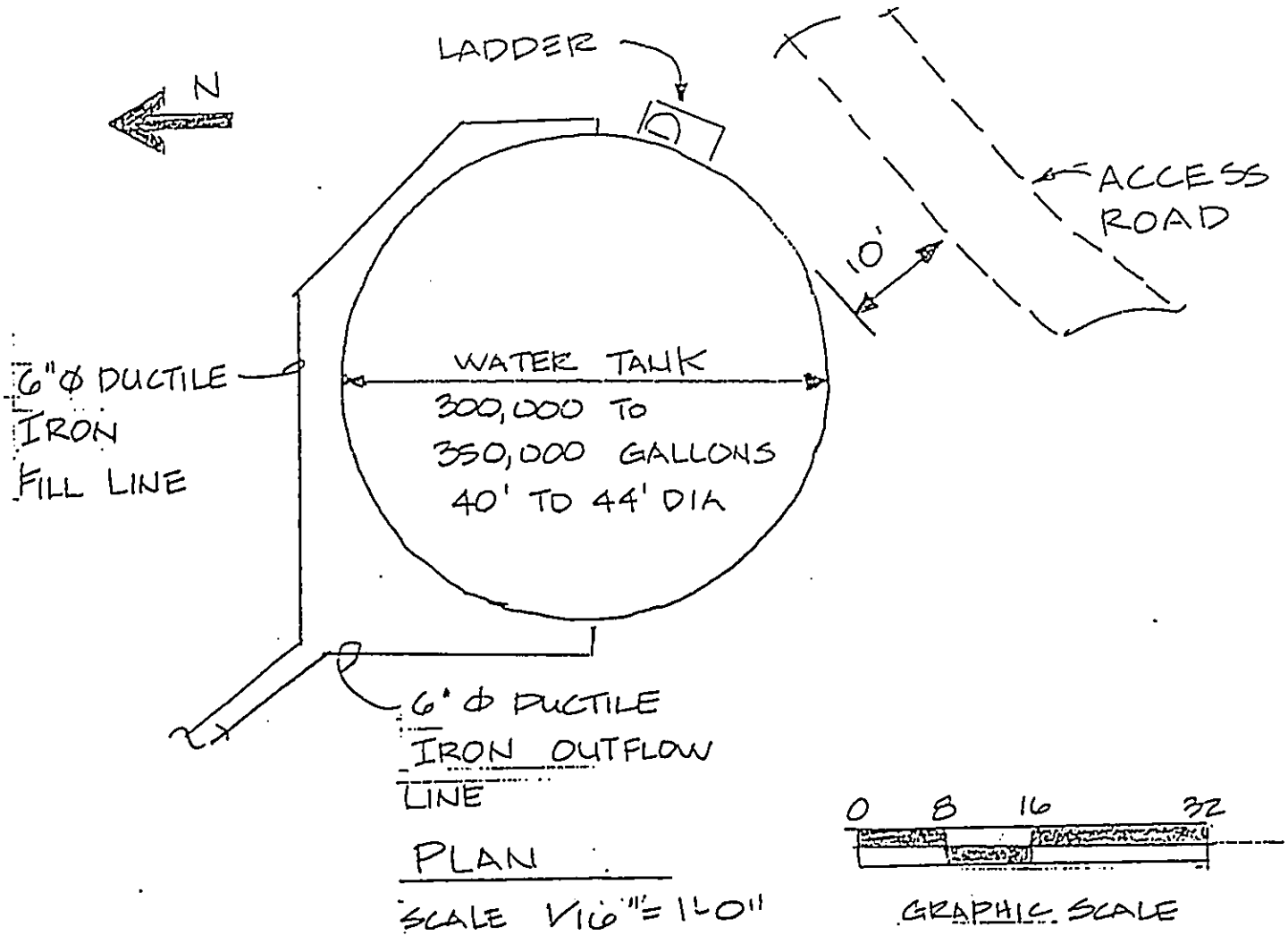
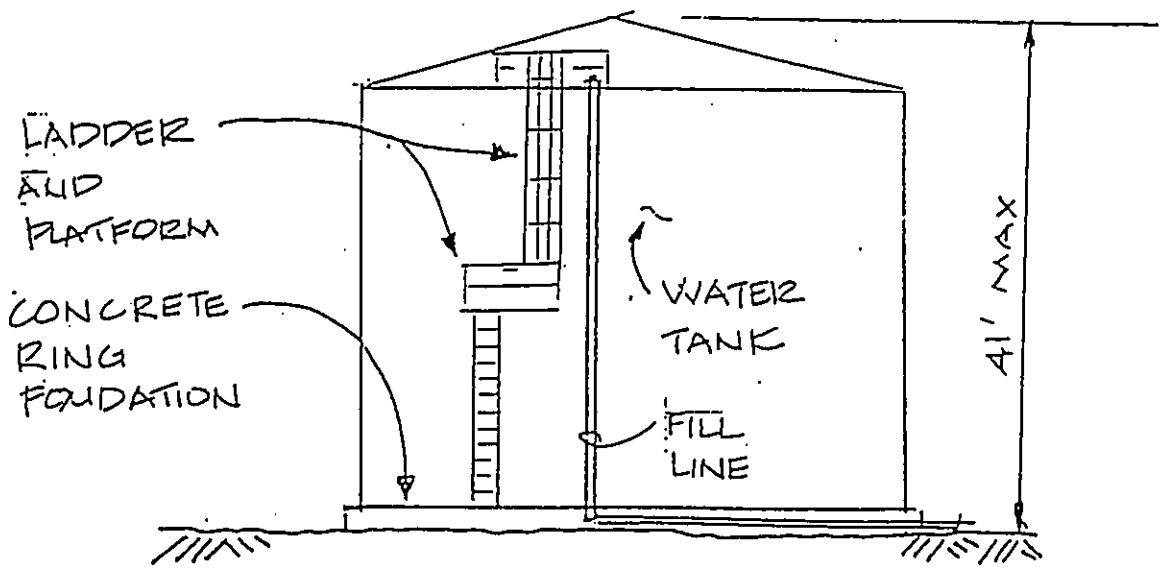


EXHIBIT II - KAHE STATION PLOT PLAN



PLAN

SCALE 1/16" = 1'-0"



EAST ELEVATION

SCALE 1/16" = 1'-0"

EXHIBIT III – PLAN AND ELEVATION OF THE KAHE WATER TANK

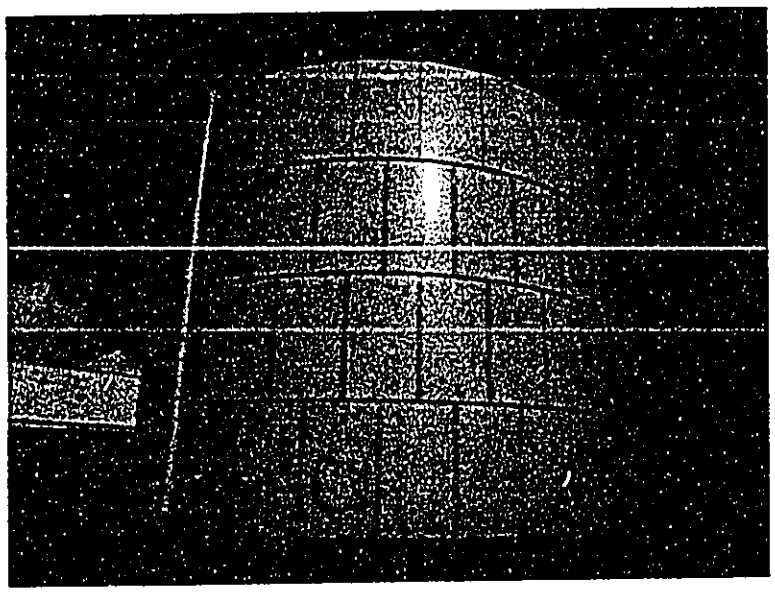


Photo of Water Tank
View is toward the North

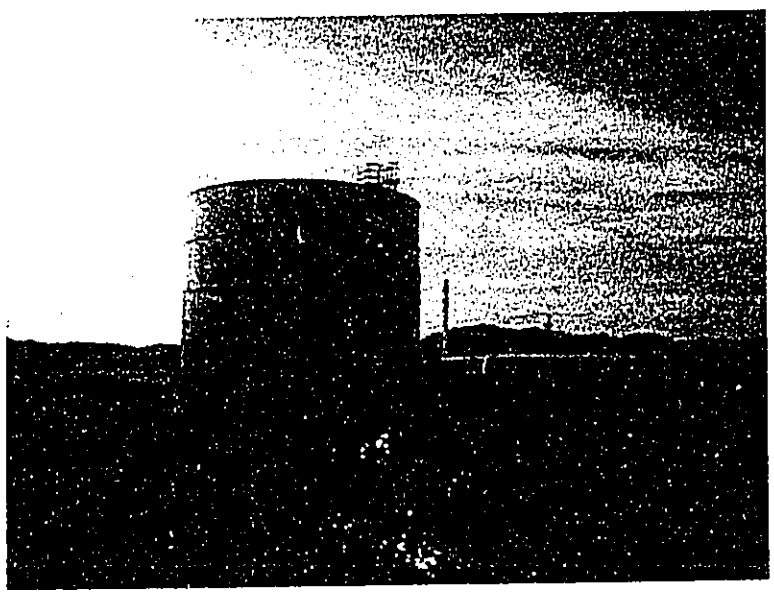


Photo of Water Tank
View is toward the South

EXHIBIT IV – PHOTOGRAPHS OF A SIMILAR WATER TANK ON MOLOKAI

APPENDIX C

PLANS AND DETAILS

FINAL ENVIRONMENTAL ASSESSMENT
for the
Kahe Power Plant
Water Storage Tank

Appendix C
Plans and Details

Table of Contents

Item	Location
Exhibit V – Drawing T-1, SK-2, SK-2, and SK-3 which show the water tank site and proposed interconnection piping and details.	Inserted in Pocket
Exhibit VI – Drawing 87702 which shows the power plant storm drains closest to the water tank and the K5 and K6 Discharge Tunnels.	Inserted in Pocket

MAP/DRAWING#

0099

MAP/DRAWING#

0099A

MAP/DRAWING#

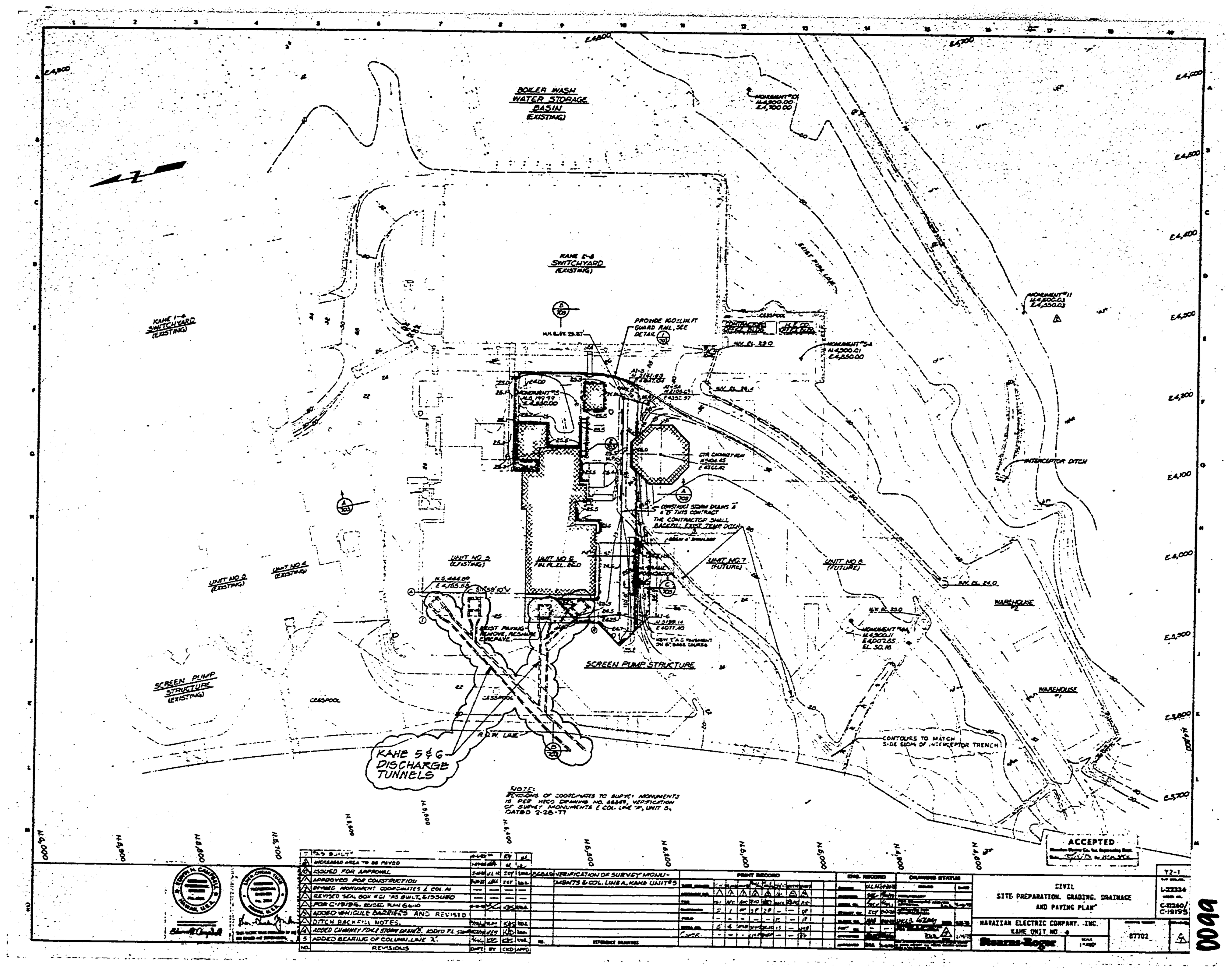
0099 B

MAP/DRAWING#

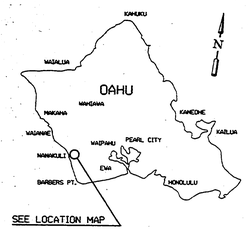
0099C

MAP/DRAWING#

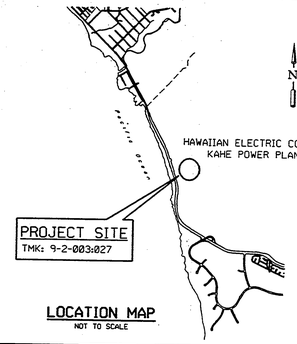
0099 D


BOILER WASH WATER STORAGE BASIN (EXISTING)
KANE 5&6 DISCHARGE TUNNELS
SCREEN PUMP STRUCTURE
CONTOURS TO MATCH SIDE SLOPE OF INTERCEPTOR TRENCH
ACCEPTED
CIVIL
SITE PREPARATION, GRADING, DRAINAGE AND PAVING PLAN
HAWAIIAN ELECTRIC COMPANY, INC.
Stearns-Roger
87702
Y2-1
L-22336
C-11240/
C-19195
0099

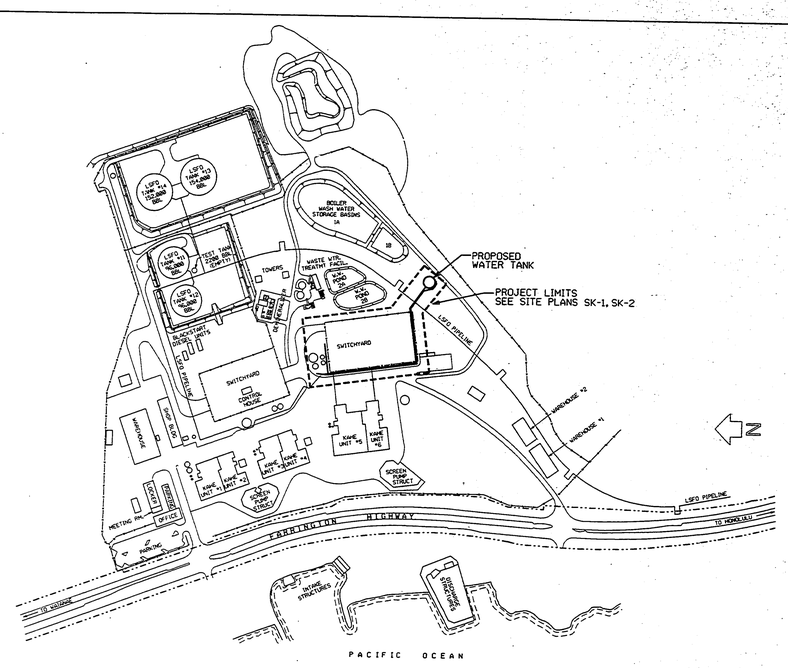
HAWAIIAN ELECTRIC COMPANY, INC.
WATER TANK - KAHE POWER PLANT



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE



SITE PLAN
KAHE POWER PLANT
NOT TO SCALE

LIST OF DRAWINGS:

T-1 TITLE SHEET
SK-1 SITE AND PIPING PLAN, SHT 1 OF 2
SK-2 SITE AND PIPING PLAN, SHT 2 OF 2
SK=3 DETAILS

SCOPE OF WORK:

1. CONSTRUCT WATER TANK AND WATER PIPES AS SHOWN ON SITE PLANS

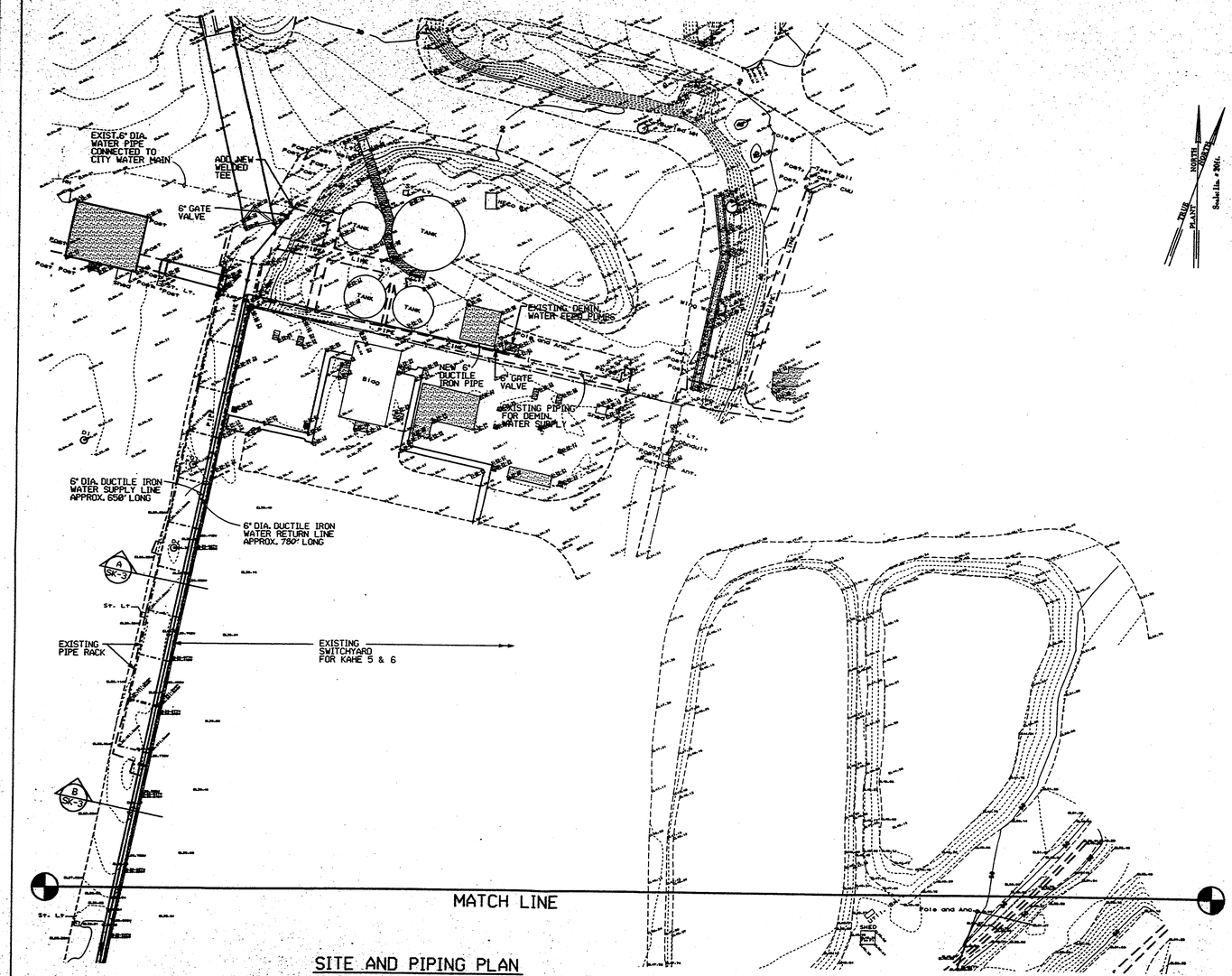
NO.	DATE	REVISIONS	BY	CHK'D	APP'D
A	3-09-00	ISSUED FOR GOVERNMENTAL APPROVAL	LI		

CSA - KAHE WATER STORAGE TANK
TITLE SHEET
KAHE POWER PLANT

DESIGNED	JON YAMAZAKI	DRAWN LI	DATE 3-09-00
CHECKED	ELEC. MECH. STRUC.		SCALE NTS
APPROVAL			ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII
			DRAWING NUMBER T-1 REV A

09-MAR-2000 14:36 litokazu c:\users\litokazu\dgn\kahe fire tank\kahetitle.dgn

0099 A



SITE AND PIPING PLAN

SCALE: 1" = 20'-0"

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
A	3-09-00	ISSUED FOR GOVERNMENTAL APPROVAL	LI		

CSA - KAHE WATER STORAGE TANK
SITE AND PIPING PLAN, SHT 1 OF 2
KAHE POWER PLANT

DESIGNED JON YANAGIDA	drawn LI	DATE 3-3-00	SCALE 1"=20'
CHECKED	ELEC. MECH. STRUC.		
APPROVAL		ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII	
		DRAWING NUMBER SK-1	REV A

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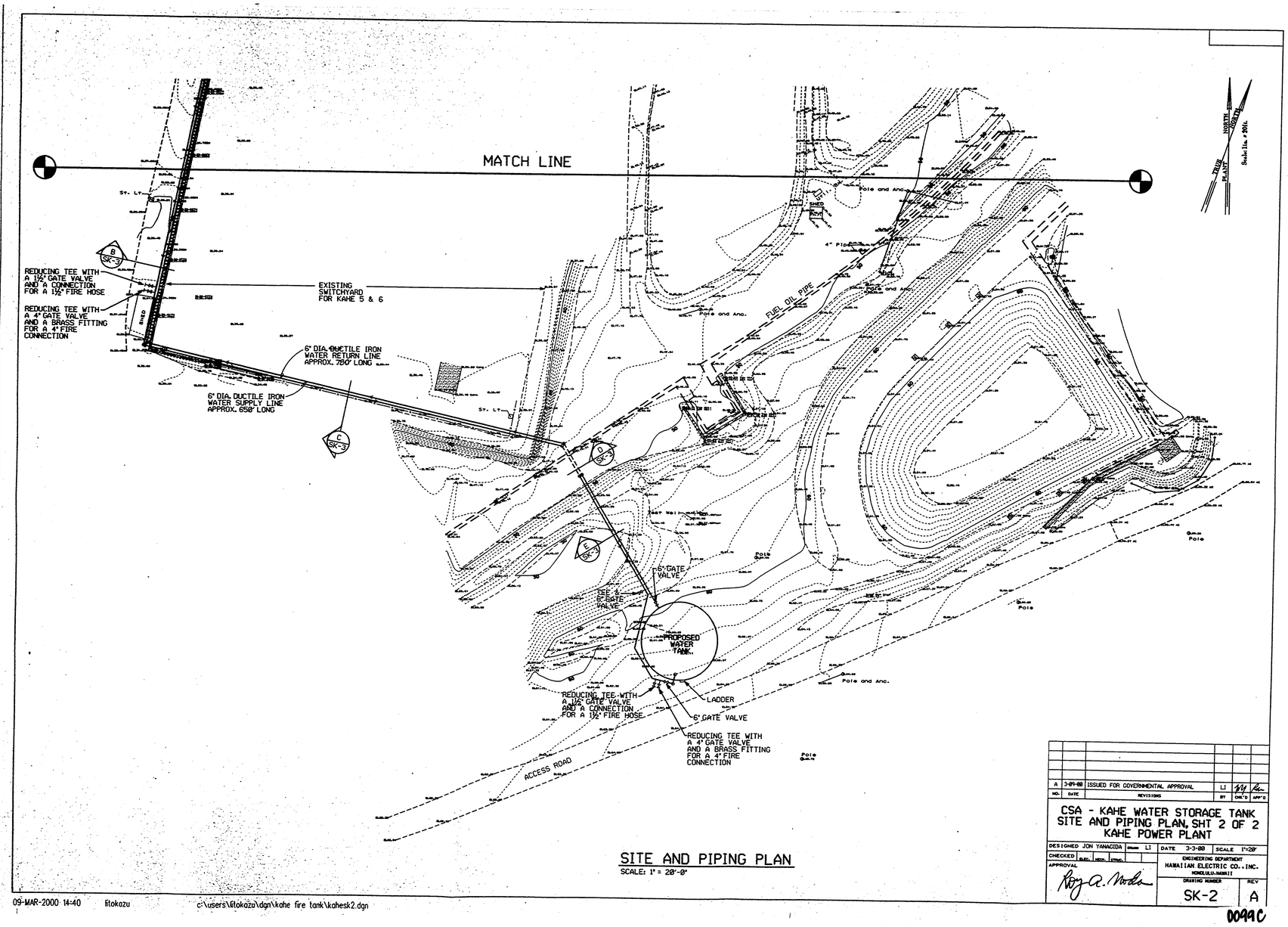

SITE AND PIPING PLAN
SCALE: 1" = 20'-0"

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
A	3-09-00	ISSUED FOR GOVERNMENTAL APPROVAL	LI		

CSA - KAHE WATER STORAGE TANK
SITE AND PIPING PLAN, SHT 2 OF 2
KAHE POWER PLANT

DESIGNED JON YANAGIDA	DRAWN LI	DATE 3-3-00	SCALE 1"=20'
CHECKED ELEC. MECH. STRUC.		ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII	
APPROVAL Roy A. Noda		DRAWING NUMBER SK-2	REV A

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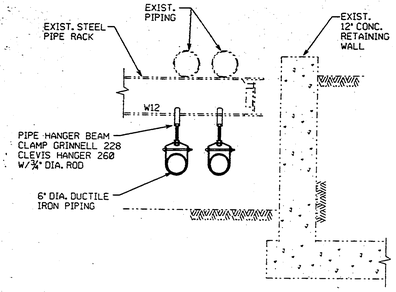
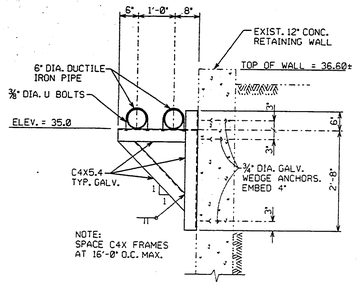
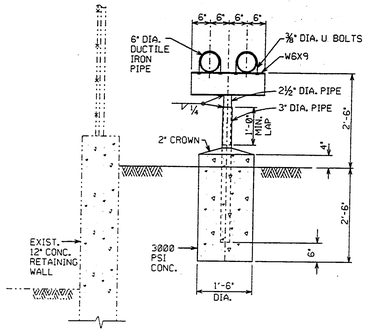
0099C



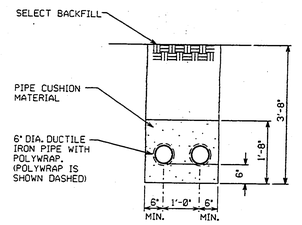
SECTION A SK-3



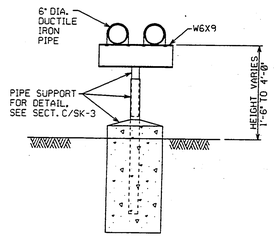
SECTION B SK-3



SECTION C SK-3



SECTION D SK-3



SECTION E SK-3

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
A	3-09-00	ISSUED FOR GOVERNMENTAL APPROVAL	LI		

CSA - KAHE WATER STORAGE TANK
DETAILS
KAHE POWER PLANT

DESIGNED JON YANAGIDA	Drawn LI	DATE 3-3-00	SCALE 3/4"=1'-0"
CHECKED	DATE	WORK ITEM#	
APPROVAL		ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII	
		DRAWING NUMBER SK-3	REV A

09-MAR-2000 14:42 litokazu c:\users\litokazu\dgn\kahe fire tank\kahesk3.dgn

D099D