DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 768-3486 • FAX: (808) 768-3487 • WEBSITE: http://envhonolulu.org

KIRK CALDWELL
MAYOR

LORI M.K. KAHIKINA, P.E.
DIRECTOR

TIMOTHY A. HOUGHTON
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO:

January 22, 2018

WEC.PE 18-006

Mr. Scott Glenn
Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Glenn:

SUBJECT: Draft Environmental Assessment
Heeia Wastewater Pump Station Improvement
TMK: 4-6-23:41

We transmit the Draft Environmental Assessment (DEA) and Anticipated Finding of No Significant Impact (DEA-AFNSI) for the Heeia Wastewater Pump Station Improvements situated at the above tax map key location in Heeia, Oahu, Hawaii for publication in the next available edition of the Environmental Notice.

Enclosed is a completed Office of Environmental Quality Control (OEQC) Publication Form, one (1) copy of the DEA-AFNSI, and a CD containing the completed OEQC publication form as a Word file, and a searchable PDF of the DEA.

Should you have any questions regarding this submittal, please contact Edileo Alcalde from our Division of Wastewater Engineering and Construction at 768-8776.

Sincerely,

Lori M.K. Kahikina, P.E.
Director

Enclosures

cc: Howard K. Endo, Shimabukuro, Endo & Yoshizaki, Inc.

18-294

AGENCY
PUBLICATION FORM

FEB - 8 2018

Project Name:	Heeia Wastewater Pump Station Improvements
Project Short Name:	(please use no more than five succinct words; count not to include document status, e.g., EA)
HRS §343-5 Trigger(s):	HRS §343-5 (a) (1), Propose the use of state or county lands; provided that the agency shall consider environmental factors and available alternatives in its feasibility or planning studies.
Island(s):	Oahu
Judicial District(s):	Kaneohe
TMK(s):	4-6-23:41
Permit(s)/Approval(s):	Permits that may be required: National Pollutant Discharge Elimination System (NPDES) Permit – Form F, Discharges of Treated Hydrotesting Effluent, and Form G, Discharges Associated with Construction Activity Dewatering Community Noise Permit Special Management Area Permit Waivers for Yard Setback Building, Grading and Trenching Permits
Proposing/Determining Agency:	Department of Environmental Services City and County of Honolulu
Contact Name, Email, Telephone, Address	650 South King Street, 14th Floor Honolulu, Hawaii 96813 Edileo Alcalde edileo.alcalde@honolulu.gov (808) 768-8776
Consultant:	Shimabukuro, Endo & Yoshizaki, Inc.
Contact Name, Email, Telephone, Address	1126 12th Avenue, Room 309 Honolulu, Hawaii 96816 Howard K. Endo hendo@seyeng.com (808) 737-1875

Status (select one)	**Submittal Requirements**
✓ DEA-AFNSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
____ FEA-FONSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
____ FEIS Acceptance Determination	The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the

	FEIS; no comment period ensues upon publication in the Notice.
FEIS Statutory Acceptance	Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
____ Supplemental EIS Determination	The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
____ Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
____ Other	Contact the OEQC if your action is not one of the above items.

Project Summary

Provide a description of the proposed action and purpose and need in 200 words or less.

The existing Heeia Wastewater Pump Station (WWPS) was constructed in 1968 and is nearing the end of its service life after 50 years in operation. The City and County of Honolulu Department of Environmental Services proposes to improve the performance and reliability of the WWPS through rehabilitation, replacement and expansion of existing structures and equipment. Major improvements include the rehabilitation of the pump station walls, roof, parking area and wet well; replacements of pumps, piping, valves, ventilation system, chain link fence, underground fuel tank, and electrical system; expansion of the pump station building to the south for a new generator room; and installation of a combination air valve at the upstream end of the force main near Lilipuna Road. Direct short-term impacts include: 1) fugitive dust, exhaust emissions, noise from construction equipment, and traffic due to the transportation of equipment and supplies to the site, and 2) visual obstruction from construction equipment and vehicles that is expected only during the construction phase. The contractor will be required to follow standard procedures to migitate the short-term construction impacts, such as restricting working hours, sprinkling open areas, and providing tuned and maintained equipment. No adverse long-term impacts are anticipated from this project.

DRAFT ENVIRONMENTAL ASSESSMENT

HEEIA WASTEWATER PUMP STATION

Prepared for

Department of Environmental Services
Wastewater Engineering and Construction Division

Prepared by:

Shimabukuro, Endo & Yoshizaki, Inc.
dba SEY Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

February 2018

TABLE OF CONTENTS

1. INTRODUCTION

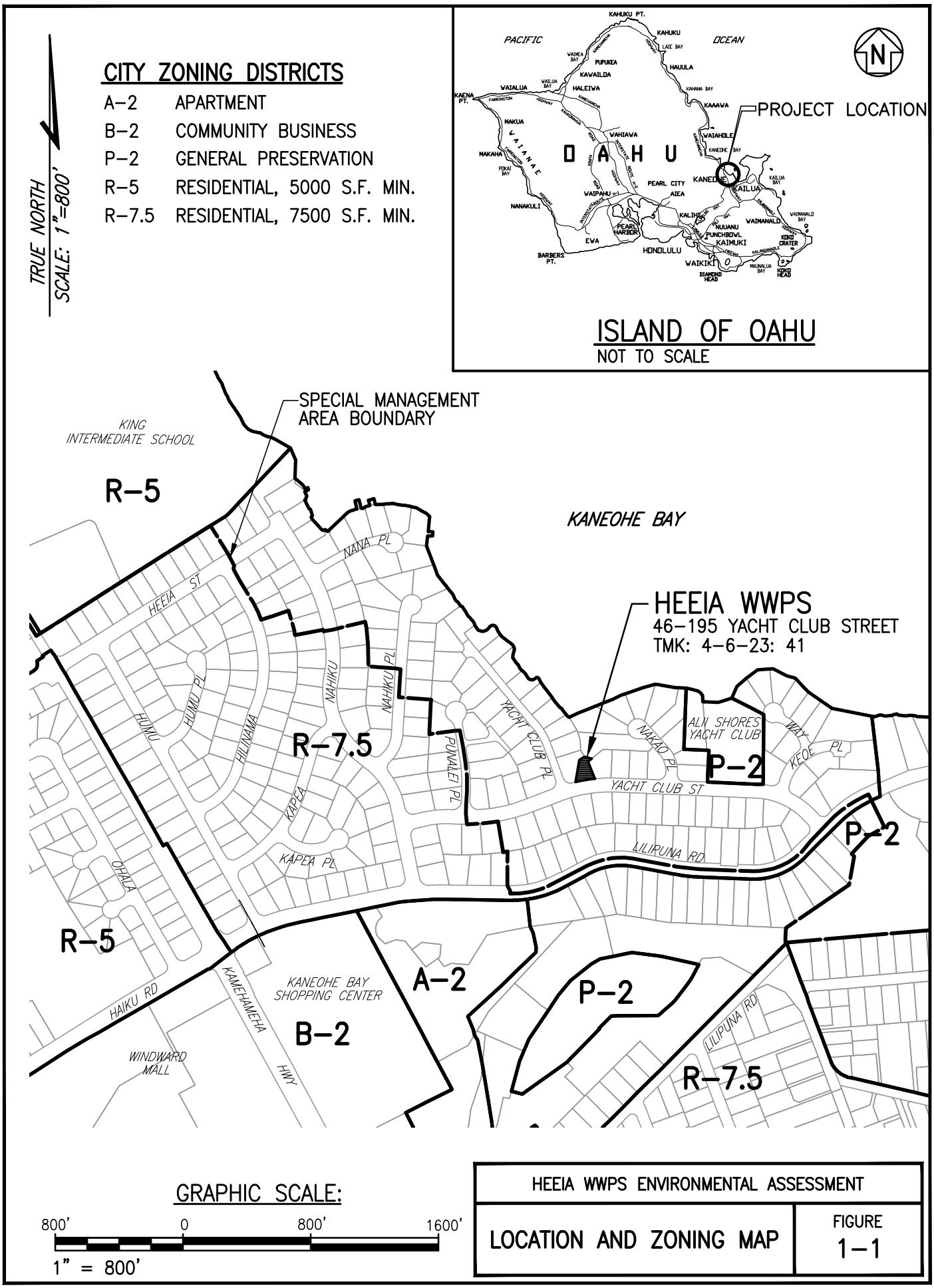
1.1 Purpose for Draft Environmental Assessment

The City and County of Honolulu (City), Department of Environmental Services (ENV) proposes to improve the performance and reliability of the Heeia Wastewater Pump Station (WWPS). The project will rehabilitate, replace, and expand the existing structures and equipment at the WWPS site and install a combination air valve at the upstream end of the force main on Lilipuna Road.

The project is located at 46-195 Yacht Club Street in Heeia in the Koolaupoko district of the island of Oahu (TMK 4-6-023:041). See **Figure 1-1**. The City owns, operates, and maintains the Heeia WWPS which serves residences in the surrounding Heeia area. The WWPS is an integral part of the Kaneohe-Kailua Wastewater Management System.

The Draft EA is prepared to address the probable impacts on the surrounding environment resulting from the proposed improvements of the Heeia WWPS. The Draft EA was prepared pursuant to the regulatory documentation requirements under Chapter 343, Environmental Impact Statements, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200 (Environmental Impact Statement Rules) of the State Department of Health (DOH) Administrative Rules. It describes the proposed improvements and the affected environment, discusses proposed actions and potential environmental impacts, and proposes mitigation measures.

After review of the Draft EA is completed by various government agencies, other interested organizations, and individuals; and following a formal 30-day comment period, the proposing and approving agency, the City ENV, will prepare a Final EA. The ENV is anticipated to conclude that the project will have no significant impact on the environment resulting in a **Finding of No Significant Impact**.



HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
LOCATION AND ZONING MAP	FIGURE 1–1

1.2 Summary of EA Information

Project Name:	Heeia Wastewater Pump Station Improvements
Applicant:	Department of Environmental Services Wastewater Engineering & Construction Division City & County of Honolulu 650 S. King Street, 14th Floor Honolulu, Hawaii 96813 Contact: Edileo Alcalde
Agency's Consultant:	Shimabukuro Endo & Yoshizaki, Inc. 1126 12th Avenue, Room 309 Honolulu, Hawaii 96816-3715 Contact: Howard K. Endo, Ph.D., P.E.
Approving Agency:	City & County of Honolulu Department of Environmental Services
Project Description:	Provide rehabilitation, replacement and expansion to improve its performance and reliability.
Existing Use:	The City owns, operates and maintains the Heeia WWPS which collects wastewater from residences in the surrounding Heeia area, and discharges wastewater to gravity sewer line near Kamehameha Highway.
Land Ownership:	City & County of Honolulu
Tax Map Key:	Heeia WWPS: 4-06-023:041
Land Area:	Heeia WWPS lot is 4,402 square feet
State Land Use:	Urban
City Zoning District:	R7.5 Residential
Special Management District Area (SMA) District	The Heeia WWPS is located within the SMA
Estimated Construction Cost:	$4,000,000 funded by City CIP
Anticipated Determination	Finding of No Significant Impact

Parties Consulted:	See Chapter 1 Parties Consulted

1.3 Parties Consulted

1.3.1 Pre-Assessment Consultation

Prior to preparing the Draft Environmental Assessment (EA), agencies and organizations listed below from the master list provided by the State Department of Health Office of Environmental Quality Control were consulted by letter on May 11, 2017. Also, residents of parcels adjoining the Heeia WWPS were consulted by letter on May 11, 2017. Substantive comments were received from parties marked below with an asterisk (*) and the comments were incorporated into the Draft EA as appropriate. Copies of substantive comments letters are included in Appendix A.

Federal Agencies

- U.S. Department of Army Corps of Engineers
- U.S. Department of the Interior Fish and Wildlife Service*

State of Hawaii Agencies

- Department of Business, Economic Development and Tourism
- Department of Education
- Department of Health (DOH), Environmental Planning Office*
- DOH, Office of Environmental Quality Control
- DOH, Safe Drinking Water Branch*
- Department of Land and Natural Resources (DLNR)*
- DLNR, State Historic Preservation Division
- Department of Transportation*
- Heeia Elementary School
- Office of Hawaii Affairs*
- Office of Planning, Land Use Commission*
- Representative Sean Quinlan
- Senator Gil Riviere

City and County of Honolulu Agencies

- Board of Water Supply (BWS)*
- Department of Design and Construction
- Department of Environmental Services
- Department of Facility Maintenance*
- Department of Parks and Recreation*
- Department of Transportation Services (DTS)*
- Fire Department*
- Police Department*
- Councilman Ikaika Anderson

Community Groups/Businesses/Individuals/Etc.

- Koolauloa Neighborhood Board No. 30
- Residents of Parcels Adjoining Heeia Pump Station (16)

1.4 Land Use Classifications

1.4.1 State Land Use District

The Heeia WWPS site and surrounding residential areas are classified as Urban on the State's Land Use District Boundary Map for the region (U). Urban District permits activities or uses as provided by ordinances or regulations of the county within which the Urban District is situated. Thus, Urban District lands on the island of Oahu are regulated by the ordinances and regulations of the City.

1.4.2 City Zoning Districts

The Heeia WWPS property is zoned R7.5 Residential along the surrounding residential properties. See **Figure 1-1**. The City Land Use Ordinance (LUO) permits the use of R7.5 zoned lands for public facilities such as wastewater pump station and force main replacement.

1.4.3 Special Management Area

A review of the City's SMA map for the Heeia WWPS site and immediate surrounding area determined that the City's SMA boundary extends from the Kaneohe Bay shoreline up to the centerline of Lilipuna Road as shown in **Figure 1-1**. Since the Heeia WWPS site is located makai of Lilipuna Road, the project site is within the SMA boundary. As a result, the Heeia WWPS improvements are subject to the City's SMA regulations described in Chapter 25 of the Revised Ordinances of Honolulu.

2. PROJECT DESCRIPTION

2.1 Existing Heeia WWPS

The Heeia WWPS is located at 46-195 Yacht Club Street in a residential neighborhood in Heeia as shown in **Figure 1-1**. The site is bordered by Yacht Club Street to the south, and private residences on the east, north and west. The pump station building is a reinforced concrete/masonry structure constructed over a drywell. The Heeia WWPS was placed into service in 1968 with one dual drive pump and one electric pump. In 1986, a third dual drive pump was added to the WWPS and the force main was replaced. The ENV is primarily concerned with the age of the pump station, the difficulties in obtaining spare parts for the older equipment, sufficiency of emergency power generation, and noise produced during operation.

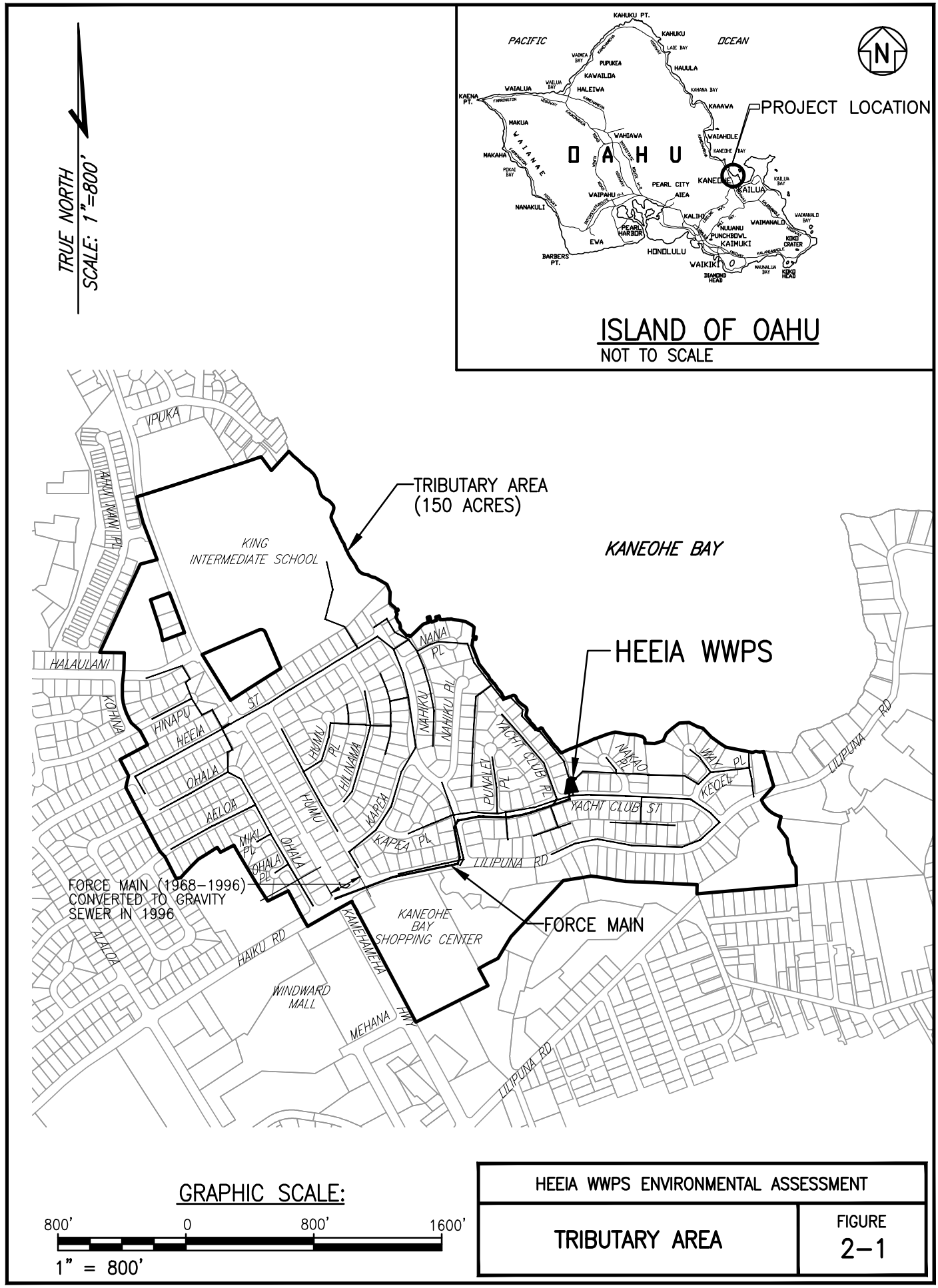
The 150 acres tributary area for the Heeia WWPS mainly consists of residential neighborhoods, King Intermediate School, and Kaneohe Bay Shopping Center as shown in **Figure 2-1**. No upstream facility/pump station discharges into the tributary area of Heeia WWPS. Design peak flow at the pump station is 1.63 mgd, with a design average flow of 0.30 mgd.

Wastewater is pumped from the pump station through a 14-inch force main to its discharge manhole near the intersection of Lilipuna Road and Humu Street (see **Figure 2-1**). From this discharge manhole, wastewater flows by gravity to the Kaneohe Wastewater Pretreatment Plant.

Topographic survey and mapping were conducted by ControlPoint Surveying, Inc. to document the existing conditions at the WWPS site as shown in **Figure 2-2**. The odd shaped pump station lot is 4,408 square feet and is approximately 70 feet across at is widest point and 87 feet along its longest side. The lot varies in elevation from 4 to 10.5 feet above mean sea level. The ground slopes upward in the north to south direction. The main facilities in the site are the pump station building, wet well, underground flow tube box, driveway, and underground 550-gallon diesel fuel tank. Wastewater enters the WWPS entrance chamber via two 10-inch diameter influent sewer mains.

The Heeia WWPS contains three pumps, two active pumps and one standby pump. Two pumps are rated at 925 gpm with a total dynamic head (TDH) of 100 feet each, and the third pump is rated at 1,020 gpm with a total dynamic head of 100 feet.

The flow tube box was constructed over the force main about 20 feet south of the pump station building and houses the flow tube and shut-off valve. The flow tube measures the flow rate of sewage pumped from the pump station. The force main was replaced in 1996 immediately upstream of the flow tube box to the discharge manhole.

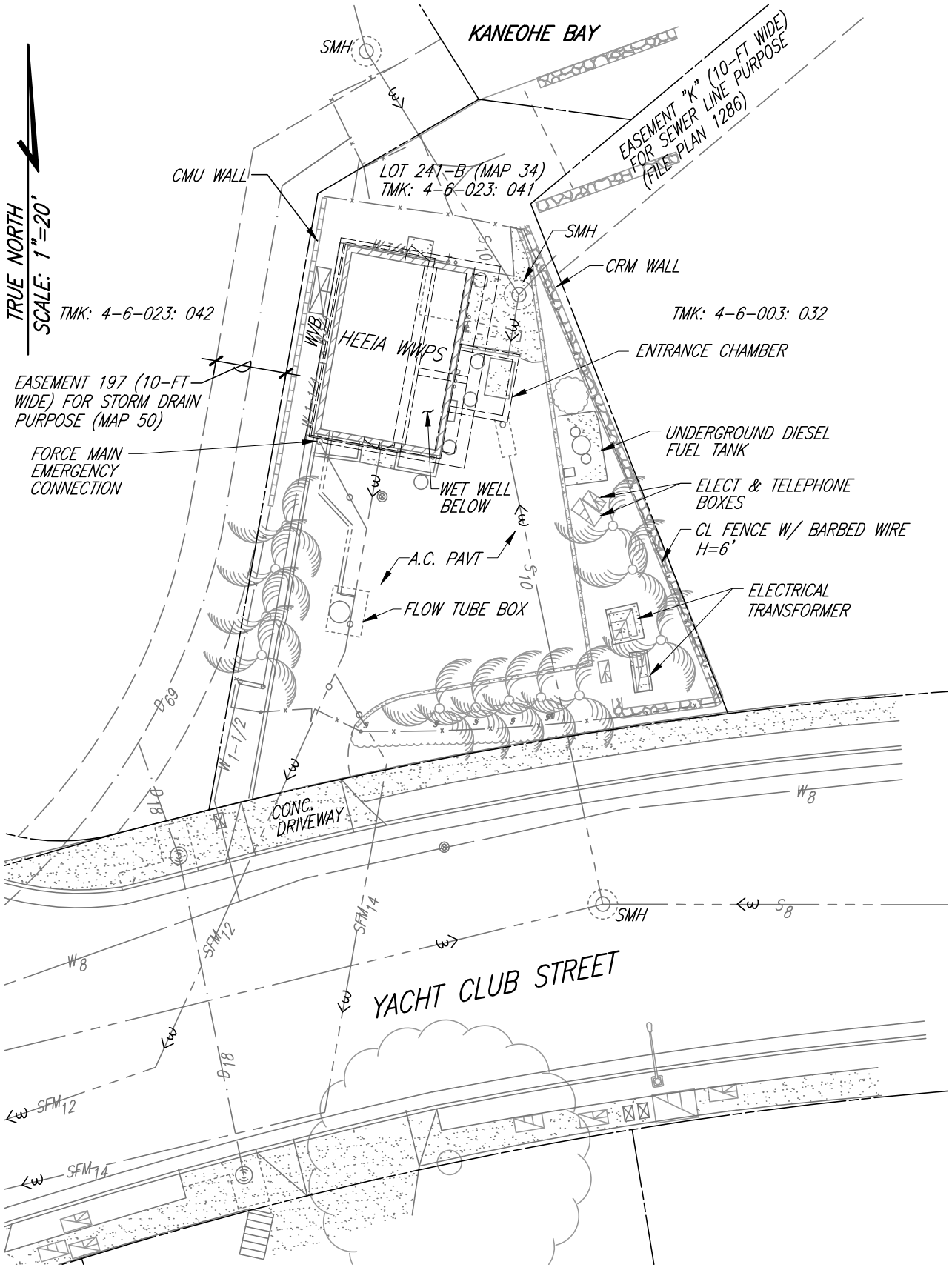


GRAPHIC SCALE:

800' 0 800' 1600'

1" = 800'

HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
TRIBUTARY AREA	FIGURE 2–1



GRAPHIC SCALE:

20' 0 20' 40'

1" = 20'

HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
EXISTING SITE PLAN	FIGURE 2-2

The existing pump station building consists of three levels: ground floor, intermediate floor, and bottom pump room. **Figure 2-3** shows the existing floor plans and sections of the pump station building. The control room is the ground floor at an elevation of 9.11 feet above mean sea level. The 25-foot long by 16.7-foot wide control room houses the motors, dual drives, ventilation exhaust fan, motor control center, and other amenities. The control room ground floor elevation was 9.50 feet in 1968 when the WWPS was placed into service.

The depth between finished (ground) floor and dry well (pump room) is approximately 21 feet. The three centrifugal vertical pumps, sump pump, and associated valves and piping reside in the pump room; and the intermediate floor only contains a level 2-foot wide by 15-foot long catwalk that is used to observe the 12-inch manifold.

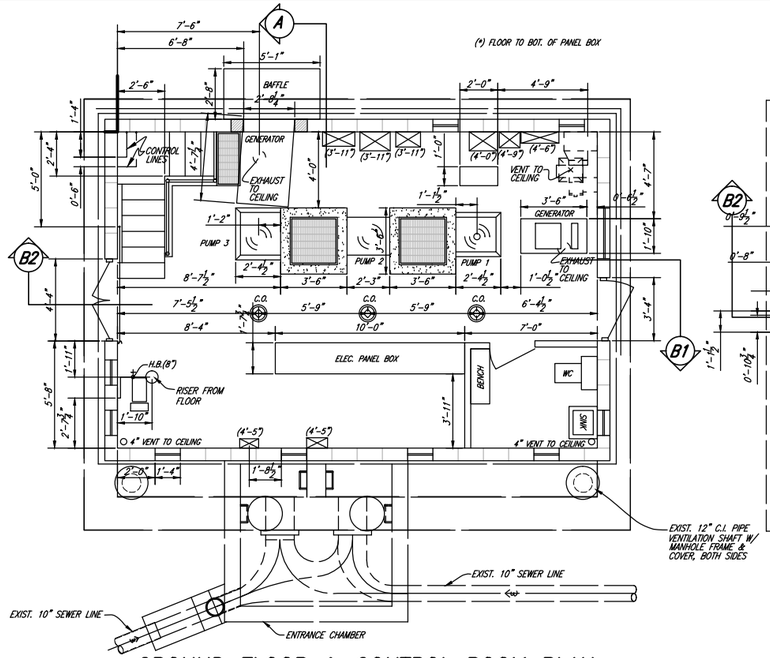
The Heeia WWPS property is zoned R7.5 Residential along with the surrounding residential properties. See **Figure 1-1**. The City Land Use Ordinance permits the use of R7.5 zoned lands for public facilities such as wastewater pump station. The LUO minimum front yard setback requirement of R7.5 zone for dwelling is 10 feet, and for other uses 30 feet. The minimum side and rear yard setback requirement of R7.5 zone for dwelling is 5 feet, and for other uses is 15 feet. The existing Heeia WWPS building has a front yard of about 41 feet, west side yard of about 5.3 feet, east side yard of about 10.7 feet, and a rear yard of about 8.5 feet and encroaches on the side yard setbacks permitted for other uses in the Development Standards of the LUO.

2.2 Description of Proposed Heeia WWPS Improvements

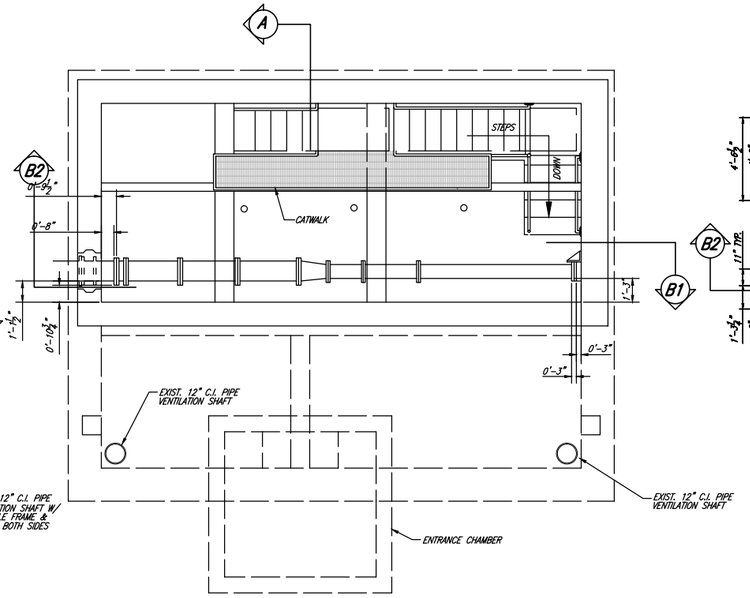
2.2.1 Site, Wet Well, Pumping System, and Station Building

The Heeia WWPS requires reconstruction and new facilities/equipment to improve its reliability. Site reconstruction and improvements will include new water supply lines, new eye wash station, new 16 feet wide driveway apron, 16 feet wide double swing gate, 6 feet high chain link fence, 6 feet high CMU wall, grade adjustment wall, security fence repair, curb and gutter repairs, regrading and reconstruction of the asphalt concrete parking area, including adjusting tops of existing utility boxes and replanting of two (2) Palm trees.

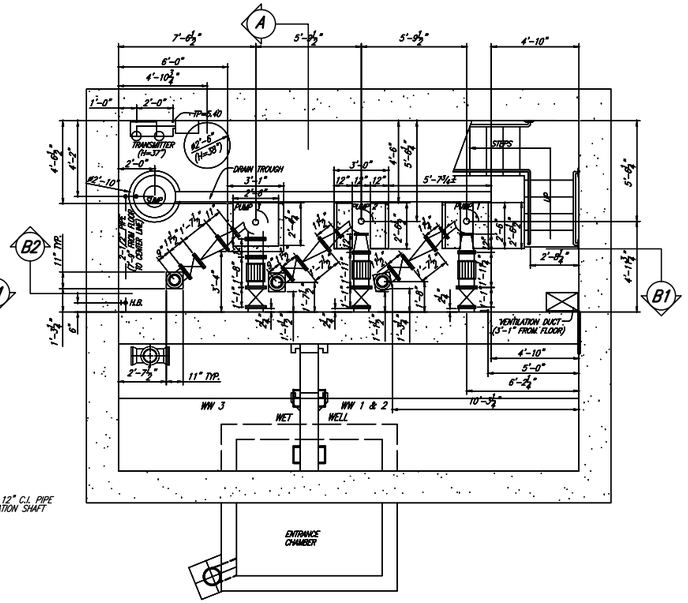
The pump station building is in fair condition. The cracks in the control room north wall will be repaired, exit sign installed, window jambs and louvers replaced, new eye bolt installed above main entrance door, and the building re-roofed. After reconstruction of the Heeia WWPS Improvement is completed, the interior and exterior of the WWPS building will be repainted.



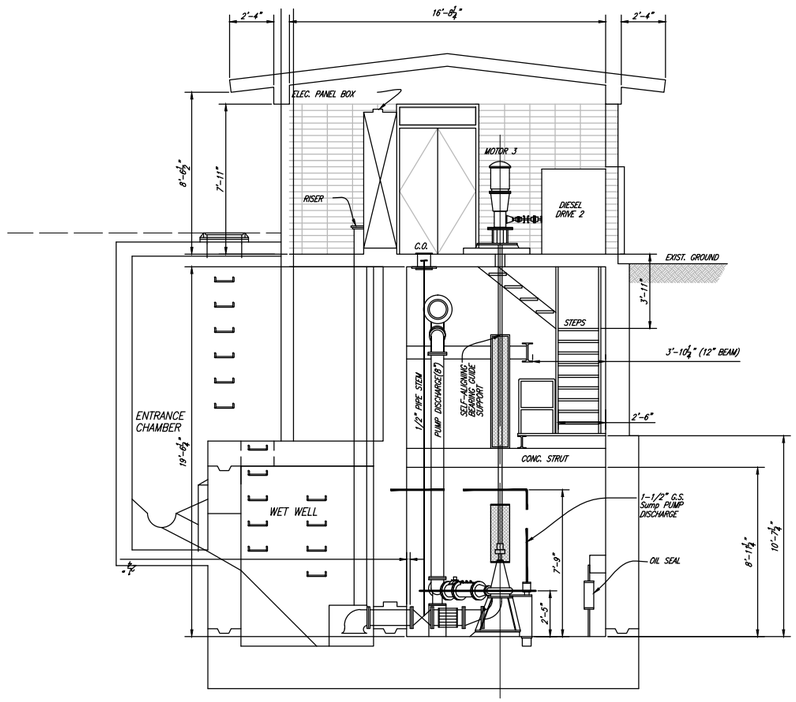
GROUND FLOOR & CONTROL ROOM PLAN



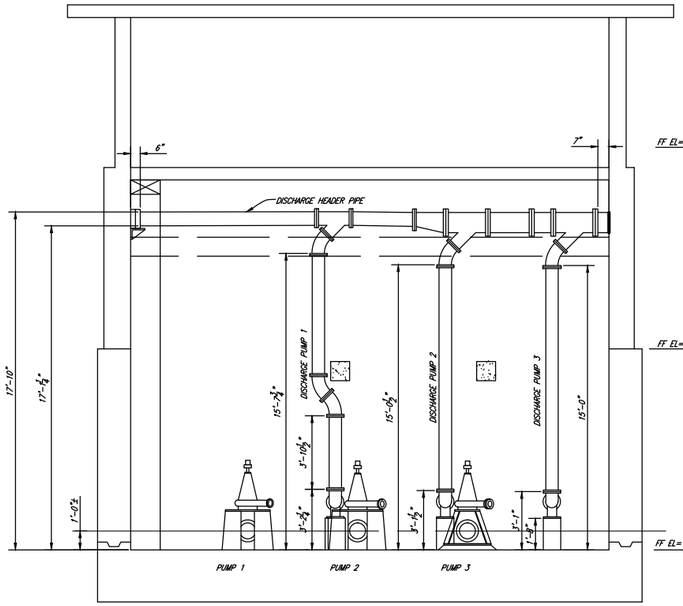
INTERMEDIATE FLOOR PLAN



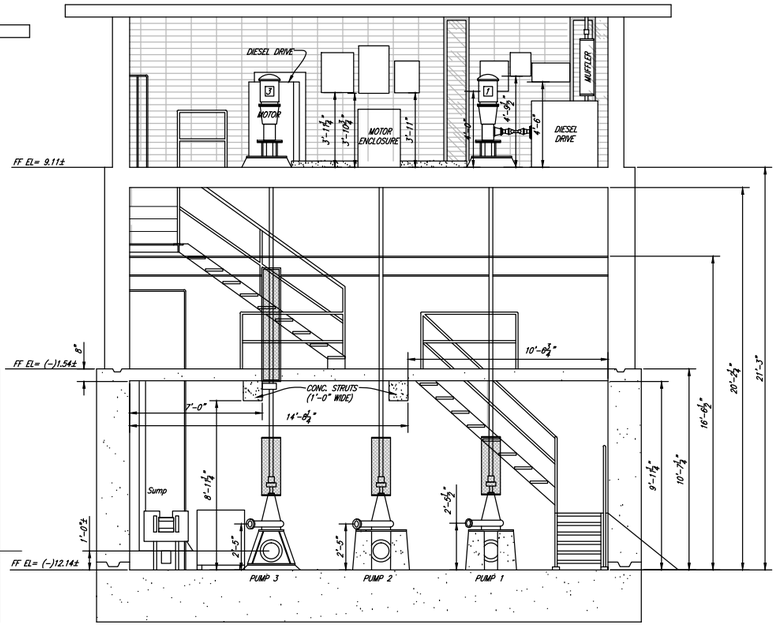
BOTTOM FLOOR & PUMP ROOM PLAN



SECTION A



SECTION B1



SECTION B2

HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
FLOOR PLANS AND SECTIONS OF EXISTING PUMP STATION	FIGURE 2–3

The manhole openings of the entrance chamber will be replaced with 2 new hatch openings with safety devices. The wet well and entrance chamber rungs will be removed and holes patched and interior concrete walls and surfaces will be repaired by removing the existing remaining coat tar coating; by chipping the existing interior surfaces to hard, solid concrete; by patching substrate voids/irregularities; by reconstructing the interior surfaces with epoxy grout to restore the original concrete surfaces; and by lining the interior surfaces with epoxy or elastomeric protective coating to protect the new surface and underlying existing hard, solid concrete and reinforcing steel from deterioration from sewage and/or sewage gases. In addition, the three suction wall pipes in the wall between the wet well and pump room will be lined with protective coating.

The vertical centrifugal pumps are near the end of their service life. These pumps will be replaced with three dry-pit submersible pumps so that the pumps can remain operational even though the pump room may flood. Dry-pit submersible pumps will also free up space in the control room for new equipment because of the removal of the existing pump motors and the diesel engine. Full spare pump will be provided.

All interior piping, valves, fittings, and accessories associated with the pumping system will also be replaced; and the discharge line from each pump will be connected to the common manifold with a wye fitting. Flapper check valves will be added. New force main from the new magnetic flow meter to the existing force main on site will be provided, along with a new bypass discharge connection.

A new combination air valve will be provided at the upstream end of the force main on Lilipuna Road near Kamehameha Highway to prevent a vacuum from forming in the force main upon pump closure. The air valve will allow air into the force main at a preset sub-pressure to protect against a vacuum.

The float level control unit is antiquated and will be replaced with updated technology such a pressure transducer and non-contact radar level control systems.

An emergency generator does not exist at the pump station to power the pumps and other essential equipment during a power failure. An acoustical treated engine generator room and a new below ground flow tube room addition to the pump station building will be provided to house a new 125 Kw engine generator for emergency purposes and a new flow tube. The new generator room will have its entrance door on its east side facing the parking area. New force main from the new flow tube to the existing force main just outside the pump station building will be provided, and a new bypass discharge connection will be installed.

A new entrance room will be provided for primary entry to the control room, pump room, and the flow tube room. Major equipment in the control room (existing pump station building) will be transported through the entrance room.

2.2.2 Ventilation System

The existing ventilation system is obsolete and does not comply with current requirements of NFPA 820. Current standards require a minimum of 6 air changes per hour (ACH) for this application. In addition, current standards require a dual fan system to provide fresh outside air at the lower pump room and exhaust at the motor/control room level. A completely new ventilation system will be provided and will be operated continuously during occupation and be monitored by the SCADA system. The ventilation system will have stainless steel supply/exhaust fans, standard ductwork and controls conforming to the State Department of Health requirements.

2.2.3 Fuel System

The existing fuel storage system is old and approaching its useful life expectancy. In addition, recent City pump station renovations have been utilizing a minimum 1000 gallon fuel storage capacity in lieu of the existing 550 gallon capacity per City WWPS Design Standards. As such, a new fuel system will be provided. The new fuel system will include new 1000 gallon, double wall, underground, fiberglass fuel storage tank, electronic fuel/tank monitoring system (Veedee Root), double wall underground piping with leak detection, packaged day tank assembly and above ground piping, etc.

2.2.4 Electrical System and Controls

The City will contact Hawaiian Electric Company (HECO) to request evaluation of the existing switch gear enclosure's existing condition. A recommendation will be made to replace the existing switch gear enclosure. Concrete pads for the existing switchgear and transformer will be replaced with a new concrete pad such that the top of the pad is higher than the adjacent grade level minimize water and debris intrusion. The area surrounding the new HECO equipment pads will be regraded to avoid sump conditions.

Site electrical work consisting of new lines from the transformer to the Motor Control Center (MCC) will be provided. The electrical service grounding system will be bonded to the existing cold water pipe system. The existing grounding ring will be replaced with a new grounding ring complying with current Electrical Code.

A new generator system will be installed to provide standby power for critical station loads in the event normal electrical service is not available. The generator will provide emergency electrical power to start and operate all connected loads. Time delay relays to prevent multiple pumps from starting simultaneously on the generator should be provided. Generator operation will be started by an automatic transfer switch (ATS) following power failure. The generator will be capable of manual operation for testing and maintenance purposes. The ATS will have a bypass provision. The generator room will also house a new day tank, generator batteries, and battery charger.

A new motor control center will be installed to eliminate possible electrical shock hazard potential from exposed power buses located in sections. A new motor control center

will also eliminate possible electrical fault conditions from deteriorating electrical conductor insulation. The remote telemetry system will be replaced with a new system to eliminate hazardous conditions from existing mercury filled contact switches.

A new programmable logic controller (PLC) system will be provided that is compliant with the City's current PLC design guidelines. A new PLC system will minimize extended PLC system outages due to unavailable replacement parts. Existing control panels will be replaced with new control panels. The existing instrumentation system will be replaced with a new system. The existing alarm system will be replaced with a new system. A new alarm system will minimize extended alarm system outages due to unavailable replacement parts. New lighting with emergency lighting will be provided.

2.2.5 Schematic Plans

Schematic Plans for construction of the improvements of **Subsection 2.2** for the Heeia WWPS Improvement through rehabilitation, replacement and expansion of the existing structure and equipment were prepared for the project. See **Figures 2-4** to **2-6**. The construction of the improvements will improve the performance and reliability of the Heeia WWPS.

2.3 Schematic Construction Cost Estimate and Time

A schematic construction cost estimate for the recommended Heeia WWPS Improvements indicated on the Schematic Plans was prepared for the project. See **Appendix C**. The schematic construction cost estimate is $4,000,000. The cost estimate was based on the schematic plans and not on detailed construction plans, should be considered as ballpark type estimate, and should be revised after preliminary construction plans are prepared. The preliminary estimated time to complete the construction is 1.5 years. No additional lands or easements are required.

2.4 List of Required Permits

The following permits will likely be required for construction of the proposed improvements for this project:

State of Hawaii Permits

1. National Pollutant Discharge Elimination System (NPDES) Individual Permit for Discharge of Construction Dewatering.

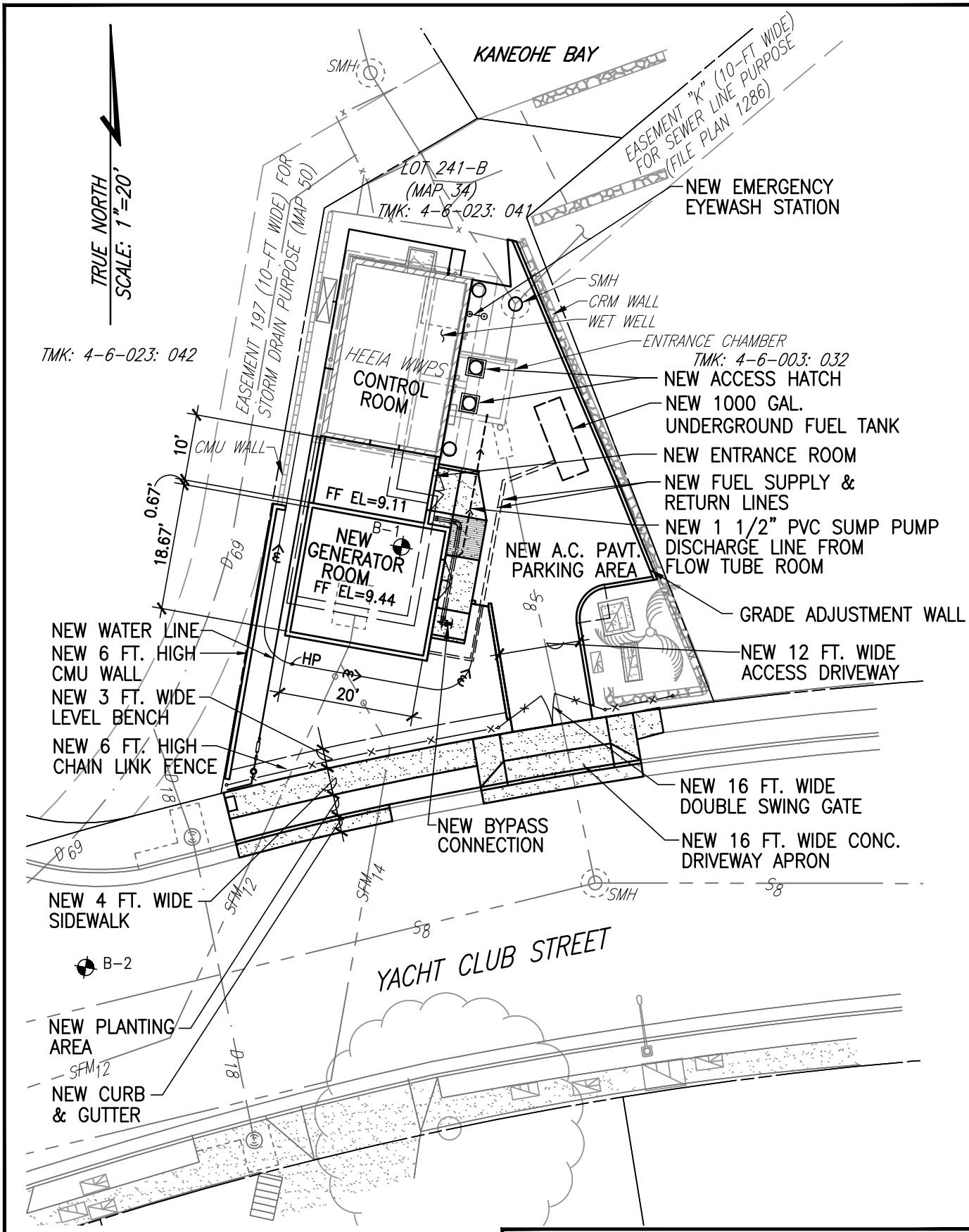
2. Chapter 55 Water Pollution Control, HAR Title 11, State Department of Health, for discharges of hydrotesting waters.

3. Permit to Discharge Dewatering Effluent into State Drainage System.

4. Community Noise Control Permit.

City and County of Honolulu Permits

1. Special Management Area Permit.
2. Shoreline Setback Variance.
3. Waiver from Yard Setback Requirements of the Land Use Ordinance.
4. Building, Grading, and Trenching Permits.
5. Construction Dewatering Permit for Discharge into the City and County Separate Storm Sewer System.
6. Construction Dewatering Permit for Industrial Waste Discharge into the City and County Separate Storm Sewer System.
7. Installation of Underground Fuel Storage Tank.
8. Street Usage Permit

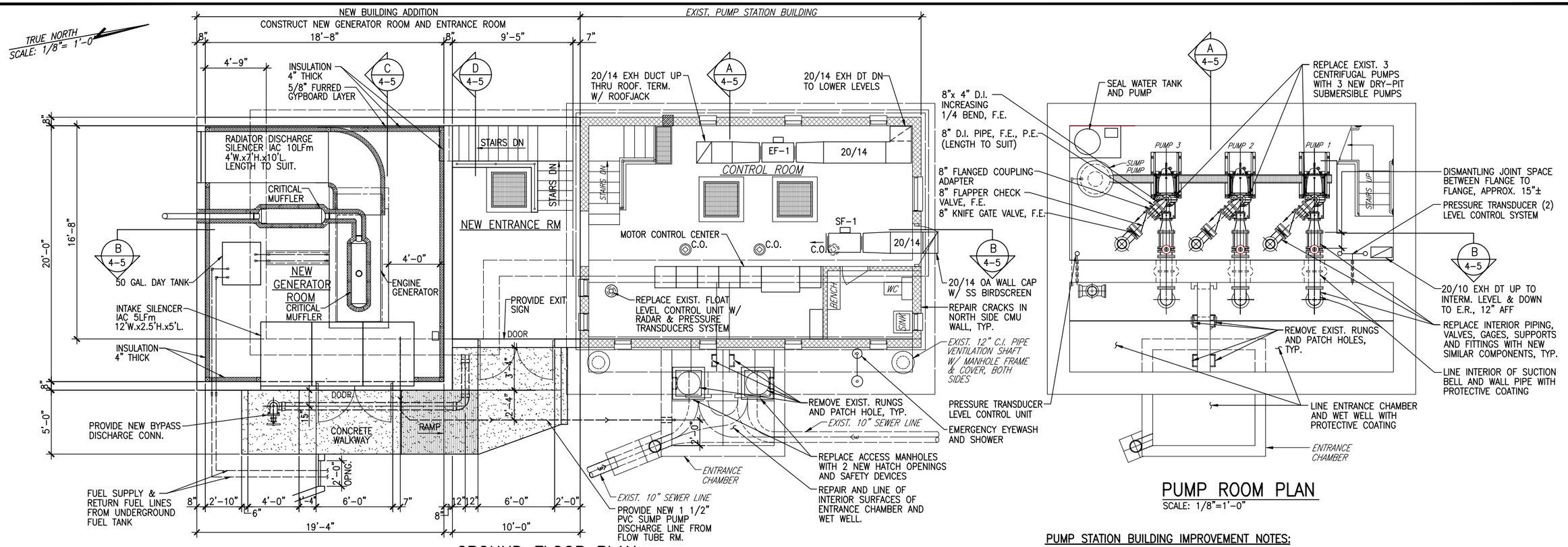


GRAPHIC SCALE:

20' 0 20' 40'

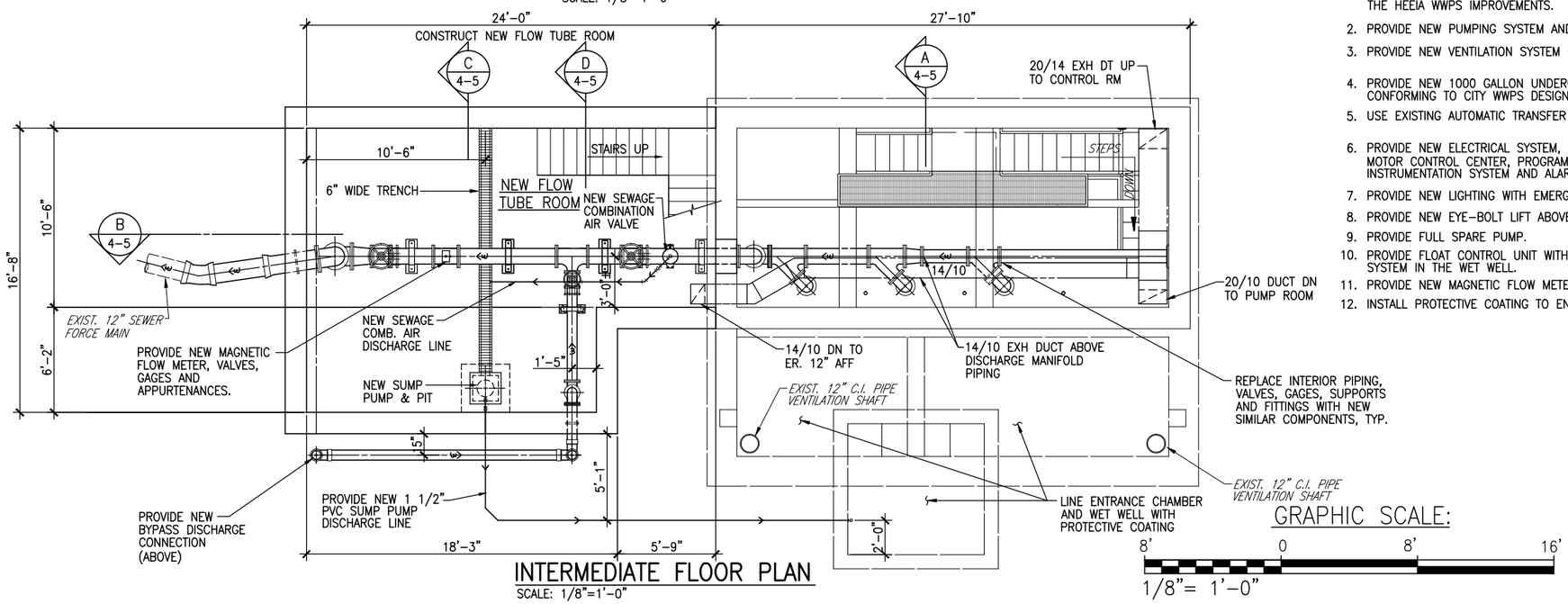
1" = 20'

HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
CONCEPTUAL SITE PLAN FOR HEEIA WWPS	FIGURE 2-4



GROUND FLOOR PLAN
SCALE: 1/8"=1'-0"

PUMP ROOM PLAN
SCALE: 1/8"=1'-0"



INTERMEDIATE FLOOR PLAN
SCALE: 1/8"=1'-0"

PUMP STATION BUILDING IMPROVEMENT NOTES:

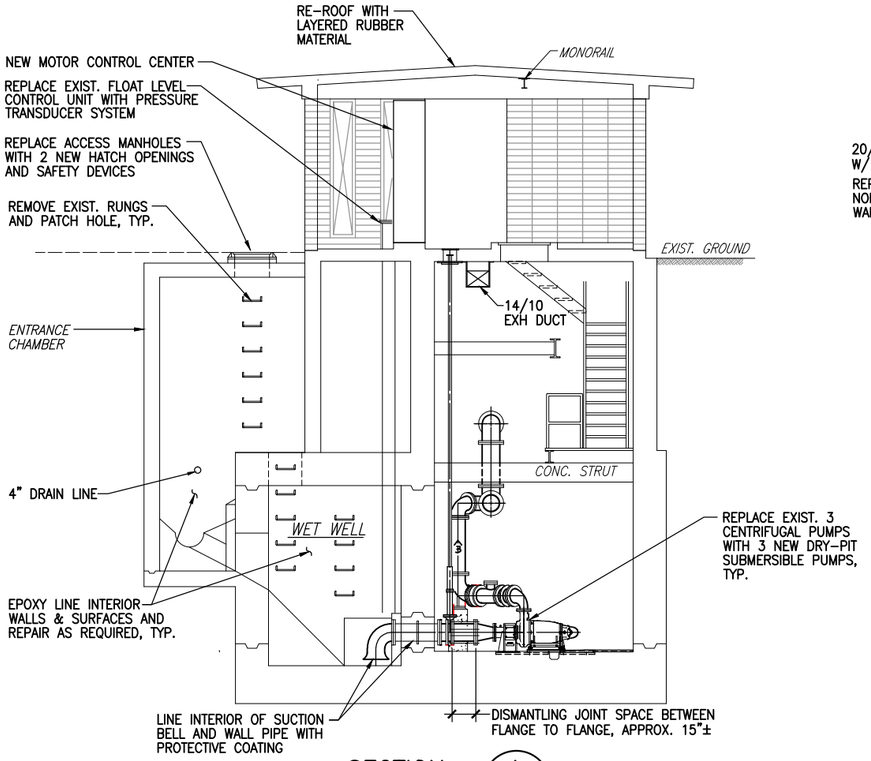
1. DEMOLISH AND REMOVE PORTION OF EXISTING PUMP STATION BUILDING, PUMPING, VENTILATION, FUEL AND ELECTRICAL SYSTEMS, ETC. AS REQUIRED FOR CONSTRUCTION OF THE HEEIA WWPS IMPROVEMENTS.
2. PROVIDE NEW PUMPING SYSTEM AND STATION BUILDING IMPROVEMENTS AS INDICATED..
3. PROVIDE NEW VENTILATION SYSTEM OPERATED CONTINUOUSLY AND MONITORED BY SCADA SYSTEM.
4. PROVIDE NEW 1000 GALLON UNDERGROUND FUEL SYSTEM FOR NEW 125 KW GENERATOR CONFORMING TO CITY WWPS DESIGN STANDARDS IN NEW ACOUSTICAL TREATED GENERATOR ROOM.
5. USE EXISTING AUTOMATIC TRANSFER SWITCH (ATS) FOR CONNECTION TO NEW GENERATOR SYSTEM.
6. PROVIDE NEW ELECTRICAL SYSTEM, INCLUDING REMOTE TELEMETRY SYSTEM ELECTRICAL CONNECTIONS, MOTOR CONTROL CENTER, PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEM, CONTROL PANEL, INSTRUMENTATION SYSTEM AND ALARM SYSTEM.
7. PROVIDE NEW LIGHTING WITH EMERGENCY LIGHTING.
8. PROVIDE NEW EYE-BOLT LIFT ABOVE AND NO STEPS AT MAIN ENTRANCE DOOR TO PUMP STATION.
9. PROVIDE FULL SPARE PUMP.
10. PROVIDE FLOAT CONTROL UNIT WITH RADAR AND 2 PRESSURE TRANSDUCERS LEVEL CONTROL SYSTEM IN THE WET WELL.
11. PROVIDE NEW MAGNETIC FLOW METER IN NEW FLOW TUBE ROOM.
12. INSTALL PROTECTIVE COATING TO ENTRANCE CHAMBER, WET WELL AND SUCTION WALL PIPES.

GRAPHIC SCALE:
8' 0 8' 16'
1/8"= 1'-0"

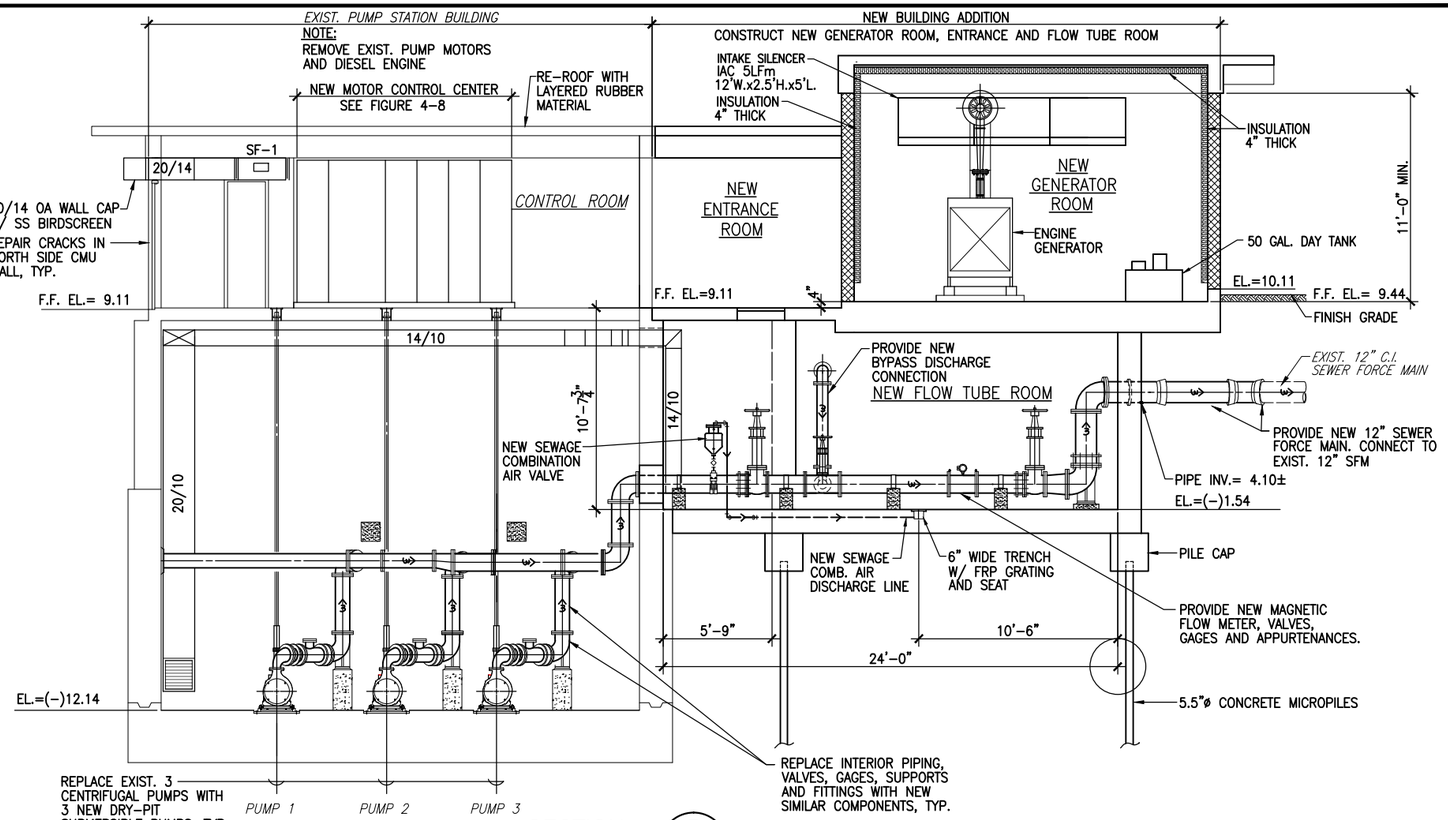
HEEIA WWPS ENVIRONMENTAL ASSESSMENT

CONCEPTUAL FLOOR PLANS OF EXPANDED PUMP STATION BUILDING

FIGURE 2-5



SECTION A (4-5)
SCALE: 1/8"=1'-0"



SECTION B (4-5)
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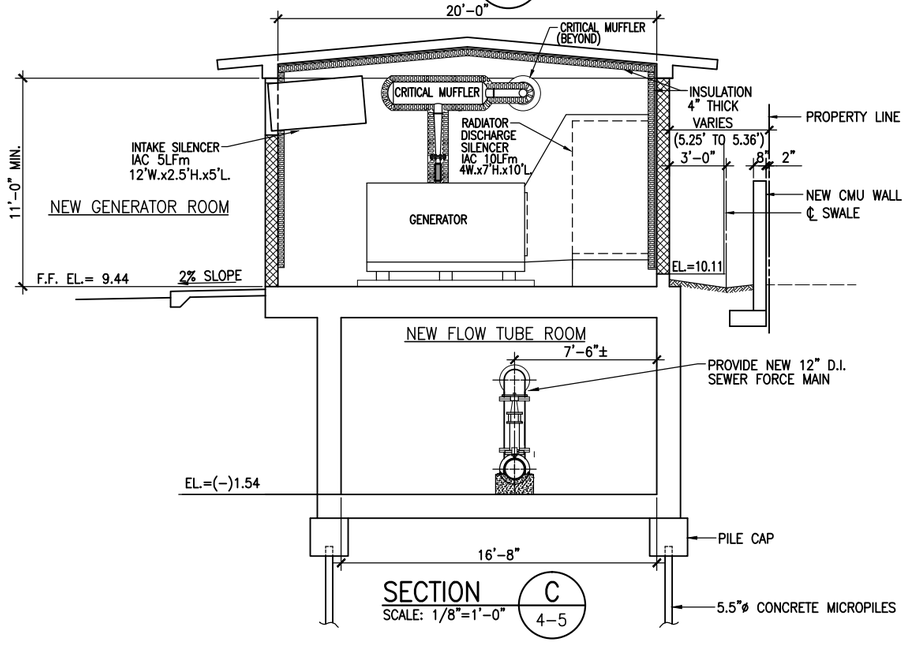
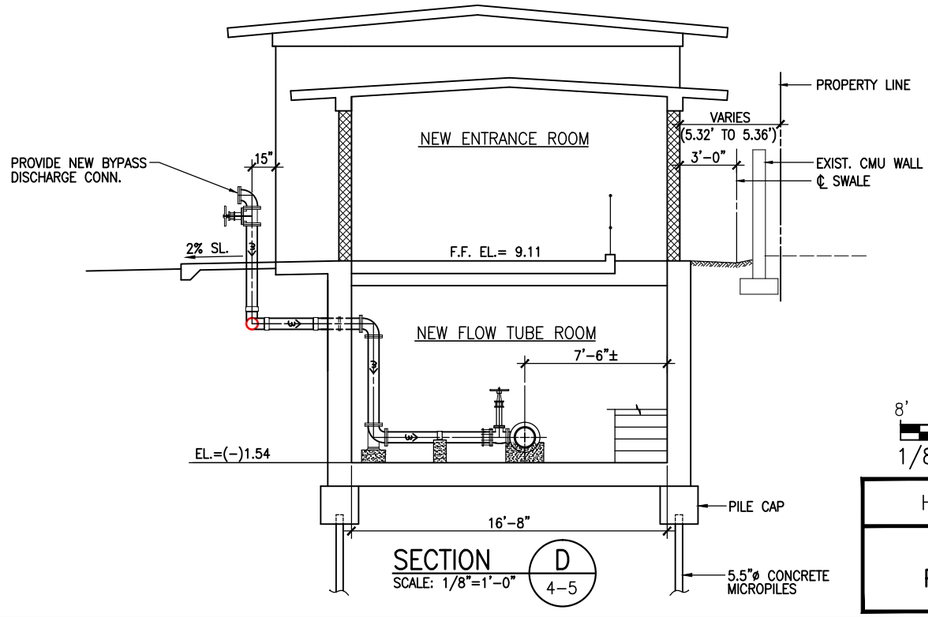


SECTION C (4-5)
SCALE: 1/8"=1'-0"



SECTION D (4-5)
SCALE: 1/8"=1'-0"

GRAPHIC SCALE:
8' 0 8' 16'
1/8"= 1'-0"

HEEIA WWPS ENVIRONMENTAL ASSESSMENT

SECTIONS OF EXPANDED PUMP STATION BUILDING

FIGURE 2-6

3. ALTERNATIVES CONSIDERED

3.1 General

The Heeia WWPS Improvements project consists of reconstruction of the site improvements, repair of existing station building, construction of new building addition, replacement of existing pumping system, piping, electrical system and controls, installation of new emergency generation system, installation of combination air valve on force main and other miscellaneous work to improve the performance and reliability of the WWPS. The WWPS began operations in 1968 and most of the work will be performed to improve the existing site, building, piping and equipment with upgrade to WWPS within the existing site and building to meet current standards. The addition of a new 125 Kw emergency generator system to the WWPS is the major improvement and will require a new room/building addition to house the generator.

The pump station is small (4,408 square feet) with an irregular configuration (see **Figure 2-2**). Five alternatives were developed considering different options for emergency power because of size and shape limitations of the lot. Alternatives were analyzed and evaluated as discussed below to select the preferred alternative for the emergency power generator system.

3.2 Alternative 1: New Diesel Engine Drives

The primary feature of Alternative 1 is replacing the two existing diesel engine drives with brand new ones. The peak design flow for the WWPS of 1.63 mgd is almost satisfied by one pump so replacing two diesel engine drives would nearly meet the emergency power requirements for the pumping system, substantially reducing the size of the new engine generator. For Alternative 1, the existing pumps and motors would remain. The operating point for the existing lead pump is 1.47 mgd at 97 feet TDH; and with two pumps running the operating point is 2.45 mgd at 102 feet TDH (see Heeia WWPS Spill Reduction Action Plan, January 1997).

The acoustical consultant visited the site and noted that the positions of the diesel engines abutting building openings does not allow sufficient space for adequate acoustical treatment for Alternative 1. The City concurred with this assessment and Alternative 1 was eliminated from further consideration.

3.3 Alternative 2: New North End Generator Room

Alternative 2 investigated the construction of a new generator room at the north end of the existing pump station building. This alternative was formulated to preserve all major facilities on the south and east half of the pump station site including flow tube box and wet well. The odd-shaped configuration of the new generator room followed the irregular property at the back of the pump station lot.

Appendix D presents the acoustical layout of the new generator room. The new generator room would house the 125 kW generator, two critical grade mufflers and exhaust air silencers (see **Figure 3** of **Appendix D**). A new 10-foot wide entrance room adjoining the south end of the existing pump station building would house the intake air silencers. The walls and ceilings of the existing pump station building and new generator room would be lined with fiberglass acoustical insulation.

Alternative 2 was removed from further consideration because of: 1) limited (less than 8 feet wide) and indirect vehicular access to the new generator room at the back of the property, 2) the need to backfill the site and construct retaining walls at the back of the property for the new generator room and suspected poor soil conditions under the new generation room, 3) the need for side and rear yard setback waivers of the LUO from the DPP due to limited yard space, and 4) difficult acoustical treatment required for the entire control room of the existing pump station building.

3.4 Alternative 3: New South End Generator Room and Underground Flow Tube Room

Alternative 3 investigated the construction of a new generator room at the south end of the existing pump station building and accompanying underground room to house the flow tube as shown in **Figure 2-4**. The Kahala WWPS has a similar pump station layout. This alternative will preserve all major facilities in the front half of the pump station site, except for the underground flow tube box. A new magnetic flow meter with supporting valves will be housed in an underground room directly beneath the new generator room as shown in **Figures 2-5** and **2-6**.

The station will be designed as a three-pump dry well submersible pump installation. Dry well submersible pumps are preferred over the existing vertical open shaft centrifugal pumps because submersible pumps will remain operational even if the dry well floods. The submersible pumps would be selected such that two operating pumps can meet the design peak flow with one standby pumping unit. One complete pump and motor will be furnished as spare equipment as requested by the City.

As shown in **Figure 2-5**, the expanded pump station building will be divided at ground level between the new generator room (south end), new entrance room (middle) and existing control room (north end). **Appendix D** discusses the proposed layout for the new generator room (see **Figure 1** of **Appendix D**) which will house the 125 kW generator with supporting equipment, two critical grade mufflers, exhaust air silencers and intake air silencers.

The entrance room will provide primary entry to the flow tube room, control room and the pump room. Major equipment in the control room and the pump room (existing pump station building) will be transported through the entrance room. The new generator room will have its entrance door on its east side facing the driveway (see **Figure 2-4)**.

The control room will house the motor control center, restroom and other amenities. Space will become available as the motors and dual drives will be removed from the control room. New supply and exhaust fans satisfying City Design Standards will replace the existing exhaust ventilation fan.

Although waivers for the front and side yard setbacks are required from the City DPP, Alternative 3 merits consideration for emergency power generation of the Heeia WWPS Improvements.

3.5 Alternative 4: New Generator Room as Second Story of Existing Pump Station Building

Alternative 4 investigated the construction of a new generator room as the new second story of the existing pump station building over the control room as requested by ENV. The Heeia WWPS was placed in service in 1968 with control room ground floor at 9.50'. Topographic survey measured the ground floor elevation at 9.11' in 2010 which indicates that settlement of 0.39' or about 4-3/4" may have occurred since 1968. A settlement of over 1/2" is severe. Thus further loads should not be added to the WWPS building. Adding a new generator room above the existing control room will increase load on the building foundation slab and subsurface soils, may induce additional settlement which may cause cracks in the foundation slab and pump room walls, and may cause groundwater to leak into the pump room and sewage to leak out from the wet well. These events should be avoided.

The walls of the control room are constructed with 8" CMU with numerous louvered openings from floor to the roof. The non-continuous 8" CMU walls are adequate to support the existing roof loads, but are not adequate to support a new floor with solid CMU or concrete walls, 125 Kw generator, accessory equipment, acoustical treatments, new roof, etc. The entire existing control room wall and roof must be demolished and replaced with new walls for a new generator room above the control room. This additional construction will disrupt operation of the WWPS, will cause an increase in WWPS loads and may further cause building settlement and cracks in the existing foundation slab and walls. This should be avoided.

Alternative 4 was removed from further consideration due to the above analysis and evaluation.

3.6 Alternative 5: New Generator Building Over Existing Pump Station Building

Alternative 5 investigated the construction of a new generator building over but independent of the existing pump station building as requested by ENV.

The minimum side yard setback for R7.5 zone dwelling is 5' and for other uses is 15' pursuant to the Development Standards of the City LUO. As noted on **Figure 3-1**, the above ground yard setback of the existing pump station building ground floor control room wall from the west property line is 5.36' to 5.46'; and the underground setback of the pump room wall from the west property line is about 4.27'. Both wall setbacks are less than the 15' yard setback permitted for other uses then dwelling by the LUO. The pump station building must have been constructed prior to the adoption of the LUO since construction of the existing pump station building within the west yard setback of 4.27' as noted above would not be permitted today without a City waiver.

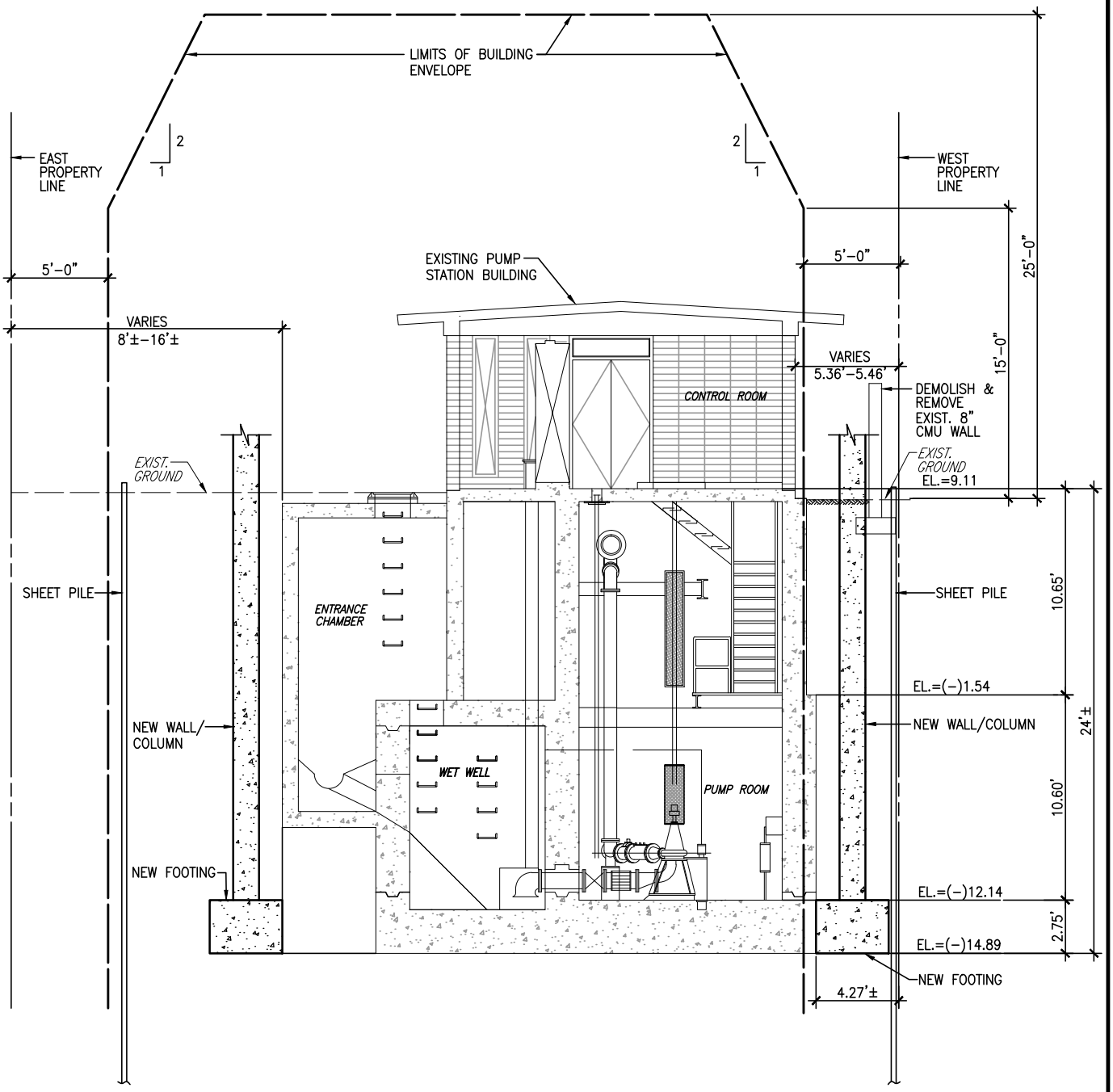
Without adding structural loads to the building, a separate building structure must be placed outside of the footprint of the existing pump station building. This will required the new wall/column and the footing of the separate building structure adjacent to the west property line to be place in the existing 4.27'± yard setback down to the bottom of the existing pump room foundation slab about 24'± below the existing ground floor control room as shown on **Figure 3-1**. A City waiver from the LUO for this further encroachment into the west yard setback will be required and is unlikely to be granted.

Construction of the new wall and footing in the 4.27' wide by 24' deep west yard setback will be very difficult and expensive. The existing 8" CMU wall will need to be demolished and removed. Sheet piles must be placed and driven down along the west property line and below the new footing depth to retain earth from the adjacent property during excavation. Excavating in the narrow 4.27' by 24' section by hand will be required. Dewatering of the excavation will be necessary. Construction of the formwork and placement of rebars and concrete in the tight space will be difficult and constrained. To complicate the construction, an existing drainage easement with a 69-inch drain pipe resides along the west property line in the adjacent lot. Construction of the wall/column and footing will be time consuming and dangerous.

Alternative 5 was removed from consideration due to the above analysis and evaluation.

3.7 Recommended Alternative

Although a waiver for the front and side yard setback requirement of the LUO must be obtained from City DPP, Alternative 3 New South End Generator Room and Underground Flow Tube Room with a new entrance room was the only viable alternative for the required emergency power generator system and was recommended for the Heeia WWPS Improvements project.



HEEIA WWPS SECTION LOOKING SOUTH FOR ALTERNATIVE 5: NEW GENERATOR BUILDING OVER EXISTING PUMP STATION BUILDING

SCALE: 1/8"=1'-0"

GRAPHIC SCALE:

8' 4' 0 8' 16'

1/8" = 1'-0'

HEEIA WWPS ENVIRONMENTAL ASSESSMENT	
ALTERNATIVE 5 FOR NEW GENERATOR BUILDING	FIGURE 3-1

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The existing surrounding environment in the vicinity of the project site is discussed in this chapter. The probable environmental impacts associated with the construction and operation of the Heeia WWPS Improvements are discussed; and mitigative measures are identified, if necessary.

4.1 Physical Environment

This section describes the existing physical environment and resources present in the vicinity of the project site.

4.1.1 Climate

The climate of the State of Hawaii is relatively moderate throughout the island chain. Oahu's temperatures have small seasonal variation such that the temperature range averages only 7 degrees between the warmest months (August and September) and the coolest months (January and February) and about 12 degrees between day and night. The Heeia and Kaneohe area are generally warm and dry with average temperatures ranging from 65 degrees to 85 degrees Fahrenheit throughout the year.

Winds are predominantly "trade winds" from the east-northeast except for occasional periods when "Kona" storms may generate strong winds from the south or when the trade winds are weak and land breeze to sea breeze circulations develop. Wind speeds vary between about 5 and 15 miles per hour providing relatively good ventilation much of the time.

The Heeia and Kaneohe area has a tropical climate with average annual rainfall of about 30 to 50 inches along the coastline. Monthly rainfall averages about 5 inches throughout most of the year. Most of the rainfall occurs during winter storms usually taking place from October to April.

4.1.2 Topography and Soils

4.1.2.1 Existing Topography

Topographic survey and mapping were conducted by ControlPoint Surveying, Inc. to document existing conditions at the Heeia WWPS Improvements site. The odd-shaped pump station lot is 4,408 square feet and is approximately 70 feet across at its widest point and 87 feet long along its longest side. The lot varies in elevation from 4 to 10.5 feet above mean sea level. The ground slopes upward in the north to south direction. The main facilities in the site are the pump station building, wet well, underground flow tube box, driveway, and underground 550-gallon diesel fuel tank. The above-ground existing facilities of the site include palm trees, gravel areas, asphalt concrete pavement, curb, gutters and sidewalk, utility equipment, chain link fence, and

vegetation. Other topographic features such as the sewer, water, telephone, and electric facilities are located underground on site and within City road rights-of-way.

4.1.2.2 Existing Subsurface Conditions

Geolabs, Inc. explored the subsurface conditions at the Heeia WWPS by drilling and sampling two borings designated as Boring B-1 and Boring B-2 extending to depths of about 51.5 feet and 16.5, respectively, below the existing ground surface.

The field exploration generally encountered 10 feet of dense/stiff surface fills overlying loose sand and boulders extending to approximately 17 feet below the existing ground surface. This was underlain by stiff alluvial deposits to about 40 feet over dense gravel to the maximum depth drilled of approximately 51.5 feet below the existing ground surface. In Boring B-1, boulder and cobles were encountered at a depth of about 14.5 feet and extended to a depth of about 17.5 feet below ground surface.

Groundwater was encountered in the borings drilled at depths ranging from about 11.3 to 12.4 feet below the existing ground surface at the time of the field exploration. The groundwater levels encountered in the borings generally correspond to about Elevations -2.3 to -1.9 feet mean sea level. Due to the proximity of the WWPS site to Kaneohe Bay, water levels are expected to vary with tidal fluctuations and storm surge conditions. It should be noted that water levels also may vary with seasonal rainfall, time of the year, and other factors.

4.1.2.3 Probable Impacts from Construction Activity and Mitigative Measures

The Heeia WWPS Improvements Heeia WWPS Improvements involve some land-disturbing activities for the rehabilitation, replacement and expansion of existing facilities and equipment. Excavation, trenching, and some grading and related construction activities will occur. Sheet piles and micropiles will be installed. However, such construction activities will be minimal, of a short-term nature, and limited to the existing Heeia WWPS and its frontage area on Yacht Club Street.

It is expected that excavation activities will require dewatering. Thus, excavation activities could result in silt from dewatering to enter Kaneohe Bay and have some short-term impact on water quality. Best management practices (BMP) will be considered and incorporated into plans to address potential short-term impacts from dewatering and will be implemented by the Contractor to minimize impacts on the coastal waters.

Construction dewatering will also require coverage under the NPDES Permit system. Therefore, impacts of dewatering on coastal waters and water quality should be minimal or minor because the Contractor will be required to comply with permit conditions and employ approved measures to minimize the effects of dewatering of silt from trenching activities.

Other typical short-term impacts associated with construction-related activities are not expected to have a significant impact on the surrounding environment. Such impacts typically involve dust, noise, odors, and traffic disturbances along surrounding roadways. Fugitive dust is expected to be minimal because construction activities will involve relatively minor grading and excavation activities. Construction noise should not have a significant impact on noise sensitive resources such as schools and residences due to the limited construction activity occurring as discussed in **Subsection 4.1.5 Noise** of this document. Traffic disturbances on surrounding roadways should be minimal and short-term. A traffic control plan will be prepared and implemented as discussed in **Subsection 4.4.5 Transportation Facilities** of this document.

Both temporary and permanent erosion and sediment control measures and BMP will be considered during the project's design for implementation as appropriate. Some typical erosion control measures and BMP that will be considered for implementation include the use of silt fences and detention basins to slow runoff and retain sediment and the application of various soil stabilization and protection materials. Dust control measures which could be considered include the implementation of a watering program to minimize soil loss from fugitive dust particle emissions. Other measures include good construction management practices at the job-site and the paving or planting of bare earth areas as soon as practicable. Necessary measures will be developed during the project's design phase and coordinated with appropriate government agencies for review.

Necessary permits from the City will be obtained which will include the preparation of plans subject to City review and approval for implementation. In addition, construction activities will comply with pertinent Administrative Rules of the State DOH such as Title 11, Chapter 46 (Community Noise Control), Chapter 54 (Water Quality Standards, Chapter 55 (Water Pollution Control), and Chapter 60 (Air Pollution Control). These measures will mitigate short-term impacts of construction activities on the adjacent environment. No long-term impacts on the surrounding environment will occur due to construction activities.

4.1.3 Natural Hazards

Of the potential natural hazards, only earthquakes, hurricane, and flood hazards are applicable. These natural hazards are addressed below. There are no other potential urban-related hazards applicable to the project site such as airport clear zones, nuisances, or hazardous waste issues associated with this project.

4.1.3.1 Earthquake Hazard

Earthquakes in the Hawaiian Islands are primarily associated with volcanic eruptions resulting from the inflation or shrinkage of magma reservoirs beneath which shift segments of the volcano. Oahu is periodically subject to episodes of seismic activity of varying intensity. Available historical data indicates that the number of major earthquakes occurring on Oahu have generally been less and of lower magnitude

compared with other islands such as Maui and Hawaii. However, earthquakes cannot be predicted with any degree of certainty or avoided; and an earthquake of sufficient magnitude (greater than 5 on the Richter Scale) may cause damage to the existing wastewater system.

Although the possibility of earthquakes on Oahu have been lower than other islands, potential damage to constructed wastewater facilities may occur from an earthquake of sufficient magnitude. However, damages to these facilities will be minimized by following appropriate City Building Code requirements. Thus, the risk of potential damage to the Heeia WWPS Improvements from earthquakes will not be more than other existing land uses or infrastructure facilities on the island of Oahu.

4.1.3.2 Hurricane Hazard

A hurricane of significant strength and high winds passing close to the island of Oahu could cause damages to the Heeia WWPS. However, the potential for damages to this facility would be less than that for residences and buildings in other urbanized areas of Heeia and Kaneohe. The majority of facilities associated with the Heeia WWPS Improvements are located underground making them less susceptible to damage from high winds.

To minimize potential damages, the improvements will be designed and constructed in conformance to applicable City Building Code and wastewater system design standards. Thus, the risk of potential damage from high winds should not be more than for other existing wastewater system developments in the Heeia and Kaneohe areas.

4.1.3.3 Flood Hazard

The residential area of the Heeia WWPS Improvements site fall within Zone X which is outside of the 100-year Special Flood Hazard Area as designated on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency. Zone X is defined as areas outside the 0.2% annual chance flood plain. It is also outside of the tsunami inundation area.

Proposed facilities and structures will be designed and constructed in compliance with City Building Code requirements for structures within flood Zone X. Consequently, the project is not expected to be affected by flood or tsunami inundation or change in the existing topography or drainage conditions of the area increasing potential flood areas.

4.1.4 Air Quality

4.1.4.1 Existing Air Quality

Air quality in Hawaii is generally characterized as “relatively clean and low in pollution.” At the Heeia and Kaneohe area of windward side of Oahu, northeast tradewinds that

are predominant throughout the year typically carry emissions and other air pollutants from the ocean area inland toward the Koolau mountains.

Air Quality Standards (AQS) applicable to the Heeia and Kaneohe area are set by the State DOH and the U.S. Environmental Protections Agency (EPA). The State DOH generally sets the AQS at a more stringent level than national standards. Established stations that monitor compliance with the AQS are located in a number of areas on the leeward side of Oahu. Since air quality is relatively clean and low in pollution on the windward side of Oahu, monitoring station are not located in the windward area.

The AQS for particulate matter, carbon monoxide, and ozone have been exceeded in the Honolulu area in recent years. The Heeia and Kaneohe area is occasionally susceptible to periods of lower air quality when tradewinds give way to southerly “kona” winds. Localized problems of poor air quality generally occur along the heavily traveled transportation corridors such as Kamehameha Highway.

4.1.4.2 Probable Impacts and Mitigative Measures

Potential short-term and temporary impacts to air quality may occur from dust emissions and odors from open force main and manhole during construction of the Heeia WWPS Improvements. Exhaust emissions from construction equipment may also temporarily affect ambient air quality. However, these impacts will be short-term and should not result in a significant impact or exceed State ambient air quality standards. Construction activities will be temporary and will comply with government regulations concerning construction activities.

In keeping with State DOH and City rules (HAR Chapter 11-59, “Ambient Air Quality Standards” and Chapter 11-60.1, “Air Pollution Control”), dust control measures will be implemented during construction to control airborne particulate matter. The use of approved erosion control plans and mitigative methods such as water sprinkling will reduce potentially adverse air quality impacts. Wet cutting or dry cutting with other dust control measures will be used when saw-cutting asphaltic concrete pavements.

Construction scheduling combined with dust control measures will be implemented to minimize air quality impacts such that the least number of residents are affected by work activities. Engine exhaust emissions from construction vehicles will be minimized via the proper operation and maintenance of all equipment to further limit potential air quality impacts. Impacts from slow moving construction vehicles will be mitigated by scheduling slow-moving vehicular travel during periods of low traffic volume on the affected streets and highways.

Odors may impact area residents when the new wastewater piping is connected to the existing force main at the Heeia WWPS. The impact will be minimal since the wastewater system will be shut down during connections. Other odor control measures will be implemented in conformance with DOH regulations.

4.1.5 Noise

4.1.5.1 Existing Noise

The Heeia WWPS site is situated within a residential zone district (Class A). Under the State DOH Community Noise Control regulations (Title 11, Chapter 46, HAR), the maximum permissible sound levels for construction activities is 55 dBA during daytime (7:00 a.m. to 10:00 p.m.) hours and 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). These levels may not be exceeded at or beyond the property line for more than 10 percent of any continuous 20-minute period. Paragraph 4.1.5 of the Draft EA discusses the impacts of the proposed 125 Kw generator and actions to be implemented to attenuate noise from the generator room to comply with DOH regulations.

Existing noise levels at the Heeia WWPS site were generally found to be controlled by motor vehicle traffic on Yacht Club Street. Daytime background ambient noise levels ranged from 46 dBA to 53 dBA with an average level of approximately 50 dBA. Nighttime traffic noise levels are estimated to be approximately 10 dBA less than daytime levels. Noise levels at the property line due to the Heeia WWPS Improvements will be less than the DOH maximum allowable levels.

4.1.5.2 Probable Impacts and Mitigative Measures

Construction-related activities for the Heeia WWPS Improvements will temporarily increase ambient noise levels within the vicinity of the work area. Potential noise sources will include construction vehicles, trenching work, equipment used for force main replacement and temporary bypass lines, and other power equipment. Measures to control construction noise will include the use of mufflers on power equipment and vehicles and the implementation of the requirements of the Community Noise Control Permit.

Community Noise Control Permit will be obtained from the State DOH to allow construction activities. Specific permit restrictions for construction activities are:

1. No permit shall allow construction activities creating excessive noise before 7:00 a.m. and after 6:00 p.m. of the same day.

2. No permit shall allow construction activities that create excessive noise before 9:00 a.m. and after 6:00 p.m. on Sundays.

3. No permit shall allow construction activities which exceed the allowable noise levels on Sundays and on holidays.

Construction activities are generally expected to be limited to regular workday hours (8:30 a.m. to 3:30 p.m., Monday through Friday). When connecting to existing pipelines, some nighttime work will be required. Construction activities of the project

shall be in compliance with the requirements of the Community Noise Control Permit and are not expected to result in a significant noise impact on the surrounding environment.

4.1.6 Visual Resources

The proposed improvements to the Heeia WWPS are not expected to have any significant impact on existing views of significance or on important visual resources. There are no existing viewing points for the public on the WWPS site and the property is surrounded by other existing residential homes. There are no important visual resources present on this property either.

Construction of the Heeia WWPS Improvements is expected to have a minimal or no effect on visual resources or public viewing points. The proposed generator room is expected to be the only additional aboveground structure added to the WWPS property. This improvement will not interrupt existing viewing areas or scenic points in the Heeia and Kaneohe area. Thus, there are no visual resources affected by this improvement.

4.1.7 Historic, Archaeological, and Cultural Resources

4.1.7.1 Historic Assessment

The immediate area associated with the Heeia WWPS is currently urbanized consisting primarily of roadways and homes. Consequently, there are no known historic, archeological or cultural resources situated within the project site and surrounding area which would be affected by the Heeia WWPS Improvements.

According to the Cultural Impact Assessments (CIA) for the project prepared by Cultural Surveys Hawaii, Inc. a Japanese fishing community known as Kinimura Camp was located on the current project area in the early 1900s, and the fishermen accessed the freshwater spring there. The spring sand material remnants of this distinctive ethnic community (e.g., artifacts) may remain intact underground and could potentially be disrupted through ground-disturbing activities. In addition, the close proximity of the O'ohope Fishpond adjacent to the project area suggests that material remains of this site (e.g. pohaku or rocks) and artifacts of cultural activities (e.g. fishhooks) could also remain solidly intact underground and be disturbed through construction-related activities.

Should historic, cultural or burial sites or artifacts be identified during ground disturbance, the Contractor will be required to immediately cease all work and the appropriate agencies notified pursuant to applicable law.

4.1.7.2 Archaeological Assessment

There is the potential for encountering archaeological deposits or human burials within the Heeia WWPS Improvements site due to the type of subsurface work planned.

To minimize any impacts on the uncovering of potential historic archaeological deposits, human burials, iwi kūpuna, or other archeological significant features or cultural artifacts associated with this project, an archeological monitoring plan will be developed during the plans preparation phase in consultation with the SHPD. In addition, an archaeological monitor will be hired to halt construction, identify any historic or archaeological sites, document them, and consult with SHPD on significance evaluations and mitigation treatment. By developing an acceptable archaeological monitoring plan accepted by SHPD for implementation, the proposed Heeia WWPS Improvements project will have no adverse effect on significant historic and archeological sites which may potentially be within the subsurface area of the project site.

4.1.7.3 Cultural Assessment

The project is not expected to adversely impact traditional native Hawaiian or other ethnic groups cultural practices customarily and traditionally exercised for subsistence, cultural, or cultural religious practices according to CIA. There are no known traditional cultural practices occurring within the existing rights-of-way of Yacht Club Street and Yacht Club Place affected by the project. Such areas are used as travel way for vehicles. The Heeia WWPS site owned by the City has been used for the WWPS for over 47 years and is located in a residential neighborhood. There are no known traditional native Hawaiian or other ethnic groups cultural practices occurring on this property.

The project will not restrict access to surrounding areas which may be used for traditional native Hawaiian or other ethnic groups cultural practices. Construction activities will result in temporary street lane closures. However, this will not prevent access to shoreline areas or other potential cultural resources in the surrounding area that may be used for traditional gathering or other cultural practices.

The land disturbing activities and open trench work necessary for the Heeia WWPS Improvements may uncover cultural deposits or possible burials during construction work. Should historic, cultural, or burial sites, or artifacts be identified during ground disturbance, work will cease and the appropriate agencies notified pursuant to applicable laws.

4.2 Biological Environment

4.2.1 Botanical Resources

Vegetation within the Heeia WWPS site consists primarily of grass and weeds with palm trees. There are no botanical resources associated with the project.

None of the observed vegetation within the WWPS site or within the affected road rights-of-way are known to be Federal- or State-listed threatened or endangered, or

candidate threatened or endangered species. Seven (7) palm trees existing within the Heeia WWPS site will be replanted elsewhere on the site as a result of the construction of the improvements. Construction of the Heeia WWPS Improvements is not expected to have a significant impact on botanical resources.

4.2.2 Avifauna and Fauna Resources

The Heeia WWPS provides no critical habitat for threatened, endangered, or candidate fauna species according to the Department of the Interior Fish and Wildlife Service (FWS). Wildlife within the Heeia Kaneohe residential area generally consists of insects, birds, mammals, reptiles and amphibians that were introduced or indigenous species that are commonly found in urban environments (i.e., mongooses, rats, mice, cats, etc.). However, the FWS did note that federal data indicate the federally endangered Hawaiian hoary bat (Lasiurus cinereus semotus) and the threatened Newell's shearwater (Puffinus auricularis newelli) may transit through the vicinity of the project area. To minimize impacts to the endangered Hawaiian hoary bat, woody plants within or in the vicinity of the project site greater than 15 feet tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season between June 1 and September 15. In addition, to minimize impacts to the Newell's shearwater, all outdoor lights should be fully shielded so the bulb can only be seen from below bulb height and nighttime construction should be avoided during the seabird fledging period of September 15 to December 15. Consequently, construction of the Heeia WWPS Improvements is expected to result in no significant impacts to important faunal populations or resources with the incorporation of these preventative measures.

4.2.3 Hydrogeological Resources

4.2.3.1 Existing Hydrogeological Resources

Groundwater within the general project area exists primarily as basal water floating on salt water; coastal areas may exhibit some basal water in sediments. Rainfall is a primary source of groundwater recharge. The high groundwater level at the Heeia WWPS site is 3.0 feet above msl taking into consideration tidal fluctuations.

The coastal waters of the adjacent to Kaneohe Bay are of high quality because disposal of municipal, agricultural, and industrial wastes have been much improved or eliminated by land treatment and water-reuse practices. Coastal waters in the vicinity of the project area are designated as Class AA waters and their use for recreational purposes and aesthetic enjoyment is protected by treatment or control compatible with the criteria established for this class according to State DOH, HAR 11-54, Water Quality Standards.

4.2.3.2 Probable Impacts and Mitigative Measures

The replanting of 7 palm trees and of Bermuda grass surface within the fenced Heeia WWPS site with rock fill and the trenching, excavation, and dewatering for the construction of the Heeia WWPS Improvements is expected to have minimal impact on

the surrounding groundwater system. The replanting, trenching, excavation, and dewatering for the construction should not change the amount of localized groundwater recharge occurring at the project site and is expected to have negligible and ultimately inconsequential impact to the overall function of the area's natural hydrological system. Rock fill surface created as a result of the project will create only minimal decrease of localized runoff and will increase the total time of concentration.

Impacts to coastal resources and water quality are also expected to be minor since the proposed Heeia WWPS Improvements is expected to eliminate wastewater spills from leaks and improve the reliability of the WWPS. There should be a reduction in wastewater spills during periods of heavy rainfall and an improvement to the water quality of the surrounding coastal waters.

Construction of the Heeia WWPS Improvements could result in short-term impacts on coastal resources and water quality resulting from silt runoff. It is expected that the construction activities such as trenching and excavation may also require dewatering. Thus, these construction activities could result in localized silt runoff that has a potential to enter coastal waters having some short-term impact on water quality. However, best management practices (BMP) as discussed in **Subsection 4.1.2.3 Probable Impacts from Construction Activity and Mitigative Measures** of this document will be incorporated into design plans and will be implemented by the Contractor to minimize the impacts of silt runoff on coastal waters.

In addition, plans will be reviewed by pertinent government agencies for comments and approval prior to construction. Construction dewatering will also require coverage under the NPDES Permit system. Therefore, impacts on coastal waters and water quality will be minimal or minor and short-term because the Contractor will employ approved measures to prevent silt runoff from construction areas along with complying with other permit conditions.

4.3 Economic, Fiscal, and Social Factors

This section discusses the project's probable impact on economic, fiscal and social factors. Due to the nature of improvements proposed for the Heeia WWPS Improvements, impacts will primarily be associated with construction-related activities.

4.3.1 Economic and Fiscal Factors

The estimated cost for the construction of the Heeia WWPS Improvements work discussed in this Draft EA is $4,000,000. This construction project will create construction jobs over the anticipated one-year construction period.

Construction jobs will typically consist of on-site laborers, tradesmen, equipment operators, supervisors, etc. These jobs will generate personal income for construction workers. Personal income is defined as the wages paid to the direct construction workers or operational employees associated with a development. Direct construction

jobs created will also stimulate indirect and induced employment within other industries on Oahu.

Fiscal impacts associated with this project would primarily involve slightly additional tax revenue generated to the State. Tax revenue sources for State government will be composed primarily of general excise taxes (GET) on development costs and construction materials, and corporate income tax. In addition, GET taxes on indirect and induced income spent stimulated by the spending of direct income will also contribute new revenues to the State. The approximately $4,000,000 expended for the Heeia WWPS Improvements construction activities will therefore generate some increased tax revenue to the State.

Since City revenues are primarily limited to property tax revenues, there will be minimal changes to the City revenues. The improvements planned for the Heeia WWPS Improvements property will contribute to property value; however, this increase is expected to be minimal. No changes to the property values or existing surrounding residences are anticipated from the construction of the Heeia WWPS Improvements to the project. The project will not generate any new in-migrant residents to the island of Oahu. Thus, there will not be any effect on State and County operational expenditures for public services.

4.3.2 Social Factors

The improvements planned to the Heeia WWPS by the project modifications are not expected to change the existing resident population in Heeia or the Koolaupoko district. The project is a City initiated wastewater system modification project. There are no new residential units or visitor units associated with this project. Thus, the project should result in no in-migration of individuals to reside within the City. As a result, there should be no impact on the existing resident population.

The Heeia WWPS Improvements will also not change or alter the character of the Heeia residential community or the character of the Koolaupoko district. The Heeia WWPS site already exists and will only have minor structural additions to the site. A new building addition will be provided aboveground. The fuel storage tank will be increased in size from 550 to 1,000 gallons and will be located underground on this site. Consequently, this project will not change existing uses in the surrounding area or have a significant impact on surrounding urbanized land uses.

4.4 Infrastructure Facilities

This section discusses the Heeia WWPS Improvements probable impact on infrastructure facilities serving the project site and surrounding area. Due to the nature of modifications proposed for the project, most of the impacts will be associated with construction-related activities.

4.4.1 Water Facilities

The Honolulu Board of Water Supply (BWS) provides potable water to the Heeia WWPS site via an 8-inch water main on Yacht Club Street. A 2-1/2 inch water lateral with a 2-inch water meter provides water to the WWPS site. The 2-1/2 inch water lateral is sufficient for the water usage of the WWPS required by the Heeia WWPS Improvements. No changes of the existing BWS water supply facilities will be required for the project.

4.4.2 Wastewater Facilities

The Heeia WWPS Improvements is intended to improve the existing Heeia WWPS serving Heeia. As a result, this project will have a positive impact in reducing the potential for future wastewater spills during heavy rains or severe storms. The project will create a reduction of chlorides that will have a positive impact on wastewater treatment reuse opportunities. The Heeia WWPS Improvements will improve the operation and reliability of the existing WWPS.

4.4.3 Drainage Facilities

Provisions for drainage within the project area generally follow roadway alignments and flow towards the ocean. In the offsite vicinity south (mauka) of the Heeia WWPS, drainage is directed to several storm drains along Yacht Club Street and flow eastward and discharges to Kaneohe Bay. Onsite drainage flows northward (makai) and discharges into the adjacent residential property.

The Heeia WWPS Improvements will have minimal impact on the existing drainage system serving this area. Rock fill and paved area created on the WWPS property will increase the amount of impervious surface on the parcel. However, this increase will be minimal and should have negligible effect on existing runoff quantities from this property. Existing drainage facilities serving this project site will be adequate for the Heeia WWPS Improvements. It will not require any drainage improvements due to construction of the project.

4.4.4 Solid Waste Facilities

Solid waste collection for the Heeia area is provided by the City ENV. Waste is transported to the Campbell Industrial Park H-Power energy recovery incinerator.

Construction of the Heeia WWPS Improvements will generate some solid waste typical of this type of construction-related activity. The volume of solid waste generated is expected to be minimal due to the small area being affected at the Heeia WWPS site. Construction-related solid wastes generated will be a short-term impact and consist primarily of vegetation, demolished concrete, rocks, and other debris created from clearing, excavation, and grading activities. The Contractor will be required to properly

dispose of all debris generated from construction in conformance with City and State regulations.

4.4.5 Transportation Facilities

Yacht Club Street provides the only vehicular access to the Heeia WWPS site. Heavier traffic volumes occur during peak travel periods such as weekday mornings and afternoons along these streets. Traffic within the immediate vicinity of the Heeia WWPS site is mostly limited to area residents since Yacht Club Street is a local traffic street. Low traffic volumes generally occur in this area during the non-peak hours.

Traffic on and adjacent to Yacht Club Street will be adversely impacted by construction activities and the presence of construction equipment. The City street will experience periodic disruptions to traffic flow like lane closures and street parking will be restricted. Kamehameha Highway and Lilipuna Road traffic will not be disrupted by construction activities.

Traffic control plans (TCP) and specifications will be prepared by a licensed professional engineer to minimize disruptions to normal traffic by construction activities. The TCP will be required to comply with all rules, regulations, and instructions of the City and State to mitigate traffic impacts. The TCP will be submitted to and approved by the City for street usage permit and implemented by the Contractor during construction. Appropriate signs and barriers will be erected and at least one lane will remain open during workday hours of 8:30 a.m. to 3:30 p.m. There will be no traffic detours. After working hours, trenches will be covered with a non-skid bridging material, and all lanes will be opened to traffic. Off-duty police officers may be required for traffic control. Driveways will be kept open. Provisions for pedestrian traffic will allow safe passage around any closed walkways.

The Kaneohe Neighborhood Board (NB) No. 30 will be notified and kept apprised of the nature of work, construction schedule, lane closures, expected length of time of inconveniences, any restrictions which may be imposed to complete the work, and the Contractor's phone number to be called to report traffic concerns.

Construction of the Heeia WWPS Improvements will have short-term and temporary impacts to traffic due to the movement of slow-moving, heavy construction vehicles and equipment. Completion of the proposed modifications and construction action are not expected to generate long-term traffic impacts.

4.5 Public Facilities and Utilities

This section discusses the Heeia WWPS Improvements probable impact on public facilities and utilities serving the project site and surrounding area. Due to the nature of improvements proposed for the Heeia WWPS Improvements, impacts will primarily be temporary and associated with construction-related activities.

4.5.1 Electrical and Communication Facilities

Construction of the Heeia WWPS Improvements is not expected to have significant impact on Hawaiian Electric Company's existing electrical facilities and its ability to provide electricity. Minor shirt-term impacts on the HECO electrical facilities will be impacted when new electrical components are provided for the WWPS. In addition, Hawaiian Telcom's existing telecommunication facilities and Oceanic Time Warner Cable's existing cable television facilities will not be affected by this project. Appropriate coordination with these utility companies will be conducted during the design and construction to minimize disruptions to their services or activities.

4.5.2 Educational Facilities

There are no educational facilities in the immediate vicinity of the Heeia WWPS site. The nearest schools in the area are King Intermediate School located about 1/2 mile away and Heeia Elementary and Parker Elementary Schools located about 3/4 mile away. The only potential impact on these schools from the project would be associated with short-term construction-related activities. Since the schools are located a considerable distance away from the project site, the construction of the Heeia WWPS Improvements will have no impact on the schools.

4.5.3 Police and Fire Protection Facilities

The construction of the Heeia WWPS Improvements is expected to have only minimal or minor short-term impact on the police and fire departments' operation. However, such impacts are not expected to affect their ability to provide adequate protection services to the Heeia community and Kaneohe area.

Police staff may be hired to assist in directing traffic during construction activities. There is also the possibility of some complaints to the Honolulu Police Department (HPD) from residents over dust and noise from construction activities. However, the Contractor will be required to comply with applicable regulations and permit conditions governing construction activities to minimize disruptions to nearby residents. Best management practices will also be implemented to minimize dust, erosion, and other nuisances from short-term construction activities. The project will have minimal impact on the HPD's ability to provide protective services in the project area.

Fire apparatus access will be provided throughout the construction site for all phases of this project. Access to fire hydrants will be maintained. The Fire Communication Center at 523-4411 will be notified by the Contractor of any interruption to the existing fire hydrant system during construction activities. Thus, construction activities associated with the project will have minimal impact on the Honolulu Fire Department (HFD) operations or ability to provide protective services. In addition, appropriate coordination will be performed during the design of this project which will include submitting construction plans of the generator and 1,000 gallon diesel fuel tank for HPD

review. A permit will be obtained from the HFD prior to installation of the new underground diesel fuel tank.

4.5.4 Recreational Facilities

Recreational facilities located in the vicinity of the Heeia WWPS improvement site include the Alii Shores Yacht Club Park.

Construction activities associated with this project are not expected to result in a significant impact on this recreational facility nor severely disrupt existing recreational activities from occurring. Construction activities will not involve the use of this facility or impede existing activities conducted there. Design of the project will include developing appropriate erosion control plans and best management practices to minimize silt from construction, dewatering and storm runoff from entering Kaneohe Bay. Such plans developed will be reviewed and approved by appropriate government agencies. Thus, implementation of such plans will provide sufficient measures to minimize impacts on these recreational facilities.

4.5.5 Medical Facilities

There are no medical facilities located in the immediate vicinity of the Heeia WWPS Improvements site. Consequently, short-term construction activities associated with the project will have no impact on medical facilities or activities.

5. CONFORMANCE WITH PLANS AND POLICIES

This chapter discusses the proposed project's conformance with the State Land Use District regulations and pertinent objectives and policies of the City's General Plan and City Zoning Districts.

5.1 Hawaii State Plan

The Hawaii State Plan (Chapter 205, Hawaii Revised Statutes) identifies the overall theme, goals, objectives, and policies for the State of Hawaii and provides guidelines for the future of long-range development within the State. The proposed project is compliant with the Hawaii State Plan by reducing the risk of sewage spills, thus improving stream and coastal water quality. Also in alignment with the Plan, the proposed project will meet the needs of Kaneohe residents while protecting environmental and cultural resources.

The most relevant sections and objectives of the Hawaii State Plan related to the proposed project are listed below:

- §226-13 Objectives and policies for the physical environment—land, air, and water quality.
  - (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:
    - (1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.
  - (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:
    - (2) Promote the proper management of Hawaii's land and water resources.
    - (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.
- §226-14 Objective and policies for facility systems--in general.
  - (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.
  - (b) To achieve the general facility systems objective, it shall be the policy of this State to:
    - (1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.
    - (2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
    - (3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

- §226-15 Objectives and policies for facility systems--solid and liquid wastes.
  (a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:
    (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.
    (2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.
  (b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:
    (1) Encourage the adequate development of sewerage facilities that complement planned growth.

5.2 State Land Use District

The State Land Use Law (Chapter 205, Hawaii Revised Statutes) was adopted in 1961 to establish an overall framework of land use management in the State of Hawaii. All land in the State is classified into one of four land use districts: Urban, Rural, Agricultural, or Conservation.

The Heeia WWPS Improvement site and surrounding residential areas are classified as Urban on the State's Land Use District Boundary Map. Urban District permits activities or uses as provided by ordinances or regulations of the county within which the Urban District is situated. Thus, the Heeia WWPS Improvements are regulated by the ordinances and regulations of the City.

A Conservation District Use Permit is not required because the project area is in an Urban District.

5.3 Land Use Ordinance and Zoning

The Heeia WWPS property is zoned R7.5 Residential along with the surrounding residential properties. See **Figure 1-1**. The City Land Use Ordinance permits the use of R7.5 zoned lands for public facilities such as wastewater pump stations.

The LUO minimum front yard setback of R7.5 zone for dwelling is 10 feet and for other uses 30 feet; and the minimum side and rear yard setback of R7.5 zone dwelling is 5 feet and for other uses is 15 feet. The Heeia WWPS Improvements building addition will have a minimum front yard proposed new yard of about 13 feet and west side yard addition of about 5 feet; and will encroach on the yard setback permitted for other uses in the Development Standards of the LUO. The proposed new building addition will be within the yard limits for dwellings of R7.5 zone.

The Heeia WWPS Improvement project must obtain a waiver from the front and side yards setback requirement of the LUO from the City Department of Planning and

Permitting. The waiver should be obtained by DPP since the yards will be within the limits for dwellings in the R7.5 zone neighborhood and will not adversely impact the environment. Note that the pump station lot meets the yard setback requirements for dwelling, but not for other uses.

5.4 Hawaii Coastal Zone Management Program

The Hawaii Coastal Zone Management (CZM) Program coordinates federal, state, and county agencies in the management of Hawaii's coastal resources and provides "for the effective management, beneficial use, protection, and development of the coastal zone." The State Office of Planning oversees the Hawaii CZM Program.

The following **Recreational Resources** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Provide coastal recreational opportunities accessible to the public.
- Policy A: Improve coordination and funding of coastal recreational planning and management; and
- Policy B: Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
  - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
  - (ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
  - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
  - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
  - (v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
  - (vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
  - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
  - (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Construction of the proposed project will be confined within the Heeia WWPS property and existing City roads. BMPs will assist to maintain water quality during the construction phase. No adverse impacts to existing coastal recreational resources and recreational facilities are expected prior to construction or after the completion of the project.

The following **Historical Resources** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.
- Policy A: Identify and analyze significant archaeological resources;
- Policy B: Maximize information retention through preservation of remains and artifacts or salvage operations; and
- Policy C: Support state goals for protection, restoration, interpretation, and display of historic resources.

A cultural impact assessment was performed to evaluate the historic and cultural resources in the surrounding area. BMPs and archaeological monitoring measures will be employed to protect these historic and cultural resources.

The following **Scenic and Open Space Resources** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.
- Policy A: Identify valued scenic resources in the coastal zone management area;
- Policy B: Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- Policy C: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- Policy D: Encourage those developments that are not coastal dependent to locate in inland areas.

Construction of the proposed project is not expected to obstruct present views or affect the quality of the existing coastal scenic and open space resources. The proposed project will minimize the risk of wastewater spills, and thus help protect coastal resources.

The following **Coastal Ecosystem** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

- Policy A: Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- Policy B: Improve the technical basis for natural resource management;
- Policy C: Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- Policy D: Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- Policy E: Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

The proposed project is upland of the shoreline, and no direct or adverse impacts to existing coastal ecosystems is anticipated. The potential reduction in sewage spills from this project may benefit coastal ecosystems.

The following **Economic Uses** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Provide public or private facilities and improvements important to the State's economy in suitable locations.
- Policy A: Concentrate coastal dependent development in appropriate areas;
- Policy B: Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- Policy C: Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
  - (i) Use of presently designated locations is not feasible;
  - (ii) Adverse environmental effects are minimized; and
  - (iii) The development is important to the State's economy.

The proposed project will provide improvements important to the State’s economy. Jobs created during construction will benefit the State’s economy in the short-term, and the potential reduction in sewage spills from this project will allow the City to retain economic resources.

The following **Coastal Hazards** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

- Policy A: Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- Policy B: Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;
- Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
- Policy D: Prevent coastal flooding from inland projects.

The proposed project has a low likelihood of being impacted by coastal hazards, such as tsunami inundation, storm waves, stream flooding, and coastal erosion, subsidence, or pollution. In addition, measures will be included to keep the pump station operational during local flooding and emergency conditions.

The following **Managing Development** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are discussed in relation to the proposed project:

- Objective A: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- Policy A: Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- Policy B: Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and
- Policy C: Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

The proposed project site is within the City's Special Management Area, and thus is under regulation by the City and County of Honolulu. This environmental assessment evaluates mitigation measures to address anticipated project impacts. The proposed project will not interfere with the development review process, communication, and public participation in the management of coastal resources and hazards. The final environmental assessment will be available for public review.

The following **Public Participation** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are relevant to the discussed in relation project:

- Objective A: Stimulate public awareness, education, and participation in coastal management.
- Policy A: Promote public involvement in coastal zone management processes;
- Policy B: Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for

persons and organizations concerned with coastal issues, developments, and government activities; and
- Policy C: Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Public participation is encouraged in the proposed project through neighborhood board meetings and contact with the Department of Environmental Services staff.

The following **Beach Protection** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are relevant to the discussed in relation project:

- Objective A: Protect beaches for public use and recreation.
- Policy A: Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
- Policy B: Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
- Policy C: Minimize the construction of public erosion-protection structures seaward of the shoreline.

The proposed project is not located near public beaches. No direct or adverse impacts to nearby public beaches is anticipated. The potential reduction in sewage spills from this project may benefit area beaches.

The following **Marine Resources** objectives and policies from the Hawaii Revised Statutes §205A-2 Coastal Zone Management Program are relevant to the discussed in relation project:

- Objective A: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.
- Policy A: Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- Policy B: Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
- Policy C: Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- Policy D: Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- Policy E: Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

The proposed project is not located within coastal waters and is not anticipated to have direct or adverse impacts to marine resources. Action from the proposed project will not obstruct public efforts to implement the State's ocean resources management plan. The potential reduction in sewage spills from this project may benefit marine resources.

5.4.1 Special Management Area Permit and Shoreline Setback Variance

Chapter 205A of the Hawaii Revised Statutes (HRS) mandates that each county in the State establish land near the shoreline as Special Management Areas (SMA). A review of the City's SMA map for the Heeia WWPS site and immediate surrounding area determined that the City's SMA boundary extends from the Kaneohe Bay shoreline up to the centerline of Lilipuna Road. See **Figure 1-1**. Since the Heeia WWPS site is located makai of Lilipuna Road, it is within the SMA boundary and possibly the shoreline setback area. As a result, the Heeia WWPS Improvements are subject to the City's SMA regulations described in Chapter 25 of the Revised Ordinances of Honolulu (ROH). A SMA use permit may be required from the City DPP for construction of the Heeia WWPS Improvements in the SMA. A shoreline setback variance may also be requested from the City DPP for construction of the improvements in the SMA.

5.5 City and County of Honolulu General Plan

The Heeia WWPS Improvement project will conform to and be consistent with applicable objectives and policies described under the General Plan. The General Plan is a statement of long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of Oahu. It includes statements of both road policies that facilitate the attainment of the objectives of the General Plan and controls and distributes anticipated population growth to avoid social, economic, and environmental disruptions and to allow people to live and work in harmony. Safe, efficient, and environmentally sensitive wastewater system must be provided to meet the needs of the people of Oahu. The General Plan requires that such need be met with careful consideration on the social, economic, and environmental consequences.

5.6 Koolau Poko Sustainable Communities Plan

Kaneohe is part of the Koolau Poko District. The Koolau Poko Sustainable Communities Plan (August 2000) describes the project area as *low density residential land use* and projects limited population growth. The proposed Heeia WWPS project aligns with the Koolau Poko Sustainable Communities Plan to maintain a low-density residential neighborhood that supports moderate population growth and abides with capacity constraints.

The proposed project will address wastewater management policies identified under Wastewater Treatment, Section 4.3.3 General Policies of the Koolau Poko Sustainable Communities Plan. Related policies include:

- **"Direct all wastewater produced within the Urban Community Boundary and Rural Community Boundary to municipal or military sewer service systems."**
  The Heeia WWPS project is part of the City sewer system. The proposed improvements intend to protect against municipal sewer overflows.

- **"Treat and recycle, where feasible, wastewater effluent as a water conservation measure."**
  The project improves the transmission of wastewater to the Kaneohe Pretreatment Facilty, but does not address the treatment of wastewater.

- **"Mitigate visual, noise, and odor impacts associated with wastewater collection and treatment systems, especially when they are located adjacent to residential designated areas."**
  Noise emission will be minimized on site by sound-reducing materials, such as solid walls and acoustical rated metal doors and walls, in the pump station and emergency generator room. Odors generated by the proposed project are not anticipated to affect nearby residential areas.

5.7 Special Districts

The proposed project is not located within any special district as identified in Chapter 21, Article 9 Special District Regulation of the Revised Ordinances of Honolulu: Hawaii Capitol, Diamond Head, Punchbowl, Chinatown, Thomas Square/Honolulu Academy of Arts, Waikiki, and Haleiwa. The City's land use requirements of Sections 21-9.40-1 to -6 and 21-9.80-1 to -9 of the LUO are not applicable to the project.

6. FINDINGS AND DETERMINATION

To determine whether a proposed action may have a significant effect on the environment, the Approving Agency needs to consider every phase of the action, the expected primary and secondary consequences, cumulative effect, and the short- and long-term effects. The Approving Agency's review and evaluation of the proposed actions effect on the environment will result in a determination whether: 1) the action will have a significant effect on the environment, and an Environmental Impact Statement Preparation Notice should be issued, or 2) the action will not have a significant effect warranting a Finding of No Significant Impact.

This chapter discusses the findings of the Draft Environmental Assessment conducted of the proposed Heeia WWPS Improvements project in relation to the 13 Significance Criteria prescribed under the State Department of Health's Administrative Rules Title 11, Chapter 200. The purpose of this assessment is to consider the "significance" of potential environmental effects which includes the sum of effects on the quality of the environment along with the overall and cumulative effects. The findings are discussed below for each criterion.

6.1 Findings

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

The proposed Heeia WWPS Improvements project will not result in the irrevocable commitment to loss or destruction of any natural or cultural resource. As discussed in **Chapter 4 Affected Environment and Environmental Consequences** of this document, the improvements are intended to improve the reliability of the Heeia WWPS. Such improvements will occur on already urbanized areas which include the City's Heeia WWPS property and adjacent Yacht Club Street right-of-way. Thus, there will be no destruction or loss of any significant, endangered, or threatened botanical, faunal, geological, or other natural resources.

There are no known cultural resources nor traditional native Hawaiian or other ethnic groups cultural practices occurring at the Heeia WWPS site or the adjacent road right-of-way. Consequently, the proposed improvements are not expected to have any impact on cultural resources or traditional cultural practices.

In terms of archaeological and historic resources, the Cultural Impact Assessment for the project prepared by Cultural Surveys Hawaii, Inc. indicated that a Japanese fishing community known as Kunimura Camp was located on the current project area in the early 1900s; and the fishermen accessed a freshwater spring there. In addition, the close proximity of the O'ohope Fishpond adjacent to the project area suggests that material remains of this site and artifacts of associated cultural activities could also remain solidly intact underground and be disturbed through construction.

The potential archaeological and historical resources impacts associated with the Heeia WWPS Improvements project were addressed in Chapter 4 of this document, and are mainly associated with construction activities which are temporary and short-term. The Heeia WWPS Improvements project will have no adverse effect to loss or destruction of any natural or traditional native Hawaiian or other ethnic groups traditional or cultural practices or resources which may potentially be within the subsurface area of the project site.

2. Curtails the range of beneficial uses of the environment.

The project will not curtail the range of beneficial uses of the surrounding environment. The Heeia WWPS has been in service for over 49 years. The proposed Heeia WWPS Improvements will not change the existing uses of such lands and roadways. Existing surrounding uses will remain as existing which are for residential homes. The proposed improvements to the existing wastewater system (WWS) will not limit or significantly impact the uses or the surrounding environment.

3. Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

The Heeia WWPS Improvements project will not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders. This Draft EA addresses the probable environmental impacts associated with the improvements which will be primarily associated with short-term construction activities. Consequently, the project will be consistent in conserving natural resources in the area and enhancing the long-term quality of life for residences in Heeia and surrounding area by improving the service quality and reliability of the WWS.

4. Substantially affects the economic or social welfare of the community or State.

As discussed under **Chapter 4** of this document, the project will not have any significant negative impacts on the economic structure of the Kaneohe Heeia Koolaupoko district or the social welfare of the Heeia community. The project will create a short-term minor economic benefit generating construction jobs and personal income. The proposed Heeia WWPS Improvements project is limited to the Heeia WWPS area. As a result, there will be no negative impact or change to the overall character of the Heeia community, Koolaupoko district, or the State.

5. *Substantially affects public health.*

The project is not expected to substantially affect public health since it will involve improvements to the City's existing Heeia WWPS. The proposed Heeia WWPS Improvements project will improve public health by minimizing potential wastewater

spills into Kaneohe Bay due to the failure of pipes by increasing the reliability of the Heeia WWPS.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

The project should not have any secondary impacts on the social environment or infrastructure and public facilities. The project strictly involves improvements to the existing Heeia WWPS. There will not be any elements of the project contributing to in-migration of residents or additional visitors to the island. The proposed Heeia WWPS Improvements project will not impact other existing infrastructure facilities or public facilities in the immediate area.

7. *Involves a substantial degradation of environmental quality.*

The proposed improvements to the Heeia WWPS will not involve a substantial degradation to the quality of the surrounding environment. Improvements to the Heeia WWPS will be limited to the existing property. As a result, construction activities will be performed on already urbanized areas; and necessary measures will be implemented during construction to minimize erosion and other short-term impacts. The project will improve the environmental quality of Kaneohe Bay and surrounding shoreline areas by minimizing future wastewater spills from leaks in the existing Heeia WWPS facility.

8. *Is individually limited, but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

This project only involves the improvements at the Heeia WWPS site as described in **Chapter 2 Project Description** of this document. Impacts associated with the Heeia WWPS Improvements were addressed in **Chapter 4** of this document and are mainly associated with construction activities which are temporary and short-term. Thus, the cumulative impacts of the proposed improvements were considered in assessing environmental impacts, and it was determined that the project will not have a significant effect on the environment. This project does not involve the commitment for larger actions since it is only intended to improve the existing Heeia WWPS.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat.*

There are no known rare, endangered or threatened botanical resources on the Heeia WWPS property, or faunal and avifaunal species inhabiting the area which may be affected by construction activities or the operation of the WWS. Necessary control measures and best management practices will be implemented to minimize runoff and other potential short-term impacts associated with construction activity. Thus, the proposed Heeia WWPS Improvements are not expected to substantially affect rare, threatened, or endangered species or potential habitat for such species.

10. Detrimentally affects air or water quality or ambient noise levels.

The Heeia WWPS Improvements project will not have a detrimentally significant impact on air, water quality, or ambient noise levels. Impacts associated with these factors will be limited to short-term construction activities. However, such impacts are expected to be minor due to the relatively minimal amount of grading and excavation proposed. To further minimize impacts, construction activities, including water quality, noise and dewatering, will be subject to applicable State regulations as discussed under **Chapter 4** of this document.

11. Affects or likely to suffer damage by being located in an environmentally sensitive area such as flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The Heeia WWPS Improvements site is not located within environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area or geologically hazardous areas. Consequently, the proposed Heeia WWPS Improvements will not be affected by such hazards or impact such environmentally sensitive areas. The Heeia WWPS is located within Zone X which is outside of the 100-year flood hazard area as discussed under **Chapter 4** of this document. Since the facilities and structures are not located in an environmentally sensitive area and are expected to be designed and constructed in compliance with the Building Code requirements for structures within flood Zone X, it would not suffer damage from natural hazards as compared to existing residences in the area.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.

The proposed Heeia WWPS Improvements will not affect scenic vistas or viewplanes since they are located in an area that has not been identified by the State and the City as a visual resource. The Heeia WWPS property is owned by the City and public access is restricted to City personnel. The improvements will not impact scenic views.

13. Requires substantial energy consumption.

The proposed Heeia WWPS Improvements will not require substantial energy consumption or increased electrical facilities to serve the Heeia WWPS. The improved Heeia WWPS will require the same power as that it replaces and can be serviced using existing electrical distribution facilities and power generating sources.

6.2 Anticipated Determination

Based upon the discussions of the Heeia WWPS Improvements effect on the environment in relation to the 13 Significance Criteria, it is determined that the improvements planned under this project will not have a significant impact on the

surrounding environment and does not warrant the issuance of an Environmental Impact Statement Preparation Notice.

A Finding of No Significant Impact (FONSI) determination is anticipated for the Heeia WWPS Improvements project based upon the information provided in this Draft EA.

APPENDIX A

Pre-Assessment Consultation

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875. FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

MEMORANDUM

Date: August 2, 2017

To: Project File

From: Howard K. Endo

Subject: Heeia Wastewater Pump Station

1. Pre-assessment letters were sent to agencies, organizations, utilities; and sixteen (16) neighboring or nearby property owners and recorded lessees were consulted notifying them of the proposed project and requesting pre-assessment comments regarding possible impacts due to the project. A list of parties consulted is included in Section 1.3.1 of the Draft EA.

2. Twenty-five (25) agencies, organizations, and utilities were consulted. Comments were received from thirteen (13) parties and no resident comments were received.

3. Generally, the comments included impacts of noise, dust, street closures, traffic detours, parking, utilities, native Hawaiian cultural practices and resources, trench restoration, and request for prior public notification of construction and detour schedules.

4. All comments received to the pre-assessment letters have been reviewed, evaluated and incorporated into the Draft EA as appropriate.

5. Copies of comment letters and responses are included in Appendix A of the Draft EA.

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Mr. Leo R. Asuncion, Jr., AICP, Acting Director
Office of Planning
Land Use Commission
235 S. Beretania Street, 6th Floor
Honolulu, Hawaii 96813

Attention: Shichao Li

Subject: Your Response of May 22, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Mr. Asuncion,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We appreciate the Office of Planning comments regarding conformance to the objectives and policies of the Hawaii State Planning Act, and Hawaii Coastal Zone Management Act. In addition, the EA will address the requirements of the Special Management Area Use Permit and potential impacts to Kaneohe Bay.

Your office will be kept abreast during the Environmental Assessment process for the subject project.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

Ref. No. P-15610

May 22, 2017

Mr. Howard K. Endo, President
Shimabukuro, Endo & Yoshizaki, Inc.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Mr. Endo:

Subject: Pre-Assessment Consultation – the Heeia Wastewater Pump Station Improvements Project, Kaneohe, Oahu, Hawaii; Tax Map Key: (1) 4-6-023: 041

The Office of Planning (OP) is in receipt of your pre-assessment consultation request, received May 15, 2017, for the proposed Heeia Wastewater Pump Station (WWPS) Improvements Project located at Kaneohe, Oahu.

According to your review request, the Department of Design and Construction, City and County of Honolulu, proposes to improve the existing Heeia WWPS with 1) the rehabilitation of the pump station walls, roof, parking area and wet well; 2) replacements of pumps, piping, valves, ventilation system, chain link fences, underground fuel tank, and electrical system; and 3) expansion of the pump station building to the south for a generator room. The project construction is scheduled to begin in 2020, and is expected to continue for 18 months.

The OP has reviewed the transmitted material and has the following comments to offer:

1. An Environmental Assessment (EA) should assess whether a proposed action is consistent with state's environmental, social, and economic goals and policies. The Hawaii State Planning Act, Hawaii Revised Statutes (HRS) Chapter 226, provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the state in areas of state interest.

   The analysis on the Hawaii State Planning Act should include a discussion on the project's ability to meet all of the goals, objectives, policies, and priority guidelines or clarify where it is in conflict with them. If any of these themes are not applicable to the project, the EA should affirmatively state such determination followed by discussion paragraphs.

2. The Hawaii Coastal Zone Management (CZM) Act, HRS Chapter 205A, requires all state and county agencies to enforce the CZM objectives and policies. The EA should include an assessment as to how the proposed action conforms to the goals and objectives of the Hawaii CZM program as listed in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343.

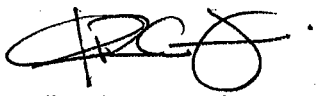
3. If the proposed improvements project is located within the special management area (SMA), and a SMA Use Permit is required, the subject EA should specifically discuss the requirements of the SMA use in accordance with the county SMA ordinances.

4. Given that the Heeia WWPS is adjacent to Kaneohe Bay, the EA should assess potential impacts resulting from the proposed project on coastal and marine resources during construction and operational phase, and propose site-specific mitigation measures for the protection of surface water resources and coastal ecosystem.

   OP's document entitled *Stormwater Impact Assessments* provides a framework for integrating stormwater impact assessment with Hawaii's environmental review process, and guidance on assessing stormwater impacts in the planning phase of project development. OP suggests the subject EA consider all applicable information provided by this document. This document is available at http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf.

If you have any questions regarding this comment letter, please contact Shichao Li of our office at (808) 587-2841.

Sincerely,



Leo R. Asuncion
Director

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Ms. Virginia Pressler, M.D., Director
Department of Health
Environmental Planning Office
919 Ala Moana Blvd., Room 312
Honolulu, Hawaii 96814

Subject: Your Response of May 22, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Dr. Pressler,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge the comments of the Department of Health (DOH) and will review the referenced DOH websites for information and guidance.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

EPO 17-114

May 19, 2017

Mr. Howard K. Endo, Ph.D., P.E.
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Email: seyeng@seyeng.com

Dear Dr. Endo:

SUBJECT: Pre-Assessment Consultation Environmental Assessment (PAC DEA) for Heeia Wastewater Pump Station Improvements, Kaneohe, Oahu
TMK: (1) 4-6-23:41

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PAC EA to our office on May 15, 2017.

We understand from the PAC EA that the *"City and County of Honolulu, Department of Design and Construction (DDC) proposes to improve the performance and reliability of the pump station through rehabilitation, replacement, and expansion of existing structures and equipment. Major improvements include the rehabilitation of, the pump station walls, roof, parking area and wet well; replacements of pumps, piping, valves, ventilation system, chain link fence, underground fuel tank, and electrical system; and expansion of the pump station building to the south for a generator room."*

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments and available strategies to support sustainable and healthy design are provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page is continually updated so please visit it regularly at: http://health.hawaii.gov/epo/egis

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

Any construction waste generated by the project needs to be disposed of at a solid waste disposal facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. Additional information is accessible at: http://health.hawaii.gov/shwb. For specific questions call (808) 586-4226.

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: http://eha-web.doh.hawaii.gov/oeqc-viewer. This viewer geographically shows where some previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www.epa.gov/ejscreen.

We request that you utilize all this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design. Thank you for the opportunity to comment.

Mahalo nui loa,

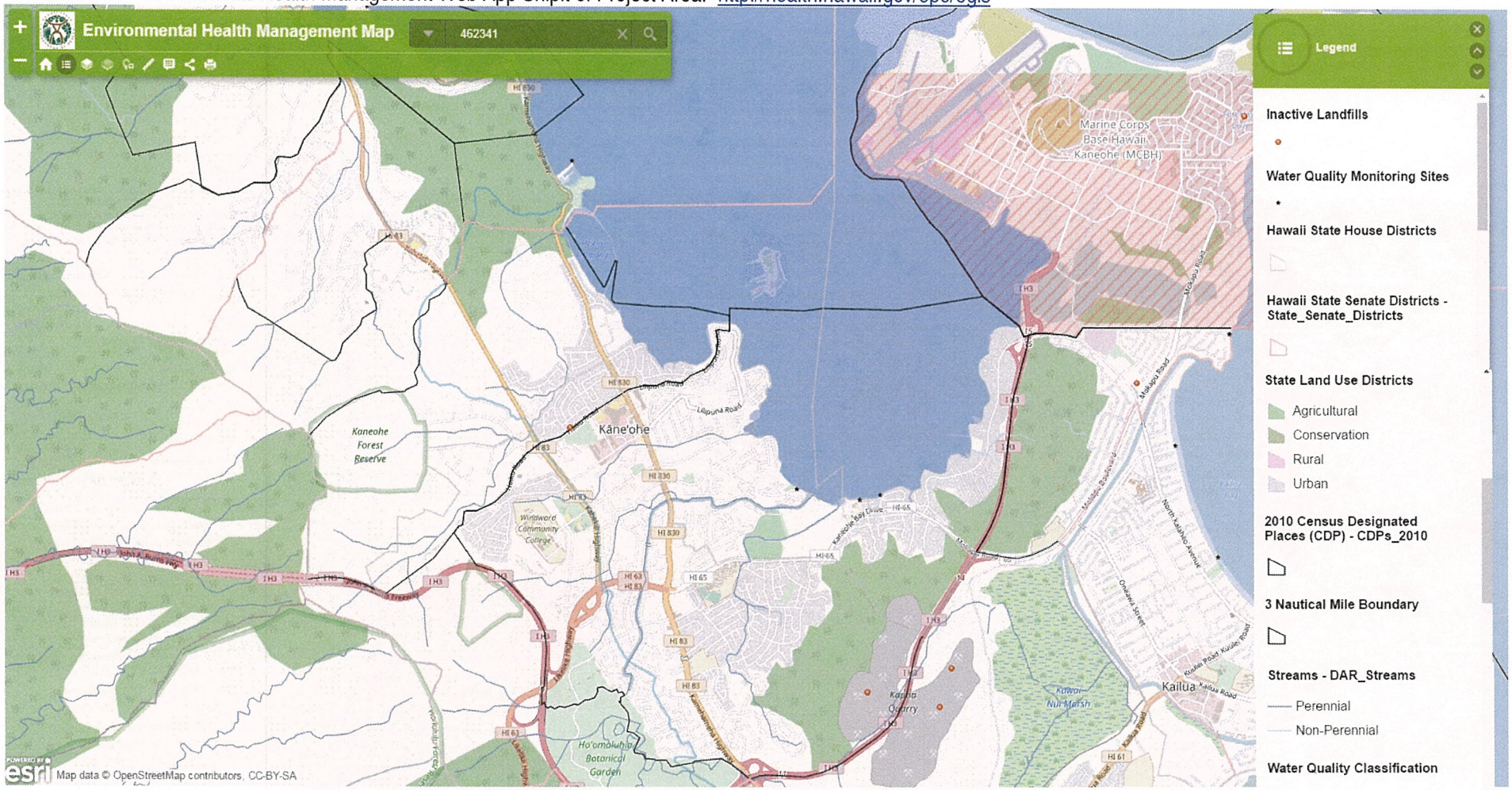
Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

LM:nn

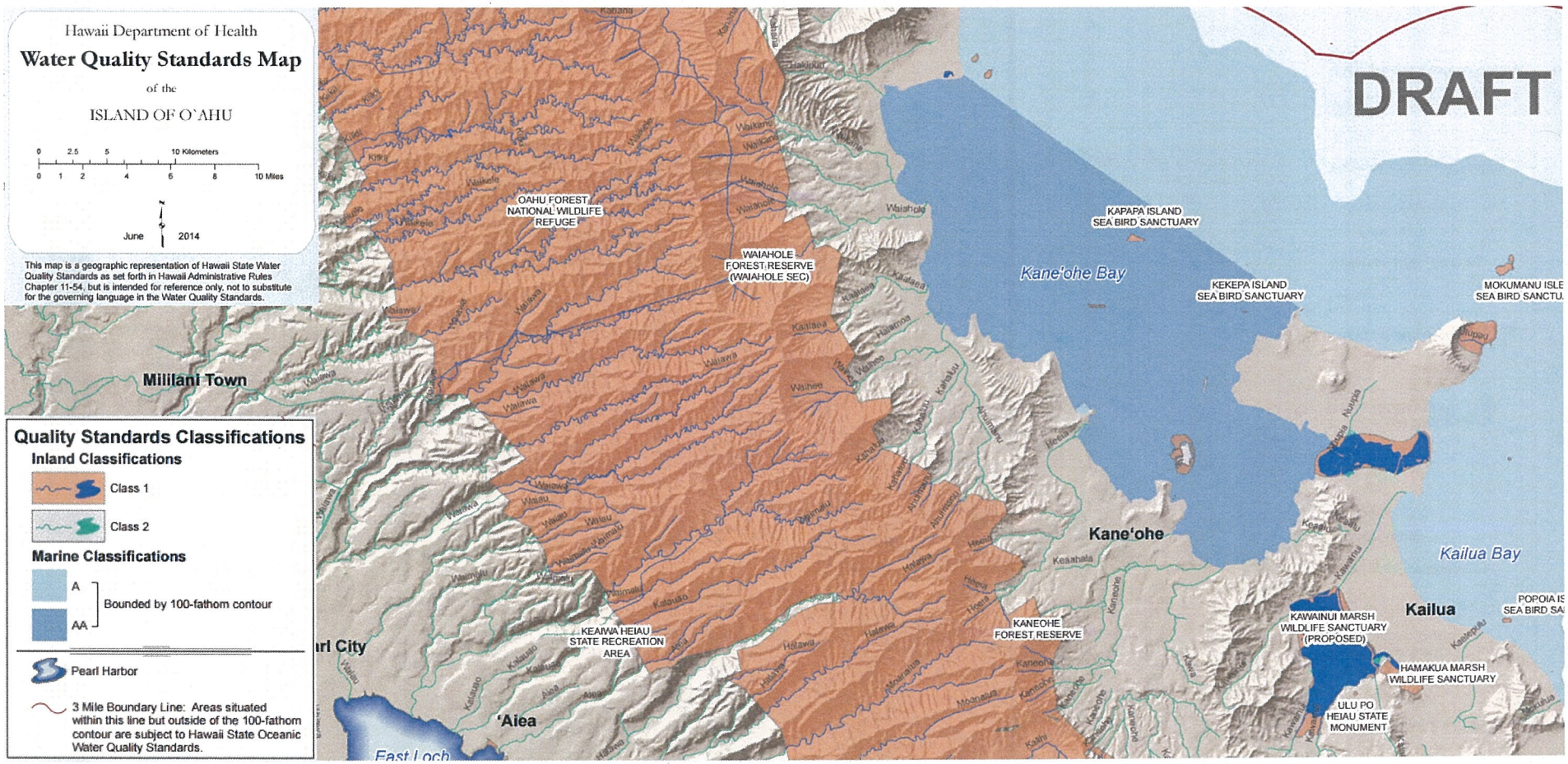
Attachment 1: Environmental Health Management Web App Snipit of Project Area: http://health.hawaii.gov/epo/egis
Attachment 2: Clean Water Branch: Water Quality Standards Map
Attachment 3: OEQC viewer (of some past EA's, EIS's in area)
Attachment 4: U.S. EPA EJSCREEN Report for Project Area

c: DOH: WWB {via email only}

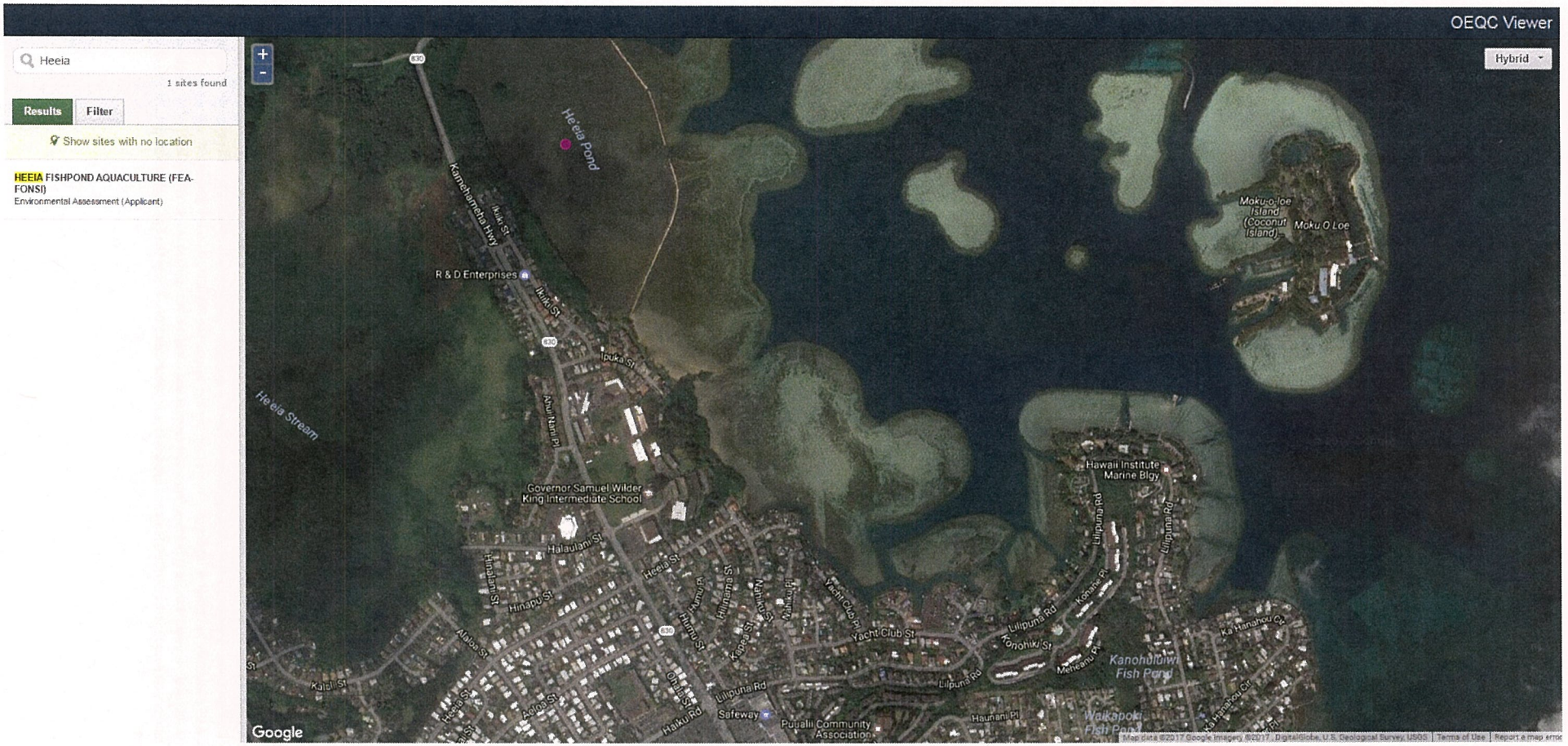
Attachment 1: Environmental Health Management Web App Snipit of Project Area: http://health.hawaii.gov/epo/egis



Attachment 2: Clean Water Branch: Water Quality Standards Map



Attachment 3: OEQC viewer (of some past EA's, EIS's in area)



Attachment 4: U.S. EPA EJSCREEN Report for Project Area

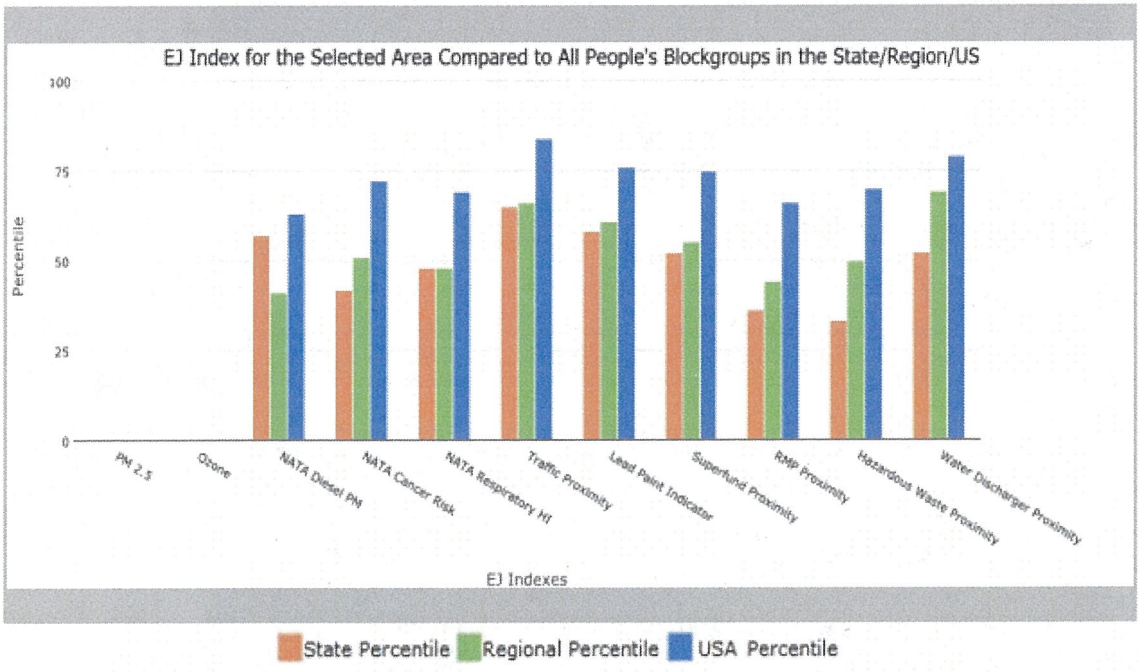
EJSCREEN Report (Version 2016)

1 mile Ring Centered at 21.423954,-157.800235, HAWAII, EPA Region 9

Approximate Population: 15,103

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	57	41	63
EJ Index for NATA* Air Toxics Cancer Risk	42	51	72
EJ Index for NATA* Respiratory Hazard Index	48	48	69
EJ Index for Traffic Proximity and Volume	65	66	84
EJ Index for Lead Paint Indicator	58	61	76
EJ Index for Superfund Proximity	52	55	75
EJ Index for RMP Proximity	36	44	66
EJ Index for Hazardous Waste Proximity+	33	50	70
EJ Index for Water Discharger Proximity	52	69	79



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2016)

1 mile Ring Centered at 21.423954,-157.800235, HAWAII, EPA Region 9

Approximate Population: 15,103

Input Area (sq. miles): 3.14

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

1 mile Ring Centered at 21.423954,-157.800235, HAWAII, EPA Region 9

Approximate Population: 15,103

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.37	N/A	9.32	N/A
Ozone (ppb)	N/A	N/A	N/A	51	N/A	47.4	N/A
NATA* Diesel PM (µg/m³)	0.106	0.149	59	0.978	<50th	0.937	<50th
NATA* Cancer Risk (lifetime risk per million)	33	34	55	43	<50th	40	<50th
NATA* Respiratory Hazard Index	0.94	1	54	2	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	260	990	56	1100	48	590	67
Lead Paint Indicator (% Pre-1960 Housing)	0.19	0.16	64	0.24	55	0.3	49
Superfund Proximity (site count/km distance)	0.053	0.098	47	0.15	38	0.13	44
RMP Proximity (facility count/km distance)	0.068	0.19	31	0.57	10	0.43	15
Hazardous Waste Proximity+ (facility count/km distance)	0.06	0.14	29	0.14	39	0.11	44
Water Discharger Proximity (facility count/km distance)	0.3	0.34	63	0.2	84	0.31	74
Demographic Indicators							
Demographic Index	49%	52%	40	47%	54	36%	72
Minority Population	79%	77%	43	58%	69	37%	84
Low Income Population	19%	26%	38	36%	26	35%	27
Linguistically Isolated Population	2%	6%	41	9%	29	5%	57
Population With Less Than High School Education	6%	9%	42	17%	29	14%	33
Population Under 5 years of age	6%	6%	54	7%	48	6%	52
Population over 64 years of age	19%	15%	69	13%	82	14%	78

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

June 1, 2017

Mr. Ernest Y.W. Lau, P.E.
Manager and Chief Engineer
Honolulu Board of Water Supply
630 S. Beretania Street
Honolulu, Hawaii 96813

Subject: Your Response of May 30, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Mr. Lau,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge the Board of Water Supply (BWS) comments regarding construction plans and schedule. The construction plans will be submitted to the BWS for review and the construction schedule will be made available the BWS.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

May 30, 2017

Mr. Howard K. Endo
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Mr. Endo:

Subject: Your Letter Dated May 11, 2017 Requesting Comments on the Pre-Assessment Notice for Draft Environmental Assessment for the Heeia Wastewater Pump Station Improvements – Tax Map Key: 4-6-023: 041

Thank you for the opportunity to comment on the proposed improvement project.

The construction plans should be submitted for Board of Water Supply (BWS) review and approval.

The construction schedule should be coordinated with BWS to minimize impacts on the water system.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Mr. Wes Frysztacki, Director-designate
Department of Transportation Services
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Subject: Your Response of May 26, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Mr. Frysztacki,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge the Department of Transportation Services comments regarding the repair of existing roadway, sidewalk and driveway areas to City Standards; informing the Neighborhood Board and area residents during the EA process; transporting construction-related supplies and equipment during off-peak traffic hours; and obtaining a street usage permit prior to construction.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP5/17-690132R

May 26, 2017

Mr. Howard K. Endo, Ph.D., P.E.
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Mr. Endo:

SUBJECT: Pre-Assessment Draft Environmental Assessment for Heeia Wastewater Pump Station Improvements, Kaneohe, Oahu, Hawaii

In response to your letter dated May 11, 2017, we have the following comments:

1. Any damage to the existing roadway, sidewalk and driveway areas caused by the project should be repaired to current City standards.

2. The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheHandi-Van), etc., should be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.

3. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.

4. A street usage permit from the City's Department of Transportation Services should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

Wes Frysztacki
Director

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Mr. Ross S. Sasamura, P.E., Director
Department of Facility Maintenance
City & County of Honolulu
1000 Uluohia Street, Room 215
Kapolei, Hawaii 96707

Subject: Your Response of May 25, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Mr. Sasamura,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge the Department of Facility Maintenance comments concerning Drainage Easement "197"; implementation of approved Best Management Practices fronting drainage facilities on Yacht Club Street and the Drainage Easement "197" outfall; and the repair of any damage/deficiencies to Yacht Club Street and Drainage Easement "197".

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu`ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 17-316

May 25, 2017

Dr. Howard K. Endo, Ph.D., P.E.
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Dr. Endo:

SUBJECT: Draft Environmental Assessment for Heeia Wastewater Pump Station
Located at 46-195 Yacht Club Street, Kaneohe, Hawaii 96744
Tax Map Key: 4-6-23:041

Thank you for the opportunity to review and provide comments regarding your letter dated May 11, 2017, on the above subject project.

Our comments are as follows:

- Please be aware of the City's Drainage Easement "197" that runs underground along the boundary between TMK: 4-6-23: parcel 041 and neighbor parcel 42 to its outfall into Kaneohe Bay.

- Once construction phase commences, install approved Best Management Practices fronting all drainage facilities on Yacht Club Street and at the Drainage Easement "197" outfall.

- During construction and upon completion of the project, any damages/deficiencies to Yacht Club Street's right-of-way or to the Drainage Easement "197" infrastructure shall be corrected to City standards and accepted by the City.

If you have any questions, please call Mr. Dexter Akamine of the Division of Road Maintenance at 768-3696.

Sincerely,

Ross S. Sasamura, P.E.
Director and Chief Engineer

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Ms. Suzanne D. Case, Chairperson
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813

Attention: Lydia Morikawa

Subject: Your Response of May 26, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Ms. Case,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge that the Land Division - Oahu District and the Office of Conservation & Coastal Lands do not have any comments at this time. The comment from the Engineering Division regarding the rules and regulations of the National Flood Insurance Program will be addressed in the Environmental Assessment.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 26, 2017

Shimabukuro, Endo & Yoshizaki, Inc.
Attention: Mr. Howard K. Endo, Ph.D., P.E.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Mr. Endo:

SUBJECT: Preparation of an Environmental Assessment for the Heeia Wastewater Pump Station

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division, (b) Land Division – Oahu District and (c) Office of Conservation & Coastal Lands on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 17, 2017

RECEIVED
LAND DIVISION
2017 MAY 19 AM 10: 15
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
_X_ Commission on Water Resource Management
___ Office of Conservation & Coastal Lands
_X_ Land Division – Oahu District
_X_ Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Preparation of an Environmental Assessment for the Heeia Wastewater Pump Station
LOCATION: Heeia, Island of Oahu; TMK: (1) 4-6-023:041
APPLICANT: City and County of Honolulu, Department of Design and Construction

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **May 25, 2017**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(x) We have no comments.
( ) Comments are attached.

Signed: Darlene Bryant-Takamatsu

Print Name: Darlene Bryant-Takamatsu
Date: 5/18/17

cc: Central Files

LY

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2017 MAY 17 A 11:50

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 17, 2017

MEMORANDUM

RECEIVED
LAND DIVISION
2017 MAY 23 AM 10:35
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
_X_ Commission on Water Resource Management
_X_ Office of Conservation & Coastal Lands
_X_ Land Division – Oahu District
_X_ Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Preparation of an Environmental Assessment for the Heeia Wastewater Pump Station
LOCATION: Heeia, Island of Oahu; TMK: (1) 4-6-023:041
APPLICANT: City and County of Honolulu, Department of Design and Construction

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **May 25, 2017**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(/) We have no comments. * NOT IN CONSERVATION DISTRICT
( ) Comments are attached.

Signed: R. Yasaka

Print Name: Lauren Yasaka
Date: 5/23/17

cc: Central Files

'17 MAY 17 AM10:58 ENGINEERING

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 17, 2017

RECEIVED
LAND DIVISION
2017 MAY 24 AM 10:54
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
From → X Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
X Commission on Water Resource Management
___ Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: To: Russell Y. Tsuji, Land Administrator
SUBJECT: Preparation of an Environmental Assessment for the Heeia Wastewater Pump Station
LOCATION: Heeia, Island of Oahu; TMK: (1) 4-6-023:041
APPLICANT: City and County of Honolulu, Department of Design and Construction

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **May 25, 2017**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: _____

Print Name: Carty S. Chang, Chief Engineer
Date: 5/23/17

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Preparation of an Environmental Assessment for the Heeia Wastewater Pump Station

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a designated Flood Hazard.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zone designations can be found using the Flood Insurance Rate Map (FIRM), which can be accessed through the Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may take precedence over the NFIP standards as local designations prove to be more restrictive. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 5/23/17

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Manuel P. Neves, Chief
Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813

Attention: Wayne Masuda, Battalion Chief

Subject: Your Response of May 23, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Chief Neves,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge the Fire Department comment regarding conformance to the Fire Code at the time of plan submittal.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

May 23, 2017

Mr. Howard Endo, Ph.D., P.E.
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Mr. Endo:

Subject: Environmental Assessment
Heeia Wastewater Pump Station Improvements Project
Kaneohe, Oahu
Tax Map Key: 4-6-023: 41

In response to your letter dated May 11, 2017, regarding the above-mentioned subject, the Honolulu Fire Department will apply the requirements of the Fire Code of the City and County of Honolulu adopted at the time of the plan submittal.

Should you have questions, please contact Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,

Socrates D. Bratakos

SOCRATES D. BRATAKOS
Assistant Chief

SDB/SY:ps

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

May 31, 2017

Cary Okimoto, Acting Chief of Police
City & County of Honolulu
Police Department
801 South Beretania Street
Honolulu, Hawaii 96813

Attention: Major Gordon Gomes (District 4)

Subject: Your Response of May 25, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Chief Okimoto,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge your comments that the Honolulu Police Department has concerns regarding the safe flow of vehicular traffic in the residential area. The Contractor shall obtain a street usage permit and implement traffic controls and management during the project.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

KIRK CALDWELL
MAYOR

~~LOUIS M. KEALOHA~~
CHIEF

CARY OKIMOTO
JERRY INOUYE
DEPUTY CHIEFS

OUR REFERENCE MT-DK

May 25, 2017

Howard K. Endo, Ph.D., P.E.
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Dr. Endo:

This is in response to your letter of May 11, 2017, requesting comments on a Pre-Assessment Consultation, Draft Environmental Assessment, for the Heeia Pump Station Improvements project located at 46-195 Yacht Club Street in Kaneohe.

The Honolulu Police Department has reviewed this project and has concerns regarding the safe flow of vehicular traffic in this residential area.

When construction begins, we recommend that the contractor obtain any applicable street usage permits and implement traffic controls and management (e.g., signs, cones, barricades, flag persons, special duty officers, etc.) at the project site. This will ensure a safe means of ingress/egress for construction vehicles, motorists, and pedestrians in the vicinity.

If there are any questions, please call Major Gordon Gomes of District 4 (Kailua-Kaneohe-Kahuku) at 723-8639.

Thank you for the opportunity to review this project.

Sincerely,

CARY OKIMOTO
Acting Chief of Police

By
MARK TSUYEMURA
Management Analyst VI
Office of the Chief

Serving and Protecting With Aloha

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

June 21, 2017

Ms. Michele K. Nekota, Director
Department of Parks & Recreation
City & County of Honolulu
1000 Uluohia Street, Room 309
Kapolei, Hawaii 96707

Subject: Your Response of June 1, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Ms. Nekota,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge that the City & County of Honolulu, Department of Parks & Recreation do not have any comments at this time. Per your request, you will be removed as a consulting party for the balance of this EA process.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DEPARTMENT OF PARKS & RECREATION

CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

June 1, 2017

Howard K. Endo, Ph.D., P.E.
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Dear Dr. Endo:

SUBJECT: Pre-Assessment Environmental Assessment
Heeia Wastewater Pump Station Improvements
Kaneohe, Hawaii
Tax Map Key: 4-6-23:41

Thank you for the opportunity to review and comment at the pre-assessment stage of the environmental assessment (EA).

The Department of Parks and Recreation has no comment. As the proposed project will have no impact on any program or facility of the Department, you may remove us as a consulted party to the balance of the EA process.

Should you have any questions, please contact John Reid, Planner at 768-3017.

Sincerely,

Michele K. Nekota
Director

MKN:jr
(690090)

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

June 30, 2017

Dr. Kamana'opono Crabbe, CEO
Office of Hawaiian Affairs
560 N. Nimitz Hwy., Suite 200
Honolulu, Hawaii 96817

Attention: Ms. Kathryn Keala

Subject: Your Response of June 7, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Dr. Crabbe,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

A cultural impact assessment (CIA) has been prepared for this project because of the historic significance of the area. The fishponds including O'ohope Fishpond are important topics discussed in the CIA. Measures to mitigate environmental impacts to the fishponds will be addressed in the Environmental Assessment.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

PHONE (808) 594-1888

FAX (808) 594-1938

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAI'I 96817

HRD17-5023B

June 7, 2017

Howard K. Endo, Ph.D, P.E.
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, HI 96816-3715

Re: Preparation of an Environmental Assessment
He'eia Wastewater Pump Station Improvements Project
He'eia Ahupua'a, Ko'olaupoko Moku, O'ahu Mokupuni
Tax Map Key: (1) 4-6-023:041

Aloha e Howard K. Endo:

The Office of Hawaiian Affairs (OHA) is in receipt of your letter dated May 11, 2017, in preparation of an environmental assessment (EA) for the He'eia Wastewater Pump Station Improvements project ("project") located in a residential subdivision at 46-195 Yacht Club Street.

Your letter notes that the existing He'eia Wastewater Pump Station was constructed in 1968 and is nearing its end of service life. Major improvements proposed by the Department of Design and Construction will improve the performance and reliability of the pump station. These improvements include rehabilitating pump station walls, roof, parking area and wet well; replacing pumps, piping, valves, ventilation system, chain link fence, underground fuel tank, and electrical system; and expanding the pump station building.

According to our records, O'ohope Fishpond, State Site No. 50-80-11-0337, was once located in the northern portion of the project area. Please provide additional information regarding this fishpond, including whether the project will impact the fishpond and how that impact will be mitigated.

OHA recommends initiating consultation with the following community organizations who may be willing to share their mana'o on this assessment with you: Paepae o He'eia, Ko'olauloa Hawaiian Civic Club, and Ko'olaupoko Hawaiian Civic Club. Please know that this list is not all encompassing as additional community organizations and/or individuals may be identified as you move forward with your consultation process.

Thank you for initiating consultation. We look forward to reviewing the draft EA. Should you have any questions, please contact Kathryn Keala at (808) 594-0272 or kathyk@oha.org.

'O wau iho nō me ka 'oia 'i'o,

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:kk

**Please address replies and similar, future correspondence to our agency:*
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy., Ste. 200
Honolulu, HI 96817

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875 FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

June 21, 2017

Mr. Marshall H. Ando, Acting Highways Administrator
Department of Transportation
869 Punchbowl Street, Room 513
Honolulu, Hawaii 96813

Attention: Mr. John Williams

Subject: Your Response of June 14, 2017 Regarding the
Pre-Assessment Notice for the
Proposed Department of Design and Construction
Heeia Wastewater Pump Station Improvements Project

Dear Mr. Ando,

Thank you for your response regarding the Pre-Assessment Notice for the proposed Heeia Wastewater Pump Station Improvements project.

We acknowledge that the State of Hawaii, Department of Transportation does not have any comments at this time. If in the future, there is any work in the State Highways Right-of-Way, we will be sure to provide construction plans for review.

If you have any questions, please call me at 737-1875.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Acalde, Wastewater Division

DAVID Y. IGE
GOVERNOR

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
HWY 2338
HWY-CM 2.4934

June 14, 2017

Mr. Howard Endo, Ph.D., P.E.
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816

Dear Mr. Endo:

Subject: Heeia Wastewater Pump Station Improvements
46-195 Yacht Club Street, Tax Map Key: (1) 4-6-23:41
Pre-Assessment for Environmental Assessment

Based on the information provided, the subject project does not appear to impact a State highway facility. If there is any work in the State Highways Right-of-Way, please advise and provide construction plans for review when available.

Should you have any questions, please call Mr. John Williams, Acting Engineering Program Manager, Construction and Maintenance Branch, Highways Division, at (808) 587-2183 or email at John.Williams@hawaii.gov.

Sincerely,

MARSHALL H. ANDO
Acting Highways Administrator

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil, Environmental & Structural Engineers
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715
Ph.: (808) 737-1875. FAX: (808) 734-5516
E-mail: seyeng@seyeng.com

July 24, 2017

Mr. Aaron Nadig
Island Team Manager
U.S. Fish and Wildlife Service
Pacific Island Fish and Wildlife Office
300 Ala Moana Blvd., Room 3-122
Honolulu, HI 96850

Subject: Species List for the Heeia Wastewater Pump Station Improvements

Dear Mr. Nadig

Thank you for your letter of July 10, 2017 in response to our inquiry regarding the presence of federally listed and proposed endangered or threatened species and critical habitat in the vicinity of the subject project. We acknowledge that your department has determined that there are no federally designated critical habitats within the immediate vicinity of the project; however, the federally endangered Hawaiian hoary bat (Lasiurus cinereus semotus) and threatened Newell's shearwater bird (Puffinus auricularis newelli) may transit through the vicinity of the project area.

Please do not hesitate to contact me should you have any questions.

Very truly yours,

Howard K. Endo, Ph.D., P.E.
President

cc: Edileo Alcalde, Wastewater Division

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
01EPIF00-2017-TA-0329

JUL 10 2017

Mr. Howard K. Endo
President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816-3715

Subject: Technical Assistance for the Proposed Heeia Wastewater Pump Station Repairs Kaneohe, Oahu

Dear Mr. Endo:

The U.S. Fish and Wildlife Service (Service) received your letter, dated June 29, 2017, requesting a list of threatened and endangered plant and animal species and designated critical habitat in the vicinity of Heeia wastewater pump station in Kaneohe, Oahu. The City and County of Honolulu proposes to repair and upgrade the Heeia wastewater pump station (TMK 4-6-23:41) that was originally constructed in 1968. The repairs will include rehabilitation of the pump station walls, roof, parking area and wet well; replacement of pumps, piping, valves, ventilation system, chain link fence, underground fuel tank, and electrical system; and expansion of the pump station building to the south for a generator room. The Service offers the following comments to assist you in your planning process so that impacts to trust resources can be avoided. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*) and the Migratory Bird Treaty Act (16 U.S.C. 703-712) (MBTA).

Based on the information in our database and records, including data provided by the Hawaii Biodiversity and Mapping Program, the following are known threatened or endangered species that occur or transit through the vicinity of your proposed project area: the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and the threatened Newell's shearwater (*Puffinus auricularis newelli*). Also within the vicinity of the proposed project is the wedge-tailed shearwater (*Puffinus pacificus*), a species protected under the MBTA. There is no designated critical habitat present in the vicinity of the proposed project area.

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be

harmed or killed. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To minimize impacts to the endangered Hawaiian hoary bat:

- Woody plants greater than 15 feet tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15).
- Barbed wire should not be used for fencing.

Newell's shearwater and wedge-tailed shearwater

Hawaiian seabirds may traverse the project area at night during the breeding season (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To minimize potential project impacts to seabirds:

- All outdoor lights should be fully shielded so the bulb can only be seen from below bulb height and only used when necessary.
- Automatic motion sensor switches and controls should be installed on all outdoor lights or lights should be turned off when human activity is not occurring in the lighted area.
- Nighttime construction should be avoided during the seabird fledging period, September 15 through December 15.

If additional information becomes available, or it is determined that the proposed project may affect federally listed species, we recommend you coordinate with our office early in the planning process so that we may further assist you with ESA compliance. We thank you for your efforts to conserve listed species and native habitats. Please contact Stacey Lowe, Fish and Wildlife Biologist (phone: 808-792-9400, email: stacey_lowe@fws.gov) should you have any questions pertaining to this response or require further guidance. When referring to this project, please include this reference number: 01EPIF00-2017-TA-0329.

Sincerely,

Aaron Nadig
Island Team Manager
Oahu, Kauai, Northwestern
Hawaiian Islands and American Samoa

APPENDIX B

Reserved for Draft Environmental Assessment Consultation

APPENDIX C

Schematic Construction Cost Estimate

Heeia Wastewater Pump Station Improvements
Conceptual Construction Cost Estimate
May 2017

Item No.	Work Description	Estimated Cost
1.	Sitework Improvements	
a.	Construct new generator room, entrance room and underground flow tube room, including dewatering and temporary bypassing	$ 1,800,000
b.	Provide new force main from new flow tube to existing force main	$ 20,000
c.	Provide new bypass discharge connection	$ 15,000
d.	Reconstruct driveway, sidewalk and parking area	$ 40,000
e.	Repair south side security fence	$ 1,000
f.	Construct new chain link security fence, CMU wall, grade adjustment wall, and double swing gate.	$ 50,000
g.	Construct new eye wash station	$ 20,000
h.	Replace water supply line	$ 30,000
	Subtotal Sitework Improvements	$ 1,976,000
2.	Entrance Chamber/Wet Well Improvements	
a.	Convert 2 manholes to hatches with safety devices	$ 33,000
b.	Remove rungs and patch holes	$ 15,000
c.	Repair and reline deteriorated interior surfaces	$ 80,000
	Subtotal Entrance Chamber/Wet Well Improvements	$ 128,000
3.	Pump Station Building Improvements	
a.	Repair cracks in north wall	$ 20,000
b.	Replace window jamb and louvers with stainless steel louvers	$ 22,000
c.	Provide exit sign	$ 1,000
d.	Provide eye bolt above main entrance room door	$ 1,000
e.	Re-roof with rubber material	$ 30,000
f.	Replace float level control unit with 3 pressure transducer systems and non-contact radar system	$ 77,000
g.	Repaint interior and exterior of pump station building	$ 25,000
	Subtotal Pump Station Building Improvements	$ 176,000

Heeia Wastewater Pump Station Improvements
Conceptual Construction Cost Estimate
May 2017

Item No.		Work Description		Estimated Cost
4.		Pump Station Equipment Improvements		
	a.	Provide 3 new dry-pit submersible pumps	$	204,000
	b.	Replace interior pumping system piping, valves, gages, supports, fittings and accessories	$	440,000
	c.	Provide new magnetic flow tube meter (Yokogawa) and system appurtenances and new connection to existing force main	$	35,000
	d.	Provide new vent system w/non-sparking wheel & SS ductwork monitored by SCADA, duct silencers etc.	$	80,000
	e.	Install new fuel system with 1000 gallon underground tank, piping, day tank and monitoring system (Veedee-Root)	$	175,000
	f.	Provide full spare pump	$	15,000
		Subtotal Pump Station Equipment Improvements	$	949,000
5.		Electrical Systems and Controls Improvements		
	a.	Site electrical work, including new lines from transformer to MCC	$	25,000
	b.	Provide new 125 KW generator system	$	60,000
	c.	Provide new Automatic Transfer Switch	$	25,000
	d.	Bond electrical service grounding system to the cold water pipe system and replace grounding ring	$	1,600
	e.	Replace Remote Telemetry System electrical connections	$	2,200
	f.	Replace Motor Control Center with smart type prewired for SCADA. Connect SCADA to HECO and water meters	$	165,000
	g.	Replace PLC System	$	110,000
	h.	Replace Control Panel	$	22,000
	i.	Replace Instrumentation	$	11,000
	j.	Replace Alarm System	$	55,000
	k.	Upgrade HECO and HTC service equipment	$	15,000
	l.	Provide new lighting with emergency lighting	$	25,000
		Subtotal Electrical Systems and Controls Improvements	$	516,800

Heeia Wastewater Pump Station Improvements
Conceptual Construction Cost Estimate
May 2017

Item No.	Work Description	Estimated Cost
6.	Off-site Combination Air Valve Manhole	$ 50,000
	Conceptual Construction Cost Estimate	$ 3,795,800
	Contingency (5%)	$ 189,790
	TOTAL	$ 3,985,590
	SAY	$ 3,986,000

APPENDIX D

Acoustical Analysis

Y. Ebisu & Associates
Acoustical and Electronic Engineers

1126 12th Ave., Room 305
Honolulu, Hawaii 96816
Ph. (808) 735-1634 – Fax (808) 732-0409
e-mail: ebisuyassoc@aol.com

YEA Job #47.007
July 7, 2010

SEY Engineers
1126 12th Avenue, Suite 309
Honolulu, Hawaii 96816

Attention: Howard Endo, P.E., Ph.D.

Subject: Basis of Design and Recommendations Regarding Acoustical Treatments To Generator Room; Heeia Wastewater Pump Station Improvements

Dear Dr. Endo:

The following letter report provides our acoustical design goals and acoustical treatment recommendations for the subject Generator Rooms. Acoustical treatment recommendations were developed for three configurations as shown in Figures 1, 2, and 3.

A. ACOUSTICAL BASIS OF DESIGN:

The Generator Room site is presently zoned "R-7.5", Residential. The applicable noise limits at or beyond the property boundaries under the State Department of Health noise regulations are 55 dBA for the daytime (7:00 am to 10:00 pm) and 45 dBA for the nighttime (10:00 pm to 7:00 am) periods.

The worst case, not to exceed, noise level for this project is to meet the 45 dBA limit of the residential zoning designation along the pump station's property boundaries. The project's design goal is to not exceed the daytime noise limit of 55 dBA along the pump station's boundary lines when the generator will probably be tested. Operation during the night will only be required during emergencies, when the DOH noise limits are normally waived.

B. INITIAL ACOUSTICAL RECOMMENDATIONS:

1. Walls and Roof: I assumed that the interior and exterior walls of the Generator Room (for all configurations) will be formed from minimum 8" thick dense concrete, or 8" thick, dense CMU, will all cells fully grouted. I assumed that the roof of the Generator Room will be formed from minimum 4" thick dense concrete, with a

furred layer of 5/8" thick gypboard applied to the underside of the concrete roof using 7/8" metal channels spaced 24" o.c. All cracks and voids in the walls and roof will need to be infilled or sealed. In Enclosure 3, the undersides of the existing and well as the new concrete roofs will need to be furred with 5/8" thick gypboard.

2. Interior Finish Treatment of Generator Room: For all configurations, the underside of the furred gypboard ceiling should be treated with 4" total thickness of semirigid fiberglass treatment. In addition, bare surfaces of the four walls (down to the 1' height line) should also be finished with 4" total thickness of semirigid fiberglass treatment (see Enclosures 1, 2, and 3). In Enclosure 3, the ceilings and walls of the existing as well as the new building rooms will need to be treated. The recommended composition of the 4" thick fiberglass treatment is a 3 1/2" thick inner layer of unfaced, semirigid panels of Owens Corning Type 703 insulation plus a 5/8" thick outer layer of Armstrong #2906, perforated, film faced, acoustical panels. The insulation may be held in place with fasteners and/or a galvanized metal lath attached to Z-furring channels spaced 24" O.C. Alternately, perforated metal, protective panels (such as Alpro panels) may be used as the outer finish layer, with a 4" thick inner layer of unfaced Owens Corning Type 703 used between the bare wall and the perforated metal panels.

3. Radiator Discharge Air Opening: The radiator discharge air opening treatment will depend upon the selected Generator Room configuration and layout. The radiator discharge air opening (for the configuration shown in Figure 1) should be treated with a bank of IAC 10LFm duct silencers with overall face area dimensions of 4' w x 5' h. The silencer baffles should be oriented vertically, and tilted to drain outwards. The discharge elbow duct between the radiator and the discharge silencer bank should be internally lined with 4" thick, 3 pcf, semirigid duct liner board, which may be formed from an inner layer of 2" thick, Owens Corning Type 703 insulation plus an outer layer of 2" thick Owens Corning Duct Liner Board, with black coated face exposed. For the Generator Room configuration shown in Figure 2, the radiator discharge air opening should be treated with a bank of IAC 5LFm duct silencers with overall face area dimensions of 4' w x 5' h. For the Generator Room configuration shown in Figure 3, the radiator discharge air opening should be treated with a bank of IAC 7LFm duct silencers with overall face area dimensions of 4' w x 5' h. The discharge elbow treatments and the tilting of the silencers to drain outward are identical for all three configurations. Metal bird screen or grillwork should be used at the exterior face of the duct silencer bank for all three configurations.

4. Intake Air Opening: The radiator intake air opening treatments and locations will depend upon the selected Generator Room configuration and layout. For the two configurations shown in Figures 1 and 2, the Generator Rooms' intake air openings

should be treated with a bank of IAC 5LFm duct silencers, with baffles oriented vertically, and with the silencers tilted to drain outward. For the configuration shown in Figure 3, the intake air opening should be treated with a bank of IAC 7LFm duct silencers. For all three configurations, metal birdscreen or grillwork should be used at the exterior faces of the duct silencer banks, and an overhead, eyebrow, or rain gutter should be included over the intake air opening.

5. Exhaust Silencer: If the end of the exhaust pipe is located approximately in the general vicinities where shown in Figures 1 through 3, two critical grade mufflers (4", Nelson 43340 and Nelson 41340), connected in series, should be included in the exhaust system for all three configurations. Also, the exhaust mufflers and pipes should be thermally insulated with high temperature, calcium silicate insulation.

6. Double Door: The new double door of the Generator Room should be formed from a sound rated, minimum STC 40 door for the configuration shown in Figure 1, and with minimum STC 50 door for the configurations shown in Figures 2 and 3. For the configuration shown in Figure 2, the double door may be relocated to the east wall, and if so, its required STC rating would be reduced from STC 50 to STC 40. In Figure 3, any new door added to the east side of the pump building's south extension should be a STC 40 door. The doors should include a steel frame, and adjustable, neoprene, compression-type seals along the head, jamb, astragal, and door bottom.

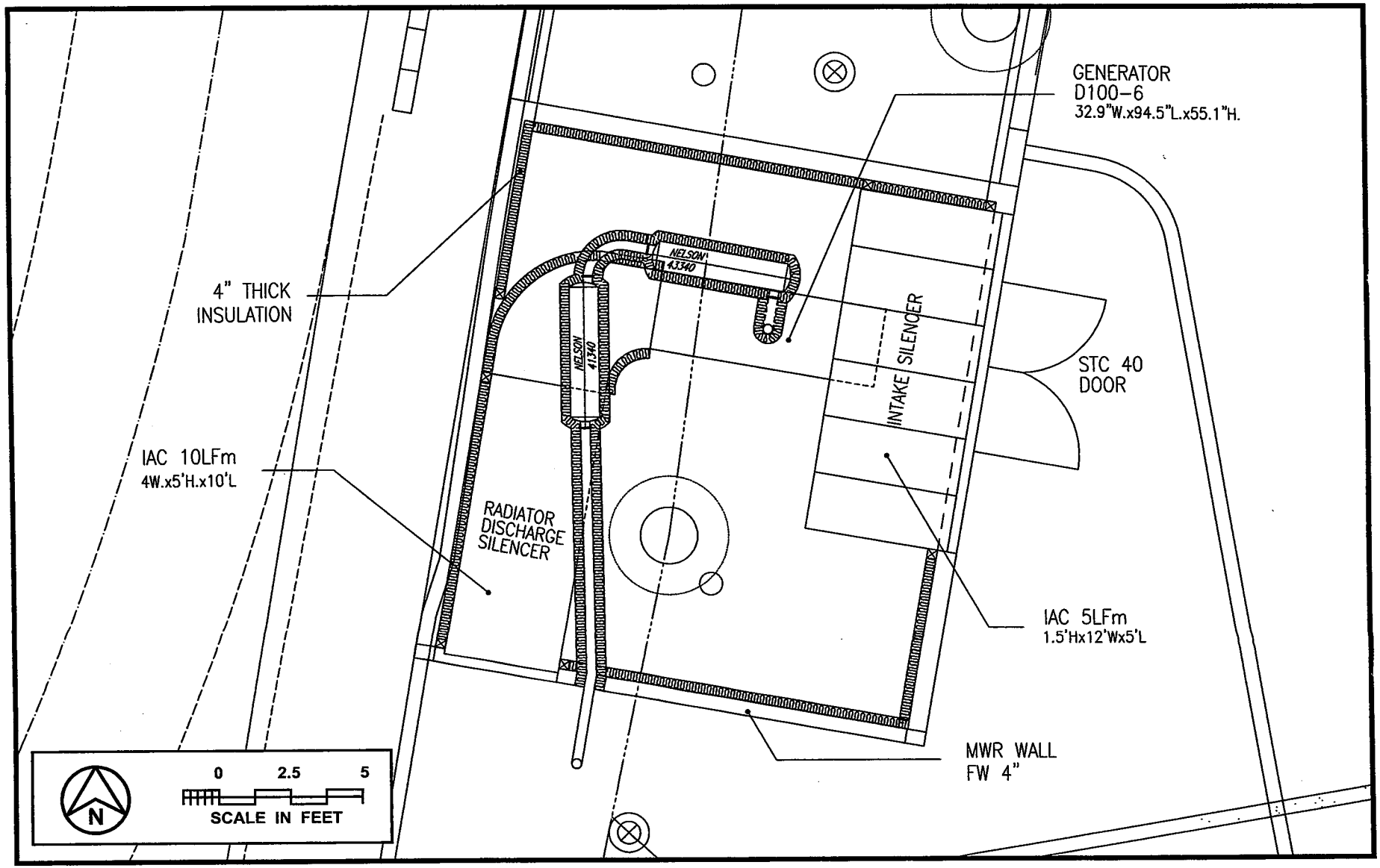
7. Vibration Isolators: For all three configurations, the generator should be mounted on spring-plus-neoprene-in-series vibration isolators with minimum 1" static deflection. The hold down bolts for the vibration isolators should also be vibration isolated with neoprene grommets and duck washers.

Let me know if you have any questions regarding these acoustical Basis of Design and treatment recommendations.

Sincerely,

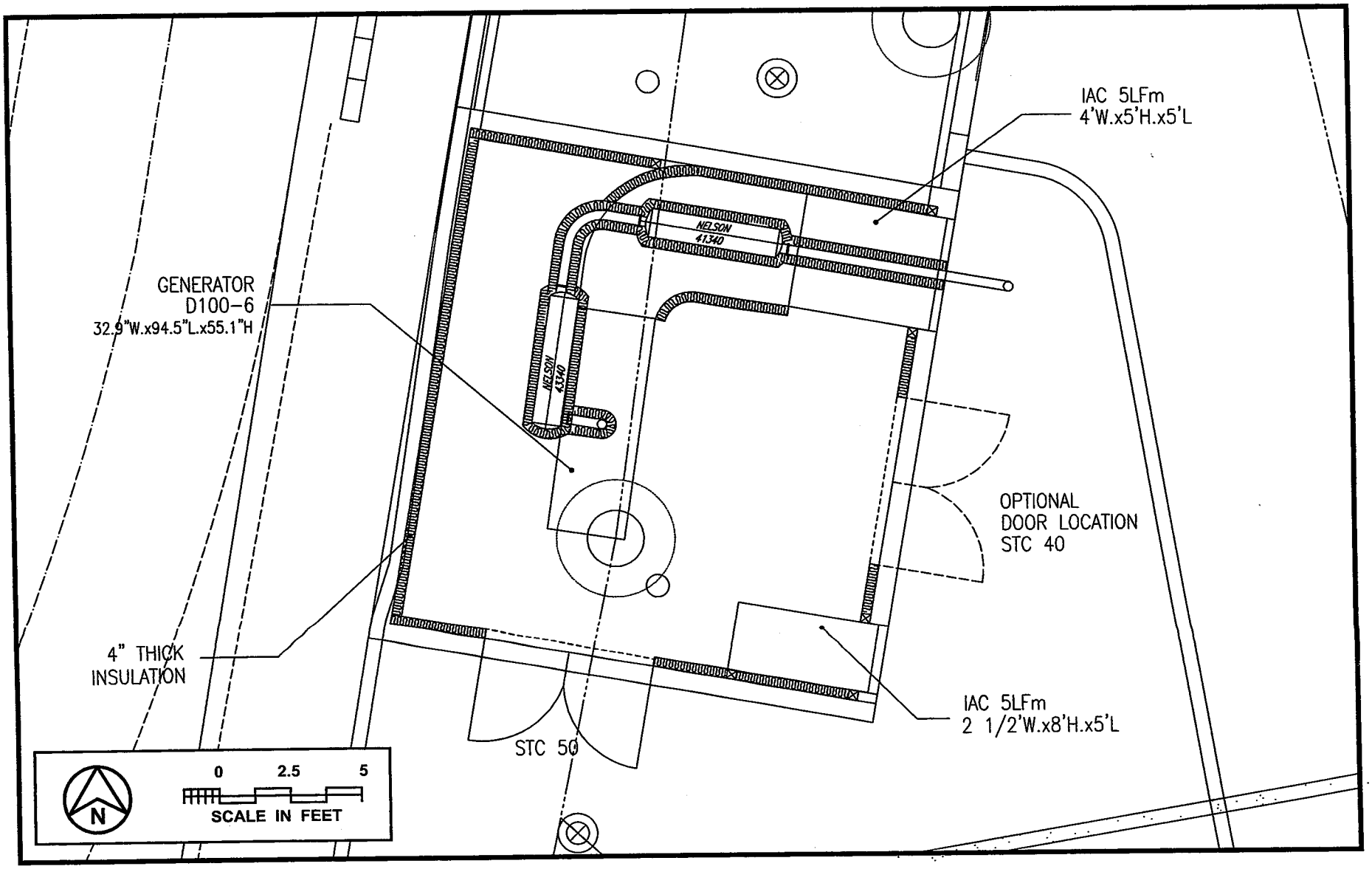
Yoichi Ebisu, P.E.

encl.



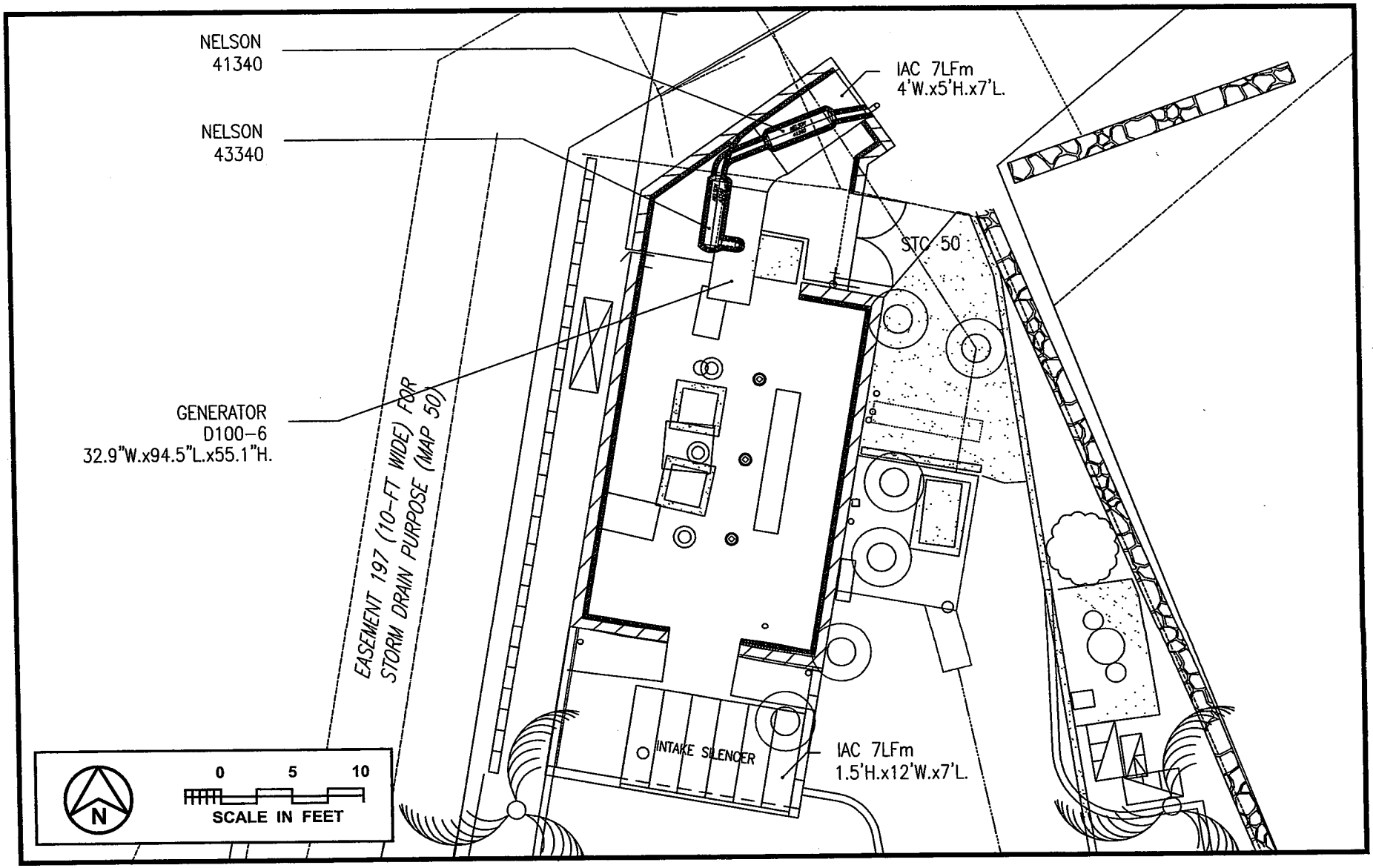
NEW GENERATOR ROOM CONFIGURATION WITH DOUBLE DOOR ON EAST WALL

FIGURE 1



NEW GENERATOR ROOM CONFIGURATION WITH DOUBLE DOOR ON SOUTH WALL

FIGURE 2



NEW GENERATOR ROOM CONFIGURATION WITH GENERATOR LOCATED AT NORTH WALL

FIGURE 3

Y. Ebisu & Associates

Acoustical and Electronic Engineers

1126 12th Ave., Room 305
Honolulu, Hawaii 96816
Ph. (808) 735-1634 – Fax (808) 732-0409
e-mail: ebisuyassoc@aol.com

YEA Job #49.023
August 16, 2012

SEY Engineers
1126 12th Avenue, Suite 309
Honolulu, Hawaii 96816

Attention: Howard Endo, P.E., PhD.

Subject: Review of Cummins and Generac Diesel Engine Generators; Emergency Generator and Ventilation System, Heeia Wastewater Pump Station Improvements

Dear Dr. Endo:

I reviewed the catalog data sheets for the Cummins DSGAA and Generac SD100 diesel engine generators. The Generac data sheet did not indicate the heat radiated into the Generator Room, so I assumed it will be similar to the Caterpillar and Cummins generators' characteristics. I will review that data when I receive it, and will revise my current recommendations as required.

The Cummins generator requires significantly higher radiator air flow (12,400 cfm) than the Caterpillar or Generac generators (8,135 and 7,900 cfm). Therefore, the face areas of the intake and discharge duct silencers shown in the 7/7/10 Basis of Design (BOD) will need to be increased. The basic Generator Room layout shown in Figure 1 of the 7/7/10 BOD remains unchanged except for the increase in room size toward the east to 20 feet to accommodate the largest generator.

The following are the recommended changes to the Generator Room layout shown in Figure 1 of the 7/7/10 BOD:

1. Increase the IAC 5LFm intake silencer face area from 1.5' h x 12'w to 2.5'h x 12'w;

2. Increase the IAC 10LFM discharge silencer face area from 4'w x 5'h to 4'w x 6.5'h;

3. Replace the 4" Nelson #43340 exhaust muffler with a 5" Nelson #43350 exhaust muffler; and

4. Replace the 4" Nelson #41340 exhaust muffler with a 5" Nelson #41350 exhaust muffler.

Let me know if you have any questions regarding these changes and recommendations.

Sincerely,

Yoichi Ebisu, P.E.