DEPARTMENT OF DESIGN AND CONSTRUCTION
KA 'OIHANA HAKULAU A ME KE KĀPILI
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAI'I 96813
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

HAKU MILLES, P.E.
DIRECTOR
PO'O

BRYAN GALLAGHER, P.E.
DEPUTY DIRECTOR
HOPE PO'O

920923

April 30, 2024

Ms. Mary Alice Evans, Director
Office of Planning and Sustainable Development
Department of Business, Economic Development and Tourism
Environmental Review Program
State of Hawai'i
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

Dear Ms. Evans:

Subject: Final Environmental Assessment and Finding of No Significant Impact (FEA-FONSI)
Honolulu Police Department Communication Facilities Upgrade
BWS Kapa'a Reservoir
Kāne'ohe and Kailua, O'ahu Island, Hawai'i
Tax Map Key: (1) 4-2-017:016

The City and County of Honolulu, Department of Design and Construction, hereby transmits the FEA-FONSI for the Honolulu Police Department Communication Facilities Upgrade at the BWS Kapa'a Reservoir.

In addition to this letter, the online Environmental Review Program (ERP) Publication Form will be uploaded through the ERP website, including one (1) electronic copy of the FEA-FONSI, as an Adobe Acrobat PDF file.

Should there be any questions, please contact Clyde Higa at 808-768-8424 or DDCFD@honolulu.gov.

Sincerely,

FOR Haku Milles, P.E., LEED AP
Director

HM:ln

Enclosures

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Monday, April 29, 2024 10:33:20 PM

Action Name

HONOLULU POLICE DEPARTMENT Communication Facilities Upgrade – BWS Kapaʻa Reservoir

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds
- (2) Propose any use within any land classified as a conservation district

Judicial district

Koʻolaupoko, Oʻahu

Tax Map Key(s) (TMK(s))

[1] 4-2-017:016

Action type

Agency

Other required permits and approvals

Conservation District Use Permit, Building Permit

Proposing/determining agency

City and County of Honolulu, Department of Design and Construction

Agency contact name

Clyde Higa

Agency contact email (for info about the action)

clyde.higa@honolulu.gov

Email address or URL for receiving comments

clyde.higa@honolulu.gov

Agency contact phone

(808) 768-8424

Agency address

650 South King Street
11th Floor
Honolulu, HI 96813
United States
Map It

Is there a consultant for this action?

Yes

Consultant

AGY LLC

Consultant contact name

Aolani Yamasato-Gragas

Consultant contact email

aolani_y@yahoo.com

Consultant contact phone

(808) 447-9849

Consultant address

615 Piikoi Street Suite 1806
Honolulu, HI 96814
United States
Map It

Action summary

The City and County of Honolulu Department of Design and Construction (DDC), Department of Information Technology (DIT), and Honolulu Police Department (HPD), intend to upgrade the public safety radio communication system at the Board of Water Supply (BWS) Kapa'a Reservoir parcel in Kāne'ohe, O'ahu. The existing communication facility, integral to Honolulu's emergency communications network, serves state, federal, and local public safety agencies. The facility prohibits public or commercial use. The project aims to replace one microwave truss tower with an 80-foot monopole tower able to withstand Category IV hurricanes, install a sidewalk, replace propane tanks with a single diesel tank, modify the building's interior, upgrade the generator, and upgrade the building and all critical appurtenances to withstand Category IV hurricanes. The proposed project involves approximately 305 square feet of improvements.

Reasons supporting determination

The nature and scale of the proposed emergency facility upgrades is such that no significant environmental effects are anticipated. Potential impacts, if any, can be mitigated through design and careful construction management practices and compliance with all governmental requirements including those of the Department of Public Works, State Department of Health and State Historic Preservation Division.

Attached documents (signed agency letter & EA/EIS)

- 2024-4-26-FEA-FONSI-920923-signed-1.pdf
- HPD-Radio-Tower-BWS-Kapaa-Final-Environemental-Assessment-2024.04.23.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- Parcels_-_Honolulu_County_Island_of_Oahu-1.zip

Authorized individual

Aolani Yamasato-Gragas

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

HONOLULU POLICE DEPARTMENT
Communication Facilities Upgrade – BWS Kapa‘a Reservoir

Kāne‘ohe, Island of O‘ahu
TMK 4-2-017:016

Final Environmental Assessment

Prepared for:
Department of Information Technology
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawai‘i 96813

Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawai‘i 96813

Prepared by:
AGY, LLC
615 Pi‘ikoi Street
Honolulu, Hawai‘i 96814

April 2024

Final Environmental Assessment
Finding of No Significant Impact

HONOLULU POLICE DEPARTMENT
Communication Facilities Upgrade – BWS Kapaʻa Reservoir

TMK 4-2-017:016
Kāneʻohe, Island of Oʻahu

Prepared for:
Department of Information Technology
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaiʻi 96813

Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaiʻi 96813

Prepared by:
AGY, LLC
615 Piʻikoi Street Suite 1806
Honolulu, Hawaiʻi 96814

April 2024

This document is prepared pursuant to:
The Hawaiʻi Environmental Policy Act,
Chapter 343, Hawaiʻi Revised Statues (HRS), and
Title 11, Chapter 200.1, Hawaiʻi Department of Health Administration Rules (HAR)

TABLE OF CONTENTS

1. PROJECT SUMMARY 1

2. DESCRIPTION OF PROPOSED PROJECT 3

2.1 Purpose and Need of Project 5
2.2 Site Background and Description 11
2.3 Existing Structures and Uses 15
2.4 Existing Utilities 16
2.5 Proposed Project Technical Characteristics 17
2.5.1 Emergency Communication Facilities 17
2.5.2 Demolition and Grading 17
2.5.3 Landscaping 17
2.5.4 Economic Characteristics 17
2.5.5 BWS Kapa‘a 272 Reservoir Replacement 18

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES 21

3.1 Climate 21
3.2 Topography and Soils 21
3.3 Hydrology 24
3.4 Wastewater 25
3.5 Flood Hazard 25
3.6 Natural Hazards 27
3.7 Circulation and Off-Street Parking 28
3.8 Biological Resources 29
3.9 Historical, Cultural, and Archeological Resources 35
3.10 Social Characteristics 36
3.11 Visual Resources 37
3.12 Air Quality 41
3.13 Noise 42
3.14 Solid Waste 43

4. RELATIONSHIP TO LAND USE POLICIES AND CONTROLS 44

4.1 State of Hawai‘i 44
4.1.1 Hawai‘i State Plan 44
4.1.2 State Land Use Classification 49
4.1.3 Coastal Zone Management 56
4.2 City and County of Honolulu 61
4.2.1 Zoning 61
4.2.2 General Plan 61
4.2.3 Ko‘olau Poko Sustainable Communities Plan 64

5. ALTERNATIVES TO THE PROPOSED ACTION 68

5.1 Alternative 1: No Action 68
5.2 Alternative 2: Replacement of Communications Tower and Facility Upgrades 68

6. PERMITS AND APPROVALS 69

7. CONSULTED PARTIES 70

7.1 Pre-Assessment Consultation 70
7.2 Distribution of the Draft Environmental Assessment 71

8. DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION ... 72

8.1 Significance Criteria 72
8.2 Findings 76
8.3 Reasons Supporting Determination 77

LIST OF FIGURES

Figure 1: BWS Kapa'a Reservoir Parcel 4
Figure 2: Island Wide Microwave Loop 9
Figure 3: Island Wide Microwave Loop – Future Connection to Kapa'a Reservoir Communication Facility 10
Figure 4: Existing Site 14
Figure 5: Site Plan 19
Figure 6: Demolition Plan 20
Figure 7: Soil Map 23
Figure 8: Flood Map 26
Figure 9: Existing and Proposed Views – John A. Burns (H-3) Freeway 39
Figure 10: Existing and Proposed Views – Mokapu Saddle Road 40
Figure 11: State Land Use Map 51
Figure 12: Zoning Map 55

LIST OF TABLES

Table 1: Existing and Future Antenna 7
Table 2: HPD Emergency Communication System 12
Table 3: Existing Structures 15
Table 4: Project Location CDUA Permits / Environmental Assessments 52
Table 5: Other HPD Microwave Tower Sites – CDUA Permits 52
Table 6: Draft Environmental Assessment Distribution List 71

APPENDIX

Appendix A – Chapter 6E-8 and 6E-42 Historic Preservation Review – Request for Concurrence with Project Effect Determination Kapa‘a BWS Reservoir Radio Tower Replacement

Appendix B – Construction Drawings

Appendix C - Management Plan - Hawaii Administrative Rules §13-5-22
P-14 Telecommunications Use D-1

Appendix D - Draft Environmental Assessment Comment and Response Letters

Appendix E - Final Environmental Assessment Honolulu Police Department Communications Facilities Upgrade

1. PROJECT SUMMARY

Proposed Action:	Honolulu Police Department Communications Facilities Upgrade Board of Water Supply Kapa‘a 272 Reservoir Department of Design & Construction Project No. II-31-19-C
Proposing Agency:	Department of Information Technology City and County of Honolulu 650 South King Street, 5th Floor Honolulu, Hawai‘i 96813 Department of Design and Construction City and County of Honolulu 650 South King Street, 11th Floor Honolulu, Hawai‘i 96813
Accepting Agency:	Department of Design and Construction City and County of Honolulu 650 South King Street, 11th Floor Honolulu, Hawai‘i 96813
Agent for the Applicant:	AGY LLC 615 Pi‘ikoi Street Suite 1806 Honolulu, Hawai‘i 96814
Project Location:	Kāne‘ohe, Hawai‘i
Parcel Area:	98,550 square feet (sf)
Project Area:	305 sf
Tax Map Key:	TMK [1] 4-2-017:016
Address:	1691 Mokapu Boulevard Kāne‘ohe, Hawai‘i 96744
Existing Uses:	Public – Water Tank Public – Communications Facility
Proposed Uses:	Upgrade Communications Facility

State Land Use District:	Urban District
Zoning District:	P-1 Restricted Preservation
Community Development Plan:	Ko‘olaupoko
Special Management Area (SMA):	Outside the SMA
Flood Insurance Rate Map:	Flood Zone D / X: Undetermined Flood Hazard Beyond 500 Year Flood Plain
Need for Assessment:	Chapter 343, Hawai‘i Revised Statues §343-5 (1) Use of State Lands and Funds Chapter 343, Hawai‘i Revised §343-5 (2) - Propose Any Use within Land Classified as a Conservation District
Anticipated Determination:	Finding of No Significant Impact

2. DESCRIPTION OF PROPOSED PROJECT

The City and County of Honolulu Department of Design and Construction (DDC), Department of Information Technology (DIT) and Honolulu Police Department (HPD) propose to upgrade the existing public safety radio communication system located on the Board of Water Supply (BWS) Kapa‘a Reservoir parcel (Figure 1). The BWS Kapa‘a Reservoir parcel is located in the town Kāne‘ohe, on the island of O‘ahu. The parcel is on the Oneawa Ridge, hills dividing the towns of Kāne‘ohe and Kailua. The property is identified as Tax Map Key 4-2-017:016 with a total area of 98,550 sf.

The existing communication facility is part of the City and County of Honolulu’s public safety and emergency communications system. The communication facility also provides use for state and federal emergency and public safety agencies. Public or commercial use is not allowed on the Kapa‘a communication towers. The existing communication facility includes two (2) truss microwave towers, an electrical raceway connecting the two (2) towers, and a one-story communication building.

The project proposes to replace one (1) existing microwave truss tower (50’-2” height) with a new monopole tower (80’-0” height); install a new concrete sidewalk around the existing communications building; remove two (2) existing propane tanks and replace with one (1) diesel fuel tank; modify the existing radio equipment building interior including removal of several existing concrete masonry unit (CMU) walls and installation of a new CMU wall; replace existing generator located inside the building with a new emergency generator. Structural improvements to the existing radio equipment building will also be made to withstand a Category IV hurricane. The total area of work will be approximately 305 square feet (sf).

Figure 1: BWS Kapa'a Reservoir Parcel

2.1 Purpose and Need of Project

The purpose of the project is to upgrade the transmission and structural systems of the existing radio tower and communication facilities at the Kapa‘a Reservoir site. The project is needed to meet current and future emergency communication needs for the east side of O‘ahu. The Kapa‘a tower is part of a microwave system used for dispatching emergency medical and public safety services, including City and County of Honolulu police, fire, ambulance vehicles and helicopters. The communication towers around the island also secure state and federal antenna as requested by the different agencies.

The microwave emergency communication system consists of radio towers, facilities, and radio equipment rooms located around the island of O‘ahu. The loop microwave system utilizes microwave transmission technology for point-to-point communications. The loop microwave system encircles the island of O‘ahu and allows signals to be transmitted in either direction around the loop. Island wide radio coverage is needed for all users throughout the system. The HPD dispatch center needs island wide coverage with every patrol unit. In addition, certain specialized divisions or sections need system access directly from the offices for communicating with their own field units. There is a need to provide an adequate number of radio channels to support the various police activities for both voice and digital communications. The upgrade will provide increased data transmission and address current deficiencies to mitigate the effects from natural disasters, such as hurricanes and earthquakes, by providing a more stable tower design. Antenna towers require maintenance and reinforcement to withstand a Category IV hurricane.

There are 16 key communication facilities located around the island (Figure 2). The BWS Kapa‘a Reservoir site is not a part of the main communication loop, but designated as a spur link connecting Kailua Police Station and the Kāne‘ohe Police Station (Figure 3).

The Kailua Police Station tower is part of the island-wide loop, but will be a spur link after the Kapaʻa tower upgrade. There is an additional spur link off of the Kailua Police Station tower to a tower at Puʻu Pāʻpaʻa at ʻAikahi. The Puʻu Pāʻpaʻa tower will remain a spur link after the Kapaʻa tower upgrade. The Puʻu Pāʻpaʻa tower was installed around the early 90's to consolidate the sites at the Kāneʻohe Police Station and the Kapaʻa facility to free up frequencies and channels to accommodate additional users on the Radio System and to improve its reliability and coverage (City and County of Honolulu 2010). The current microwave spur radio equipment is outdated and replacement parts are difficult to obtain.

The Kāneʻohe Police Station radio tower recently completed construction for increased tower height and facility upgrades. The Kāneʻohe Police Station tower is using a passive microwave relay from the Kailua Police Station. A microwave dish on the Kapaʻa tower is connected to a microwave dish on a lower tower on the Kāneʻohe side and relaying signals to the Kāneʻohe Police Station. The existing Kapaʻa tower is unable to relay directly to the Kāneʻohe Police Station. The microwave technology allows transmission of large amounts of information and uninterrupted frequencies. However, the microwave communication is typically limited to line-of-sight propagation and cannot pass around hilly and mountain landscapes. Microwave antennae require visual clearance to receive radio signals. The increased height will allow the Kapaʻa tower to be connected to the upgraded Waimānalo Ridge 100'-0" tall microwave tower. The existing Kailua Police Station tower, providing the link to the Kapaʻa tower and Kāneʻohe Police Station tower, needs replacement to be upgraded. Unfortunately, a new tower at the Kailua Police Station is not able to be constructed due to space limitation, and a more direct link for the microwave loop from the Waimānalo Ridge tower to the Kapaʻa tower is planned. Increasing the tower height will provide the Kapaʻa tower the clearance and also the space for additional links, such as high speed communications. The City and

County of Honolulu Department of Parks and Recreation requested the use of additional links at the Kapa‘a tower for security video cameras at comfort stations on the Windward side of the island. As additional links and antennae are added to the tower, wind-loading and other structural requirements are increased. The upgrade of the Kapa‘a tower will provide a direct link from the Waimānalo Ridge tower to Kāne‘ohe Police Station and also feed to the Kailua Police Station.

The height increase of the Kapa‘a tower is needed to mount three (3) additional 6’-0” antenna and high speed communication links. The height requirement for the additional three (3) antenna total 18’-0”. High speed communication for the BWS Kapa‘a 272 Reservoir increases the height by 2’-6”. Other City and County of Honolulu facilities requiring high speed communication links add an additional 8’-0” to the height requirement. The total height required for the additional antennae and high speed links total 28’-6”. The increased number of antenna and increased height of the tower create additional wind load and structural requirements for the new microwave tower replacement. For specific information on the type, model number and specification on the antenna refer to the Construction Documents (Appendix B).

Table 1: Existing and Future Antenna

Tower #1 (20’-0”) Kāne‘ohe Side – Existing Antenna	
Quantity	Type
1	6’-0” Diameter Microwave Dish
Total Existing Antenna	***1***
Tower #2 (50’-2”) Kailua Side – Existing Antenna	
Quantity	Type
1	6’-0” Diameter Microwave Dish (Kailua Police Station)
4	800MHz antenna
Total Existing Antenna	***5***

Table 1: Existing and Future Antenna, Continued from Previous Page

Tower #2 (80’-0”) Kailua Side – Future Antenna	
Quantity	Type
4	6’-0” Diameter Microwave Dish (Kailua Corp, Kamehame Ridge, Kapaa Quarry, Waimānalo Ridge)
2	2’-6” Diameter Microwave Dish (BWS)
4	Wi-Fi Antenna (3 Wi-Fi Radios attached to each Antenna)
2	800MHz antenna
Total Future Antenna	***12***
Total Antenna	***18***

The objective is to upgrade existing emergency communications towers and facilities island-wide on O‘ahu to survive a Category IV hurricane. In 2010 an audit was completed for the entire system and discovered all towers were substandard because they were only built to withstand a Category I hurricane. After Kaua‘i County was struck by Hurricane Iniki, a Category IV hurricane which destroyed emergency communication, all emergency communication towers and buildings state-wide were recommended for upgrades for natural disaster resilience. Kaua‘i County recommended towers and buildings to be able to maintain operations for a Category III hurricane and survive a Category IV hurricane. The microwave communication system is critical after a hurricane because the overhead lines for communications, such as Hawaiian Telephone and Spectrum, are not able to withstand hurricane winds. The DIT has slowly been upgrading the island-wide emergency communication loop throughout the years using City and County of Honolulu Capital Improvement Program (CIP) funding. In addition to the Kapa‘a tower, towers and facilities at Mokulē‘ia, Kawela, and Sand Island are also identified as substandard and planned for upgrading. DIT assists all branches of city government to maintain, secure and protect the various communications networks for the City and County of Honolulu, including those used by HPD, Honolulu Fire Department, Department of Emergency Management, and Honolulu Emergency Services Department, to support public safety.

Figure 2: Island Wide Microwave Loop

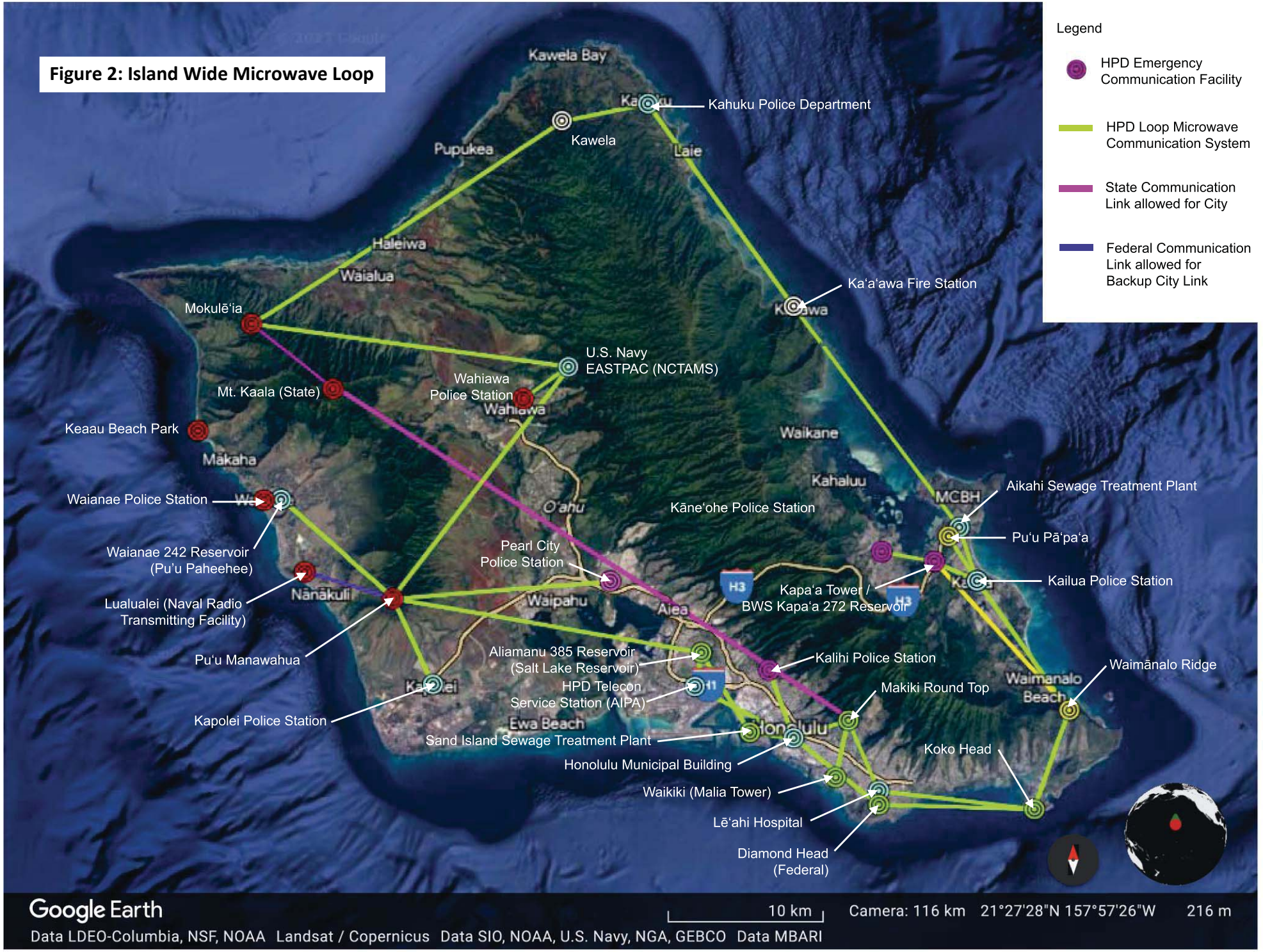


Figure 3: Island Wide Microwave Loop - Future Connection to Kapa'a Reservoir Communication Facility

2.2 Site Background and Description

Microwave system

Originally installed in 1978, the microwave system is a protected loop configuration with spur links off the loop to police substations. There are 30 stations throughout the island, including the spur links. The life span of the original microwave radio equipment is roughly 15 years. The existing 50’-2” microwave tower with a digital microwave system at Kapa‘a Reservoir site was installed in 2001 and supports all two-way voice and mobile data systems and point-to-point data transmission for the HPD and other City and County and State users. The types of communications include two-way voice radio, telemetry, data and telephone. The 800 MHz trunked system allows officers to communicate with any officer using a single radio. The system provides low potential for radio interference, more privacy, flexibility for restructuring, protection from loss of an individual repeater, and multiple features including the ability to add mobile data. The 800 MHz trunking offers frequency efficiency, flexibility for multiple users and expansion capabilities.

Because the HPD has a large number of radios, the island-wide trunked system supports a significantly larger number of field units. The system is also able to accommodate other government users who operate throughout the island. The other government users purchase their mobile, portable, and control radio units, and are considered “subscribers” on the island-wide trunked backbone system. When the system reaches a threshold additional remote site equipment, such as new repeaters and antennas will be required. Despite the shared infrastructure, each agency operates under the perception of having its independent network, ensuring the seamless yet distinct functioning of their communication systems within the shared framework.

The 800 MHz mobile data radio system supports data base access, computer aided dispatch access, mobile terminal-to-mobile terminal communications, and integration of field -initiated report writing with the records management system.

Table 2: HPD Emergency Communication System

#	Site	Tower/ Monopole Height	Permit	Recent Construction Completion
1	Honolulu Municipal Building	12’	*EA	
1A	Kalihi Police Station	60’-2”	Exempt	2022
2	Makiki Round Top (Round Top Radio)	100’, 100’, 25’, and 40’	**EA / CDUA	2008
2A	Waikiki	Only Antennas	Exempt	
3	Diamond Head (replaced by Lē‘ahi Hospital)	12’ and 12’		Removed
3A	Lē‘ahi Hospital	Only Antennas	**EA	1994
4	Koko Head (Anuenue Radio Facilities and Tower)	50’, 20’ and 70’	**EA/ CDUA/ SMA	2007
5	Waimānalo Ridge	100’	*EA/ CDUA	2013
6	Kailua Police Station	100’	Exempt	
6A	Kapa‘a 272 Reservoir	20’ and 50’	*EA	
6B	Kāne‘ohe Police Station	93’-10”	Exempt	2021
7	Aikahi Sewage Treatment Plant	100’	Exempt	
8	Ka‘a‘awa Fire Station	100’	**EA / SMA	2018
9	Kahuku Police Station	152’	Exempt	
9A	Sunset Beach Neighborhood Park	30’	*EA	
10	Kawela	90’ (existing), 180’ (in design)	*EA / CDUA / Exempt	In Design
11	Mokulē‘ia	80’ (existing), 100’ (in design)	*EA / CDUA	In Design
12	U.S. Navy – EASTPAC (NCTAMS)	175’	Exempt	

Table 2: HPD Emergency Communication System, Continued from Previous Page

#	Site	Tower/ Monopole Height	Permit	Recent Construction Completion
12A	Wahiawa Police Station	60’	Exempt	
13	Pu‘u Manawahua	220’	*EA/ CDUA	2016
13A	Wai‘anae 242 Reservoir (Pu’u Paheehee)	18’	EA / CDUA	2022
13B	Wai‘anae Police Station	50’	*EA / CDUA	
13C	Keaau Beach Park	25’	*EA / CDUA / SMA	In Design
13D	Pearl City Police Station	60’	Exempt	
14	Āliamanu 385 Reservoir (Salt Lake Reservoir)	50’	*EA / CDUA	complete
14A	HPD Telecon Service Station (AIPA - Airport)	Only Antenna	Exempt	
15	Sand Island Sewage Treatment Plant	24’	*EA / SMA	
16	Pu‘u Pā‘pa‘a	130’	**EA	1999
17	Lualualei (Naval Radio Transmitting Facility)	1,500’ and 1,500’		2012
18	Kapolei Police Station	Tower		
19	AES Kapa‘a	Future		Pending Approval
20	Kapa‘a Corp Yard	Future		Pending Approval

*EA approval addressed all sites (except “Future” sites, Pu‘u Pā‘pa‘a site and Lualualei site) in Final Environmental Assessment Honolulu Police Department Communication Facilities Upgrade. 1993-01-08-FEA-HPD-Communications-Facilities-Upgrade. Leahi Hospital was addressed in Final Environmental Assessment Honolulu Police Department Leahi Hospital Communication Facilities. 1994-06-08-OA-FEA-Hpd-Leahi-Hospital-Communications. Pu‘u Pā‘pa‘a and Lualualei sites were mentioned in 2010 Audit. Audit of the Honolulu Police Department’s Utilization of the 800 Megahertz Telecommunications System. Kawela is located in the Army’s Kahuku Training Area and does not require an EA or CDUA per communications with the Army.

**Additional EA completed

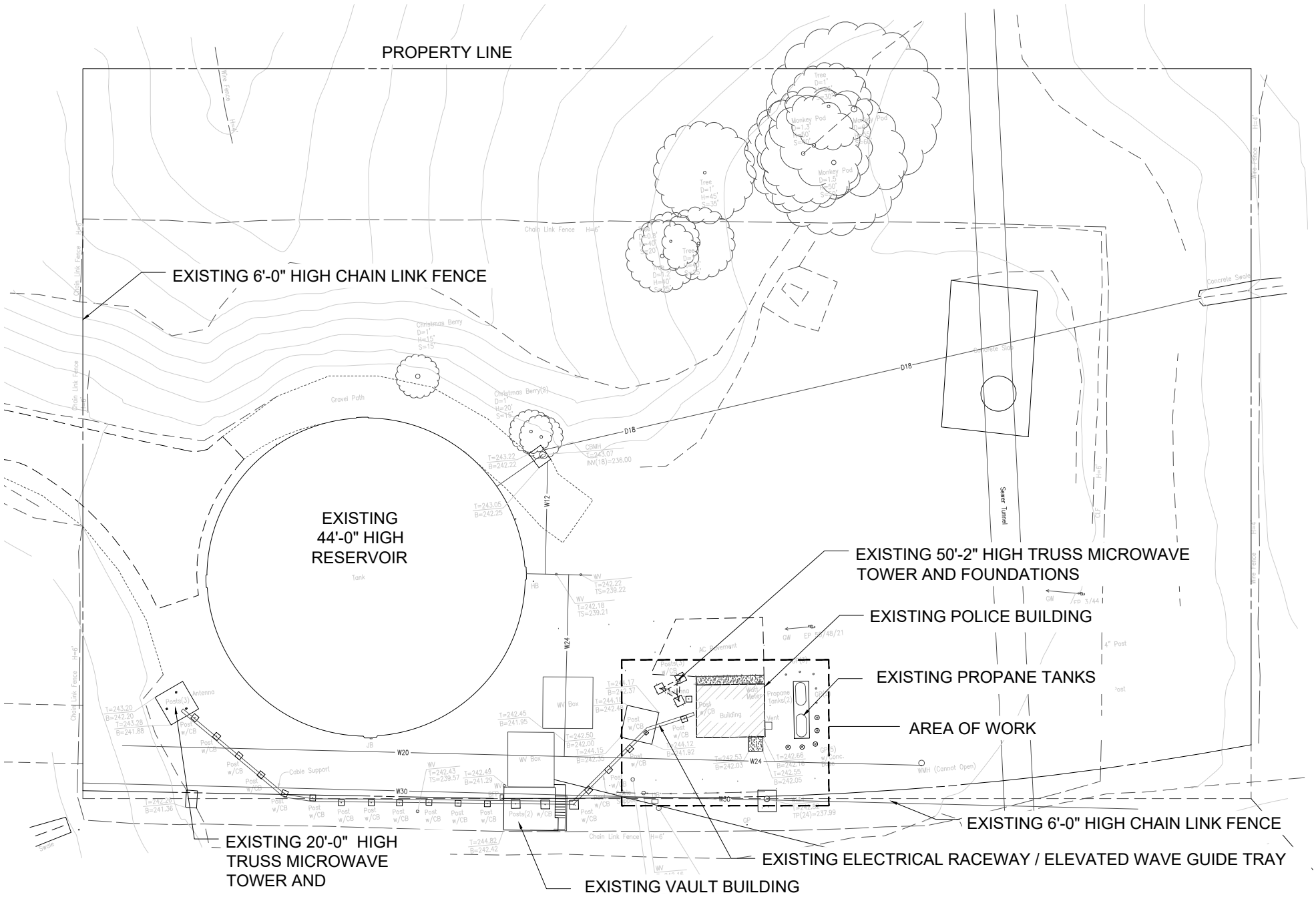


Figure 4: Existing Site

2.3 Existing Structures and Uses

The primary structures at the project site are the Kapa'a 272' BWS 2.0 million gallon (MG) reservoir, reservoir related appurtenances, the police building and two (2) antennae towers.

Table 3: Existing Structures

Building	Function	Square Feet (sf)	Year Built
Water Tank	BWS 2.0 million gallon (MG) reservoir	25,337 sf	1958
Vault Building	Electrical controls and telephone service for water tank	2,000 sf	1967
Police Building	Equipment room	420 sf	2001
20' Antenna Truss Tower	Emergency Communications		1998
50' Antenna Truss Tower	Emergency Communications		2001

The water tank, constructed in 1958, is approximately 44'-0" high and 111'-2" in diameter with a tank elevation of approximately 286 feet. The water tank is cylindrical formed structure with pre-stressed concrete exterior walls. According to the State Historic Preservation Division (SHPD) Historic Property Evaluation – Survey Form submitted for the BWS Kapa'a Reservoir Replacement Project, the water tank structure features a 4" concrete dome with a rectangular hatch shelter with a decorative breeze block vent. The water tank, is the dominant site feature on the site due to the large mass and cylindrical shape which contrasts with the surrounding environment.

The survey form also describes the Vault Building as a below-ground rectangular building with concrete masonry unit (CMU) block exterior walls. The building features a

built-up flat roof with a concrete overhang on its east and west ends. Concrete steps lead down to the Vault Building entrance. Decorative breeze block provides ventilation at the building's east and west elevations.

The Police Building is single-story rectangular building, approximately 12’-0” high with concrete masonry unit (CMU) exterior walls. The building features a flat built-up roof, single doors at its front and rear facades on the north and south sides of the building, jalousie windows on the south side and two window AC units on the building's east side.

One (1) 20’-0” high truss microwave tower with one (1) 6’-0” diameter microwave dish is located on the Kāne‘ohe side of the reservoir. The other 50’-2” high truss microwave tower with one (1) 6’-0” diameter microwave dish is located on the Kailua side of the reservoir. An electrical raceway / elevated wave guide tray connects the two towers. The guide is approximately 1’-0” wide and raised 10’-0” high, with supporting metal posts at approximately 10’-0” intervals for approximately 200’-0”.

On the northeast area of the site is a 50’-4” by 29’-10” concrete pad and access shaft for the 10’-0” diameter Kāne‘ohe/Kailua Wastewater Gravity Flow Tunnel. The tunnel is located within a 40’-0” wide subterranean easement, which runs along the Kailua side property line. The tunnel is approximately 80’-0” from the property line.

2.4 Existing Utilities

The project site includes electrical, communication, drainage, and water utilities. Existing 50-foot high electrical poles and guy wires service both the BWS Vault Building and Police Building which house the various electrical controls to ensure the safe and reliable function of the reservoir and emergency telecommunications facilities. There are also existing telephone cabinets and telemeter cabinets which provide hardline telephone service for the project site. One of the existing 50-foot high electrical poles,

on the Kailua side of the property, has a pole mounted transformer which would obstruct the line of site for the communication transmission.

2.5 Proposed Project Technical Characteristics

2.5.1 Emergency Communication Facilities

The project proposes to replace one (1) existing microwave truss tower (50’-2” height) with a new monopole tower (80’-0” height); install a new concrete sidewalk around the existing communications building; remove two (2) existing propane tanks and replace with one (1) diesel fuel tank; modify the existing radio equipment building interior including removal of several existing concrete masonry unit (CMU) walls and installation of a new CMU wall; replace existing generator located inside the building with a new emergency generator (Figure 5).

2.5.2 Demolition and Grading

Demolition and grading is minimal. One (1) 50-foot high microwave truss tower and two (2) propane tanks will be removed (Figure 6). The total area of grading work will be approximately 305 square feet (sf).

2.5.3 Landscaping

Aside from re-grassing disturbed areas with construction, landscaping is not proposed.

2.5.4 Economic Characteristics

The construction costs are estimated at $1,800,000 and will be funded by the City and County of Honolulu. The project will be completed in one phase with construction to commence around Fall 2025 with completion by Fall 2026.

2.5.5 BWS Kapa‘a 272 Reservoir Replacement

The existing 2.0 million gallon (MG) concrete reservoir was approved to be replaced by a new 1.0 MG concrete reservoir (Figure 5). Reservoir-related appurtenances would also be installed to support the new 1.0 MG reservoir. After the new 1.0 MG reservoir is constructed, the existing 2.0 MG reservoir and reservoir related appurtenances would be demolished to and the site cleared of debris. The CDUA (Conservation District Use Application) for the project was approved in December 2022. However, as of December 2023, demolition or construction has not commenced, despite the scheduled timeline for the project's initiation in 2022.

The new reservoir will be approximately 34’-0” tall and 77’-8” in diameter. The BWS Kapa‘a 272 Reservoir CDUA determined the existing environment of the parcel is physically constrained by landform and land cover, not situated in an area that would obstruct any views, and the new reservoir would not have any significant visual impacts.

The BWS reservoir replacement project is a completely separate project from the HPD emergency communication facility upgrade project. Both projects are managed and funded by different City and County of Honolulu agencies. The City and County of Honolulu DDC, DIT and HPD are proposing to upgrade the existing public safety radio communication system located on the BWS Kapa‘a Reservoir parcel. The emergency facility upgrade project is critical for public safety.

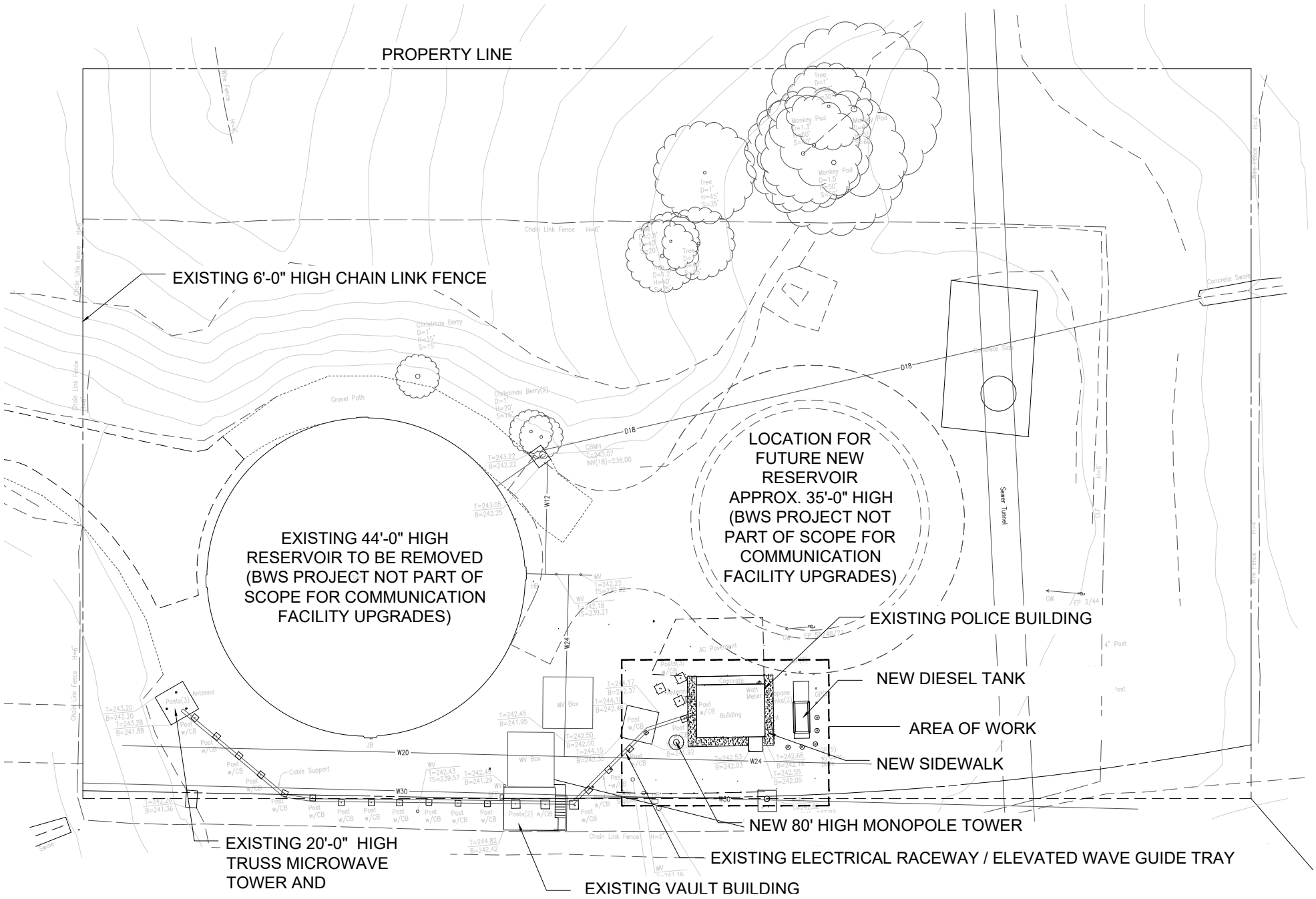


Figure 5: Site Plan

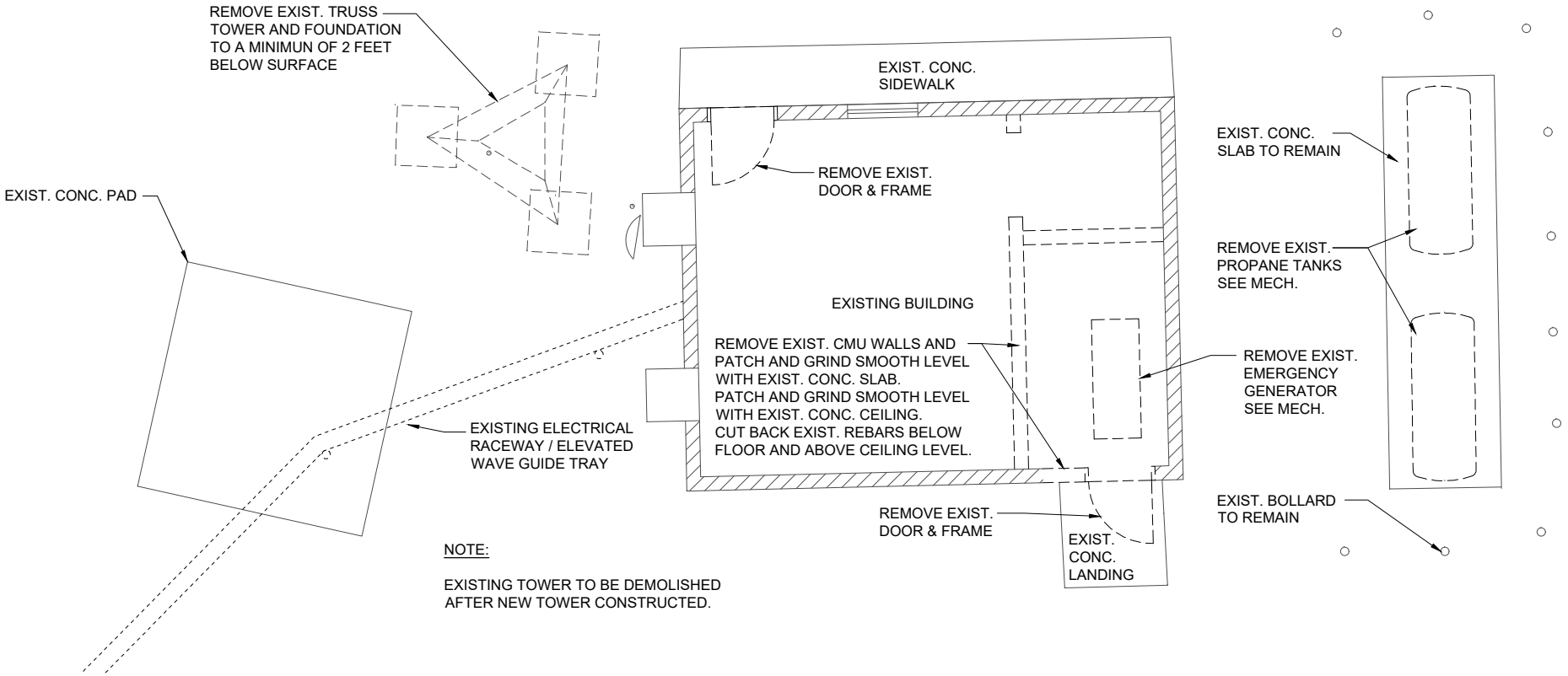


Figure 6: Demolition Plan

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

3.1 Climate

Existing Conditions

The project is located on a flat area cut into Oneawa Ridge, a ridge dividing Kāne‘ohe and Kailua on the eastern side of O‘ahu. The climate in the area is characterized by abundant sunshine, relatively constant temperatures, infrequent storms, moderate humidity, and prevailing northeasterly tradewinds. The prevailing east and east-northerly trade winds occur approximately 70 percent of the year with higher percentages in the summer months than winter. This results in light and variable wind conditions. The climate in the area is warm and temperate with temperatures ranging between 50 and 90 degrees Fahrenheit. The area also receives a significant amount of rain with a mean annual rainfall amount of approximately 60 inches.

Potential Impacts and Mitigative Measures

The ground preparation for the emergency communication facility upgrades will not involve removal existing landscaping, besides re-grassing of disturbed areas. The project is not expected to have any impact on the climate. As such, no significant impacts to local temperature, rainfall, or wind patterns are anticipated for either the short-term or long-term. No mitigation measures are proposed.

3.2 Topography and Soils

Existing Conditions

Topography of the project area consists of relatively steep slopes, with steeper mountain vistas, ridgelines, and cliffs to the southwest, and a flat residential area and shoreline to the northeast. Soil for the entire property is Alaeloa silty clay, 40 to 70

percent slopes (ALF; Figure 7). The Alaeloa series consists of deep and very deep, well drained soils that formed in residuum weathered from basic igneous rock. The depth to water table is more than 80 inches with no frequency of flooding or ponding (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm).

Potential Impacts and Mitigative Measures

The proposed project will involve minimal grading and site preparation for the emergency facility upgrade will not alter the topography. The soil type will remain unchanged and erosion will be controlled. The upgrades will not involve any change to the topography or soils since the construction will occur on flat portions of the property.

Short-term construction related impacts associated with the construction may include minor soil loss, erosion, compaction, soil profile mixing and loss of soil productivity. Construction should employ Best Management Practices (BMPs) to minimize or prevent such occurrences. BMPs include silt fences, periodic watering to minimize dirt particles, and stabilized construction road access. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. If needed, imported fill should be limited to the use of clean and uncontaminated materials. Any graded or excavated material that cannot be reused should be disposed of at an approved waste facility in accordance with State and City regulations. Areas that are exposed as a result of earthwork should be properly handled using site-specific BMPs as required to ensure against the loss of sediment and soils due to storm water runoff. BMPs may include structural (e.g., berms, silt fences, barriers), vegetative (e.g., grass, mulch, ground cover, soil stabilization), and other management measures (e.g., project phasing and good housekeeping practices), as appropriate.

Map Unit Symbol	Map Unit Name
AeE	Alaeloa silty clay, older substrate, 15 to 35 percent slopes, MLRA 167
ALF	Alaeloa silty clay, 40 to 70 percent slopes
KlaB	Kawaihapai stony clay loam, 2 to 6 percent slopes, MLRA 158
KtC	Kokokahi clay, 6 to 12 percent slopes
PYF	Papaa clay, 35 to 70 percent slopes

SOURCE:
UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE,
WEB SOIL SURVEY, NATIONAL COOPERATIVE SOIL SURVEY

NOT TO SCALE

Figure 7: Soil Map

3.3 Hydrology

Existing Conditions

The project area is situated in the Kawainui watershed. There are no surface waters, coastal waters, or wetlands in the project area.

Potential Impacts and Mitigative Measures

The proposed project does not involve any activities that would alter existing stream channels, wetlands, other surface water bodies, or result in any flooding of lower elevation properties.

Short-term construction related impacts associated with the construction may include minor soil erosion. Construction will employ BMPs to prevent contaminants such as sediment, petroleum products, and debris from leaving the site via storm water runoff. BMPs include scheduling work during periods of minimal rainfall, placement of permanent erosion control measures on lands where vegetation is removed as quickly as possible, silt fences, dust fences and stabilized construction vehicle access ways.

The contractor will comply with Hawai‘i Administrative Rules (HAR) § 11-55 Water Pollution Control, DOH, regarding clean water and consult with the Clean Water Branch of the State of Hawai‘i DOH, to ensure acceptable construction methodology and materials. The contractor will also secure permits, if required, prior to construction activities.

Since the disturbed area is expected to be under an acre, National Pollutant Discharge Elimination System (NPDES) Construction Storm Water General Permit Coverage is not required.

3.4 Wastewater

Existing Conditions

There are no toilet facilities at the emergency communication facility. The facility will not require wastewater services from the City and County of Honolulu or use an on-site system for treatment or disposal.

Potential Impacts and Mitigation Measures

The emergency communications facility will not have an adverse effect to the City's wastewater system nor create adverse effect from the on-site disposal of wastewater or which might adversely affect groundwater resources.

3.5 Flood Hazard

Existing Conditions

The project area is designated Zone D and X, outside flood prone areas, as determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). The Zone D designation is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted (Figure 8).

Potential Impacts and Mitigative Measures

As stated in the *Final Environmental Assessment (FEA) Honolulu Police Department Communication Facilities Upgrade* approved in 1992, the communication facilities upgrades will not result in any flooding of lower elevation properties.

National Flood Hazard Layer FIRMette

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

FEMA

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2023 at 7:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Figure 8: Flood Map

3.6 Natural Hazards

Erosion Hazard

The amount of grading will be minimal and the area for upgrade work is not on sloped areas of the property.

Tsunami / Sea Level Rise Hazard

Tsunami evacuation zone maps for the City and County of Honolulu Department of Emergency Management identify low lying areas where evacuation is recommended since extensive damage to life and property may occur from seismic sea waves and safe areas for evacuation. The project site in the "Safe Zone" away from the shoreline, beyond the reach of seismic sea waves, and outside the tsunami evacuation zone.

Sea level rise has the potential to threaten life and property in coastal and low elevation areas. The parcel, which is located approximately 275 to 290 feet above mean sea level (amsl), is outside of the sea level rise vulnerability zones which are areas impacted by 3.2 feet of sea level rise, according to the *Hawaii Sea Level Rise Viewer* (Hawaii Climate Change Mitigation and Adaptation Commission, 2021).

Seismic / Hurricane Hazard

The new communication tower is designed to comply with the Telecommunications Industry Association (TIA) Structural Standard for Supporting Structures and Antennas version G, Addendums 1 and 2 (TIA-222-H) and the International Building Code 2018 (IBC). The TIA222-H requires that communications towers be designed to survive the most critical loading combination they are exposed to, which is based on load, resistance, and topographic considerations. The proposed communications tower is designed to withstand a load combination of 160 miles per hour (mph), which exceeds the Saffir-Simpson Hurricane Wind Scale for a Category IV Hurricane which is associated

with winds of up to 155 mph. The new communications tower is classified as a risk category III and Seismic Design Category D. Seismic Design Category D -Corresponds to buildings and structures in areas expected to experience severe and destructive ground shaking but not located close to a major fault. This seismic resistance class is based on the purpose and use of the new tower to provide emergency communications services.

Landslides and Wildfires

Landslides and rock falls have potential to damage built structures and roads, jeopardizing access for affected users and communities. Steep cliffs and areas containing an abundance of dry vegetation may be more susceptible to rock falls and wildfires. The project area is mostly developed such that the threats from wildfires are unlikely but possible on adjacent undeveloped parcels, especially when vegetation is dry. Drought conditions and high winds could exacerbate the fire hazard. Many wildfires are caused by human actions of an intentional nature or as a result of negligence. Located on the same property as a water reservoir should reduce the impact of a wildfire.

The threats to humans and property from unpredictable natural events will always be present. The proposed project is not expected to affect or exacerbate the occurrence of naturally occurring hazards.

3.7 Circulation and Off-Street Parking

Access to the Kapa‘a 272 Reservoir parcel is from Mokapu Saddle Road and a City and County of Honolulu BWS paved access road. The access road is approximately 860 feet west from the H-3 Interstate / Mokapu Saddle Road overpass.

Periodic maintenance and service of the facility will be required. However, activity will not increase workers in the area on a daily basis and will have minimal impact on current traffic levels. Existing roads and right-of-way will be adequate to accommodate any access required to the site.

Adverse traffic impacts during construction of the project are not anticipated. The scope and scale of the proposed communications facility is not anticipated to generate a high volume of construction traffic. Access for a fire apparatus for the proposed project will comply with existing codes and regulations. Fire apparatus access roads will be maintained with unobstructed width and vertical clearances in accordance with County requirements (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended) and the Uniform Fire Code, Section 902.2.1, as amended. Fire department access roads will be provided such that any portion of an exterior wall of the first story of the building is located not more than 150 feet (45 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility (NFPA 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1). The fire department access road will extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building (NFPA 1; 2018 Edition, Section 18.2.3.2.1). The fire department access roads will be in accordance with Section 18.2.3 (NFPA 1; 2018 Edition, Section 18.2.3).

3.8 Biological Resources

Existing Conditions

The BWS Kapa‘a Reservoir parcel consists of grassed areas with high and dense vegetation primarily on the sloped terrain. Common plants found at the project site include koa haole (*Leucaena leuocephala*), klu, and natal redtop grass (*Rhynchelytrum*

repens). The existing 2.0 MG BWS reservoir site and HPD Emergency Communication Facility was developed and operating since 1958. There are no native plant or animal species located on the parcel or immediately adjacent areas. There are no known rare or endangered plant and/or animal species located at the project site. The project area is not located with a State designated Natural Reserve Area or located in an area designated as critical habitat according to the United States Fish and Wildlife Service (USFWS) Critical Habitat Mapper.

Potential Impacts and Mitigative Measures

According to Avifaunal Surveys and Assessment of Impacts to All Listed Species for the Kaneohe-Kailua Sewer Main Upgrade Project, avian surveys were completed and found no native, endangered or protected species on the parcel. Only introduced exotic birds such as Chestnut Mannikins, Waxbills, Sparrows, Red Avadavats and Doves were located on the parcel.

U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office (USFWS-PIFWO) and the State of Hawaii’s Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) indicate there are five listed species with the potential to occur or transit through in the vicinity of the project area: the State listed endangered Pueo (*Asio flammeus sandwichensis*), the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), band-rumped storm-petrel (*Oceanodroma castro*), Hawaiian petrel (*Pterodroma sandwichensis*), and the threatened Newell’s shearwater (*Puffinus auricularis newelli*). These endangered, threatened and protected species have been found in most areas on the island of O‘ahu. Avoidance and best management practices will be implemented to minimize and mitigate adverse effects prior to construction and during construction.

Pueo (*Asio flammeus sandwichensis*), or the Hawaiian Short-Eared Owl, is State listed as endangered. It is known to use a variety of habitats including wet and dry forests but is most commonly seen in open habitats such as grassland, shrub lands, and even in parks in urban areas. DOFAW noted the pueo could potentially occur in the project area and are most active during dawn and dusk twilights. If pueo are seen at the project site, DLNR will be notified and consulted to assess the potential impacts on pueo from project implementation and to incorporate measures to avoid and minimize impacts. Before any potentially disturbing activity such as clearing vegetation, especially ground based disturbance, DOFAW recommends a qualified biologist conduct surveys during crepuscular hours and walk line transects through the area to detect any active pueo nests. If a nest is discovered, minimize time spent at the nest, and establish a minimum buffer distance of approximately 328 feet from the nest until the chicks are capable of flight. Non-native mammals such as mongoose, cats, dogs and ungulates should be removed from the nesting area. The pueo nest on the ground year round.

Hawaiian hoary bats are known to occur on O'ahu and there is always potential to be present within the project site. During land clearing activities that include tree removal, the USFWS guidelines will be followed, which recommend that no trees greater than 15-feet tall be trimmed or removed during the bat pupping season from June 1 to September 15. The Hawaiian hoary bats roost during the day in native and alien trees and other woody vegetation. During the bat breeding season (June 1 through September 15th), young bats may be left unattended in nursery trees while the adults are out foraging. Prior to construction, clearing or trimming of woody vegetation taller than 15-feet is to be scheduled outside the bat breeding season to avoid killing or injuring young bats. Barbed-wire will not be used for fencing, as bats can become ensnared and killed by barbed-wire fencing during flight.

The project area does not provide suitable habitat for endangered Hawaiian waterbirds, although they may occur in the vicinity of the project area. Should future project construction activities involve temporary or permanent standing water, including excavation or grading for construction or roadwork, then it is likely to attract endangered Hawaiian waterbirds, particularly the Hawaiian stilt which is known to nest in sub-optimal conditions such as ponding water features. The USFWS and DLNR will be consulted to evaluate the potential impacts on listed waterbirds should there be temporary or permanent standing water constructed on the project site. Three species of migratory seabirds (including the band-rumped storm-petrel, Hawaiian petrel, and the Newell’s shearwater) may fly over portions the project area at night between the months of May and November. Any outdoor lighting could result in seabird disorientation, fallout, injury, or mortality. To minimize the threat of disorientation or downing of migratory birds the construction or unshielded equipment maintenance lighting should not be permitted after dark between the months of April and October. In addition, to minimize glare and obtrusive light, all outdoor lighting would be fully shielded. Any lights associated with the project should be cutoff, equipped with a motion sensor, or shielded so that the light cannot be seen from above and lower the ambient glare caused by unshielded lighting. If the top of the tower must be lighted with aviation warning lights or beacons to meet Federal Aviation Administration (FAA) regulations, the USFWS recommend the use of a red flashing light versus the use of red or white solid light, if possible. DOFAW provided a resource related to seabird-friendly light styles protecting the dark, starry skies of Hawai‘i at the website https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

There will be no significant impact to native flora or fauna or habitats, as the vegetation was altered long ago. Minor grading and trenching will be needed for the emergency

communication facility upgrades. Once constructed, the proposed action will not substantially change the impervious areas of the facility.

No nighttime construction will be performed, and dark sky compliant lighting will be installed to ensure no deleterious impacts to seabirds who can be downed after becoming disoriented by lights. Therefore, the proposed action is not anticipated to cause adverse impacts to existing natural resources within the surrounding area, community, or region.

DOFAW also recommends minimizing the movement of plant or soil material between work sites. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid Ohia Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetle), or invasive plant parts that could harm native species and ecosystems.

The contractor will be required to implement measures such as cleaning excess soil and debris from all equipment, materials, and personnel to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70 percent alcohol solution to prevent the spread of Rapid Ohia Death and other harmful fungal pathogens. Additional recommendations from DOFAW are provided below. DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e., climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Invasive species should not be planted on the project site. DOFAW recommends consulting the Hawaii-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home) and the www.plantpono.org website for guidance on selection and evaluation for landscaping plants.

DOFAW also provided additional information on the invasive Coconut Rhinoceros Beetle (CRB) or Oryctes rhinoceros is found on the islands of O'ahu, Hawai'i Island, Maui and Kaua'i. On July 1, 2022, the Hawai'i Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of O'ahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: Washingtonia, Livistona, and Pritchardia (all commonly known as fan palms), Cocos (coconut palms), Phoenix (date palms), and Roystonea (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-speciesprofiles/coconut-rhinoceros-beetle/. Although there are no palm trees or mulch on the proposed project area, it will be noted that all dead trees should be removed to prevent any potential CRB breeding. If CRB is found on site, the appropriate agencies will be contacted by calling 808-643-PEST, (808) 679-5244, emailing info@crbhawaii.org and/or 643pest.org.

The standard comments from State of Hawai'i Department of Health (DOH), Clean Air Branch (CAB) indicate that demolition and land clearing have the potential to disperse rodents. The DOH Vector Control Branch administers the regulatory controls pursuant to HAR §11-26-35,"Rodents; Demolition of Structures and Clearing of Sites and Vacant Lots." The site work for the upgrade project is very minimal and will not be clearing land or grassed areas.

3.9 Historical, Cultural, and Archeological Resources

Existing Conditions

The project site is used as a BWS reservoir and emergency communication site and public access is not allowed for the protection of public safety. The existing 2.0 MG reservoir at the Kapa‘a 272 Reservoir facility has been in operation since 1958 and the emergency facility since 1988.

Additionally, a review of the SHPD records indicated an archaeological monitoring report (Filimoehala and Rieth 2019) included a test boring location with TMK: (1) 4-2-017:016. No archaeological historic properties were identified in the project area or vicinity. SHPD accepted the archaeological monitoring report on September 19, 2019 (Log No. 2019.01554, Doc. No. 1909JA07). An Archeological Field Inspection and Literature Review (FILR) of the project site was also completed in 2020 for the Kapa‘a 272 Reservoir Replacement Project. The AFILR did not reveal or identify any historic properties (traditional Hawaiian and historic artifacts, etc.) on the subsurface of the project area and SHPD approved the “No historic properties affected” determination Hawaii Revised Statues (HRS) Chapter 6E Submittal for the project (Appendix A).

Potential Impacts and Mitigative Measures

Construction of the emergency facility upgrades will involve some ground disturbance in the form of grading and excavation. It is anticipated that no subsurface cultural or historical resources are present; however, should subsurface remains, artifacts, or other historical deposits be discovered during excavation activities, all work shall cease and the appropriate agencies and authorities, including the State Historic Preservation Division, will be notified.

The proposed action would not change the existing use. There are no known present or contemporary cultural uses within or around the project area. Since no change in land use and access is proposed, no disturbance of associated cultural resources can be expected in relation to the proposed action. SHPD provided a letter of concurrence with DDC's effect determination of "No historic properties affected" for the project on November 21, 2021, ending the HRS 6E-8 historic preservation review process. The SHPD letter is provided in Appendix A.

The proposed project will have no effect on the existing public use of any uplands, beach or ocean waters, or traditional or customary gathering activities. No mitigation is proposed.

3.10 Social Characteristics

Existing Conditions

The Bus operates routes on Mokapu Saddle Road fronting the project area. Only the west-bound bus would be minimally affected during the communication facility upgrade construction. The closest west-bound bus stop is located about a mile away from the project site near Kalaheo High School. Periodic maintenance and servicing would have minimal impact on traffic.

Existing fire connections and hydrants are present for existing structures, the proposed communication facility upgrades are not anticipated to create an increased demand for existing fire protection services.

Potential Impacts and Mitigative Measures

The proposed project will improve public service in the form of life safety, emergency response and communications. The upgrade will not significantly increase the demand

or create a burden on other public services, such as police, fire, trash, medical and other services. As such, no mitigation is proposed. Access for a fire apparatus, water supply, and construction for the proposed project will comply with existing codes and regulations. Prior to construction of the project, civil drawings will be submitted to the HFD for review and approval, to verify the proposed upgrades meets all regulations regarding access and water supply.

3.11 Visual Resources

Existing Conditions

The upgrade requires a new 80'-0" high monopole tower to replace the existing 50'-2" shorter, wider microwave truss tower. The existing tower and building were painted dark earth-tone colors, with the intension to appear receding into, rather than matching, the lighter colors of the earth, grasses and shrubs covering the hillside.

View-plane impacts for the parcel were addressed in *the Visual Impact Assessment for the Kapa'a 272 Reservoir Replacement* (R. M. Towill Corporation, 2022). The BWS Reservoir Replacement project CDUA was approved in December 2022 with the finding of no significant visual impacts for the new 1.0 MG Reservoir. It was determined the existing environment of the parcel is physically constrained by landform and land cover. In addition to the physical constraints of the environment, the extent to which the project is visible is constrained by the physiological limits of human sight. According to the report, physiological limits of human sight is what a viewer can see, distinguished by the location, proximity, and light.

Potential Impacts and Mitigative Measures

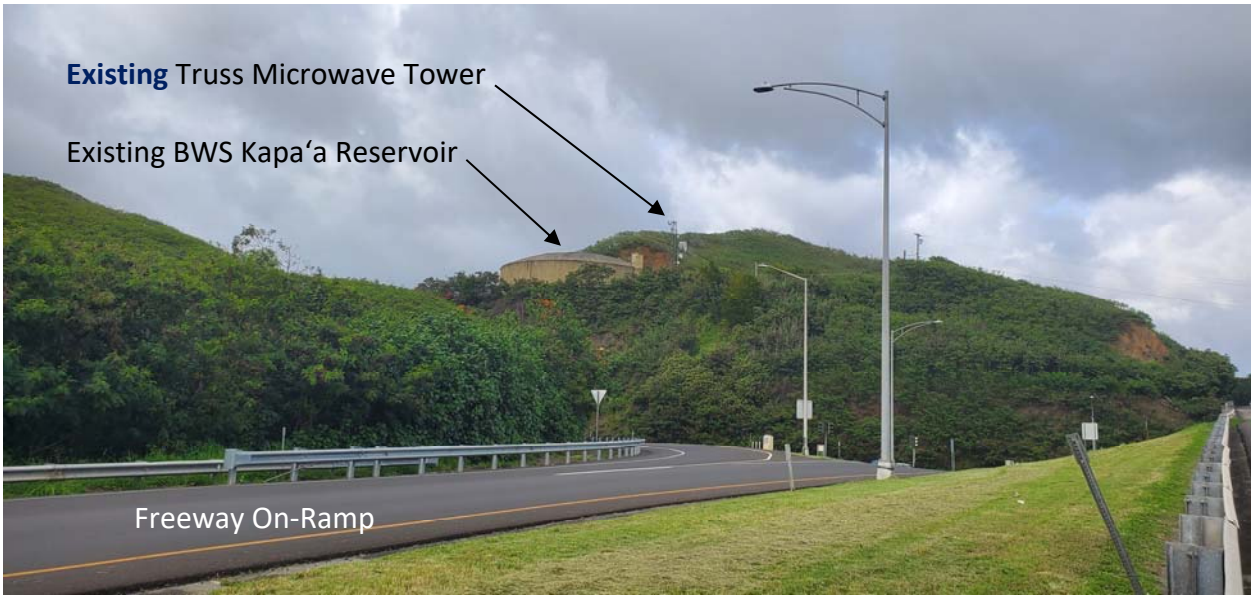
The upgrades to the tower require a monopole tower with an increase in height of 29'-10", from the 50'-2" height, replacing the shorter, wider microwave truss tower with a

taller monopole tower. The new tower is approximately 30’ taller, but with a single pole instead of the truss structure. The main requirement for the tower is to ensure structural integrity in the case of a Category IV hurricane. The other communication facility upgrades improvements would be near ground level and shielded from view by existing vegetation. The site is surrounded by tall vegetation on all sides and the proposed upgrades would not affect the vegetation surrounding the property.

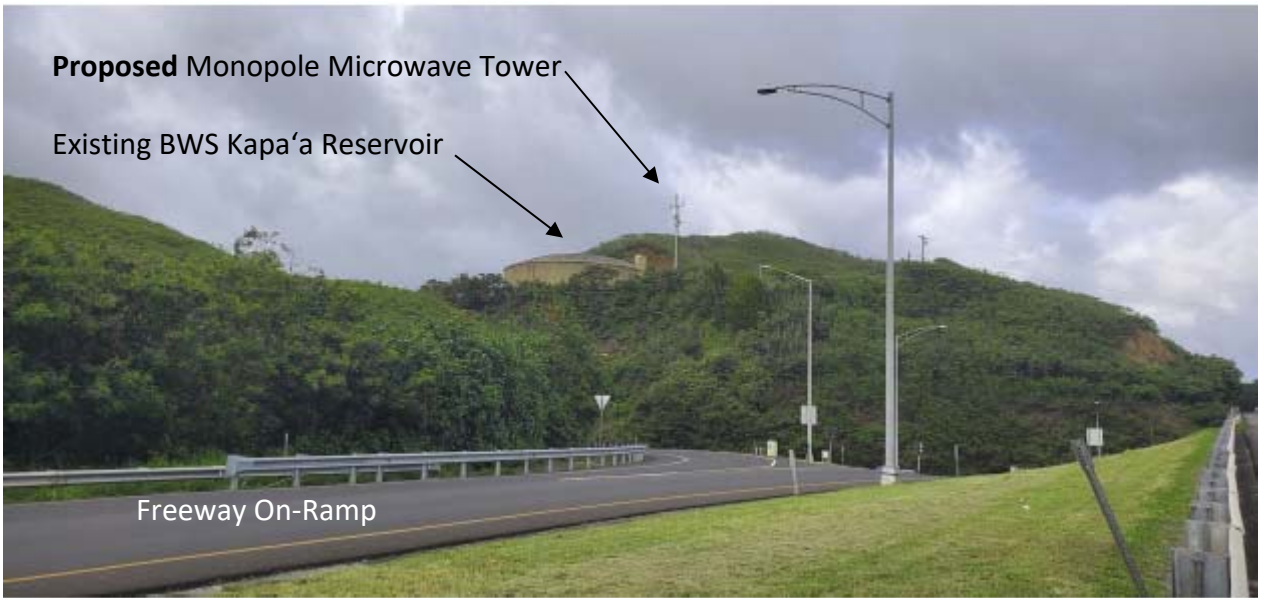
No adverse effects to the surrounding population are expected from the upgrade project as the site is not situated in an area obstructing any stationary, continuous, or intermittent views identified in the Ko‘olau Poko Sustainable Communities Plan. The parcel is located away from the shoreline; therefore, no direct effect on the quality of the coastal scenic resources or views of the coast are expected. The existing Kapa‘a Reservoir parcel has provided service to the region for over 60 years with the 2.0 MG reservoir being the dominant feature. In addition to the reservoir and microwave towers, there are existing utility poles and lines, crossing over the John A. Burns Freeway which are visible. While the new replacement monopole tower will be visible from certain vantage points, it will be replacing an existing resource used for public safety and emergency communications. The locations where viewers currently have the highest exposure to and awareness of the increase tower height are from Mokapu Saddle Road and the John A. Burns (H-3) Freeway. Existing and proposed views are provided along both roadways (Figure 9 and Figure 10).

The new tower and building will be painted a dark earth-tone color, similar to the existing facilities, with the intension of the facilities to appear to recede into, rather than match, the lighter colors of the earth, grasses and shrubs covering the hillside. These impacts would be further reduced by limiting vegetation removal to the extent possible, resulting in a low residual impact.

Figure 9: Existing and Proposed Views – John A. Burns (H-3) Freeway



<u>Existing</u> View from John A. Burns (H-3) Freeway Looking North



<u>Proposed</u> View from John A. Burns (H-3) Freeway Looking North

Figure 10: Existing and Proposed Views – Mokapu Saddle Road

<u>Existing</u> View from Mokapu Saddle Road

<u>Proposed</u> View from Mokapu Saddle Road

3.12 Air Quality

Existing Conditions

DOH CAB, under HAR §11-60.1, monitors the air quality statewide. The present ambient air quality in the project area is considered good due to the prevailing northeasterly trade winds and the absence of major sources of air pollution near the site. Air quality at the site is mostly affected by air pollutants from motor vehicles, with carbon monoxide being the most abundant of the air pollutants emitted, due to the location near major roadways.

Potential Impacts and Mitigative Measures

Short-term noise impacts would be generated from construction-related activities, such as exhaust emissions and dust, at the project site. However, these impacts are not anticipated to be significant as they would be short term and temporary in nature and would not result in long-term adverse impacts to the surrounding environment.

Proposed mitigation measures include the installation of dust screen barriers, periodic watering to minimize air borne particles, and proper maintenance of construction vehicles. Construction activities will be conducted in accordance with State air pollution control regulations as outlined in HAR §11-60 Fugitive Dust, DOH. Construction will employ Best Management Practices (BMP) to minimize or prevent such occurrences.

The air quality levels would remain at baseline when normal operations begin and the construction is complete. The emergency communications facilities are unmanned except for periodic site visits by a technician to maintain the equipment and antennae, or emergency service repairs.

3.13 Noise

The project is located along the mountain-side next to the freeway and highway, with residential areas nearby. Surrounding ambient sound levels are minimal and are influenced primarily by ambient noise typical of residential environments derived mainly from resident activities and motor vehicles along the freeway and highway, such as emergency vehicle sirens, military vehicles, buses and heavy and medium duty trucks.

Potential Impacts and Mitigative Measures

Changes in ambient noise levels at the project site will be negligible because the proposed action will not subsequently alter existing land use and activities. As such, long-term, significant adverse noise impacts are not anticipated as the noise generated by the facility upgrade would be consistent with the existing ambient noise typical of a freeway, highway and residential environment.

Short-term noise impacts would be generated from construction-related activities at the project site. Noise generated by activities, such as construction vehicles, can generate intermittently high noise levels. However, these impacts are not anticipated to be significant as they would be short term and temporary in nature and would not result in long-term adverse impacts to the surrounding environment. Short-term noise-generating activities would be conducted in accordance with HAR §11-46 Community Noise Control, DOH. Mitigation includes limiting the hours and days of construction to daylight hours between 7:00 AM and 6:00 PM, Monday through Friday, excluding certain holidays, and 9:00 AM and 6:00 PM on Saturdays. Construction on Sundays will be as approved by the City.

Once in operation, the new tower, renovated equipment building, and diesel tank are not anticipated to lead to an increase in the generation of noise, as compared to the

existing communication facilities. The renovations to the equipment building are on the interior portions of the building that are not audible or visible from the outside Furthermore, transmitting antennas and diesel tanks do not typically generate noise. No other mitigation measures are recommended.

3.14 Solid Waste

Existing Conditions

The emergency communication facilities are unmanned except for periodic site visits by a technician to maintain the equipment and antennae, or emergency service repairs.

Potential Impacts and Mitigative Measures

The proposed project is not anticipated to increase or affect the City and County of Honolulu's solid waste collection and disposal service.

Construction of the project will generate solid waste typical of construction related activities over the short-term. The upgrade involves the removal of two (2) existing propane tanks The contractor will be required to remove all debris from the site, and properly dispose of it in conformance with government regulations. Waste generated by site preparation will primarily consist of vegetation, rocks, and debris from clearing, grubbing, and grading. To reduce solid waste, soil and rocks displaced from grading and clearing will be used as fill within the project area as needed and if of suitable quality. Construction material debris will be recycled or disposed at an acceptable waste disposal facility such as the PVT Landfill site in Nānākuli, O'ahu's primary construction and debris (C&D) landfill. As much as possible re-usable materials should be diverted from the landfill. All green waste should be dropped off at a green waste recycling facility to divert waste to the County landfills.

4. RELATIONSHIP TO LAND USE POLICIES AND CONTROLS

4.1 State of Hawai‘i

4.1.1 Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, Hawai‘i Revised Statutes) establishes a statewide planning system with an overall theme, goals, objectives, policies, and priority guidelines to guide future long-range development of the State.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for facility systems – in general (§226-14), which states:

Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

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.

(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.

The proposed project would address the objectives regarding the general facility systems objective by providing a more reliable emergency communications infrastructure. The project would ensure a dependable and efficient communication system capable of supporting the public’s emergency response needs. The project is consistent with this objective.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for facility systems – telecommunications (§226-18.5), which states:

Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.

To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.

To further achieve the telecommunications objective, it shall be the policy of this State to:

(1) Facilitate research and development of telecommunications systems and resources;
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;
(3) Promote efficient management and use of existing telecommunications systems and services;

The proposed project would address the objectives regarding the telecommunication systems objective by providing a more reliable emergency communications infrastructure. The project would ensure a dependable and efficient communication system capable of supporting the public’s emergency response needs. The project is consistent with this objective.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for socio-cultural advancement - public safety (§226-26), which states:

Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:

(1) Assurance of public safety and adequate protection of life and property for all people.
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.

To achieve the public safety objectives, it shall be the policy of this State to:

(1) Ensure that public safety programs are effective and responsive to community needs.
(2) Encourage increased community awareness and participation in public safety programs.

To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:

(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.

To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:

(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.
(2) Enhance the coordination between emergency management programs throughout the State.

The proposed project would address the objectives regarding public safety because the tower serves as critical link between the Waimānalo Ridge tower to the Kāne‘ohe Police Station and also provides a link to the Kailua Police Station. The existing Kapa‘a tower is not high enough to provide a direct line of sight transmission and is not structurally hurricane resistant. Increasing the tower height will provide the Kapa‘a tower the clearance, the space for additional links for high speed communications and upgrades to meet additional security requirements on the Windward side of the island. As

additional links and antennae are added to the tower, wind-loading and other structural requirements are increased. The higher tower will provide a more reliable emergency communications infrastructure for the island-wide system. The project would ensure a dependable and efficient communication system capable of supporting the public's emergency response needs. The project is consistent and critical to the objectives of maintaining public safety.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for socio-cultural advancement - public safety (§226-27), which states:

Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:

(1) Efficient, effective, and responsive government services at all levels in the State.
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.

To achieve the government objectives, it shall be the policy of this State to:

(1) Provide for necessary public goods and services not assumed by the private sector.
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.
(3) Minimize the size of government to that necessary to be effective.
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.
(6) Provide for a balanced fiscal budget.

(7) Improve the fiscal budgeting and management system of the State.

(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.

The existing radio tower and communication facilities at the Kapa‘a Reservoir site is part of a wider communications system that ensures the efficient deliverance of emergency response during cases of emergency. The new communications tower and upgrades will be critical in maintaining communication service along the windward side of O‘ahu. If the tower and facilities are not upgraded, island-wide emergency communication plans will not be fulfilled, the existing tower will be susceptible to natural disasters, such as hurricane and earthquakes, the communication system will become vulnerable, resulting in inefficient emergency response. The upgrade is consistent with maintaining effective government services at all levels.

4.1.2 State Land Use Classification

Hawai‘i Land Use Law, Chapter 205, Hawai‘i Revised Statutes, classified land under four districts: Conservation, Agricultural, Rural, and Urban. The property is located within the Conservation District, regulated by the Department of Land and Natural Resources, Office of Conservation and Coastal Lands. The property is located in the Conservation District (Figure 11).

The Conservation District has five subzones: Protective, Limited, Resource, General, or Special. The most environmentally sensitive subzone is classified as Protective and the least sensitive is classified as General. The project parcel, TMK: (1) 4-2-017:016, lies within the General (G) Subzone of the State Land Use Conservation District.

The proposed use is consistent with the objectives of the General subzone as it will ensure the stability of the emergency communication facilities in the event of a natural disaster. The upgrades to the emergency communication facilities support the long-term safety and welfare of the public. These improvements will be constructed in compliance with Federal, State, and County standards.

The proposed project will upgrade an existing resource used for public safety and emergency communications to the region, fulfilling a mandated governmental service for public benefit in accordance with public policy and the purpose of the conservation district. The proposed action will promote the long-term sustainability of public safety and welfare by ensuring structural integrity after a natural disaster, such as a Category IV hurricane, to meet current standards and provide service to the region for future emergency situations.

Part of the emergency communication facility upgrade requires an existing 50-foot microwave truss tower to be replaced by an 80-foot monopole tower to increase data transmission and address current deficiencies to mitigate the effects from natural disasters, such as hurricanes and earthquakes. The main requirement for the tower is to ensure structural integrity in the case of an earthquake or Category IV hurricane. This project is part of an island wide upgrade to the emergency communication system. Several emergency communication facilities are located within the Conservation District, have obtained permit approval and completed the necessary upgrades.

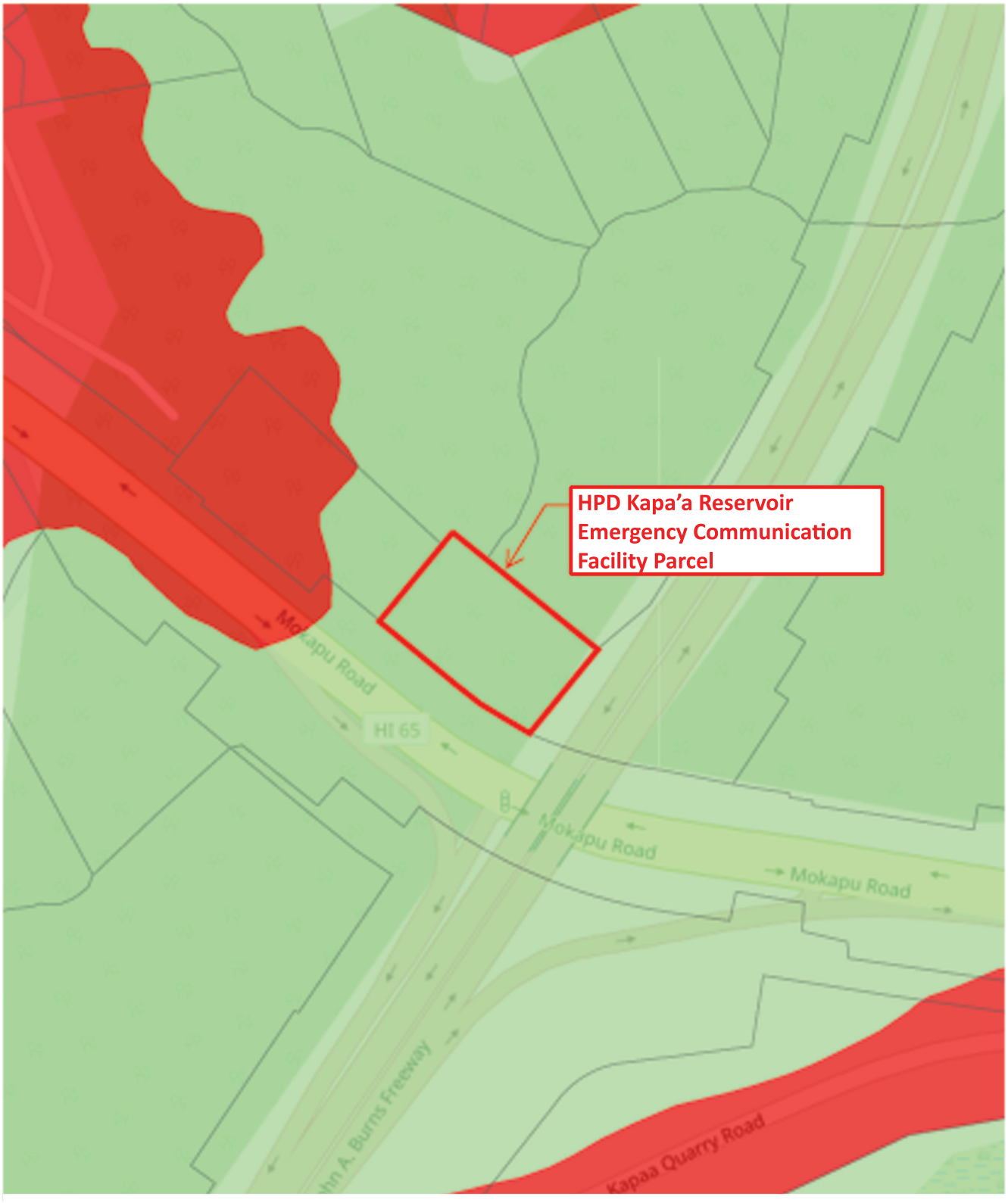


Figure 11: State Land Use

Table 4: Project Location CDUA Permits / Environmental Assessments

Date	Permit #	Project
HPD - Communication Facilities – BWS Kapa'a Reservoir Site – CDUA / FEA		
February 26, 1988	CDUP OA-2105	Radio Communications Facilities at Kapa'a
August 13, 1993	CDUP OA-2628	HPD Communications Facilities Upgrades
August 1, 1993	1993-01-08 OA FEA	HPD Communications Facilities Upgrades Environmental Assessment
May 23, 2011	2011-05-23-OA-FEIS	Kaneohe/Kailua Wastewater Conveyance and Treatment Facility
February 28, 2014	CDUP OA-3670	Kaneohe/Kailua Wastewater Gravity Flow Tunnel
December 8, 2022	CDUP OA-3898	BWS Kapa'a 272' Reservoir Replacement Project

Table 5: Other HPD Microwave Tower Sites – CDUA Permits

Date	Permit #	Project
Other HPD Microwave Tower Sites – CDUA Permits		
March 15, 1973	CDUP OA-0444	Microwave and VHF Translation Communication System at Kokohead, Maunalua and Makiki Roundtop (Ualakea State Park)
January 27, 1989	CDUP OA-2189	Co-Habitation Telecommunication Facility, Waimānalo Ridge, Oahu
June 1, 1990	OA-2388	Puu Manawahua Radio Transmitter Site
June 18, 1990	OA-2386	Waimānalo Ridge Radio Transmitter Site
August 13, 1993	CDUP OA-2628	HPD Communications Facilities Upgrades
December 17,1993	CDUP OA-2660	Waimānalo Ridge Communication Site Underground Utility Service Line
April 27, 2009	CDUP OA-3502	Microwave Communications Station at Pu'u Manawahua

Table 5: Other HPD Microwave Tower Sites – CDUA Permits, Continued from Previous Page

Date	Permit #	Project
Other HPD Microwave Tower Sites – CDUA Permits		
August 12, 2013	CDUP OA-3672	Waimānalo Ridge Telecommunication Facility Upgrade and Maintenance Project (EA Exemption)
October 20, 2016	OA-1888, OA-13-58 and OA-15-36	Building Renovation and Tower Replacement at Puu Manawahua (EA Exemption)

The project parcel, TMK: (1) 4-2-017:016, lies within the General (G) Subzone of the State Land Use Conservation District. The emergency communication facility is an identified land use in the General Subzone pursuant to HAR, §13-5-22 P-6 PUBLIC PURPOSE USES (D-1) Not for profit land uses undertaken in support of a public service by an agency of the county, state, or federal government, or by an independent nongovernmental entity, except that an independent non-governmental regulated public utility may be considered to be engaged in a public purpose use. Examples of public purpose uses may include but are not limited to public roads, marinas, harbors, airports, trails, water systems and other utilities, energy generation from renewable sources, **communication systems**, flood or erosion control projects, recreational facilities, community centers, and other public purpose uses, intended to benefit the public in accordance with public policy and the purpose of the Conservation District.

The upgrades to the emergency communication facility are essential providing a communication link in Oahu's emergency communication network, critical for public safety. The proposed project will construct a slightly taller tower and smaller tower footprint, but would not change the existing land use at the site. The proposed upgrade

is an identified land use in the General Subzone pursuant to HAR, §13-5-22 P-8 STRUCTURES AND LAND USES, EXISTING (D-1) Major alteration of existing structures, facilities, uses, and equipment, or topographical features which are different from the original use or different from what was allowed under the original permit. When county permit(s) are required for the associated plan(s), the department’s approval shall also be required.

The proposed use is consistent with the objectives of the General subzone as it will ensure the stability of the emergency communication facilities in the event of a natural disaster. The upgrades to the emergency communication facilities support the long-term safety and welfare of the public. These improvements will be constructed in compliance with Federal, State, and County standards.

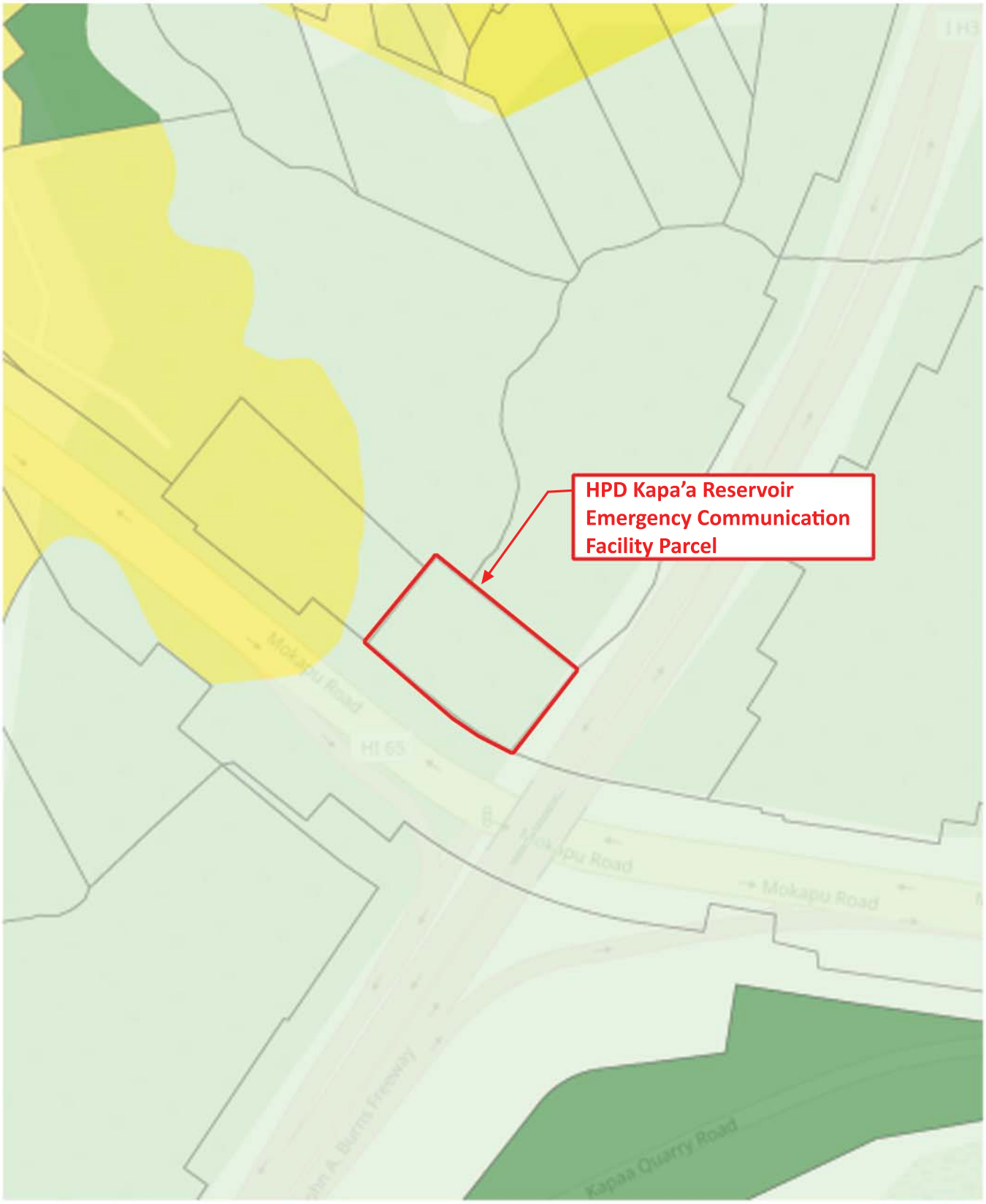


Figure 12: Zoning Map

4.1.3 Coastal Zone Management

The Coastal Zone Management (CZM) law, established in 1977 under HRS Chapter 205A, governs all state lands within its jurisdiction, mandating that all agencies adhere to the objectives and policies outlined in HRS Chapter 205A-2. The ten CZM objectives are as follows:

- *Managing Development - Balancing economic and environmental concerns through a good system of technical review and public participation.*
- *Economic Uses - Choosing appropriate places for needed facilities and development.*
- *Public Participation - Promoting involvement and education about coastal issues.*
- *Coastal Hazards - Minimizing threats from tsunami, storm waves, pollution, and other dangers to human health.*
- *Beach Protection - Assuring that development does not erode beaches or interfere with public access.*
- *Recreational Resources - Providing coastal recreational activities for the public.*
- *Historic Resources - Preserving and sometimes restoring significant sites.*
- *Scenic and Open Space Resources - Preserving and sometimes improving treasured view-planes and open spaces.*
- *Coastal Ecosystems - Protecting reefs and other coastal habitats.*
- *Marine Resources - Sustaining marine and coastal resources through good decisions about development, use, or protection.*

The proposed project aligns with the CZM objectives and policies. Below is an evaluation of its compliance with these objectives and policies:

- *Managing Development* - The environmental assessment procedure outlined in HRS Chapter 343 facilitates environmental matters to be thoroughly considered in decision-making, alongside economic and technical factors. The environmental review program utilizes public notification and involvement in the project's development. The upgrades to the emergency communication facility are essential providing a communication link in Oahu's emergency communication network, critical for public safety.

- *Economic Uses* - The construction costs are estimated at $1,800,000 and will be funded by the City and County of Honolulu. The project will be completed in one phase with construction to commence around Fall 2025 with completion by Fall 2026. The upgrades to the emergency communication facility will contribute to the State’s economy by ensuring the safety and welfare of the island population.

- *Public Participation* - The environmental assessment procedure outlined in HRS Chapter 343 utilizes public notification and consultation in the project's development. The upgrades to the emergency communication facility are essential providing a communication link in Oahu's emergency communication network, critical for public safety.

- *Coastal Hazards* - The project location is approximately 0.5 miles inland, outside of the State of Hawai‘i Special Management Area (SMA), not located in a tsunami evacuation area or an area which will be affected by sea level rise. The project area is designated Zone D and X, outside flood prone areas, as determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). The Zone D designation is used for areas where there are possible but undetermined

flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted. The proposed upgrades will be located away from areas susceptible to erosion and will not increase coastal hazards. The proposed upgrades will not substantially change the impervious areas of the emergency communication facility reducing the hazards from erosion and subsidence. The emergency communication facilities are unmanned except for periodic site visits by a technician to maintain the equipment and antennae, or emergency service repairs. The facilities will not create any hazardous pollutants to the environment. The proposed project does not increase coastal hazard threats but is essential during emergency situations

- *Beach Protection* – The project parcel is located on Oneawa Ridge at an approximate elevation range of 245 to 290 feet above mean sea level on a hill away from the beach or shoreline. The proposed upgrades will not impact any beaches for public use and recreation.

- *Recreational Resources* - The HPD emergency communication facility at the Kapa'a reservoir is not located along the coastline. The proposed project will not change recreational resources. The existing land use is a BWS reservoir and emergency communication facility. Public access is not allowed for the protection of public safety. Policies regarding shoreline recreation resources and shoreline public access are not applicable. BMPs will be implemented during construction (e.g., silt fences, periodic watering to minimize dirt particles, and stabilized construction road access, etc.) of the proposed project. These measures are intended to mitigate or eliminate stormwater runoff from the construction site and prevent any degradation of water quality in nearby surface or coastal waters.

- *Historic Resources* - SHPD provided a letter of concurrence with DDC's effect determination of "No historic properties affected" for the project on November 21,

2021, ending the HRS 6E-8 historic preservation review process (Appendix A). It is anticipated that no subsurface cultural or historical resources are present; however, should subsurface remains, artifacts, or other historical deposits be discovered during excavation activities, all work shall cease and the appropriate agencies and authorities, including SHPD, will be notified.

- *Scenic and Open Space Resources* - No adverse effects to the surrounding population are expected from the upgrade project as the site is not situated in an area obstructing any stationary, continuous, or intermittent views identified in the Koʻolau Poko Sustainable Communities Plan. The parcel is located away from the shoreline; therefore, no direct effect on the quality of the coastal scenic resources or views of the coast are expected. The existing Kapa'a Reservoir parcel has provided service to the region for over 60 years with the 2.0 MG reservoir being the dominant feature. In addition to the reservoir and microwave towers, there are existing utility poles and lines, crossing over the John A. Burns Freeway which are visible. While the new replacement monopole tower will be visible from certain vantage points, it will be replacing an existing resource used for public safety and emergency communications.

- *Coastal Ecosystems* - The project parcel is located on Oneawa Ridge at approximate elevation range of 245 to 290 feet above mean sea level on a hill. There are no coastal waters in or adjacent to the project area. The proposed project is located inland, approximately 0.50 miles away from the nearest coastal ecosystems, and is, therefore, not expected to have adverse impacts on coastal/shoreline resources, including reefs, beaches, dunes, and marine resources. Minor grading and trenching will be needed for the communication facility upgrades and will utilize BMPs construction (e.g., silt fences, periodic watering to minimize dirt particles, and stabilized construction road access, etc.) to mitigate or avoid any potential for

environmental impacts. These measures are intended to mitigate or eliminate stormwater runoff from the construction site and prevent any degradation of water quality in nearby surface or coastal waters. Once constructed, the proposed action will not substantially change the impervious areas of the emergency communication facility.

- *Marine Resources* - The project parcel is located on Oneawa Ridge at approximate elevation range of 245 to 290 feet above mean sea level on a hill approximately 0.50 miles inland from the shoreline. There are no marine or coastal resources in or adjacent to the project area. In addition, the upgrades will not significantly increase the amount of impervious area. Therefore, there are no anticipated impacts on marine resources. The project will adhere to County, State, and Federal regulations regarding water quality standards. BMPs will be implemented during construction (e.g., silt fences, periodic watering to minimize dirt particles, and stabilized construction road access, etc.) of the proposed project. These measures are intended to mitigate any potential adverse impacts on marine and coastal resources.

Additionally, the project adheres to special management area (SMA) guidelines, ensuring compliance with regulations and consideration of cumulative impacts. Through comprehensive assessment and planning, the proposed HPD emergency communication facility upgrades at the Kapaa BWS reservoir is in alignment with CZM objectives and policies, contributing to responsible coastal management practices.

4.2 City and County of Honolulu

4.2.1 Zoning

The County zoning for the proposed project is P-1 Restricted Preservation District and not within the Special Management Area (Figure 12). The project is within the State Conservation District and land uses are under the jurisdiction of the State of Hawaii Department of Land and Natural Resources. The City and County of Honolulu has no zoning jurisdiction over the site.

Nearby parcels are zoned R-7.5 Residential District.

4.2.2 General Plan

The General Plan for the City and County of Honolulu (amended in 2022) is a written guide, providing the objectives and policies for the future long range development and welfare of O‘ahu’s people. The plan provides comprehensive statements of long-range social, economic, environmental, and design objectives. The plan was developed and organized into key focus areas pertaining to population; balanced economy; natural environment and resource stewardship; housing and communities; transportation and utilities; energy systems; physical development and urban design; public safety and community resilience; health and education; culture and recreation; government operations and fiscal management.

The General Plan acknowledges population growth will result in increased demands for services provided by government and utilities, including communication systems and the need to upgrade existing facilities. Social, economic, and environmental consequences must be carefully considered when providing the required improvements. The proposed upgrades are consistent with the policies and goals of the City and County of Honolulu General Plan, particularly the following:

Section V. Transportation and Utilities

Objective C - *To ensure reliable, cost-effective, and responsive service for all utilities with equitable access for residents.*

Policy 1 - Maintain and upgrade utility systems in order to avoid major breakdowns and service interruptions.

Policy 2 - Provide improvements to utilities in existing neighborhoods to reduce substandard conditions, and increase resilience to use fluctuations, natural hazards, extreme weather, and other climate impacts.

Policy 3 - Facilitate timely and orderly upgrades and expansions of utility systems.

Section VIII. Public Safety

Objective A - *To prevent and control crime and maintain public order.*

Policy 1 - Provide a safe environment for residents and visitors on O'ahu.

Policy 10 - Cooperate with other law-enforcement agencies to develop new methods of addressing crime. Support communication and coordination across federal, State and City law enforcement and corrections agencies.

Objective B - *To protect residents and visitors and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.*

Policy 1 - Keep up-to-date and enforce all City and County safety regulations.

Policy 4 - Collaborate with State and federal agencies to provide emergency warnings, protection, mitigation, response, and recovery, during and after major emergencies such as tsunamis, hurricanes, and other high-hazard events.

Policy 5 - Cooperate with State and federal agencies to provide protection from war, civil disruptions, pandemics, and other major disturbances.

Policy 7 - Provide adequate resources to effectively prepare for and respond to natural and manmade threats to public safety, property, and the environment.

Policy 8 - Foster disaster-ready communities and households through implementation of resilience hubs and other resiliency strategies.

Policy 9 - Plan for the impacts of climate change and sea level rise on public safety, in order to minimize potential future hazards.

Policy 10 - Develop emergency management plans, policies, programs, and procedures to protect and promote public health, safety, and welfare of the people.

Policy 11 - Provide educational materials on emergency management preparedness, fire protection, traffic hazards, and other unsafe conditions.

Section IX. Health and Education

***Objective A -** To protect the health and well-being of residents and visitors.*

Policy 2 - Provide prompt and adequate ambulance and first-aid services in all areas of O‘ahu.

Section XI. Government Operations and Fiscal Management

Objective A - *To promote increased efficiency, effectiveness, and responsiveness in the provision of government services by the City and County of Honolulu.*

> *Policy 5 - Expand the adoption of technology across all City agencies to achieve greater transparency, efficiency, and accountability to the general public throughout government operations.*

Objective C - *To achieve equitable outcomes for City programs, policies, and allocation of resources throughout the O‘ahu community.*

> *Policy 3 - Promote adherence to processes that advance procedural, distributional, structural, intergenerational, and cultural equity within the City.*

The proposed project complies with the policies and goals of the General Plan by providing an effective and efficient emergency communication system. The proposed upgrades are critical to the safety and welfare of the residents and visitors on O‘ahu.

4.2.3 Ko‘olau Poko Sustainable Communities Plan

The Ko‘olau Poko Sustainable Communities Plan (KP SCP) was adopted in 2017 and provides the community’s vision for future development. The KP SCP consists of policies, guidelines, and conceptual schemes to serve as policy guidance for future planning and investment in the Ko‘olau Poko region. The proposed upgrades are consistent with the policies and goals of the KP SCP, particularly the following:

4.4 Electrical and Communication Systems

The KP SCP addresses the growth in telecommunications systems and the increased development of infrastructure in the 1990s. The section addresses the increased ability for public agencies to provide faster and more efficient responses to those in need in emergency situations. Although benefits cannot be disputed, communities have opposed the antennas due to aesthetic impacts on public views and neighborhood character. The public has also raised concerns about the environmental effects of electromagnetic field exposure associated with radio transmissions. The KP SCP affirms the Federal Communications Commission (FCC) is responsible for evaluating the human environmental effects of radio frequency (RF) emissions from FCC-regulated transmitters. The federal guidelines specifically preclude local decisions affecting environmental effects of radio frequency emissions, assuming the provider is in compliance with the Commission's RF rules.

4.4.1 Policies

- *Design system elements and incrementally replace facilities such as substations, transmission lines and towers to avoid or mitigate any potential adverse impacts on scenic and natural resource values and to enhance system reliability.*

- *Encourage co-location of antennas; towers should host the facilities of more than one service provider to minimize their proliferation and reduce visual impacts.*

- *Use stealth technology (i.e. towers disguised as trees) especially on freestanding antennas towers in order to blend in with the surrounding environment and minimize visual impacts.*

4.4.2 Guidelines

- *Co-locate communications and power equipment and devices with similar facilities in order to minimize the number of supporting structures and dispersal sites.*

The project involves the replacement of an existing emergency communications tower at approximately in the same location with a new 30-foot taller tower. The proposed tower will be painted the same dark earth tone colors as the existing tower. Differences in height, form, and scale will be perceptible, and the microwave dishes will continue to be visible in order to maintain the line of sight required. However, the visibility of the proposed tower in surrounding view planes are comparable to the existing tower. The utilization of stealth technology, such as the use of towers disguised as trees, is not applicable for the proposed communications tower. It is critical to ensure that no design elements interfere with the microwaves, as it is relied upon by CCH first responders. The existing tower will be replaced with a new monopole tower. The monopole tower and the color selection will be another form of stealth technology to be utilized. The new tower will be structurally stable in the event of a Category IV hurricane. The tower's structural integrity is especially critical during emergencies to ensure government agencies and first responders can communicate with one another to keep the public notified of emergency information. The new communications tower cannot be relocated farther inland as such areas are undeveloped, mountainous and less suitable for development. Furthermore, the function of a public communications tower is dependent on line-of-sight, whereby the transmission of radio frequencies cannot occur if the tower is obstructed by intervening mountains or ridges.

The existing emergency communications facility is located on City and County of Honolulu property reducing cost and any security issues. The reservoir has been in

operation since 1958, the emergency facility since 1988 and the wastewater access shaft since 2018. All are managed and maintained by departments of the City and County of Honolulu. The proposed project will only require 308 sf of grading in and around the existing equipment room.

4.8 Civic and Public Safety Facilities and Community Resilience

The KP SCP states community resilience is the ability of a community to prepare for anticipated hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. In order to protect lives, livelihoods, and quality of life, communities should plan for damages and disruptions to buildings and infrastructure systems from natural, technological, and human-caused hazards. Planning for a more resilient community involves a comprehensive, risk-based approach that is tailored to their community's needs for maintaining vital services. The U. S. Department of Homeland Security and the National Institute of Standards and Technology, U. S. Department of Commerce, provides policy, support information and guidelines for community resilience planning and implementation strategies that will better prepare communities for future hazard events. The City and County of Honolulu, Department of Emergency Management, prepared various plans and operations guides to prepare, prevent, protect, respond and recover from hazards.

4.8.1 Policies

- *Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental service and protection of public safety.*

Upgrades to the emergency communications system is a critical part of various plans and operations guides to prepare, prevent, protect, respond and recover from hazards. The upgrades are consistent with the above as it will replace and modernize aged

facilities and equipment, as well as improve the overall quality of communications. The proposed project will not adversely impact nearby land owners or significantly diminish the natural beauty of the Ko‘olau Poko region.

5. ALTERNATIVES TO THE PROPOSED ACTION

5.1 Alternative 1: No Action

Under the No-Action alternative, there would be no change to the existing emergency communication facilities at the Kapa‘a BWS Reservoir parcel. This No-Action alternative poses an unacceptable risk to public safety because the existing communication facility needs to be upgraded to meet current standards and regulations. Public safety is jeopardized by poor communications coverage on the Windward side of O‘ahu and could result in slower emergency response times island-wide. Taking no action to upgrade the public safety communications system would mean disregarding island-wide emergency communication system plans and forgoing significant gains in the effectiveness and efficiency of the system and of the emergency management system. Use of limited and dated systems would not be in the public interest, and would potentially affect the island-wide emergency communication system, public safety, emergency services, disaster response and essential government operations, potentially exposing residents and visitors on the island of O‘ahu to safety concerns.

5.2 Alternative 2: Replacement of Communications Tower and Facility Upgrades

The preferred alternative is to proceed with the upgrades involving replacement of the 50-foot high truss tower with the new 80-foot high monopole tower (80’-0” height), and improvements to the facilities, including an additional sidewalk, interior renovations, propane tank and generator tank replacement. This option constitutes the preferred alternative because it is the only option to fulfill the purpose of the project providing

efficient communications services to emergency response personnel on the Windward side of O‘ahu.

Alternate locations for the emergency communications facility were evaluated but were not pursued in the previous FEA and other planning documents due to signal coverage inadequacy, visibility issues, lack of space and the inability to co-locate the facility with other similar structures. Because a new tower at the Kailua Police Station was not able to be constructed with increase heights due to space limitation, the more direct link for the microwave loop from the Waimānalo Ridge tower to the Kapa‘a tower was planned. The Kapa‘a Reservoir site is an existing site and planned for minor modifications. The emergency communications facility would mitigate impacts to scenic resources by using stealth technology in the form of the monopole design and color selection. The existing environment will not be disturbed and will remain in place. The emergency communication facility upgrade will only require 305 sf of grading. The facility is co-located with other communications equipment to minimize the number of supporting structures and dispersal sites. Located with the BWS reservoir also provides additional security measures for both facilities.

6. PERMITS AND APPROVALS

Several approvals and permits will be or may be required from various agencies within the City and County of Honolulu, the State of Hawai‘i, and/or federal government to implement the proposed project. A summary listing is as follows:

State of Hawai‘i

Department of Land and Natural Resources

- Conservation District Use Permit
- Fire Contingency Plan

Department of Health

Community Noise Permit

City and County of Honolulu

Department of Planning and Permitting

Building Permit

Construction and Building Permits

Grading, Grubbing and Stockpiling Permits

Utility Connection Permits

Consultation with the City and County of Honolulu Department of Planning and Permitting is on-going and this list may change.

Federal Government

Federal Aviation Administration

Helicopter Flight Permit

Airport Glideslope Clearance

Federal Communications Commission

Operation License

7. CONSULTED PARTIES

7.1 Pre-Assessment Consultation

The following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment:

Department of Information Technology (DIT)

Department of Design and Construction (DDC), Facilities Division

Honolulu Police Department (HPD)

Department of Facilities Maintenance (DFM)

Honolulu Board of Water Supply (BWS)

7.2 Distribution of the Draft Environmental Assessment

The notice of availability of the Honolulu Police Department Communication Facilities Upgrade – BWS Kapa‘a Reservoir Draft Environmental Assessment was published by the Office of Planning and Sustainable Development, Environmental Review Program in the February 8, 2024 edition of *The Environmental Notice*. The Draft EA was distributed to the parties listed in Table 6 with a request for review and comment. The comment period for the Draft EA ended on March 11, 2024. The agencies and organizations marked with an asterisk (*) have submitted written comments during the review period. Comments received and responses provided are incorporated in Appendix D.

Table 6: Draft Environmental Assessment Distribution List

Federal Government	
Department of the Army, Corp of Engineers	National Ocean and Atmospheric Administration, National Marine Fisheries Service
U.S. Department of Agriculture Natural Resources Conservation Service	U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office
Environmental Protection Agency	
State of Hawai‘i	
Environmental Review Program	Hawai‘i State Library Hawai‘i Document Center
Hawai‘i State Public Library	Office of Hawaiian Affairs
Department of Business, Economic Development and Tourism	Department of Health – Environmental Health Administration*
Department of Defense	Public Utilities Commission

Table 6: Draft Environmental Assessment Distribution List, Continued from Previous Page

State of Hawai‘i	
Department of Land and Natural Resources, Division of Forestry and Wildlife*	Department of Land and Natural Resources, Land Division
Department of Land and Natural Resources - Engineering	Department of Land and Natural Resources – Historic Preservation Division
Department of Land and Natural Resources – Office of Conservation and Coastal Lands*	Department of Land and Natural Resources, Division of Aquatic Resources*
Office of Planning and Sustainable Development*	Department of Transportation, Highways Division, Oahu District
City and County of Honolulu	
Department of Design and Construction	Department of Emergency Management*
Board of Water Supply	Department of Emergency Services
Honolulu Fire Department*	Department of Environmental Services
Department of Planning and Permitting*	Department of Transportation Services
Honolulu Police Department*	
Elected Officials	
State Representative Natalia Hussey-Burdick*	State Senator Jarrett Keohokalole
Honolulu City Council Council Esther Kia‘āina	U.S. Senator Mazie Hirono
U.S Senator Brian Shatz	U.S. Representative Jill Tokuda
Community	
Kāne‘ohe Neighborhood Board No. 30	Kailua Neighborhood Board No. 31
Hawaiian Electric Company*	Hawaiian Telcom

8. DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

8.1 Significance Criteria

According to the Department of Health Hawai‘i Administrative Rules §11-200-12, thirteen “Significance Criteria” shall be considered for determining if an action will have a significant impact on the environment. This includes all phases of a project, its

expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long term effects. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the criteria listed below.

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

The project will not result in an irrevocable commitment to loss or destruction of any natural or cultural resource. The Project is not expected to adversely impact natural or cultural resources. The project will involve substantively the same land uses when the project is completed. The proposed project would be constructed in an area which has been leveled and graded for the current use.

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

The project will not curtain the range of beneficial uses of the environment. The project will involve a continuation of the existing use of the site. The proposed action is intended to update the emergency response communication system. The improvements will support public safety-related issues and is undertaken for the public good.

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

The proposed project is consistent with the environmental policies established in Chapter 344, Hawai‘i Revised Statutes. The proposed project will not alter the area’s existing natural processes or resources and will not lower the quality of life for Hawai‘i residents. The project will provide upgrades to the emergency communications facility to support the needs of residents and visitors of residents and visitors on the island of

O‘ahu. Construction will produce some short-term impacts to air quality and noise, but these impacts are minor and will be mitigated in accordance with Department of Health regulations.

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

The project will not significantly affect the socio-economic welfare of the community or state. The project will benefit the public by enhancing communications for emergency first responders. The proposed upgrades will not have an adverse effect to the economic or social welfare of the community.

5. ***Substantially affects public health;***

The proposed project will not have an adverse effect on public health. During project activities, there will be the potential for minor impacts to air quality, noise levels, and the generation of storm water runoff, which will be addressed through the application of appropriate mitigation measures as described in the assessment, such as BMPs for erosion control. The mitigation measures will be submitted with construction plans and documents. Once in operation, the communication facility upgrades are not anticipated to lead to an increase in the generation of noise. Transmitting antennas do not typically generate noise. No substantial adverse impacts to public health are anticipated, and no other mitigation measures are recommended.

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

The proposed project is not anticipated to result in any adverse secondary or cumulative impacts involving an increase or major shift population or the demand for public facilities. Upon completion, the communication facility upgrades will substantively involve the same use of the site.

7. Involves substantial degradation of environmental quality;

There will be no significant or substantial degradation of environmental quality based on the limited scope and scale of the proposed action. No adverse impacts are therefore, anticipated or expected to the environmental quality of the project area. The proposed project will fit into the existing facility and will not substantially change or disturb the existing natural processes occurring in the area.

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

The proposed project does not commit resources or energy for a larger action. There are no future phases of development and there is no commitment to a larger action. There are also no cumulative effects on ecosystem resources or human communities based on the project’s limited scope and scale.

9. Substantially affect a rare, threatened or endangered species or its habitat;

There are no rare, threatened, or endangered plants or animal species located at the subject site.

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

As required, any potential impacts to air, water quality, or noise levels are anticipated to be construction related, and will be addressed through the implementation of appropriate mitigation measures described in this document. Once in operation, the facility upgrades are not anticipated to lead to an increase in the generation of noise, as compared to the existing use.

11. Affects or is 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, freshwater, or coastal water.

The project area is not in an environmentally sensitive area. The emergency communication facility is not along the coastline or within a Special Management Area. It is outside of flood prone and tsunami inundation areas.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies;

The proposed facility upgrades will affect existing scenic vistas or view planes by adding 30 feet of height with the new communications tower. However, the additional height is needed to reduce interference between the various antennas and microwaves. The BWS reservoir will remain the dominant feature on the site. There are existing 50 foot high electrical poles, one of which has a pole mounted transformer which would obstruct the line of site for the communication transmission in the Kailua / Waimānalo direction.

13. Requires substantial energy consumption.

Construction activities will result in a short-term increase in power demand. On the long term, the emergency communication facility upgrades will have similar electrical needs to the existing facility. Electrical consumption is anticipated to be comparable to the existing condition due to the use of new energy-efficient equipment.

8.2 Findings

Based on the foregoing information presented, it is anticipated that the proposed emergency facility upgrades will not have a significant effect. As such, a Finding of No Significant Impact is appropriate for the proposed project.

8.3 Reasons Supporting Determination

The nature and scale of the proposed emergency facility upgrades is such that no significant environmental effects are anticipated. Potential impacts, if any, can be mitigated through design and careful construction management practices and compliance with all governmental requirements including those of the Department of Public Works, State Department of Health and State Historic Preservation Division.

REFERENCES

LIST OF WORKS USED

Bishop Museum and State of Hawai‘i. 2008. Division of Aquatic Resources. *Atlas of Hawaiian Watersheds & Their Aquatic Resources.* Honolulu, Hawai‘i.

City and County of Honolulu, City Auditor. August 2010. *Audit of the Honolulu Police Department’s Utilization of the 800 Megahertz Telecommunications System*. Prepared for the City and County of Honolulu Mayor and the City Council of Honolulu.

City and County of Honolulu, Department of Planning and Permitting. 2004. *Primary Urban Center (PUC) Development Plan (DP)*. May 2004. City and County of Honolulu, Department of Planning and Permitting. General Plan. Amended 2002.

City and County of Honolulu, Honolulu Land Information System (HoLIS). 2010. *Updated Tsunami Evacuation Zones for the Island of O’ahu.*

Department of Planning and Permitting. 2017. *Ko‘olau Poko Sustainable Communities Plan*. City and County of Honolulu.

Federal Emergency Management Agency. 2004. *Flood Insurance Rate Map. Number 150001. Panel 0165. Suffix: F. Map Number: 15003C0165F.* September 30, 2004.

Fieler & Associates, Law Enforcement Facilities and Technologies Consultants. March 1989. *Honolulu Police Department Division of Communications: Communications Division Organization, Management and Technology Planning Study Report.* Prepared for Honolulu Police Department.

Fung Associates Inc. March 2021. *State Historic Preservation Division HRS 6E Submittal Forms*. Prepared for the Honolulu Board of Water Supply.

Hawai’i Climate Change Mitigation and Adaptation Commission. 2021. *State of Hawai’i Sea Level Rise Viewer*. Version 1.08. Prepared by the Pacific Islands Ocean Observing System (PacIOOS) for the University of Hawai’i Sea Grant College Program and the State of Hawai’i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, with funding from National Oceanic and Atmospheric Administration Office for Coastal Management Award No. NA16NOS4730016 and under the State of Hawai’i Department of Land and Natural Resources Contract No. 64064. http://hawaiisealevelriseviewer.org. Accessed March 2023.

KFVE-TV Joint Venture. May 1997. *Final Environmental Assessment Pu’u Pā‘pa‘a Television Translator Facility.* Prepared for EBI Consulting. Honolulu, Hawai‘i.

Lacayo Planning. December 1992. *Final Environmental Assessment Honolulu Police Department Communication Facilities Upgrade.* Prepared for City and County of Honolulu Building Department.

Lacayo Planning. May 1994. *Final Environmental Assessment Honolulu Police Department Leahi Hospital Communication Facilities.* Prepared for City and County of Honolulu Building Department.

Nextel Communications. December 1999. *Final Environmental Assessment Nextel Pu’u Pā‘pa‘a ESMR Antenna Site.*

Peralta, Erika and Spear, Robert L. Scientific Consultant Services, Inc. 2020. *An Archaeological Field Inspection and Literature Review for the Proposed Kapa‘a 272’ Reservoir Replacement In Kāne‘ohe, Kāne‘ohe Ahupua‘a, Ko‘olaupoko District, Island Of O’ahu, Hawai’i [Tmk: (1) 4-2-017:016]*. Prepared for Kai Hawaii, Inc.

RM Towill Corporation. April 2022. *Conservation District Use Application Kapa‘a 272 Reservoir Replacement.* Prepared for City and County of Honolulu Board of Water Supply.

RM Towill Corporation. April 2018. *Final Environmental Assessment Ka‘a‘awa Fire Station - Communication Facilities Improvements and Tower Replacement Project.* Prepared for City and County of Honolulu Board of Water Supply.

RM Towill Corporation. January 2022. *Visual Impact Assessment for Kapa‘a 272 Reservoir Replacement.* Prepared for City and County of Honolulu Department of Information Technology and Department of Design and Construction.

Schema Systems Inc. October 1991. *Communications Study and Master Radio Plan.* Prepared for City and County of Honolulu, Honolulu Police Department.

Shinsato Engineering, Inc. April 2019. Report Geotechnical Investigation Microwave Monopole Dish Replacement, BWS - Kapaa Reservoir, 1691 Mokapu Boulevard, Kaneohe, Hawaii 96744, TMK: (1) 4-2-017: 016. Prepared for YFH Architects. Honolulu, Hawai‘i.

SWCA Environmental Consultants. June 2021. *Final Environmental Assessment Verizon Wireless Lanikai Communications Facility*. Prepared for EBI Consulting. Honolulu, Hawai‘i.

Appendix A
Chapter 6E-8 and 6E-42 Historic Preservation Review – Request for Concurrence with Project Effect Determination
Kapaʻa BWS Reservoir Radio Tower Replacement, DDC Project No. II-31-19-C Building Permit Application – A2020-11-0150
1691 Mokapu Blvd., Kailua
Kailua Ahupuaʻa, Koʻolaupoko District, Island of Oʻahu
TMK: (1) 4-2-017:016

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

November 24, 2021

IN REPLY REFER TO:
Project No. 2020PR34899
Doc. No. 2111LS07
Archaeology

Xianping Li, Project Manager
City and County of Honolulu
Department of Design and Construction
630 South King Street
One Main Plaza
Honolulu, HI 96813

Dean Uchida, Director
Department of Planning and Permitting
City and County of Honolulu
One Main Plaza Building
650 South King Street
Honolulu, Hawaii 96813

Dear Xianping Li and Dean Uchida:

SUBJECT: **Chapter 6E-8 and 6E-42 Historic Preservation Review –**
Request for Concurrence with Project Effect Determination
Kapa‘a BWS Reservoir Radio Tower Replacement, DDC Project No. II-31-19-C
Building Permit Application – A2020-11-0150
1691 Mokapu Blvd., Kailua
Kailua Ahupua‘a, Ko‘olaupoko District, Island of O‘ahu
TMK: (1) 4-2-017:016

This letter provides the State Historic Preservation Division’s (SHPD’s) review of the Kapa‘a BWS Reservoir Radio Tower Replacement Project. SHPD received a letter dated August 23, 2021 (Ref. No. 859854) from the City and County of Honolulu Department of Design and Construction (DDC) submitting the project for HRS 6E-8 review. The DDC’s submittal also included a SHPD HRS 6E Submittal Form, scope of work, permit set, a TMK plat map, and photographs. Additionally, the project requires a City and County of Honolulu Department of Planning and Permitting (DPP) building permit (A2020-11-0150) and thus is also subject to review per HRS 6E-42.

Project Description
The project area comprises of a 500-sq.-ft. portion of the 2.26-acre parcel. The project involves the installation of a new monopole microwave tower to replace the existing truss microwave tower. Additionally, a new concrete sidewalk will be installed around the existing communication building. Subsurface disturbance will include excavation for installation of a 5-ft-diameter footing to 22 feet below grade. Excavation for the sidewalk will be 33 ft. by 3 ft. by <1 ft. deep. Additional work includes demolition and removal of the existing tower and foundation to a minimum of 2 ft. below surface, following construction of new tower. Existing propane tanks will be removed, and modifications will be made to existing radio equipment building including removal of several existing CMU walls and installation of a new CMU wall. A future reservoir (approximately 35 ft. high) is planned but is not part of current project.

Findings
A review of the SHPD records indicate that an archaeological monitoring report (Filimoehala and Rieth 2019) included a test boring location with TMK: (1) 4-2-017:016. A single stratum of Alaeloa silty clay was documented above natural basalt bedrock. No archaeological historic properties were identified in the project area or vicinity. SHPD accepted the archaeological monitoring report on September 19, 2019 (Log No. 2019.01554, Doc. No. 1909JA07).

The USDA (Foote et al. 1972) identifies the soils within this parcel as Alaeloa silty clay, 40 – 70% slopes (ALF). Low potential exists for the project to encounter intact subsurface historic properties.

Determination
Based on the information provided, **SHPD concurs** with the DDC's effect determination of "No historic properties affected" for the current project. Pursuant to HAR §13-275-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The HRS 6E-8 historic preservation review process is ended.

SHPD hereby notifies the DDC and the DPP that the permit issuance process may continue.

Please attach to construction permits: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 692-8015.

Please contact Susan A. Lebo, Archaeology Branch Chief, at Susan.A.Lebo@hawaii.gov for any questions regarding this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Kalani Mahoe, kalani.mahoe@honolulu.gov
Lester Hirano, lhirano@honolulu.gov
Perry Tamayo, ptamayo@honolulu.gov
Lloyd Higa, higal@yharchitects.com
Clyde Higa, clyde.higa@honolulu.gov
Elaine Morisato, emorisato@honolulu.gov

Appendix B
Construction Drawings

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT

1691 MOKAPU BOULEVARD
KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 : 016

DEPARTMENT OF DESIGN & CONSTRUCTION
PROJECT NUMBER: II-31-19-C

CITY & COUNTY OF HONOLULU
REVISED ORDINANCE CHAPTER 32
HONOLULU COUNTY CODE 1990, AS AMENDED

ARTICLE 6 - ENERGY CODE

TO THE BEST OF MY KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY CONSERVATION CODE FOR:

X BUILDING COMPONENT SYSTEMS
__ ELECTRICAL COMPONENT SYSTEMS
__ MECHANICAL COMPONENT SYSTEMS

SIGNATURE: _____ DATE: 4/6/20
NAME: Lloyd Higa
TITLE: ARCHITECT
LICENSE NO: AR-6093

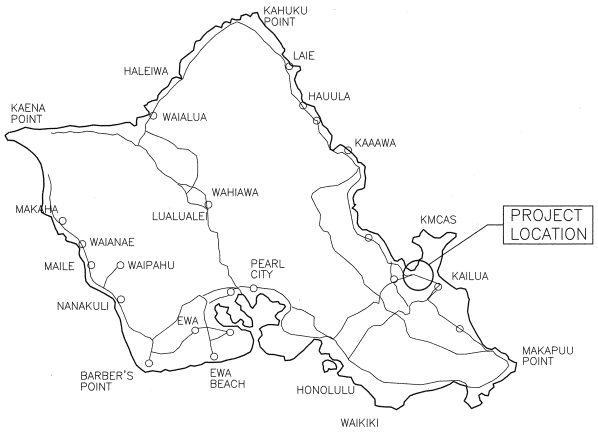
LLOYD HIGA
ARCHITECT
AR-6093

THIS PROJECT SHALL BE DESIGNED & CONSTRUCTED TO CONFORM WITH THE ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.

"I ACKNOWLEDGE THAT ANY AND ALL APPROVED CHANGES, MODIFICATIONS, AND CORRECTIONS TO THE BUILDING PERMIT SET OF PLANS WILL BE REFLECTED ON THE BUILDING DIVISION FILE COPY AND JOB SITE COPY."

Lloyd Higa — 4/6/20 DATE

ISLAND MAP



PROJECT INFO.

ADDRESS:	1691 MOKAPU BOULEVARD
TMK:	4-2-017 PARCEL 16
LOT AREA:	98,550 SF
ZONING (LUO)	P-1 RESTRICTED PRESERVATION DISTRICT
FLOOD ZONE:	D, X
SMA:	NOT IN SMA
STATE LAND USE:	CONSERVATION DISTRICT
FLOOR AREA:	- SF
OCCUPANCY:	-
BUILDING FLOORS:	1
CONSTRUCTION TYPE:	VN

APPROVED BY:

MANAGER & CHIEF ENGINEER, BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU — DATE 10/7/2020

DIRECTOR, DEPARTMENT OF INFORMATION TECHNOLOGY
CITY AND COUNTY OF HONOLULU — DATE 10/9/2020

FOR DIRECTOR, DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU — DATE 10/7/2020

INDEX TO DRAWINGS

SHT NO	DWG NO	DESCRIPTION
1	T-1	TITLE SHEET, ISLAND MAP, PROJECT INFO, INDEX TO DRAWINGS
2	T-2	ABBREVIATIONS, TYPICAL SYMBOLS, TYPICAL MATERIAL SECTIONS
3	A-1	TOPO SURVEY
4	A-2	SITE PLAN
5	A-3	GENERAL NOTES, DEMOLITION AND RENOVATED FLOOR PLAN
6	A-4	TOWER ELEVATIONS, DOOR TYPE AND SCHEDULE, DOOR DETAIL
7	S-1	GENERAL NOTES
8	S-2	PLAN NEW MONOPOLE
9	S-3	ELEVATION NEW MONOPOLE
10	S-4	DETAILS AND SECTIONS
11	S-5	DETAILS AND SECTIONS
12	M-1	MECHANICAL LEGEND, NOTES
13	M-2	MECHANICAL DEMOLITION PLAN
14	M-3	MECHANICAL PLAN
15	M-4	MISC. DETAILS
16	E-1	ELECTRICAL SYMBOLS, GENERAL NOTES, DEMOLITION NOTES, LUMINAIRE SCHEDULE, ENERGY CALCULATIONS
17	E-2	ELECTRICAL SITE PLAN
18	E-3	ENLARGED ELECTRICAL DEMOLITION SITE PLAN
19	E-4	LIGHTING DEMOLITION PLAN
20	E-5	POWER AND SIGNAL DEMOLITION PLAN
21	E-6	ENLARGED ELECTRICAL SITE PLAN - NEW WORK
22	E-7	LIGHTING PLAN - NEW WORK
23	E-8	POWER AND SIGNAL PLAN - NEW WORK
24	E-9	MONOPOLE ELECTRICAL ELEVATION, PORTABLE GENERATOR TERMINATION ENCLOSURE DETAIL
25	E-10	SINGLE LINE DIAGRAMS - DEMOLITION AND NEW WORK
26	E-11	PANEL SCHEDULES
27	R-1	ANTENNA SCHEDULE AND DETAIL

FINAL - APRIL, 2020

SHT. NO.	DESCRIPTION	DATE	REVISION

LICENSED PROFESSIONAL ARCHITECT No.AR-6093 — LLOYD M. HIGA — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature — 4/30/22 Date

ACCEPTED BY:

Chief, Facilities Division — Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BOULEVARD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 : 016

TITLE SHEET, ISLAND MAP, PROJECT INFO, INDEX TO DRAWINGS

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	T-1
SHEET NO.	1 OF 27
FILE	DRAW FOLDER

C:\Users\nokazowak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\T-1.dwg Plotted:4/10/2020 2:22 PM

A/C	AIR CONDITIONING
A.B.	ANCHOR BOLT
ABV.	ABOVE
AC	ASPHALTIC CONCRETE; ASPHALTIC PAVING
ACOUS.	ACOUSTICAL
A.D.	AREA DRAIN
ADD.	ADDENDUM
ADJ.	ADJUSTABLE
ADJA.	ADJACENT
A.F.F.	ABOVE FINISH FLOOR
AGGR.	AGGREGATE
AL.	ALUMINUM
ALT.	ALTER; ALTERNATE
ANOD.	ANODIZED
A.P.	ACCESS PANEL
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ARROW	ARROW
A.T.	ACOUSTICAL TILE
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
B.M.	BENCH MARK
BM.	BEAM
B.O.C.	BOTTOM OF CURB
BOT.	BOTTOM
B.O.W.	BOTTOM OF WALL
BPU	BACKFLOW PREVENTER UNIT
BR.	BEDROOM
BRKT.	BRACKET
B.S.	BOTH SIDES
BSMT.	BASEMENT
BTWN.	BETWEEN
B.U.R.	BUILT-UP ROOFING
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT
CEM. PLAS.	CEMENT PLASTER
CER.	CERAMIC
C.G.	CORNER GUARD
C.I.	CAST IRON
C.I.P.	CAST-IN-PLACE
C.J.	CONTROL JOINT
C.L.F.	CHAIN LINK FENCE
CLG.	CEILING
CLO.	CLOSET
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR.	COUNTER
C/O	CLEAN OUT, SEWER
C.O.	CASED OPENING
COL.	COLUMN
COMP.	COMPARTMENT
CONC.	CONCRETE
COND.	CONDITION
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
COORD.	COORDINATE
COP.	COPPER
CORR.	CORRIDOR
CPT.	CARPET
C.T.	CERAMIC TILE
CTR.	CENTER
C.W.	COLD WATER
D	DRAIN LINE
DBL.	DOUBLE
D/C	DROP CURB
D.D.	DECK DRAIN
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DRINKING FOUNTAIN
DI	DRAIN INTAKE
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DISP.	DISPENSER
DN.	DOWN
D.O.	DOOR OPENING
DR.	DOOR
D.S.	DOWNSPOUT
D.S.P.	DRY STANDPIPE
DWG.	DRAWING
DWR.	DRAWER
(E) OR EXIST.	EXISTING
E	EAST OR ELECTRICAL LINE
EA.	EACH
E.C.	ELASTOMERIC COATING; EXPOSED CONSTRUCTION
E.F.S.	EXTERIOR FINISH SYSTEM
EHH	ELECTRICAL HANDHOLE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELAS.	ELASTOMERIC
ELEC.	ELECTRICAL
EMH	ELECTRICAL MANHOLE
ENCL.	ENCLOSURE
E.O.P.	EDGE OF PAVEMENT
E.O.S.	EDGE OF SLAB
E.P.	ELECTRICAL PANEL BOARD
E.P.B.	ELECTRICAL PULLBOX
EQ.	EQUAL
EQPT.	EQUIPMENT
E.W.	EACH WAY
E.W.C.	ELECTRICAL WATER COOLER
EXH.	EXHAUST
EXP.	EXPANSION
EXPO.	EXPOSED
EXT.	EXTERIOR
F.	FEMALE
F.A.	FIRE ALARM
F.B.	FLAT BAR
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.G.	FINISH GRADE
FH	FIRE HYDRANT
FIN.	FINISH
FIXT.	FIXTURE
FL.	FLOOR
FLASH.	FLASHING
FLDG.	FOLDING
FLG.	FLOORING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD; SLAB; STRUCTURE
F.O.W.	FACE OF WALL
FR.	FRAME
F.R.P.	FIBERGLASS REINFORCED POLYESTER PANEL
F.S.	FLOOR SINK
FT.	FOOT; FEET
F.T.D.	FACIAL TISSUE DISPENSER
FTG.	FOOTING
FURR.	FURRING; FURRED
FUT.	FUTURE
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
GL.	GLASS
GLU-LAM	GLU-LAMINATED WOOD
GND.	GROUND
GR.	GRADE
GRD.	GROUND
G.S.	GYPSUM SHEATHING
G.S.B.	GYPSUM SHEATHING BOARD
G.W.B.	GYPSUM WALLBOARD
GYP.	GYPSUM
H.	HIGH
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HD.	HEAD
HDCP.	HANDICAPPED
HDWD.	HARDWOOD
HDWE.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.S.	HAND SINK
HT.	HEIGHT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
H.W.	HOT WATER
HWM	HIGH WATER MARK
I	IRRIGATION LINE
I.D.	INSIDE DIAMETER
IN.	INCH
INCL.	INCLUSIVE; INCLUDED; INCLUDING
INSUL.	INSULATION
INT.	INTERIOR
INTEG.	INTEGRATED
INV.	INVERT
IW	IRRIGATION WATER
JAN.	JANITOR
J.B.	JUNCTION BOX
J.C.	JANITORS CLOSET
JST.	JOIST
JT.	JOINT
K.D.	KNOCK DOWN
KO.	KNOCK OUT
L.	LENGTH; LONG
LAB.	LABORATORY
LAM.	LAMINATE; LAMINATED
LAV.	LAVATORY
LB.	POUND
LDG.	LANDING
L.F.	LINEAL FOOT
L.H.	LEFT HAND
LIQ.	LIQUOR
LKR.	LOCKER
LOC.	LOCATION
L.R.	LIVING ROOM
LT.	LIGHT
LVR.	LOUVER
M.	MALE
MAR.	MARBLE
MAS.	MASONRY
MAX.	MAXIMUM
M.B.	MACHINE BOLT
M.C.	MEDICINE CABINET
MECH.	MECHANICAL
MEMB.	MEMBRANE
MET.	METAL
MFR.	MANUFACTURER
MH.	MANHOLE
MIR.	MIRROR
MISC.	MISCELLANEOUS
MLDG.	MOULDING; MOLDING
M.O.	MASONRY OPENING
M.R.	MOISTURE RESISTANT
MTD.	MOUNTED
MTG.	MOUNTING
MTL.	MATERIAL
MUL.	MULLION
MUN.	MUNTIN
N	NORTH
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
OA.	OVERALL
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER (DIMENSION)
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
OF. D.	OVERFLOW DRAIN
OFF.	OFFICE
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
OH.	OVERHANG
O.I.	OWNER INSTALLED
OPNG.	OPENING
OPP.	OPPOSITE
OPP.HAND	OPPOSITE HAND
OPR.	OPERABLE
O/T	OVERHEAD TELEPHONE
OVHD.	OVERHEAD
P	PROPERTY LINE
P.A.	PUBLIC ACCESS SYSTEM
PC.	PIECE; POST CONTRACT
P.D.	PLANTER DRAIN
PERIM.	PERIMETER
PH.	PENTHOUSE
PL.	PLATE
P.LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLBG.	PLUMBING
PLYWD.	PLYWOOD
PNL.	PANEL
PR.	PAIR
PRCST.	PRECAST
PREFAB.	PREFABRICATE
PREP.	PREPARATION
PROP.	PROPERTY
PRV.	PRESSURE REDUCING VALVE
P.S.F.	POUNDS PER FOOT
PT.	POINT; PAINT
P.T.D.	PAPER TOWEL DISPENSER
PTD.	PAINTED
P.T.D.R.	PAPER TOWEL DISPENSER & WATER RECEPTACLE
PTN.	PARTITION
P.T.R.	PAPER TOWEL RECEPTACLE
PVC	WHITE PLASTIC PIPE
PVMT.	PAVEMENT
QCV	QUICK COUPLING VALVE
Q.T.	QUARRY TILE
R.	RADIUS
R.B.	RESILIENT BASE
RCP	REINFORCED CONCRETE PIPE
R.D.	ROOF DRAIN
REBAR.	REINFORCING BAR
REF.	REFERENCE
REFL.	REFLECTED
REFR.	REINFORCED; REINFORCING
REQ.	REQUIRED
RESIL.	RESILIENT
REST.	RESTROOM
REV.	REVISED; REVISION
RF.	ROOF
R.F.	RESILIENT FLOORING
RFG.	ROOFING
RGH.	ROUGH
RLG.	RAILING
RM.	ROOM
RND.	ROUND
R.O.	ROUGH OPENING
R.W.C.	RAIN WATER CONDUCTOR
S	SEWER LINE
S.	SOUTH
S.A.	SINGLE ACTING
SC	SCALE
S.C.	SOLID CORE
S.C.D.	SEAT COVER DISPENSER
SCHED.	SCHEDULE
SCP.	SCUPPER
SCR.	SCREEN
S.C.R.	SHOWER CURTAIN ROD
SCV.	SPRINKLER CONTROL VALVE
S.D.	SMOKE DETECTOR; SOAP DISPENSER
S.DISH	SOAP DISH
SDMH	STORM DRAIN MANHOLE
SECT.	SECTION
S.F.	SQUARE FOOT
SH.	SHELF
SHR.	SHOWER
SHT.	SHEET
SHTG.	SHEATHING
SIM.	SIMILAR
SL.	SLOPE
SLDG.	SLIDING
SLGT.	STREET LIGHT
SLNT	SEALANT
S.M.	SHEET METAL
SMH	SEWER MANHOLE
S.N.D.	SANITARY NAPKIN DISPENSER
S.N.R.	SANITARY NAPKIN RECEPTACLE
SP	SIGN POST
SP.	SPACE
SPEC.	SPECIFICATION
SPKR.	SPEAKER
SPRH.	SPRINKLER HEAD
SQ.	SQUARE
S.SK.	SERVICE SINK
S.ST.	STAINLESS STEEL
ST.	STONE
STA.	STATION
STD.	STANDARD
STL.	STEEL
STN.	STAIN
STOR.	STORAGE
STRL.	STRUCTURAL
SURR.	SURROUND
SUSP.	SUSPENDED
SVC.	SERVICE
SW.	SWITCH
S/W	SIDEWALK
SYM.	SYMMETRICAL
SYS.	SYSTEM
T&G	TONGUE AND GROOVE
TACKBD.	TACKBOARD
T.B.	TOWEL BAR
T.B.B.	TILE BACKER BOARD
TBL.	TABLE
TCRP	TRASH CAN RETAINER POST
TCRT	TENNIS COURT
T.D.	TRENCH DRAIN
TEL.	TELEPHONE
TEMP.	TEMPERED; TEMPORARY
TER.	TERRAZZO
THK.	THICK; THICKNESS
THR.	THRESHOLD
THRU.	THROUGH
TLT.	TOILET
TMH.	TELEPHONE MANHOLE
T.M.K.	TAX MAP KEY
T.O.()	TOP OF (ITEM)
T.O.C.	TOP OF CURB
T.O.P.	TOP OF PAVEMENT
T.O.S.	TOP OF SLAB
T.O.W.	TOP OF WALL
T.P.D.	TOILET PAPER DISPENSER
T.P.H.	TOILET PAPER HOLDER
T.PT.	TEXTURED PAINT
TRAN.	TRANSITION
TRD.	TREAD
T.S.	TOWEL SHELF
TSWL	TOP SWALE (LEFT)
TSWR	TOP SWALE (RIGHT)
TV.	TELEVISION
TYP.	TYPICAL
UC.	UNDERCUT
U/E	UNDERGROUND ELECTRICAL
U.L.	UNDERWRITERS LABORATORY
UNK.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
UR.	URINAL
U/T	UNDERGROUND TELEPHONE
VAL.	VALANCE
VAR.	VARIES
VBU	VACUUM BREAKER UNIT
VERT.	VERTICAL
VEST.	VESTIBULE
VOL.	VOLUME
V.P.	VENEER PLASTER
V.T.R.	VENT THROUGH ROOF
V.I.F.	VERIFY IN FIELD
W	WATER LINE
W.	WIDE; WIDTH; WEST
W/	WITH
W/O	WITHOUT
W.C.	WALL COVERING; WATER CLOSET
WD.	WOOD
WDW.	WINDOW
WFL	WOODEN FENCE LINE
W.GL.	WIRE GLASS
W.H.	WATER HEATER
WMB	WATER METER BOX
W.O.	WHERE OCCURS
W.P.	WATERPROOFING
WP.MEMB.	WATERPROOF MEMBRANE
W.R.	WATER RESISTANT
WRB.	WARDROBE
WSCT.	WAINSCOT
W.S.P.	WET STAND PIPE
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC
WV	WATER VALVE
WV_A	WATER VALVE BOX (DIA=0.9')
WVMH	WATER VALVE MANHOLE
&	AND
∠	ANGLE
@	AT
℄	CENTERLINE
[	CHANNEL
'	FLOOR; FEET
"	INCH; INCHES
%	PERCENT
#	POUND; NUMBER
Ⓟ	PROPERTY LINE

TYPICAL SYMBOLS

BUILDING SECTION
USE SYMBOL AT BOTH ENDS OF CUT
(5/8" DIAMETER)

WALL OR DETAIL SECTION
(5/8" DIAMETER)

DETAIL
(5/8" DIAMETER)

SIZE OR SHAPE AS REQUIRED
DETAIL ALTERNATE
(5/8" DIAMETER)

EXTERIOR, INTERIOR AND NORTH POINT REFERENCE ON PLANS
(5/8" DIAMOND)

KEY TO INTERIOR ELEVATIONS (USE WHEN MORE THAN FOUR SIDES)

OFFICE ROOM NAME
1208 ROOM NUMBER
ROOM IDENTIFICATION
(1/4" X 5/8" BOX)

MATCH LINE
SHADED PORTION IS THE SIDE CONSIDERED
(3/8" DIAMETER)

WORKING POINT, CONTROL POINT, OR DATUM POINT
(1/4" DIAMETER)

655.0
NEW POINT ELEVATION
(1/4" X 5/8" BOX)

655.0
EXISTING POINT ELEVATION

COLUMN LINE
(3/8" DIAMETER)

100
NEW CONTOURS

EXISTING CONTOURS

1B
PARTITION TYPE
(3/8" DIAMOND)

PROPERTY LINE

13
D
W OR L
DOOR, WINDOW OR LOUVER MARK
(5/8" HEXAGON)

TYPICAL MATERIAL SECTIONS

EARTH

CONCRETE MASONRY UNIT

CONCRETE

SAND, MORTAR, PLASTER

BASE COURSE, CUSHION FILL, SUB BASE GRAVEL, CRUSHED ROCK

STEEL

WOOD, FINISH

PLYWOOD

WOOD FRAMING, BLOCKING

WOOD FRAMING, CONTINUOUS

CERAMIC TILE, QUARRY TILE, OR RESILIENT FLOORING

SHT. NO.	DESCRIPTION	DATE	REVISION

LLOYD M. HIGA
LICENSED PROFESSIONAL ARCHITECT
No.AR-6093
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/20/22 Date

ACCEPTED BY:

Chief, Facilities Division Date

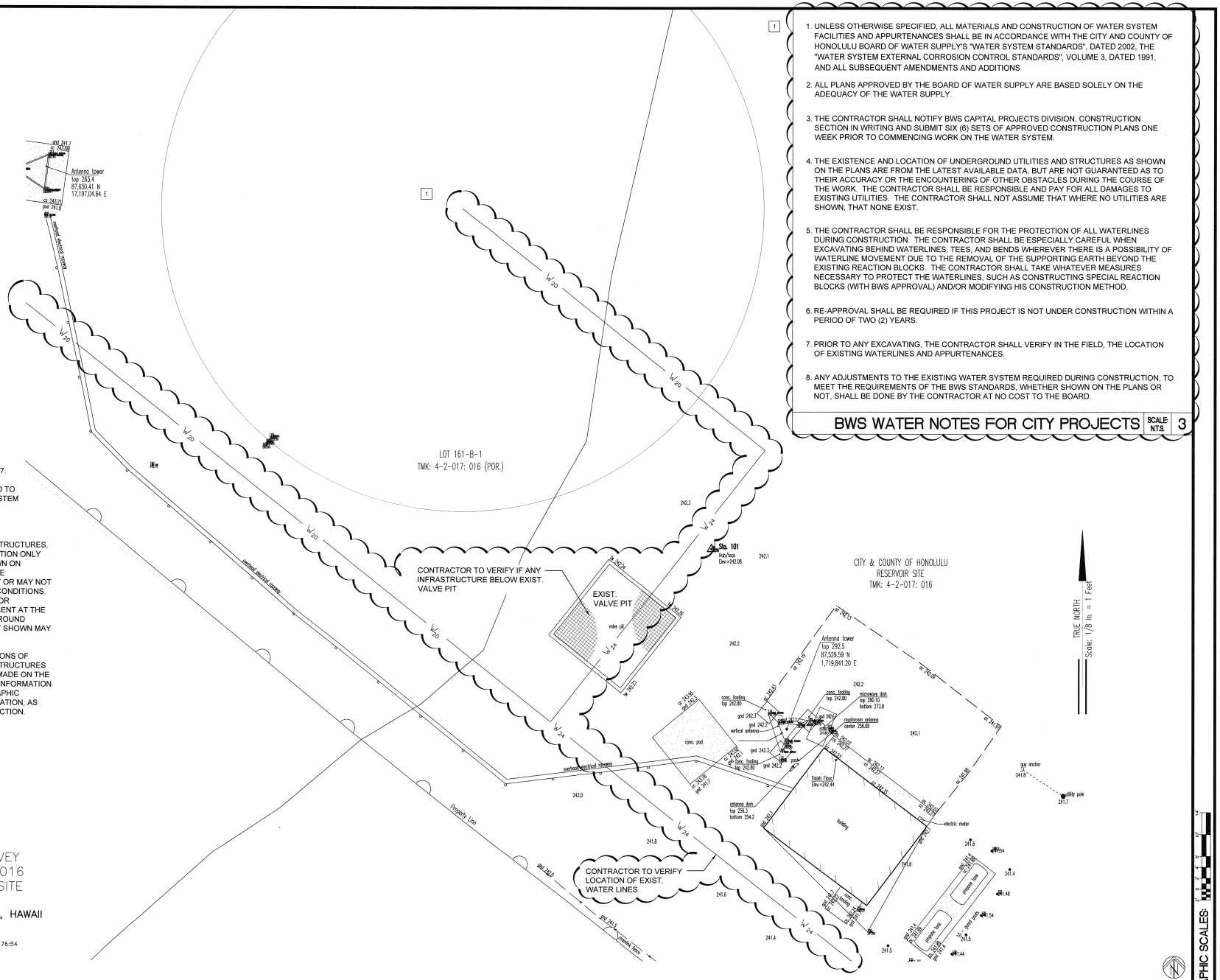
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
TMK: 4-2-009:009 & 4-2-009:010 (PARCEL 9 & 10)
TAX MAP KEY: 4 - 2 - 009 : 009

ABBREVIATIONS, TYPICAL SYMBOLS, TYPICAL MATERIAL SECTIONS

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	T-2
SHEET NO.	2 OF 27
FILE	DRAW FOLDER

C:\Users\nakazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\T-2.dwg Plotted:4/10/2020 2:22 PM



LEGEND:

BC BOTTOM CURB
C CONCRETE
G GROUND
H HEIGHT
S SPREAD
T TOP
TC TOP CURB
TDC TOP DROP CURB

NOTES:

1. ELEVATIONS ARE REFERRED TO TU0367.

2. COORDINATES SHOWN ARE REFERRED TO HAWAII STATE PLANE COORDINATE SYSTEM NAD83 ZONE III U.S. FOOT

UTILITY NOTE:

UNDERGROUND UTILITY LINES AND/OR STRUCTURES, IF SHOWN, ARE PROVIDED FOR INFORMATION ONLY AND ARE BASED ON INFORMATION SHOWN ON PLANS/MAPS PREPARED BY OTHERS. THE INFORMATION SHOWN, THEREFORE, MAY OR MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES MAY OR MAY NOT BE PRESENT AT THE LOCATIONS SHOWN OR OTHER UNDERGROUND UTILITY LINES AND/OR STRUCTURES NOT SHOWN MAY BE PRESENT.

UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE USER(S) OF THIS TOPOGRAPHIC SURVEY MAP SHALL VERIFY THE INFORMATION, AS NEEDED, DURING DESIGN AND CONSTRUCTION.

KN Surveying, LLC
500 ALAKAWA STREET, #100A
HONOLULU, HAWAII 96817
PH. 524-7100

TOPOGRAPHIC SURVEY
PORTION 4-2-017:016
KAPAA RESERVOIR SITE
MONOPOLE
KAILUA, KOOLAUPOKO OAHU, HAWAII

SCALE: 1/8 IN. = 1 FT.

10 JANUARY 2019 FIELD BOOK 176:54

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS

2. ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY.

3. THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING AND SUBMIT SIX (6) SETS OF APPROVED CONSTRUCTION PLANS ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.

4. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT ARE NOT GUARANTEED AS TO THEIR ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATERLINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATERLINES, TEES, AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATERLINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATERLINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.

6. RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO (2) YEARS.

7. PRIOR TO ANY EXCAVATING, THE CONTRACTOR SHALL VERIFY IN THE FIELD, THE LOCATION OF EXISTING WATERLINES AND APPURTENANCES.

8. ANY ADJUSTMENTS TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION, TO MEET THE REQUIREMENTS OF THE BWS STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD.

BWS WATER NOTES FOR CITY PROJECTS | SCALE: N.T.S. | 3

TOPO SURVEY | SCALE: 1/8"=1'-0" | 1

GRAPHIC SCALES:

NO.	DATE	DESCRIPTION	APPROVED
1	5/15/20	ADDENDUM NO. 4	BY

LICENSED PROFESSIONAL ARCHITECT No. AR-6093 LLOYD M. HIGA HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

Chief, Facilities Division Date

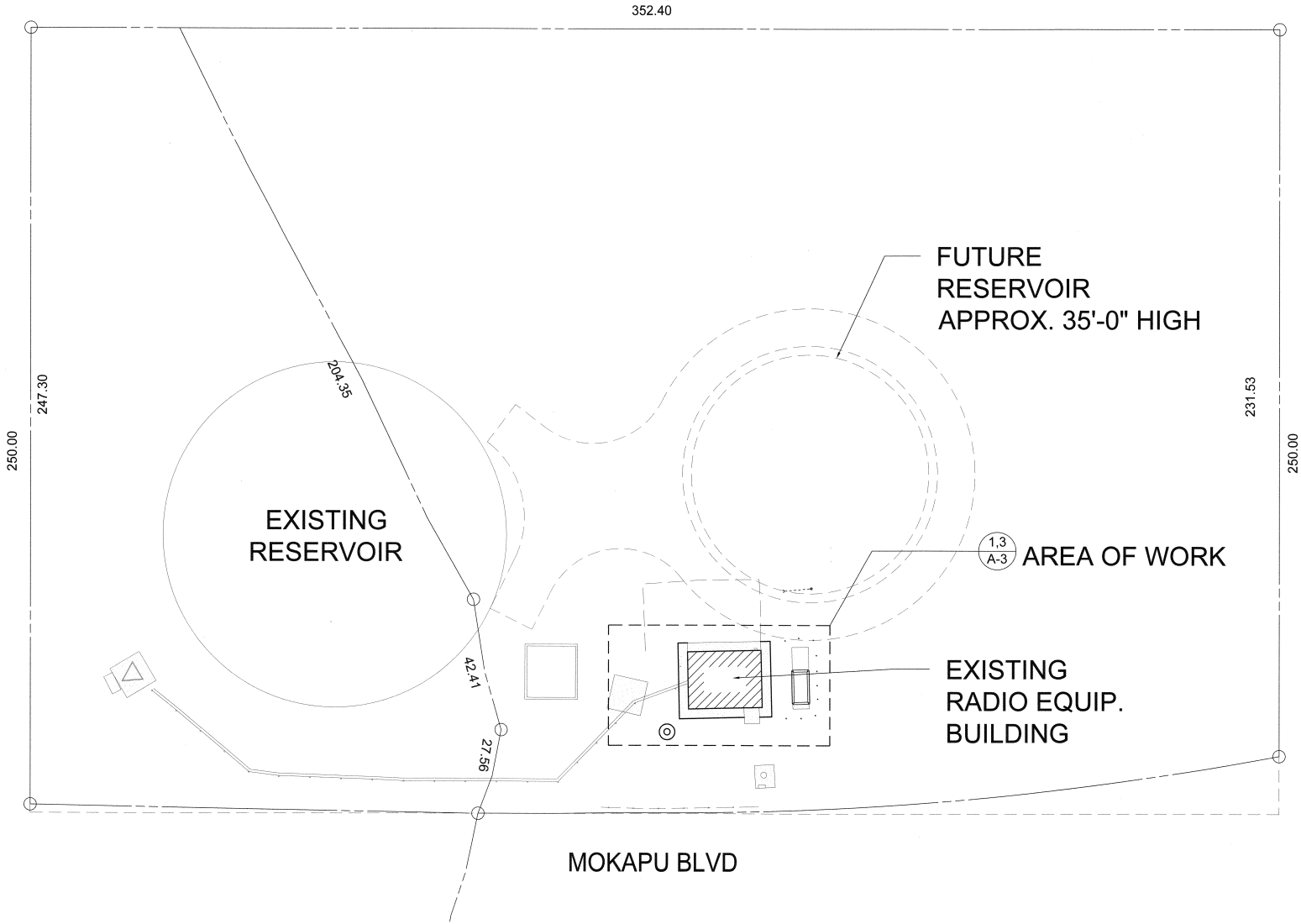
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1939 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017: 016

TOPO SURVEY

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	A-1/R1
SHEET NO.	3 OF 27
FILE	DRAW FOLDER

C:\Users\nokazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\A-1 TOPO.dwg Plotted:5/13/2020 10:14 AM



SITE PLAN SCALE: 1/16"=1'-0" 1

GRAPHIC SCALES:

REVISION	DATE:	DESCRIPTION:	SHT. NO.	APPROVED
			OF	
			OF	
			OF	
			OF	
			OF	

LLOYD M. HIGA
LICENSED PROFESSIONAL ARCHITECT
No.AR-6093
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

Chief, Facilities Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 : 016

SITE PLAN

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	A-2
SHEET NO.	4 OF 27
FILE	DRAW FOLDER

C:\Users\nakazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\A-2 SITE.dwg Plotted:4/10/2020 2:22 PM

1. GENERAL NOTES APPLY TO ALL DRAWINGS.

2. DUE TO THE NATURE OF THE WORK, ALL DIMENSIONS SHOWN SHALL BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION OF ANY ITEM. FAILURE TO ADHERE TO THIS PROCEDURE SHALL PLACE FULL RESPONSIBILITY FOR ANY ERRORS DIRECTLY UPON THE CONTRACTOR.

3. INFORMATION CONCERNING EXISTING BUILDING STRUCTURE, SIZE, LOCATION OR EQUIPMENT, FINISHES, ETC. WAS OBTAINED FROM VARIOUS PLANS FOR CONSTRUCTION OF THE EXISTING BUILDING. EVERY EFFORT HAS BEEN MADE TO ACCURATELY DEPICT EXISTING BUILDING CONDITIONS. HOWEVER ALL WORK MUST BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

4. ALL PROPOSED SUBSTITUTIONS SHALL BE APPROVED BY THE DESIGN ARCHITECT, IN WRITING, PRIOR TO INSTALLATION.

5. THE GENERAL CONTRACTOR SHALL USE EXTREME CAUTION IN DEMOLITION OF EXISTING CONSTRUCTION. ANY ITEM STRUCTURAL IN NATURE AND SCHEDULED FOR DEMOLITION IN THIS DRAWING BUT NOT IDENTIFIED AS STRUCTURAL IN NATURE SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO DEMOLITION. BY FAILURE TO DO SO, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH ACTION.

6. ALL WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO PROCEEDING WITH WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

7. THIS PROJECT SHALL BE DESIGNED & CONSTRUCTED TO CONFORM WITH THE ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.

8. CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE IN A SECURE, CLEAN AND SAFE MANNER.

9. PROTECTION : CONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR TAKING ALL STEPS NECESSARY TO PROTECT THE PUBLIC FROM INJURY AND ADJACENT PROPERTY FROM DAMAGES DURING CONSTRUCTION AS REQUIRED BY LOCAL CODES.

10. REPAIR ALL EXISTING CONSTRUCTION AFFECTED BY NEW WORK TO ITS ORIGINAL CONDITION.

11. CONTRACTOR TO PROVIDE TOUCH UP PAINT TO ANY ADJACENT AREA DAMAGED DURING CONSTRUCTION.

12. THE FACILITY SHALL REMAIN IN OPERATION DURING CONSTRUCTION.

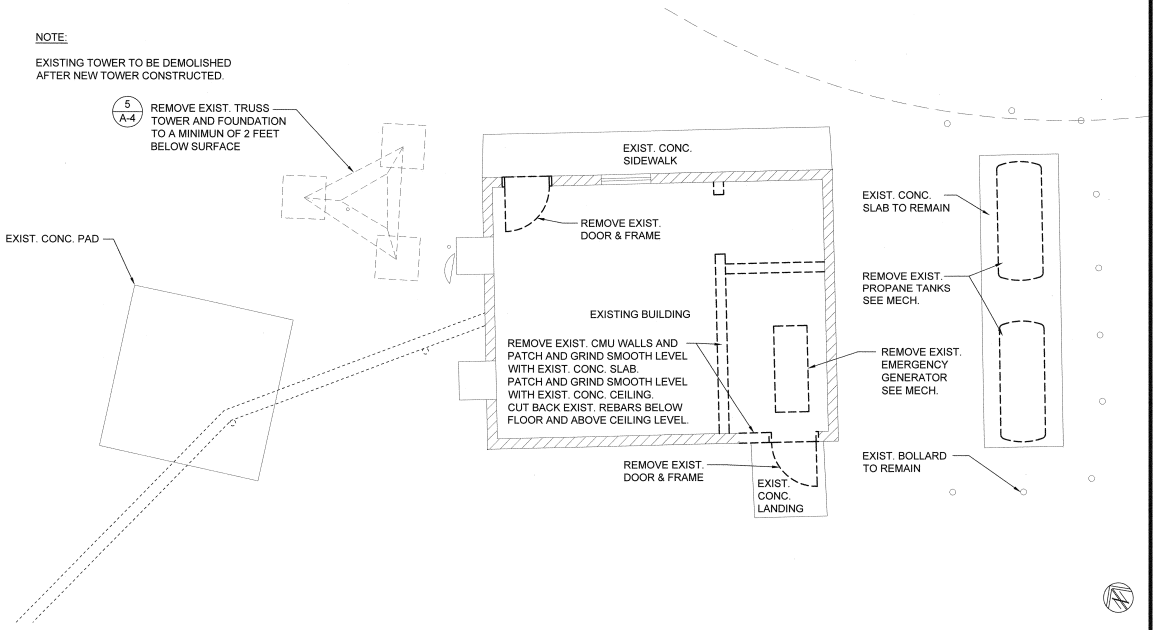
13. ALL ATTACHMENTS FOR LADDER, DISHES, ANTENNAS AND OTHERS TO BE CLAMP TYPE AND NOT PENETRATE THE MONOPOLE.

GENERAL NOTES

SCALE: - | 12

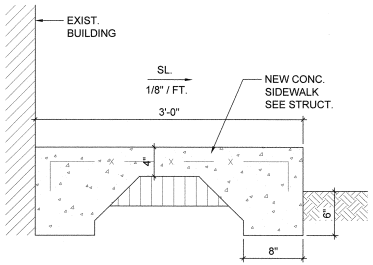
NOTE:

EXISTING TOWER TO BE DEMOLISHED AFTER NEW TOWER CONSTRUCTED.



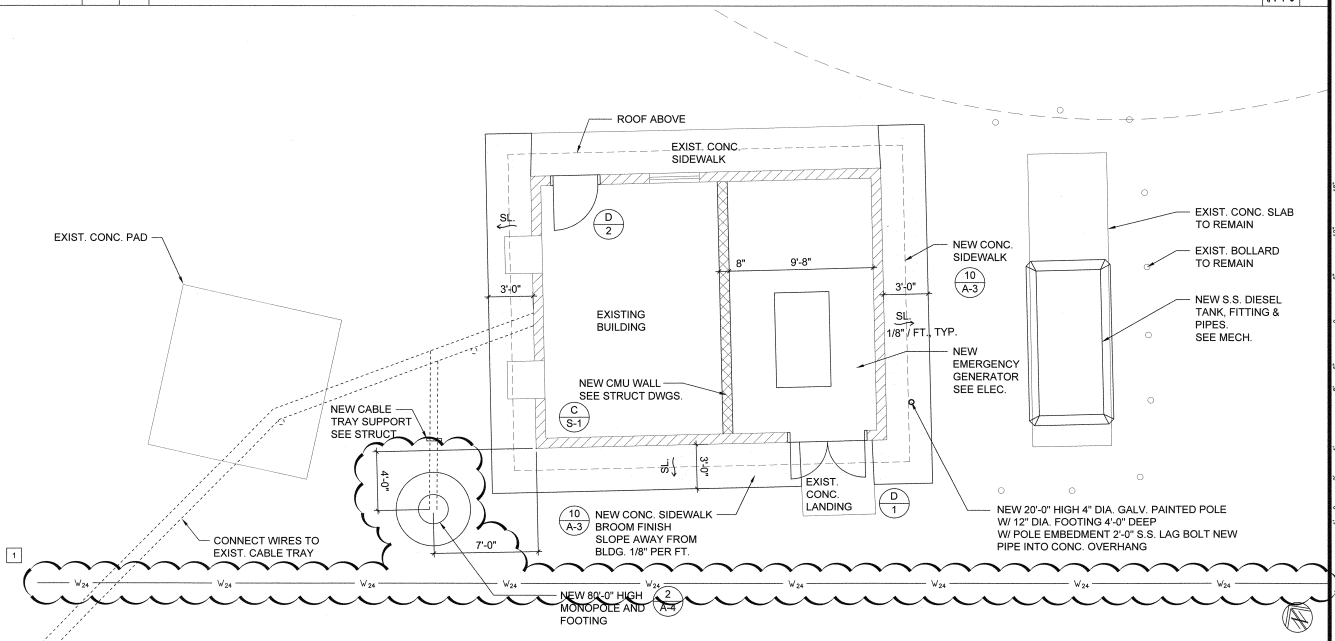
DEMOLITION FLOOR PLAN

SCALE: 1/4"=1'-0" | 3



CONC. WALK SECTION

SCALE: 1 1/2"=1'-0" | 10



RENOVATED FLOOR PLAN

SCALE: 1/4"=1'-0" | 1

GRAPHIC SCALES:

NO.	DATE	DESCRIPTION	APPROVED
1	5/15/20	ADDENDUM NO. 4	or

LLOYD M. HIGA
LICENSED PROFESSIONAL ARCHITECT
No. AR-6093
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/20 Date

ACCEPTED BY:

Chief, Facilities Division Date

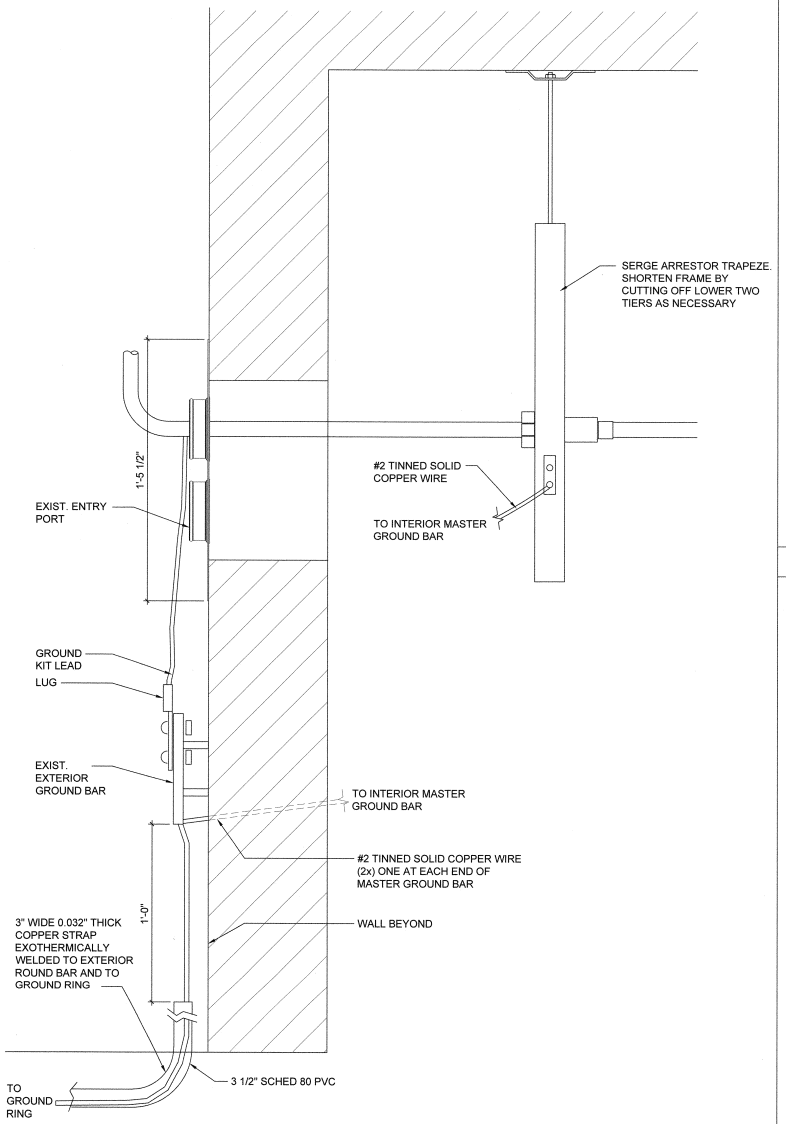
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1991 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 006

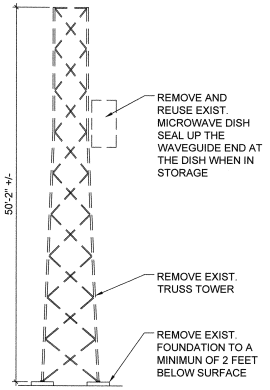
GENERAL NOTES, DEMOLITION AND RENOVATED FLOOR PLAN

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	A-3/R1
SHEET NO.	5 OF 27
FILE	DRAW FOLDER

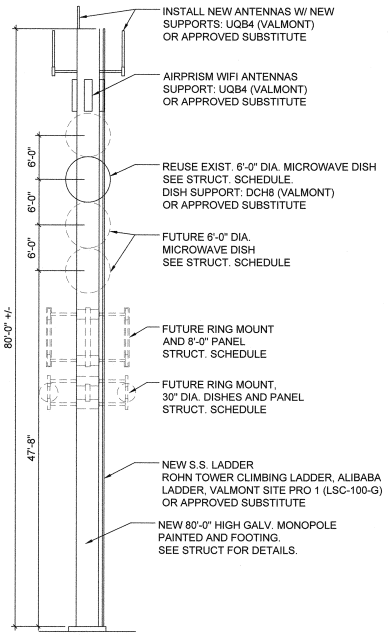
C:\Users\nakazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\A-3 PLAN.dwg Plotted:5/13/2020 10:13 AM



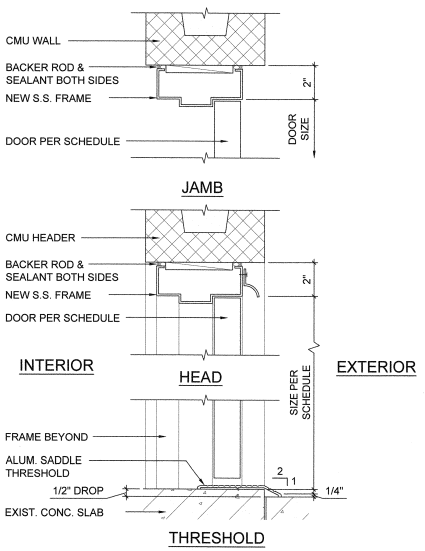
CABLE ENTRY PORT DETAIL — SCALE: 3"=1'-0" — 7



EXIST. TOWER ELEVATION — SCALE: 1/8"=1'-0" — 5



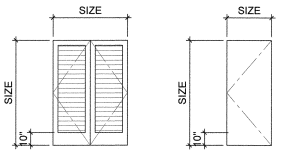
NEW TOWER ELEVATION — SCALE: 1/8"=1'-0" — 2



DOOR DETAIL — SCALE: 3"=1'-0" — 4

DOOR SCHEDULE

DOOR NUMBER	SIZE W x H	THK.	TYPE	FRAME DETAIL	THRESHOLD	REMARKS
1	5'-0" x 7'-0"	1 3/4"	1	4/A-4	ALUM.	-
2	3'-0" x 7'-0"	1 3/4"	2	4/A-4	ALUM.	-



DOOR TYPE AND SCHEDULE — SCALE: 1/4"=1'-0" — 1

GRAPHIC SCALES:

NO.	DESCRIPTION	DATE:	SHT. NO.	APPROVED
			OF	
			OF	
			OF	
			OF	
			OF	

LLOYD M. HIGA — LICENSED PROFESSIONAL ARCHITECT No.AR-6093 — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

Chief Facilities Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
890 MOKAPU BLVD, KAILUA, HAWAII 96744
TAX MAP KEY: 4 - 2 - 010 : 048

TOWER ELEVATIONS, DOOR TYPE AND SCHEDULE, DOOR DETAIL

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	A-4
SHEET NO.	6 OF 27
FILE	DRAW FOLDER

C:\Users\ndkazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\A-4 DET.dwg Plotted:4/10/2020 2:22 PM

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE 2006 INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE CITY AND COUNTY OF HONOLULU.
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND THE SPECIFICATIONS.

3. THE GENERAL NOTES AND TYPICAL DETAILS SHALL APPLY UNLESS OTHERWISE SHOWN.

4. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS.

5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW BY THE CONTRACTING OFFICER.

6. ARCHITECTURAL PLANS ARE CONSIDERED A PART OF THE STRUCTURAL DESIGN DRAWINGS AND ARE TO BE USED TO DEFINE DETAIL CONFIGURATIONS INCLUDING, BUT NOT LIMITED TO RELATIVE LOCATION OF MEMBERS, ELEVATIONS, LOCATION OF ALL OPENINGS, ETC.

7. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO THE START OF THE JOB AND NOTIFY ALL DISCREPANCIES TO THE CONTRACTING OFFICER.

8. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

9. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING AND THE PROTECTION OF ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.

10. ALL ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS. ANY DEVIATION MUST BE APPROVED BY OSHA PRIOR TO ERECTION.

11. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROPERLY ALIGN THE STRUCTURE.

12. SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FROM THE SHADE STRUCTURE DESIGNER REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

13. ALL REQUESTS BY THE CONTRACTOR TO CHANGE WHAT IS SHOWN IN THE CONTRACT DOCUMENTS MUST BE SUBMITTED IN WRITING TO THE CONTRACTING OFFICER.

14. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER TWO (2) WORKING DAYS PRIOR TO BEGINNING ANY WORK WHICH WILL CONCEAL STRUCTURAL ELEMENT SUCH AS FOURING CONCRETE (CONCEALING REINFORCING).

15. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SPECIAL INSPECTION REQUIREMENTS INCLUDING THE IDENTITY AND CONTACT INFORMATION OF THE INSPECTOR RESPONSIBLE FOR EACH REQUIREMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE CONTRACTING OFFICER FOR THE NEED OF THE SERVICES OF THE SPECIAL INSPECTOR IN A TIMELY MANNER. NO WORK REQUIRING SPECIAL INSPECTION SHALL PROCEED WITHOUT SPECIAL INSPECTION.

FOUNDATION

1. THE FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT TITLED "REPORT - GEOTECHNICAL INVESTIGATION MICROWAVE MONOPOLE DISH REPLACEMENT- BWS KAPAA RESERVOIR - 1691 MOKAPU BLVD - KANEOHE, HAWAII 96744 - TMK: (1) 4-2-011:016" BY SHINSATO ENGINEERING, INC., PROJECT 19-0026 DATED APRIL 4, 2019, UNLESS OTHERWISE INDICATED FOUNDATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS REPORT. THE REPORT IS PART OF THIS PLAN AND SHALL BE KEPT ON THE JOB SITE AT ALL TIMES.

2. ALL FOOTINGS SHALL BEAR ON UNYIELDING BASALT ROCK. THE BOTTOM OF HOLE SHALL BE CLEANED PRIOR TO PLACEMENT OF CONCRETE. ALL FOOTING EXCAVATIONS SHALL BE OBSERVED AND APPROVED BY A QUALIFIED REPRESENTATIVE OF SHINSATO ENGINEERING PRIOR TO PLACEMENT OF REINFORCING STEEL OR CONCRETE. THE CONCRETE SHALL BE PLACED AS SOON AS PRACTICAL UPON COMPLETION OF THE DRILLED PIER EXCAVATION.

3. ANY DEBRIS, LOOSE OR DISTURBED SOIL OR OTHER DELETERIOUS MATERIAL FOUND IN STRUCTURAL AREAS SHALL BE REMOVED AND REPLACED WITH PROPERLY COMPACTED STRUCTURAL FILL.

4. REFER TO GEOTECHNICAL REPORT FOR STRUCTURAL FILL REQUIREMENTS AND FOR FILL PLACEMENT AND COMPACTION REQUIREMENTS.

5. ALL WATER, MUD AND DEBRIS SHALL BE REMOVED FROM THE BOTTOM OF FOOTING EXCAVATIONS PRIOR TO THE PLACEMENT OF CONCRETE.

6. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER 3 WORKING DAYS PRIOR TO BEGINNING ANY FOUNDATION WORK (BOTTOM OF FOOTING, STRUCTURAL FILL, ETC.).

7. CONTRACTOR SHALL PROVIDE DETAILS OF DRILLING EQUIPMENT, DRILLING CONTROLS, DRILLING METHODOLOGY, LINING OF DRILLED HOLE, PROTECTION OF THE TOP OF DRILLED HOLE TO PREVENT PEOPLE OR OBJECTS FROM FALLING INTO THE HOLE, AND HOW EXCAVATED SOIL WILL BE COLLECTED AND DISPOSED OF. THESE DETAILS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER IN WRITING FOR REVIEW AND APPROVAL BEFORE STARTING WORK.

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318-05.

2. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF) WITH AGGREGATES CONFORMING TO ASTM C-33. UNLESS OTHERWISE NOTED, THE COMPRESSIVE STRENGTHS OF CONCRETE AT 28 DAYS AND MAXIMUM AGGREGATE SIZES SHALL BE AS FOLLOWS:

	STRENGTH	AGGREGATE SIZE
MONOPOLE FOOTING	4,000 PSI	3/4"
CONCRETE FILL	4,000 PSI	3/4"

3. MAXIMUM WATER-CEMENT RATIO SHALL NOT EXCEED 0.55.

4. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. EXCEPT WELDED REBARS SHALL CONFORM TO ASTM A706.

5. UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOWEL EXTENSIONS AND EMBEDMENTS SHALL BE 48 BAR DIAMETERS MINIMUM BUT NOT LESS THAN 2'-0".

6. ALL REINFORCING BARS MARKED CONTINUOUS (CONT.) ON THE PLANS SHALL BE LAPPED 48 BAR DIAMETERS MINIMUM BUT NOT LESS THAN 2'-0".

7. STAGGER ALL SPLICES WHERE POSSIBLE.

8. ALL WELDING OF REINFORCING SHALL CONFORM TO "STRUCTURAL WELDING CODE - REINFORCING STEEL" (AWS D1.4).

9. REBARS SHALL BE SUPPORTED, BENT AND PLACED AS PER "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES" ACI 315 (LATEST).

10. MINIMUM COVER IN INCHES FOR REBARS FOR CAST-IN-PLACE CONCRETE:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:	
#5 AND SMALLER	1-1/2"
#6 AND LARGER	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:	3/4"

11. AT TIME CONCRETE IS PLACED, REINFORCING SHALL BE FREE FROM MUD, OIL, LAITANCE OR OTHER COATINGS ADVERSELY AFFECTING BOND CAPACITY.

12. REINFORCEMENT, ANCHOR BOLTS, CONNECTORS, DOWELS AND ALL OTHER EMBEDDED ITEMS SHALL BE POSITIVELY SECURED BEFORE POURING.

PLAIN CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318-05.

2. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF) WITH AGGREGATES CONFORMING TO ASTM C-33. UNLESS OTHERWISE NOTED, THE COMPRESSIVE STRENGTHS OF CONCRETE AT 28 DAYS AND MAXIMUM AGGREGATE SIZES SHALL BE AS FOLLOWS:

	STRENGTH	AGGREGATE SIZE
CLSM	100 PSI	#4 SIEVE

3. MAXIMUM WATER-CEMENT RATIO SHALL NOT EXCEED 0.55.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL PIPES AND STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B. CHANNELS, ANGLES, PLATES, BARS AND MISCELLANEOUS STEEL SHAPES SHALL CONFORM TO ASTM A-36. FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE A.I.S.C. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

2. ALL BOLTS SHALL CONFORM TO ASTM A307.

3. WELDING: ALL WELDING IS TO COMPLY WITH A.W.S. SPECIFICATIONS AND IS TO BE DONE BY CERTIFIED WELDERS. ALL WELDING IS TO BE DONE BY ELECTRIC ARC PROCESS AND SHALL BE PERFORMED WITH APPROVED ELECTRODES AS REQUIRED BY I.B.C. WELDS ARE DESIGNED AT FULL STRESS AND MUST BE DONE IN THE SHOP OF A LICENSED FABRICATOR.

4. ALL WELDS NOT SHOWN SHALL BE FULL PENETRATION WELDS CAPABLE OF DEVELOPING THE FULL STRENGTH OF THE CONNECTING MEMBERS.

5. GALVANIZE ALL STRUCTURAL STEEL SHAPES, PLATES, BOLTS AND ACCESSORIES. PAINT STEEL AS SHOWN ON ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

PRE-ENGINEERED STEEL MONOPOLE

1. ALL WORK SHALL CONFORM TO THE ANSI-TIA 222-H (2018), INTERNATIONAL BUILDING CODE 2006, AND ASCE 7-16.

2. SHOP DRAWINGS, CALCULATIONS AND OTHER SUBMITTALS SHALL BE SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF HAWAII AND SUBMITTED TO THE CONTRACTING OFFICER / ARCHITECT FOR APPROVAL.

3. PROVIDE AND INSTALL ANCHOR BOLT STEEL TEMPLATES FOR COLUMN ANCHOR BOLTS PRIOR TO CONCRETE POUR.

4. WHEN COMPUTING WIND UPLIFT, THE ACTUAL DEAD LOAD SHALL BE USED WHEN IT IS LESS THAN THE SPECIFIED DEAD LOAD.

5. A MINIMUM OF 1" OF NON-SHRINK LEVELING GROUT SHALL BE USED UNDER ALL COLUMN BASE PLATES. MONOPOLE MANUFACTURER SHALL ENSURE THAT ANCHOR BOLT PROJECTION ABOVE THE SLAB ACCOUNTS FOR THE GROUT.

6. CONCRETE DRILLED PIER FOOTING IS SHOWN FOR COMPLETENESS. THE FOOTING LENGTH, DIAMETER, REINFORCING AND ANCHOR BOLT EMBEDMENT WILL BE DESIGNED BY THE STRUCTURAL ENGINEER OF RECORD AFTER THE MONOPOLE MANUFACTURER SUBMITS THE MONOPOLE BASE REACTIONS FOR REVIEW AND APPROVAL. MONOPOLE BASE REACTIONS SHALL BE LISTED BY LOAD CASE, USING FACTORED LOADS. MAXIMUM VERTICAL AND HORIZONTAL REACTIONS SHALL BE CLEARLY NOTED. THE CONTRACTOR SHALL TREAT THE FOOTING DESIGN AS A VARIABLE QUANTITY BECAUSE THE FOOTING SIZE AND REINFORCING MAY CHANGE FROM WHAT IS SHOWN.

7. STEEL MONOPOLE SHALL BE DESIGNED TO MEET THE CRITERIA OF THE CODES LISTED ON THIS SHEET.

8. THE MONOPOLE MANUFACTURER SHALL BE RESPONSIBLE FOR DESIGNING THE MONOPOLE STRUCTURE, APPURTENANCE (ANTENNAS, WIRES, LADDER, ETC.) CONNECTIONS TO THE MONOPOLE, ANCHOR BOLT SIZE AND QUANTITY, AND BASE PLATE. THE MONOPOLE MANUFACTURER SHALL BE HIRED AND PAID FOR BY THE CONTRACTOR. THE COST OF THE WORK FOR THE PRE-ENGINEERED STEEL MONOPOLE DESIGN SHALL BE INCLUDED IN THE CONTRACTOR'S BID. CABLE SUPPORTS SHALL BE EXTERNAL AND SHALL BE SPACED APART AT A MAXIMUM OF 36 INCHES.

9. STEEL MONOPOLE SHALL BE ASTM A572 GRADE 65 (OR AS APPROVED BY THE CONTRACTING OFFICER) HOT-DIP GALVANIZED PER ASTM A-123. THE STEEL MONOPOLE WALL THICKNESS SHALL BE A MINIMUM OF $\frac{3}{8}$" THICK.

10. STEEL MONOPOLE SHALL BE SLIP MOUNTED TAPERED. MONOPOLE SHALL BE MINIMUM 16 SIDED REGULAR POLYGON CROSS SECTION. ALL SLIP JOINTS SHALL BE SEALED TO CONTAIN CONCRETE OR CLSM FILL INSIDE MONOPOLE.

11. MONOPOLE MANUFACTURER HAS THE OPTION TO REDESIGN THE FOOTING PROVIDED THAT ALL RECOMMENDATIONS IN THE PROJECT GEOTECHNICAL REPORT ARE FOLLOWED AND THE DESIGN MEETS ALL OF THE CODE REQUIREMENTS. SUBMIT STRUCTURAL CALCULATIONS AND DRAWINGS SEALED BY A STRUCTURAL ENGINEER LICENSED IN HAWAII TO BE REVIEWED AND APPROVED.

DESIGN CRITERIA

1. CODES: ANSI/TIA-222-H (2018)

2. RISK CATEGORY III

3. WIND FORCES

GROUND ELEVATION		600 FT
TOPOGRAPHIC FACTOR	Kzt	1.0
ROOFTOP SPEED UP	Ks	1.0
GROUND ELEVATION	Ke	0.997
BASIC WIND SPEED		191 MPH
EXPOSURE CATEGORY		B
DIRECTIONALITY FACTOR	Kd	0.95

4. SEISMIC FORCES

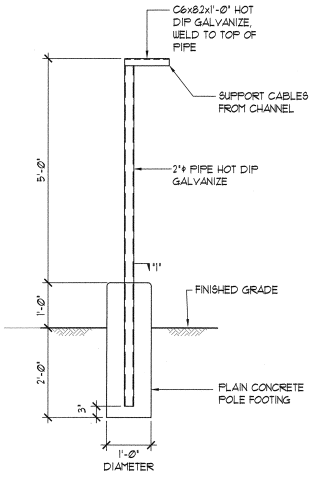
IMPORTANCE FACTOR	1.25
MAPPED SPECTRAL RESPONSE	
Ss	0.588
S1	0.172
SDs	0.521
SD1	0.259
TL	4S
SEISMIC DESIGN CATEGORY	D

SPECIAL INSPECTION

1. ITEMS REQUIRING SPECIAL INSPECTION:
   REINFORCING STEEL (PERIODIC)
   ANCHOR BOLTS (PERIODIC)
   CONCRETE (2006 IBC TABLE 1704.4)
   FIELD WELDING OF STEEL

2. NOTIFY SPECIAL INSPECTOR 4 WORKING DAYS PRIOR TO NEED OF INSPECTION SERVICES.

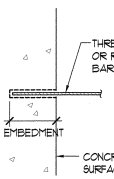
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE CONTRACTING OFFICER SO THEY CAN NOTIFY THE SPECIAL INSPECTOR IN A TIMELY MANNER. IF SPECIAL INSPECTIONS ARE NOT DONE THE CERTIFICATE OF OCCUPANCY MAY NOT BE ISSUED BY THE CITY AND COUNTY.



CABLE TRAY SUPPORT

SC: 3/4"=1'-0"

A
S-1



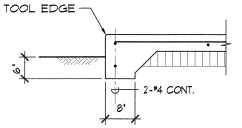
THREADED ROD (REBAR)	DRILL BIT DIAMETER	MINIMUM EMBEDMENT
1/2"ø (#4)	5/8"	4"
5/8"ø (#5)	3/4"	6"
3/4"ø (#6)	7/8"	7"
7/8"ø (#7)	1"	8"

NOTES:
A. PRE APPROVAL FOR SIMPSON STRONG TIE SET-XP EPOXY TIE ADHESIVE. ALL SUBSTITUTION REQUEST SHALL BE SUBMITTED WITH CURRENT ICC-ES REPORT TO ENGINEER FOR REVIEW AND APPROVAL.
B. ALL THREAD ROD SHALL BE CARBON STEEL CONFORMING TO ASTM F1554, GRADE 36 HOT DIP GALVANIZED. REINFORCING BAR SHALL BE ASTM A615 GRADE 60.
C. PRE DRILL HOLE WITH DRILL BIT COMPLYING WITH ANSI B212.15-1994.
D. CLEAN HOLE WITH OIL FREE COMPRESSED AIR (80 PSI MINIMUM) AND NYLON BRUSH.
E. FILL HOLE HALF TO TWO THIRDS FULL WITH ADHESIVE STARTING FROM BOTTOM, THEN INSERT ANCHOR TO BOTTOM OF HOLE AND TWIST CLOCKWISE TO ENSURE ADHESIVE COVERS THE ANCHOR SURFACE. ADHESIVE MUST BE LEVEL WITH CONCRETE SURFACE AFTER INSERTION OF ANCHOR.
F. ANCHOR INSTALLATION REQUIRES SPECIAL INSPECTION.

EPOXY ANCHOR DETAIL

NO SCALE

B
S-1



SIDEWALK EDGE

SC: 3/4" = 1'0"

C
S-1

GRAPHIC SCALES:

NO.	DESCRIPTION	DATE	REVISION

ADRIAN C.M. LEE — LICENSED PROFESSIONAL ENGINEER — No. 9164-S — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Adrian Lee 4/20/22
Signature Date

ACCEPTED BY:

Chief, Facilities Division Date

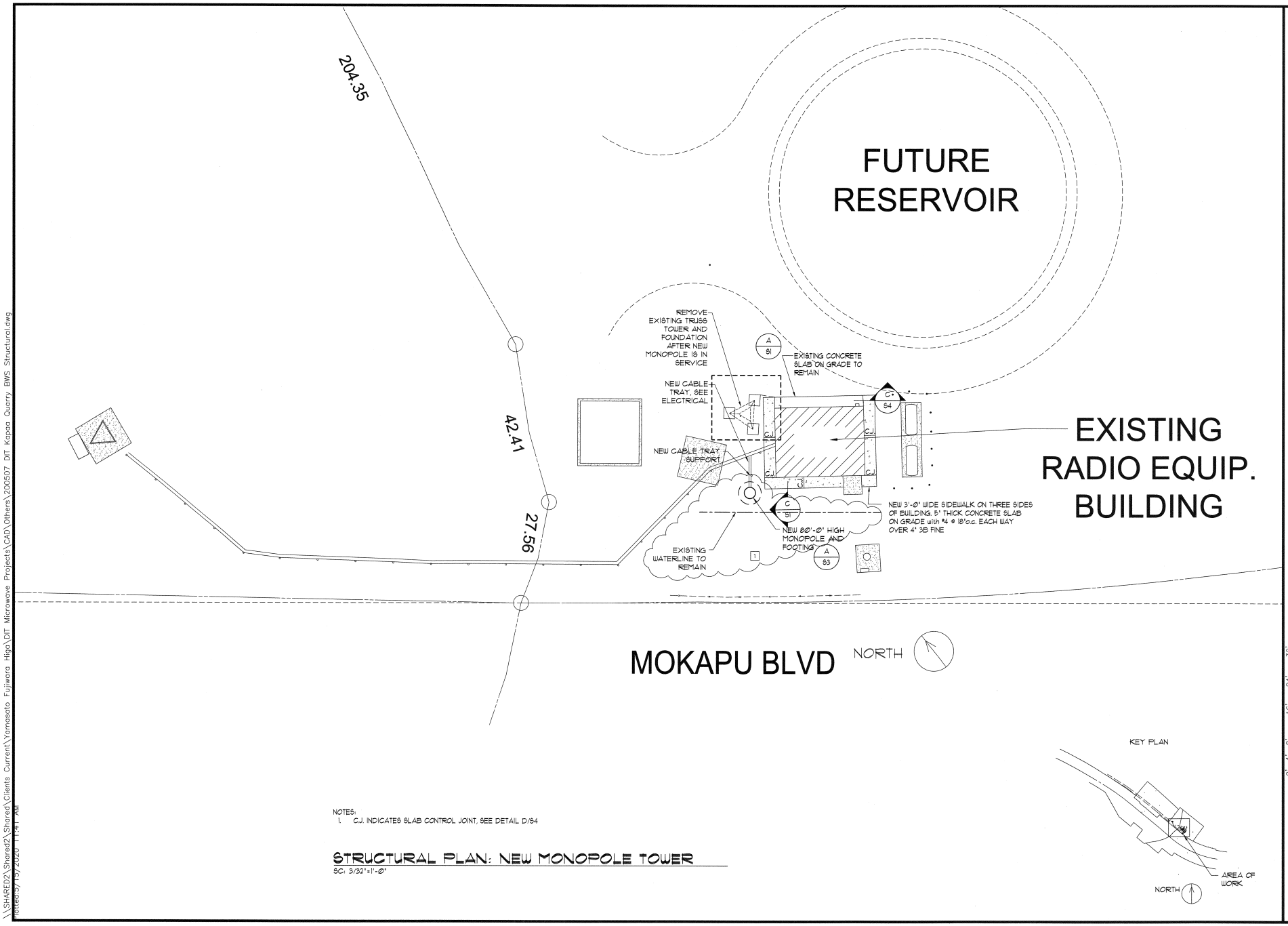
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TMK MAP 4-2-011: 016

GENERAL NOTES

DESIGN BY:	AL
DRAWN BY:	JM
CHECKED BY:	AL
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	S-1
SHEET NO.	7 OF 27
FILE	DRAW FOLDER

C:\Users\T530\Dropbox\Jngineering\Shared Folder\Clients Current Mobile\Others\200408 DIT Kapoa Quarry BWS Structural.dwg Plotted:4/8/2020 3:17 PM



NOTES:
1. C.J. INDICATES SLAB CONTROL JOINT, SEE DETAIL D/S4

STRUCTURAL PLAN: NEW MONOPOLE TOWER

SC: 3/32"=1'-0"

GRAPHIC SCALES: 3/32"=1'-0" 0' 4' 8' 16' 24' 32'

REVISION	DATE	DESCRIPTION	SHT. NO.	APPROVED
1	5/15/20	ADDENDUM NO. 4		

ADRIAN C.M. LEE
LICENSED PROFESSIONAL ENGINEER
No. 9164-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Adrian Lee 4/30/22
Signature Date

ACCEPTED BY:

Chief, Facilities Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

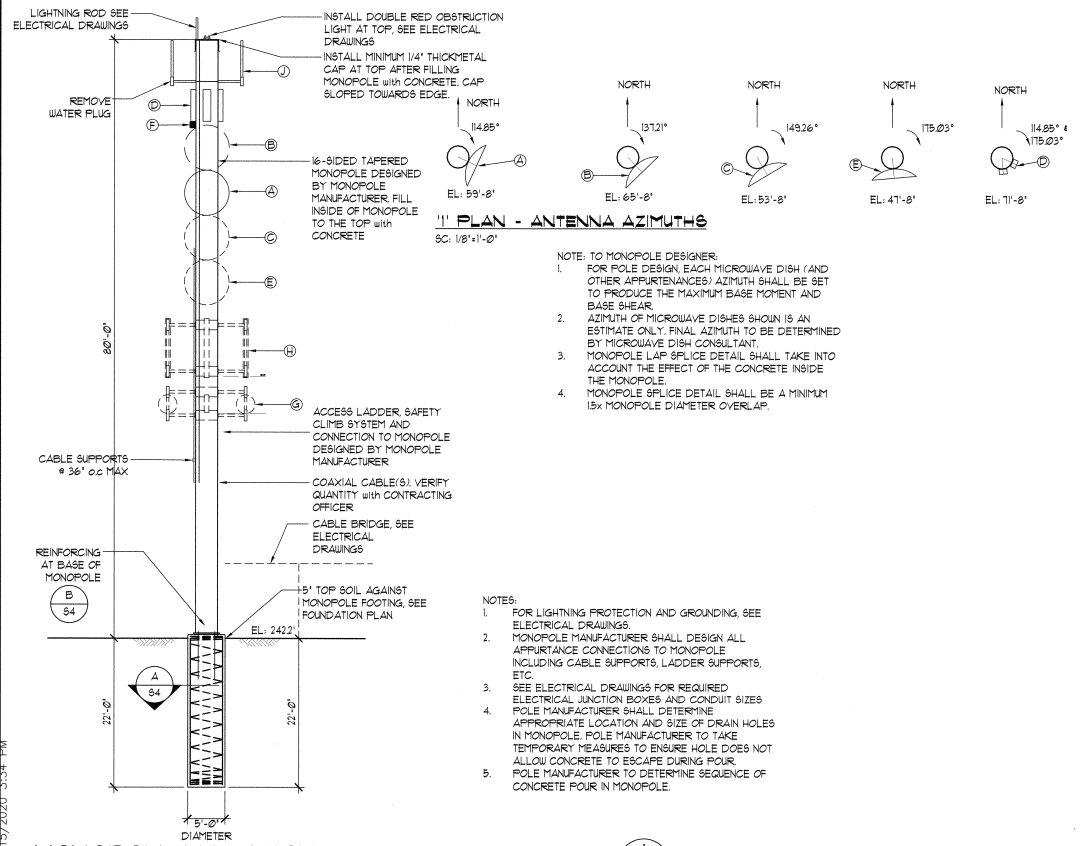
KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007 - 016

PLAN NEW MONOPOLE

DESIGN BY:	AL
DRAWN BY:	JM
CHECKED BY:	AL
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	S2/R-1
SHEET NO.	8 OF 26
FILE	DRAW FOLDER

\\SHARED2\Shared2\Shared\Clients Current\Yamasato Fujiwara Higa\DIT Microwave Projects\CAD\Others\200507 DIT Kapaa Quarry BWS Structural.dwg
Plotted:5/15/2020 11:41 AM

MARK	APPURTENANCE	MANUFACTURER	MODEL	HEIGHT OF CENTER	TRANS LINE	TX (MHz)	RX (MHz)	ANTENNA BANDWIDTH (MHz)	WEIGHT (lbs)	MAX. WINDLOAD AREA (ft^2)	WINDLOAD
A	6'-Ø" DIAMETER MICROWAVE ANTENNA (KAILUA POLICE STATION) REUSE EXISTING DISH	ANDREW (COMMSCOPE)	UEHP6-59W	59'-8"	EW 63 WAVEGUIDE	6GHz BAND 5925-6425	6GHz BAND 5925-6425	6GHz BAND	297 lbs	28.3	AXIAL-4Ø22 lbs SIDE- 1139 lbs MOMENT- 2123 lb-ft
B	FUTURE 6'-Ø" DIAMETER MICROWAVE ANTENNA (KAMEHAMEHA RIDGE)	ANDREW (COMMSCOPE)	UEHP6-59W	65'-8"	EW 63 WAVEGUIDE	6GHz BAND 5925-6425	6GHz BAND 5925-6425	6GHz BAND	297 lbs	28.3	AXIAL-4202 lbs SIDE- 1190 lbs MOMENT- 2218 lb-ft
C	FUTURE 6'-Ø" DIAMETER MICROWAVE ANTENNA (KAILUA CORP YARD)	ANDREW (COMMSCOPE)	UEHP6-59W	53'-8"	EW 63 WAVEGUIDE	6GHz BAND 5925-6425	6GHz BAND 5925-6425	6GHz BAND	297 lbs	28.3	AXIAL- 3819 lbs SIDE- 1082 lbs MOMENT- 2016 lb-ft
D	AIRPRISM WIFI ANTENNAS (4) [1]	UBIQUITI	AP-5AC-90-HD (x4) RP-5AC-GEN2 (x12)	71'-8"	(12) CAT6 CABLES IN SCH. 80 PVC CONDUIT FROM JUNCTION BOX TO EQUIPMENT SHELTER COMM ROOM	5.15-5.85GHz	5.15-5.85GHz	5GHz BAND	28.9 lbs	9.Ø	762 lbs AT 191 MPH
E	FUTURE 6'-Ø" DIAMETER MICROWAVE ANTENNA (KAPAA QUARRY)	ANDREW (COMMSCOPE)	UEHP6-59W	47'-8"	EW 63 WAVEGUIDE	6GHz BAND 5925-6425	6GHz BAND 5925-6425	6GHz BAND	297 lbs	28.3	AXIAL- 3586 lbs SIDE- 1015 lbs MOMENT- 1892 lb-ft
F	INSTALL 14 EXTERNAL CAT 6 CABLES WITH A JUNCTION BOX AT TOP. INSTALL JUNCTION BOX AT TOP WITH A CAT 6 PATCH PANEL. RUN CAT 6 JUMPER CABLES FROM JUNCTION BOX TO ANTENNAS. EXIT FROM JUNCTION BOX SHALL BE FROM BOTTOM AND WATER TIGHT SEAL. JUNCTION BOX SHALL BE A NEMA4 ENCLOSURE. INSTALL FOURTEEN (14) CAT 6 CABLES, 12 FOR ANTENNA CONNECTIONS AND TWO FOR SPARES. USE EXISTING CABLE ENTRY PORTS FOR WIFI CAT6 CABLE RUNS FROM JUNCTION BOX ON MONOPOLE TO COMM. ROOM.										
G	FUTURE RING MOUNT, (2) FUTURE BWS 30' DIAMETER DISHES AND FUTURE PANEL (WAIMANALO RIDGE)	ANDREW (COMMSCOPE)	UEHP6-59W	31.25'	EW 63 WAVEGUIDE	6GHz BAND 5925-6425	6GHz BAND 5925-6425	6GHz BAND	49.Ø lbs	25	AXIAL- 3586 lbs SIDE- 1015 lbs MOMENT- 1892 lb-ft
H	FUTURE RING MOUNT, (4) FUTURE 8'-Ø" PANEL	AMPHENOL	WPA-100102-8CF-EDIN-X-25	39.00'					23.Ø lbs	21	AXIAL- 3347 lbs SIDE- 947 lbs MOMENT- 1778 lb-ft
J	SINCLAIR SC473-HFILDF 800 MHz ANTENNA (2)	SINCLAIR	SC473-HFILDF	74'-0"	WITH 7/8"ø HELIAX CABLE TO BOTTOM	769-775 & 851-861	799-805 & 806-816	694-869	17.Ø lbs	.83	177 lbs AT 191 MPH



MONOPOLE ELEVATION

SC: 1/8"=1'-Ø"

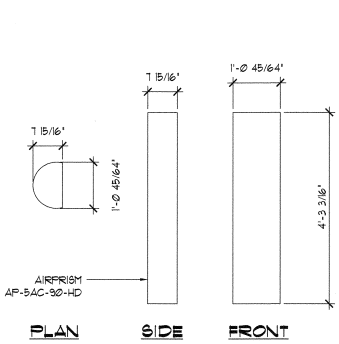
A S3

'1' PLAN - ANTENNA AZIMUTHS

SC: 1/8"=1'-Ø"

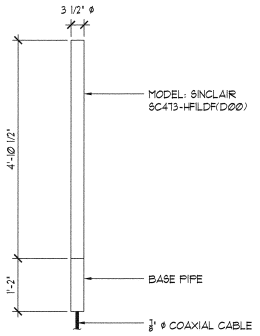
NOTE: TO MONOPOLE DESIGNER:
1. FOR POLE DESIGN, EACH MICROWAVE DISH (AND OTHER APPURTENANCES) AZIMUTH SHALL BE SET TO PRODUCE THE MAXIMUM BASE MOMENT AND BASE SHEAR.
2. AZIMUTH OF MICROWAVE DISHES SHOWN IS AN ESTIMATE ONLY. FINAL AZIMUTH TO BE DETERMINED BY MICROWAVE DISH CONSULTANT.
3. MONOPOLE LAP SPLICE DETAIL SHALL TAKE INTO ACCOUNT THE EFFECT OF THE CONCRETE INSIDE THE MONOPOLE.
4. MONOPOLE SPLICE DETAIL SHALL BE A MINIMUM 1.5x MONOPOLE DIAMETER OVERLAP.

NOTES:
1. FOR LIGHTNING PROTECTION AND GROUNDING, SEE ELECTRICAL DRAWINGS.
2. MONOPOLE MANUFACTURER SHALL DESIGN ALL APPURTANCE CONNECTIONS TO MONOPOLE INCLUDING CABLE SUPPORTS, LADDER SUPPORTS, ETC.
3. SEE ELECTRICAL DRAWINGS FOR REQUIRED ELECTRICAL JUNCTION BOXES AND CONDUIT SIZES
4. POLE MANUFACTURER SHALL DETERMINE APPROPRIATE LOCATION AND SIZE OF DRAIN HOLES IN MONOPOLE. POLE MANUFACTURER TO TAKE TEMPORARY MEASURES TO ENSURE HOLE DOES NOT ALLOW CONCRETE TO ESCAPE DURING POUR.
5. POLE MANUFACTURER TO DETERMINE SEQUENCE OF CONCRETE POUR IN MONOPOLE.



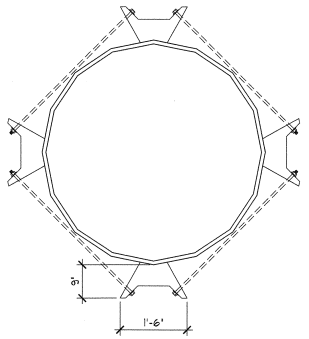
AIR PRISM WIFI ANTENNA

SC: 3/4"=1'-Ø"



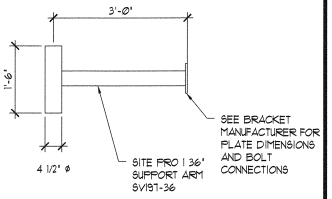
800 MHZ WHIP ANTENNA

SC: 3/4"=1'-Ø"



AIR PRISM BRACKET

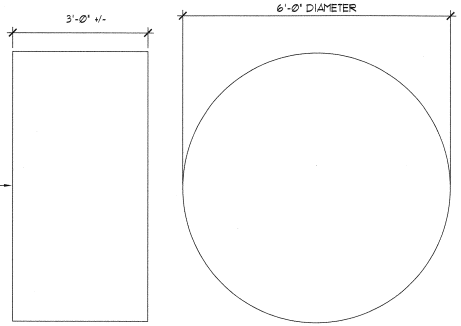
SC: 3/4"=1'-Ø"



WHIP ANTENNA BRACKET

SC: 3/4"=1'-Ø"

ANDREW UEHP6-59W VERIFY MODEL AND ATTACHMENT BRACKET WITH CONTRACTING OFFICER MONOPOLE DESIGNER TO DESIGN CONNECTION OF BRACKETS TO MONOPOLE



NOTE:
1. DIMENSIONS PROVIDED ARE ESTIMATES. VERIFY ALL EQUIPMENT AND BRACKET DIMENSIONS WITH CONTRACTING OFFICER.

6'-Ø" DIAMETER MICROWAVE DISH

SC: 3/4"=1'-Ø"

APPURTENANCES ON MONOPOLE

SC: 3/4"=1'-Ø"

B S3

GRAPHIC SCALES: 3/4" = 1'-0" | 1/8" = 1'-0"

NO.	DESCRIPTION	DATE	APPROVED
1	ADDENDUM NO. 4	5/15/20	DT

ADRIAN C. M. LEE — LICENSED PROFESSIONAL ENGINEER — No. 9164-S — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Adrian Lee 1/30/23
Signature Date

ACCEPTED BY:

Chief Facilities Director Date

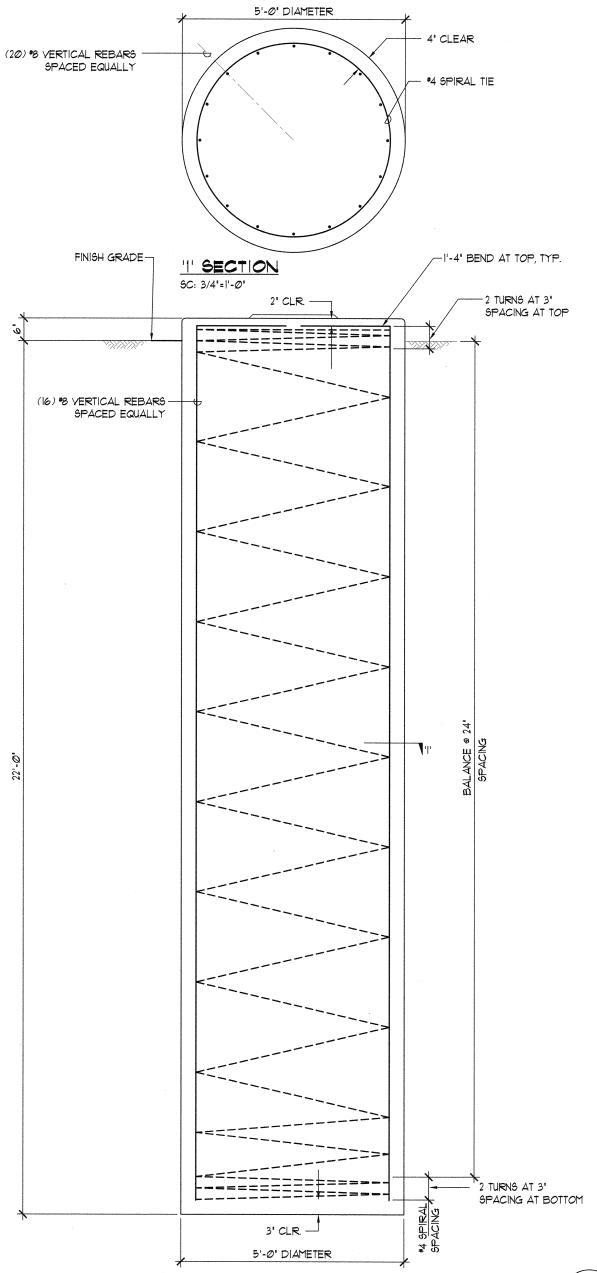
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 095

ELEVATION NEW MONOPOLE

DESIGN BY:	AL
DRAWN BY:	JM
CHECKED BY:	AL
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	S3/ R-1
SHEET NO.	9 OF 26
FILE	DRAW FOLDER

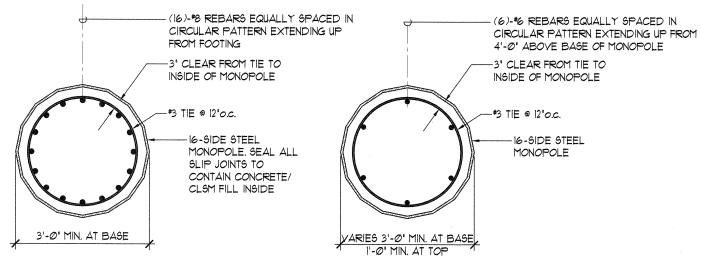
\\SHARED2\Shared2\Shared\Clients Current\Yamasato Fujiwara Higa\DIT Microwave Projects\CAD\Others\200507 DIT Kapaa Quarry BWS Structural.dwg
Plotted: 5/15/2020 3:34 PM



'1' SECTION
SC: 3/4"=1'-0"

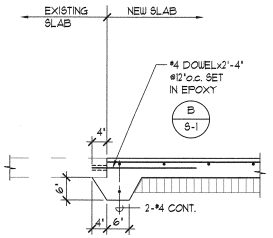
DRILLED PIER
SC: 3/4"=1'-0"

A
S-4



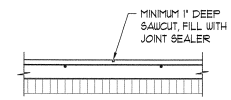
'2' SECTION AT BASE
SC: 3/4"=1'-0"

'3' SECTION ABOVE BASE
SC: 3/4"=1'-0"



NEW TO EXISTING SLAB
SC: 3/4"=1'-0"

C
S-4

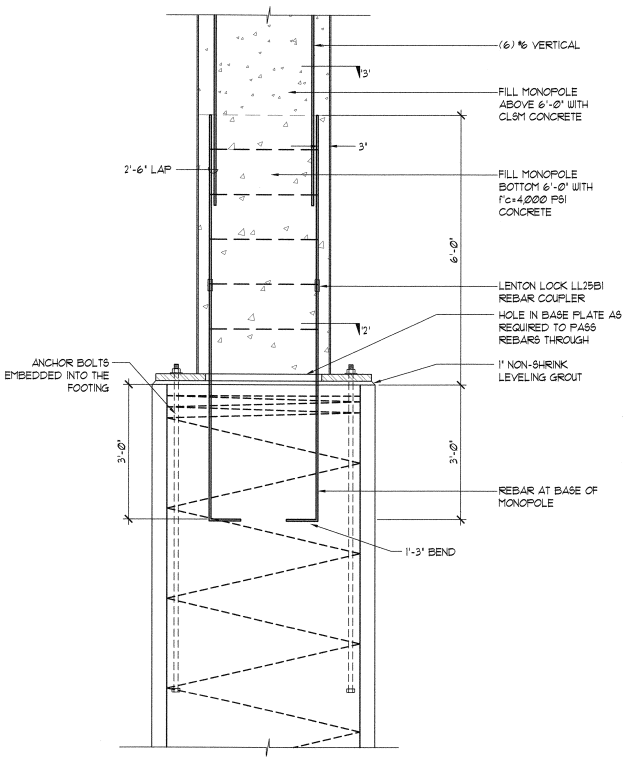


NOTES:
1. SAW CUT SHALL BE DONE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO AVOID EXCESSIVE RAVELING. BUT NOT MORE THAN 8 HOURS AFTER FINISHING.

SAWED CONTROL JOINT

CONTROL JOINT DETAILS (C.J.)
SC: 3/4" = 1'-0"

D
S-4



BASE OF MONOPOLE SECTION
SC: 3/4"=1'-0"

B
S-4

GRAPHIC SCALES: 3/4" = 1'-0" 0' 1' 2' 3' 4'

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
			of	
			of	
			of	
			of	
			of	

ADRIAN C.M. LEE
LICENSED PROFESSIONAL ENGINEER
No. 9164-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Adrian Lee 4/30/22
Signature Date

ACCEPTED BY:

Chief, Facilities Division Date

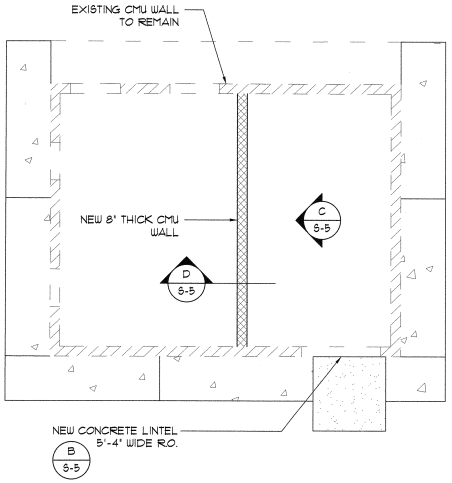
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1601 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 : 016

DETAILS AND SECTIONS

DESIGN BY:	AL
DRAWN BY:	JM
CHECKED BY:	AL
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	S-4
SHEET NO.	10 OF 27
FILE	DRAW FOLDER

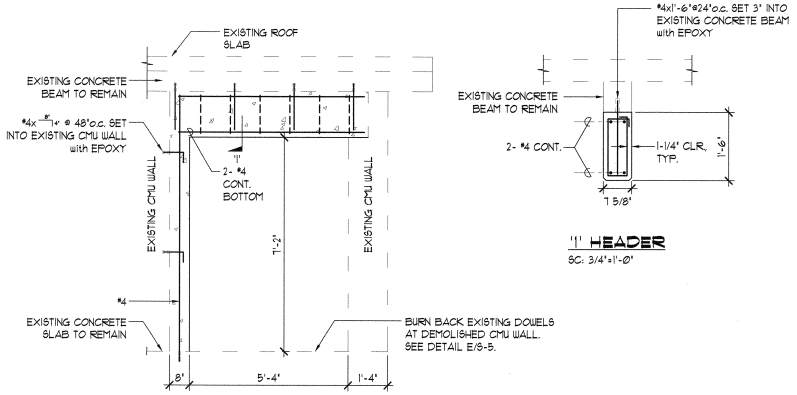
C:\Users\T530\Dropbox\i3ngineering\Shared Folder\Clients Current Mobile\Others\200408 DIT Kapaa Quarry BWS Structural.dwg Plotted:4/8/2020 3:17 PM



STRUCTURAL FLOOR PLAN

SC: 1/4"=1'-0"

A S-5



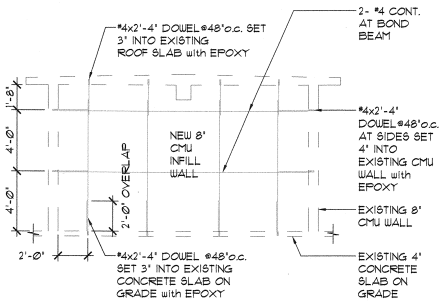
1'-1" HEADER

SC: 3/4"=1'-0"

ELEVATION NEW HEADER AT ENLARGED OPENING

SC: 1/2"=1'-0"

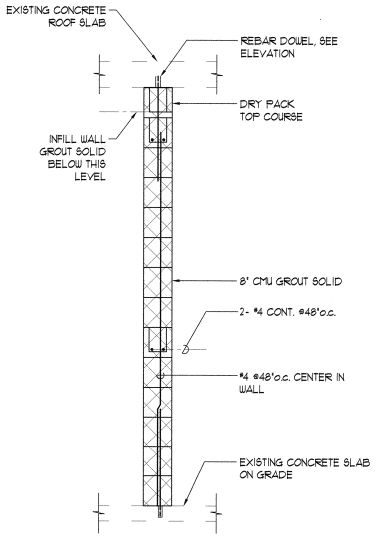
B S-5



NEW INFILL WALL ELEVATION

SC: 1/4"=1'-0"

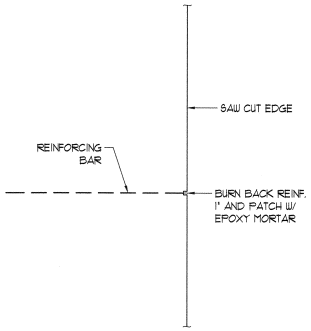
C S-5



NEW INFILL CMU WALL

SC: 3/4"=1'-0"

D S-5



DETAIL PATCH AT SAWCUT REINFORCING

NO SCALE

E S-5

CONCRETE MASONRY - CMU

1. CONCRETE BLOCK, GRADE N, MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90 WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI.

2. MORTAR SHALL BE MORTAR CEMENT, TYPE M OR S CONFORMING TO ASTM C270. MORTAR SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI AT 28 DAYS.

3. GROUT, CONFORMING TO ASTM C476, MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. COARSE GROUT SHALL BE A MIX OF: 1 PART CEMENT, 3 PARTS SAND, 2 PARTS PEA GRAVEL, TO BE OF FLUID CONSISTENCY (9" MINIMUM SLUMP).

4. THE THICKNESS OF GROUT BETWEEN BLOCK UNITS AND REINFORCING STEEL SHALL BE NOT LESS THAN 1/2", BETWEEN PARALLEL REINFORCING BARS, NOT LESS THAN 3/4".

5. IF WORK IS STOPPED ONE (1) HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINTS BY STOPPING THE GROUT 1-1/2" BELOW THE TOP OF THE BLOCK.

6. ALL CELLS SHALL BE GROUTED SOLID. GROUT IN LIFTS NOT TO EXCEED 6'-0".

7. GROUT SHALL BE VIBRATED 3 TO 5 MINUTES AFTER POUR.

8. UNLESS NOTED OTHERWISE ALL WALLS SHALL BE CONSTRUCTED IN CONVENTIONAL RUNNING BOND.

9. PROVIDE CONTROL JOINTS AT THE FOLLOWING:
WALL HEIGHT CHANGES GREATER THAN 2'-0"
WALL THICKNESS CHANGES (THOUGH NOT AT PILASTERS)
AT CONTROL JOINTS IN FOUNDATION, SLAB OR ROOF
AT 60'-0" O.C. MAXIMUM

REINFORCING FOR CONCRETE MASONRY

1. ALL REINFORCING STEEL BARS (EXCEPT STIRRUPS AND TIES) SHALL CONFORM TO ASTM A615 GRADE 60. STIRRUPS AND TIES SHALL CONFORM TO ASTM A615 GRADE 40.

2. UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOWEL EXTENSIONS AND EMBEDMENTS SHALL BE 40 BAR DIAMETERS.

3. AT ALL LINTELS, EXTEND HORIZONTAL BOTTOM REINFORCING 24" BEYOND OPENINGS. PROVIDE 2 - #5 BOTTOM BARS MINIMUM IN ALL LINTELS.

4. WHEREVER POSSIBLE, BOND BEAMS OF INTERSECTING WALLS SHALL BE CONSTRUCTED AT THE SAME ELEVATION. WHERE BOND BEAMS OF INTERSECTING WALLS DO NOT MATCH, BOND BEAM REINFORCING SHALL BE EMBEDDED INTO THE INTERSECTING WALL A MINIMUM OF 40 BAR DIAMETERS AND GROUTED.

GRAPHIC SCALES: 3/4" = 1'-0" | 1" | 2" | 3" | 4" | 1/4" = 1'-0" | 0' | 2' | 4' | 8' | 1/2" = 1'-0" | 0' | 1' | 2' | 4'

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
			OF	
			OF	
			OF	
			OF	
			OF	

ADRIAN C.W. LEE LICENSED PROFESSIONAL ENGINEER No. 9164-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Adrian Lee 4/30/22
Signature Date

ACCEPTED BY:

Chief, Facilities Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
8591 KOKIOPO BLVD, KAWAKAMI, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 050

DETAILS AND SECTIONS

DESIGN BY:	AL
DRAWN BY:	JM
CHECKED BY:	AL
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	S-5
SHEET NO.	11 OF 27
FILE	DRAW FOLDER

C:\Users\T530\Dropbox\3ngineering\Shared Folder\Clients Current Mobile\Others\200408 DIT Kapaa Quarry BWS Structural.dwg Plotted:4/8/2020 3:17 PM

MECHANICAL LEGEND

——— FOS ———	FUEL OIL SUPPLY LINE
——— FOR ———	FUEL OIL RETURN LINE
FOS	FUEL OIL SUPPLY LINE
FOR	FUEL OIL RETURN LINE
FE	FIRE EXTINGUISHER

GENERAL MECHANICAL NOTES

1. CONFORM TO ALL REQUIREMENTS OF THE BUILDING, PLUMBING AND ELECTRICAL CODES, STATE OF HAWAII HEALTH REGULATIONS, FIRE MARSHAL'S REGULATIONS AND OTHER APPLICABLE REGULATIONS.
2. INSTALLATION SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE PROJECT AS A WHOLE.
3. DUCT SIZES NOTED ARE NET INSIDE DIMENSIONS.
4. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO BID AND CONSTRUCTION.
5. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND DELAYS.
6. PAY FOR ALL PERMIT FEES AND APPLICATIONS.
7. PROVIDE ADDITIONAL MATERIALS AND LABOR FOR A COMPLETE OPERABLE SYSTEM AT NO EXTRA COST TO THE OWNER.
8. COORDINATE ALL REQUIRED SYSTEM DOWN-TIMES WITH THE OCCUPYING TENANTS AND THE BUILDING MANAGEMENT. SCHEDULE DOWN-TIMES FOR OFF-HOURS WHEN REQUIRED.
9. PROVIDE ACCESS PANELS FOR ALL ITEMS UNDER THIS SECTION REQUIRING SERVICING, INSPECTION, MAINTENANCE AND ADJUSTMENT.
10. PREPARE SIX (6) SETS OF SHOP DRAWINGS, SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO START OF WORK. PREPARE ONE SET OF REPRODUCIBLE AS-BUILT DRAWINGS SHOWING THE ACTUAL INSTALLED CONDITIONS AND SUBMIT TO THE OWNERS UPON COMPLETION OF WORK.
11. PROVIDE ONE YEAR FREE MAINTENANCE CONTRACT FOR ALL SYSTEMS AND EQUIPMENT PROVIDED UNDER THIS SECTION.
12. PROVIDE FINAL CONNECTIONS TO ALL OFCI EQUIPMENT. PROVIDE ALL VALVES, UNIONS, STRAINERS, PRESSURE REGULATORS, INDIRECT WASTE PIPING, ETC. REQUIRED FOR A COMPLETE INSTALLATION. VERIFY ALL REQUIREMENTS WITH THE OWNER AND EQUIPMENT SUPPLIER.
13. ALL EXISTING PIPING SHOWN IS BASED ON INFORMATION MADE AVAILABLE AT THE TIME OF DESIGN, ALL LINE SIZES AND LOCATIONS MUST BE VERIFIED ON THE FIELD.
14. SUBMIT AS-BUILT MECHANICAL DRAWINGS IN BOTH PRINTED FORMAT AND IN AUTOCAD DWG FORMAT BURNED ONTO A CD TO THE LANDLORD UPON COMPLETION OF THE PROJECT.
15. ALL MATERIAL, WORK AND INSTALLATION SHALL BE IN COMPLIANCE WITH 2006 IBC, 2006 UPC, 2015 IECC, AND 2012 NFPA 1.

MECHANICAL LEGEND, NOTES | SCALE: NONE | 1

GRAPHIC SCALES:

NO.	BY	DATE	DESCRIPTION	BY	APPROVED

LANCE AKITO UCHIDA
LICENSED PROFESSIONAL ENGINEER
No. 5804-M
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

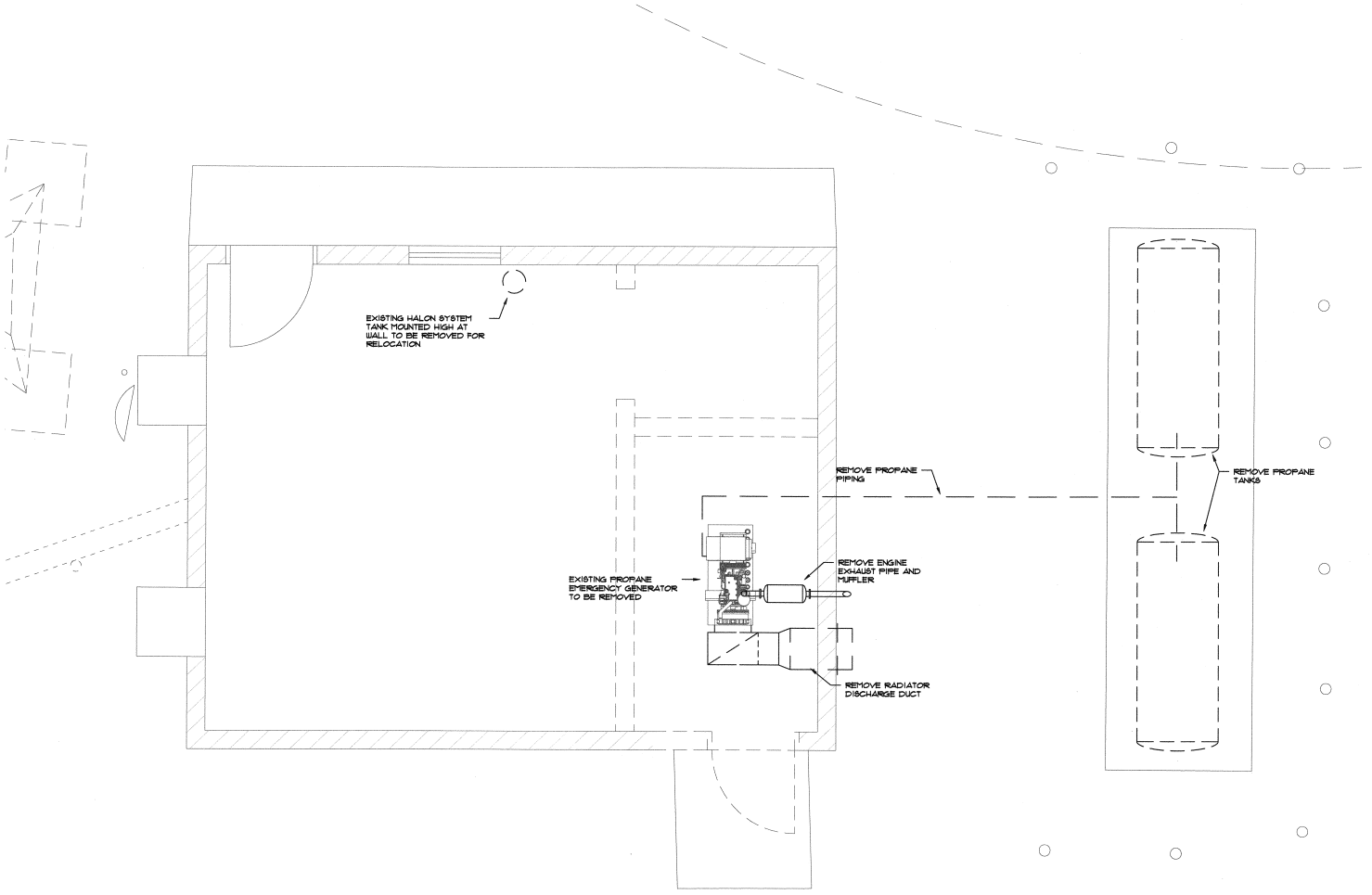
Program Administrator/ Mechanical/Electrical Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
3591 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 098

MECHANICAL LEGEND, NOTES

DESIGN BY:	LU
DRAWN BY:	LU
CHECKED BY:	LU
DATE:	APRIL 2019
PROJECT NO.:	II-31-19-C
DRAWING NO.:	M-1
SHEET NO.	12 OF 27
FILE	DRAW FOLDER



MECHANICAL DEMOLITION PLAN

SCALE: 1/2"=1'-0" 1

GRAPHIC SCALES

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED

LANCE AKITO UCHIDA
LICENSED PROFESSIONAL ENGINEER
No. 5804-M
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

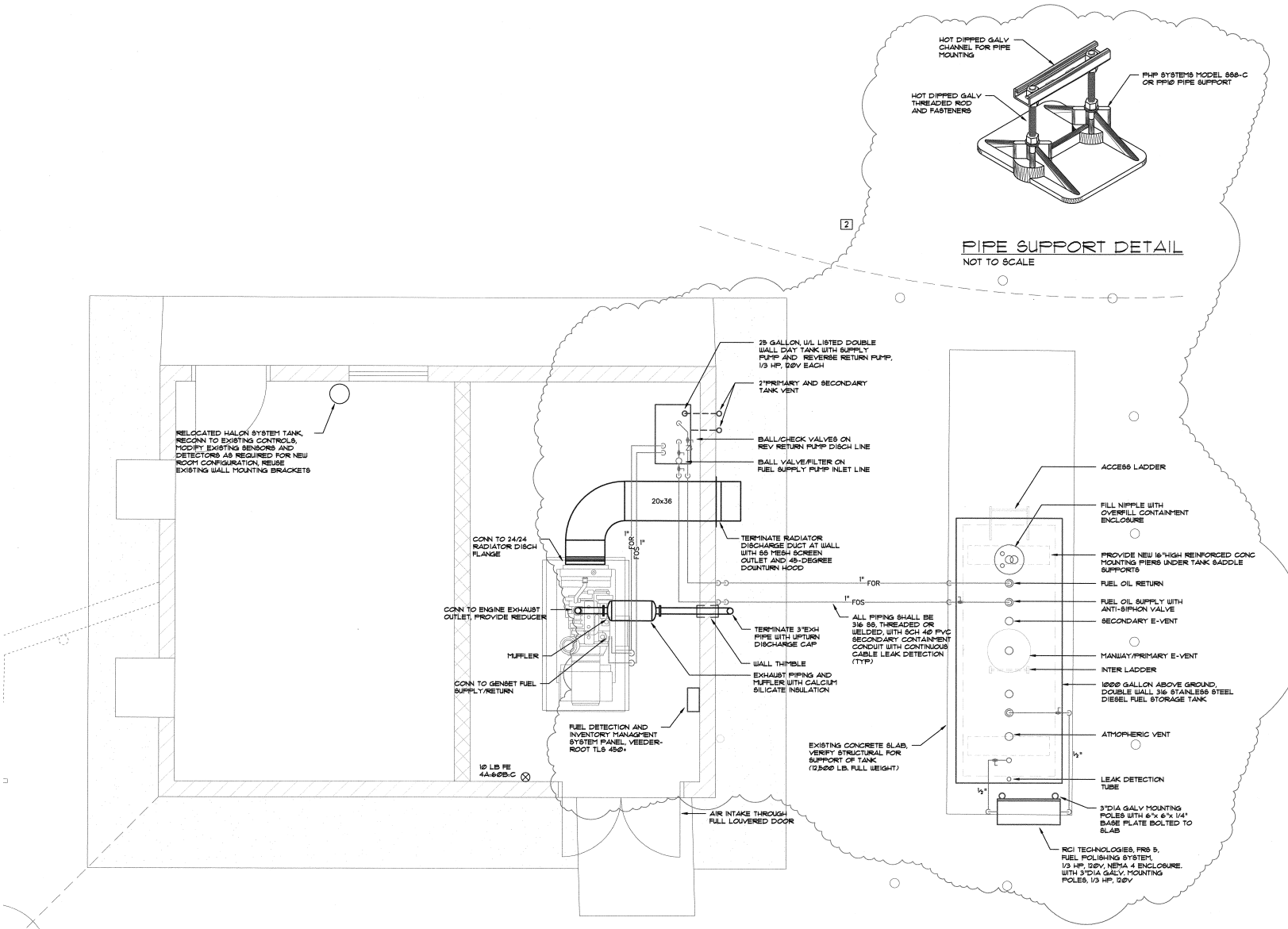
Project Administrator, Mechanical/Electrical Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
3591 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 097: 098

MECHANICAL DEMOLITION PLAN

DESIGN BY:	LU
DRAWN BY:	LU
CHECKED BY:	LU
DATE:	APRIL 2019
PROJECT NO.:	II-31-19-C
DRAWING NO.:	M-2
SHEET NO.	13 OF 27
FILE	DRAW FOLDER



MECHANICAL PLAN | SCALE: 1/2"=1'-0" | 1

GRAPHIC SCALES: 4" 2" 1" 0"

REVISION	DATE:	DESCRIPTION	SHT. NO. APPROVED
2	5/29/20	FUEL SYSTEM REVISIONS	OF
1	5/20/20	FUEL SYSTEM REVISIONS	OF

LANCE AKITO UCHIDA LICENSED PROFESSIONAL ENGINEER No. 5804-M HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/20 Date

ACCEPTED BY:

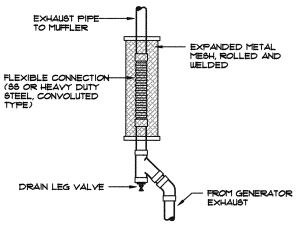
Project Architect or Professional Engineer Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

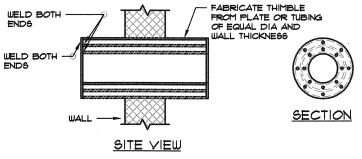
KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
3501 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 5 - 007: 028

MECHANICAL PLAN

DESIGN BY:	LU
DRAWN BY:	LU
CHECKED BY:	LU
DATE:	APRIL 2019
PROJECT NO.:	II-31-19-C
DRAWING NO.:	M-3/R-2
SHEET NO.	14 OF 27
FILE	DRAW FOLDER



EXHAUST RISER DETAIL



WALL THIMBLE DETAIL

MISC. DETAILS | SCALE: NONE | 1

GRAPHIC SCALES:

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
			of	
			of	
			of	
			of	
			of	

LANCE AKITO UCHIDA
LICENSED PROFESSIONAL ENGINEER
No. 5804-M
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

Project Engineer/Manager Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
3591 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 : 088

MISC. DETAILS

DESIGN BY:	LU
DRAWN BY:	LU
CHECKED BY:	LU
DATE:	APRIL 2019
PROJECT NO.:	II-31-19-C
DRAWING NO.:	M-4
SHEET NO.	15 OF 27
FILE	DRAW FOLDER

COUNTY OF HONOLULU
HAWAII ADMINISTRATIVE RULES (HAR) 3-181.1

TO THE BEST OF MY KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE STATE OF HAWAII ENERGY CONSERVATION CODE (2015 IECC AS AMENDED) FOR ELECTRICAL AND LIGHTING SYSTEMS (SECTION C405 AND C408).

COMPLIANCE METHOD
- ☐ 2015 IECC as amended. Mandatory & Prescriptive
- ☒ 2015 IECC as amended. Mandatory & Total Building Performance
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Prescriptive
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Energy Cost Budget

INFORMATION IN CONSTRUCTION DOCUMENTS	YES	N/A
Interior Lighting		
Occupant sensor controls. C405.2.1	☒	☐
Time switch controls. C405.2.2	☐	☒
Daylight responsive controls. C405.2.3	☐	☒
Daylight zones on plans. C405.2.3.2 & C405.2.3.3	☐	☒
Guest room controls. C405.2.4	☐	☒
Interior lighting fixture schedule	☒	☐
Input power for interior lighting fixtures. C405.4.1	☒	☐
Interior lighting fixture locations	☒	☐
Lighting control functional performance testing requirement. C408.3	☐	☒
Exterior Lighting		
Exterior lighting controls. C405.2.5	☐	☒
Exterior lighting fixture schedule	☐	☒
Input power for exterior lighting fixtures	☐	☒
Exterior lighting fixture locations	☐	☒
Electrical		
Electrical transformer efficiency. C405.7	☐	☒
Tenant submetering. C405.10	☐	☒

NOTES

Signature: Jason Yogi Date: APRIL 2020

Name: Jason Yogi, P. E.

Title: Principal

License No.: 9062-E

JASON YOGI LICENSED PROFESSIONAL ENGINEER No. 9062-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. ["OBSERVATION OF CONSTRUCTION" SHALL BE AS DEFINED IN CHAPTER 115, HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS, STATE OF HAWAII, SUBCHAPTER 1, SECTION 16-115.2, DEFINITIONS, EFFECTIVE 9/29/94.]

BUILDING ENERGY EFFICIENCY STANDARD CALCULATIONS

EXTERIOR LIGHTING POWER ALLOWANCE NA INSTALLED NA

INTERIOR LIGHTING POWER ALLOWANCE 187W INSTALLED 114W

ENERGY CALCULATIONS SCALE: N.T.S. 17

LUMINAIRE SCHEDULE		
TYPE	LAMP	DESCRIPTION
A	19W LED 4000°K	COLUMBIA LIGHTING LCL4-40K-LW-E-UNV OR EQUAL AS REVIEWED AND APPROVED BY THE OFFICER-IN-CHARGE

NOTE: 1. ALL LUMINAIRES SHALL BE U.L. LISTED FOR THEIR INTENDED USE AND FOR THE LOCATIONS THEY ARE TO BE UTILIZED.

2. PROVIDE ALL ACCESSORIES, EQUIPMENT AND WIRING AS REQUIRED FOR COMPLETE, OPERABLE SYSTEMS.

LUMINAIRE SCHEDULE SCALE: N.T.S. 13

1. EXISTING PLANS DO NOT INDICATE COMPLETE EXISTING WIRING CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
2. BEFORE ANY WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO BE CUT TO ASSURE THAT SERVICES REQUIRED ARE NOT DISCONTINUED. PROVIDE ADDITIONAL WIRING DEVICES AND OTHER ACCESSORIES TO ENSURE CONTINUITY OF SERVICE TO OTHER PARTS OF INSTALLATION TO REMAIN.
3. REMOVE ALL EXISTING WIRING NOT TO REMAIN IN SERVICE.
4. REMOVE ALL CONDUITS NO LONGER REQUIRED.
5. PHASE WORK TO ASSURE CONTINUITY OF ELECTRICAL, TELEPHONE AND SIGNAL SERVICES TO PARTS OF FACILITIES THAT WILL REMAIN IN USE.
6. REMOVE ALL EXISTING LIGHTING FIXTURES, RECEPTACLES, SWITCHES AND EQUIPMENT INDICATED TO BE REMOVED OR NO LONGER REQUIRED. BLANK OUTLETS AND PLUG ALL HOLES IN BOXES AND CABINETS.
7. ABANDON CONDUITS BELOW GRADE NO LONGER REQUIRED. PULL OUT ALL WIRES IN ABANDONED CONDUITS.

DEMOLITION NOTES SCALE: N.T.S. 10

1. CONTRACTOR SHALL PHASE ALL WORK AS PER GENERAL CONTRACTOR.
2. CONTRACTOR SHALL REVIEW ARCHITECTURAL AND ALL OTHER DISCIPLINE'S DRAWINGS FOR COORDINATION WORK. CONTRACTOR SHALL PROVIDE ADDITIONAL EQUIPMENT AND WIRING AS REQUIRED TO PROVIDE COMPLETE, OPERABLE SYSTEMS.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING AND NEW CONDITIONS PRIOR TO START OF ALL WORK AND ADJUST INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND WIRING AS REQUIRED.
4. ALL EXTERIOR EQUIPMENT AND EQUIPMENT EXPOSED TO WET LOCATIONS SHALL BE NEMA 4X 316 STAINLESS STEEL.
5. CONTRACTOR SHALL SAWCUT AND PATCH ALL EXISTING AC PAVEMENT, CONCRETE SIDEWALKS AND CURBING AS REQUIRED TO INSTALL ALL NEW DUCTLINES, GROUND RODS, CONDUITS AND GROUNDING CONDUCTORS.
6. CONTRACTOR SHALL BREAK AND PATCH CEILINGS, WALLS AND FLOORS AS REQUIRED TO INSTALL ALL CONDUIT, OUTLET BOXES AND EQUIPMENT.
7. CONTRACTOR SHALL PROVIDE ALL MOUNTING SUPPORTS AS REQUIRED TO INSTALL ALL EQUIPMENT, CONDUIT AND WIRING AS REQUIRED.
8. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND CEILINGS SHALL BE FIREPROOF SEALED.
9. PENETRATIONS OF ALL EXTERIOR WALLS OR CEILINGS SHALL BE WEATHERPROOF AND WATERTIGHT.
10. ALL WORK SHALL COMPLY WITH NFPA 780.
1. 11. CONTRACTOR SHALL PROVIDE TEMPORARY GENERATOR, PANELBOARDS, WIRING AND ANY OTHER EQUIPMENT REQUIRED TO KEEP THE BUILDING OPERATIONAL DURING CONSTRUCTION

GENERAL NOTES SCALE: N.T.S. 9

- EXISTING CEILING FLUORESCENT LUMINAIRE
- EXISTING CEILING FLUORESCENT LUMINAIRE TO BE REMOVED
- CEILING LED LUMINAIRE
- S EXISTING SWITCH
- S EXISTING SWITCH TO BE REMOVED
- S SWITCH, 1P20A, +4'-0" TO TOP OF DEVICE
- EXISTING DUPLEX CONVENIENCE OUTLET
- EXISTING DUPLEX CONVENIENCE OUTLET TO BE REMOVED
- DUPLEX CONVENIENCE OUTLET, 3W20A, GROUNDING TYPE, +18" UNLESS OTHERWISE NOTED
- EXISTING SPECIAL OUTLET
- EXISTING SPECIAL OUTLET
- EXISTING SPECIAL OUTLET TO BE REMOVED
- EXISTING EQUIPMENT CONNECTION TO BE REMOVED
- E EQUIPMENT CONNECTION
- WALL JUNCTION BOX, 4-11/16" SQUARE MINIMUM
- J LARGE JUNCTION BOX
- GROUND ROD AND TEST WELL
- EXISTING PANELBOARD TO BE REMOVED
- PANELBOARD
- EXISTING MOTOR OUTLET
- EXISTING SAFETY SWITCH
- WP WEATHERPROOF

- WIRING IN EXISTING RACEWAY
- WIRING IN EXISTING RACEWAY TO BE REMOVED
- —G— EXISTING GROUNDING CONDUCTOR
- —G— EXISTING GROUNDING CONDUCTOR TO BE REMOVED
- —G— GROUNDING CONDUCTOR
- WIRING IN EXPOSED RACEWAY
- WIRING IN RACEWAY CONCEALED IN FLOOR OR BELOW GRADE
- —X—EOH—X— EXISTING OVERHEAD SERVICE CONDUCTORS TO BE REMOVED
- —OH/E— OVERHEAD SERVICE CONDUCTORS

NOTES: 1. ANY CIRCUIT WITH NO FURTHER DESIGNATION INDICATES A TWO WIRE CIRCUIT. CIRCUITS WITH ADDITIONAL WIRES ARE INDICATED AS FOLLOWS: -//-, 3 WIRES: -///-, 4 WIRES, ETC.

2. GROUND WIRE PER NATIONAL ELECTRICAL CODE INDICATED AS FOLLOWS; —<—.

3. ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT WALL OR CEILING SURROUNDING.

ELECTRICAL SYMBOLS SCALE: N.T.S. 1

GRAPHIC SCALES: NOT TO SCLAE

NO.	REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
1		5/15/20	ADDENDUM NO. 4	OF	

JASON YOGI LICENSED PROFESSIONAL ENGINEER No. 9062-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Jason Yogi 4/30/20 Date

ACCEPTED BY:

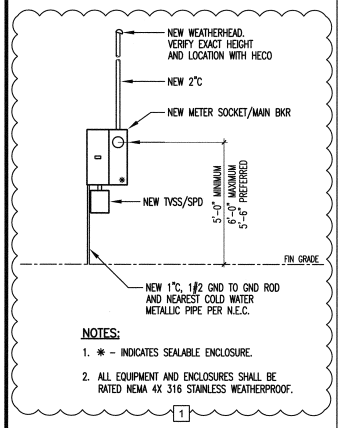
PROGRAM ADMINISTRATOR MECHANICAL/ELECTRICAL DIVISION Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
888 MOKAPU BLVD, KAPOLEI, OAHU, HAWAII 96744
TMK NOS. (1) 4-1-007: 088

ELECTRICAL SYMBOLS, NOTES, DEMOLITION NOTES, LUMINAIRE SCHEDULE, ENERGY CALCULATIONS

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-1/R-1
SHEET NO.	16 OF 27
FILE	DRAW FOLDER



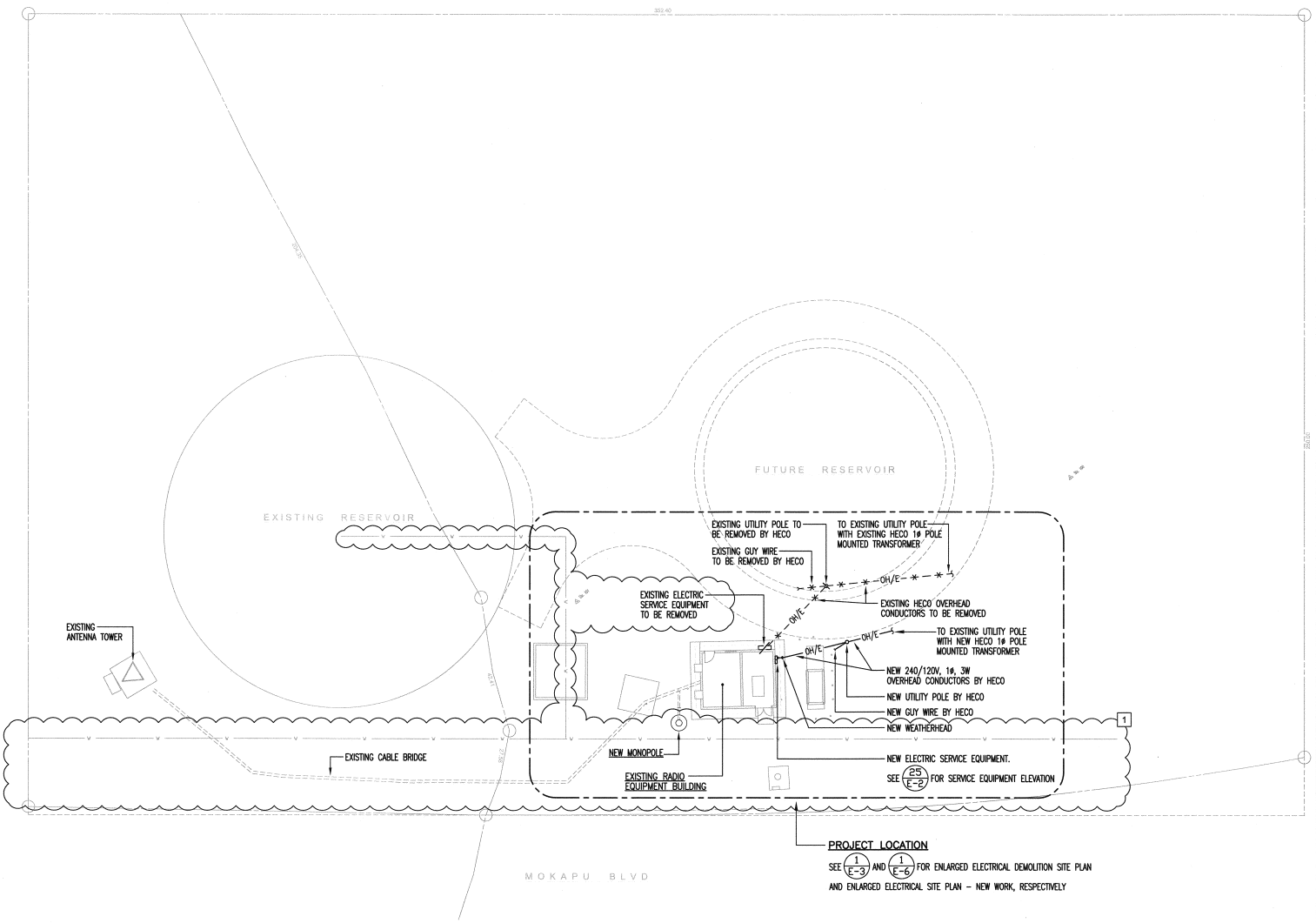
NOTES:

1. ✱ – INDICATES SEALABLE ENCLOSURE.
2. ALL EQUIPMENT AND ENCLOSURES SHALL BE RATED NEMA 4X 316 STAINLESS WEATHERPROOF.

1

SERVICE EQUIPMENT ELEVATION

SCALE: 3/8"=1'-0" | 25



ELECTRICAL SITE PLAN

SCALE: 1/16"=1'-0" | 1

GRAPHIC SCALES:

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
1	5/15/20	ADDENDUM NO. 4	OF	

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Jason Yogi 4/30/20
Engineer Date

ACCEPTED BY:

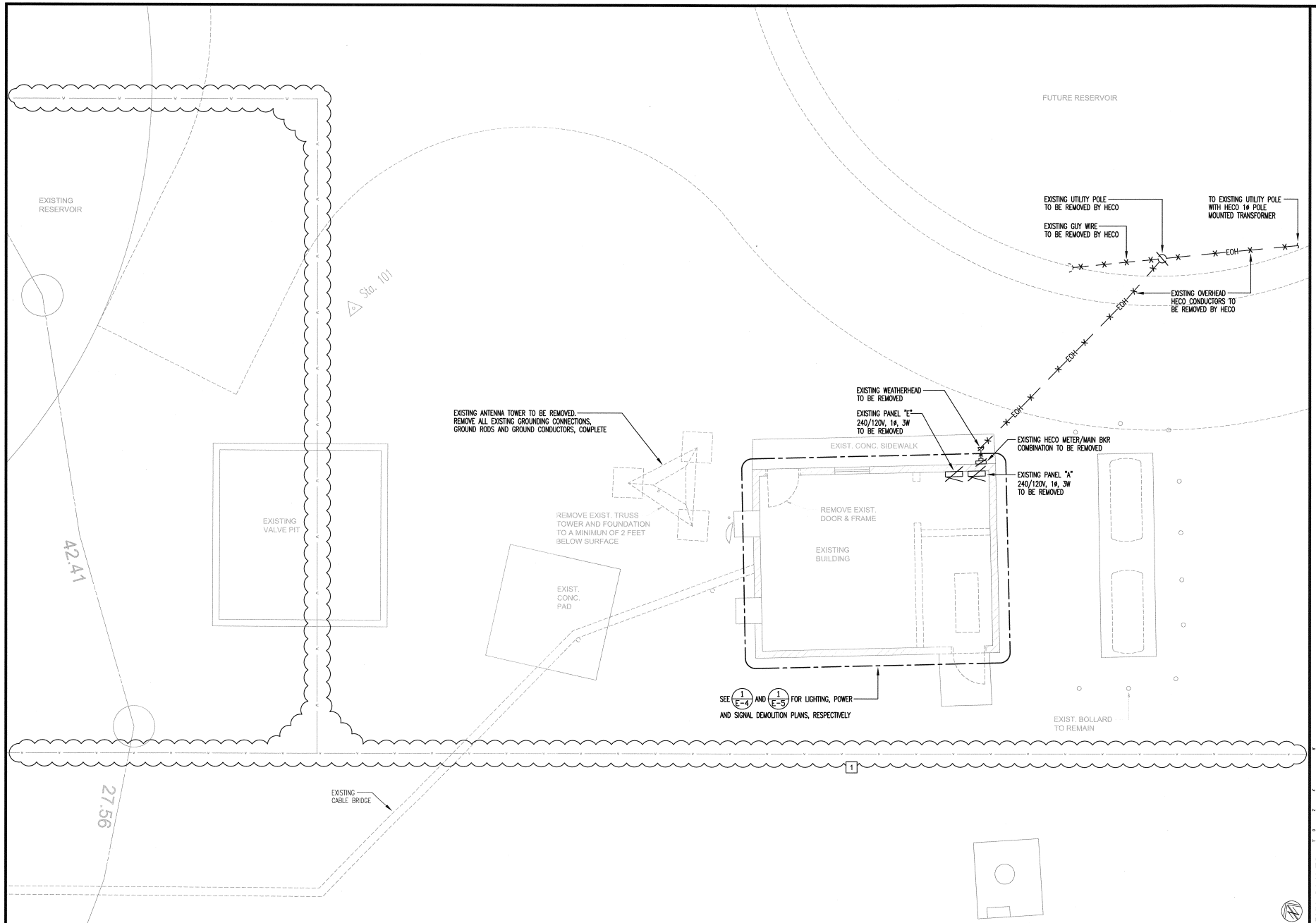
PROGRAM ADMINISTRATOR MECHANICAL/ELECTRICAL DIVISION Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1938 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 008

ELECTRICAL SITE PLAN, SERVICE EQUIPMENT ELEVATION

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-2/R-1
SHEET NO.	17 OF 27
FILE	DRAW FOLDER



ENLARGED ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1/4"=1'-0" | 1

GRAPHIC SCALES

REVISION	DATE	DESCRIPTION	SHT. NO.	APPROVED
1	5/15/20	ADDENDUM NO. 4	05	

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

4/30/22
Date

ACCEPTED BY:

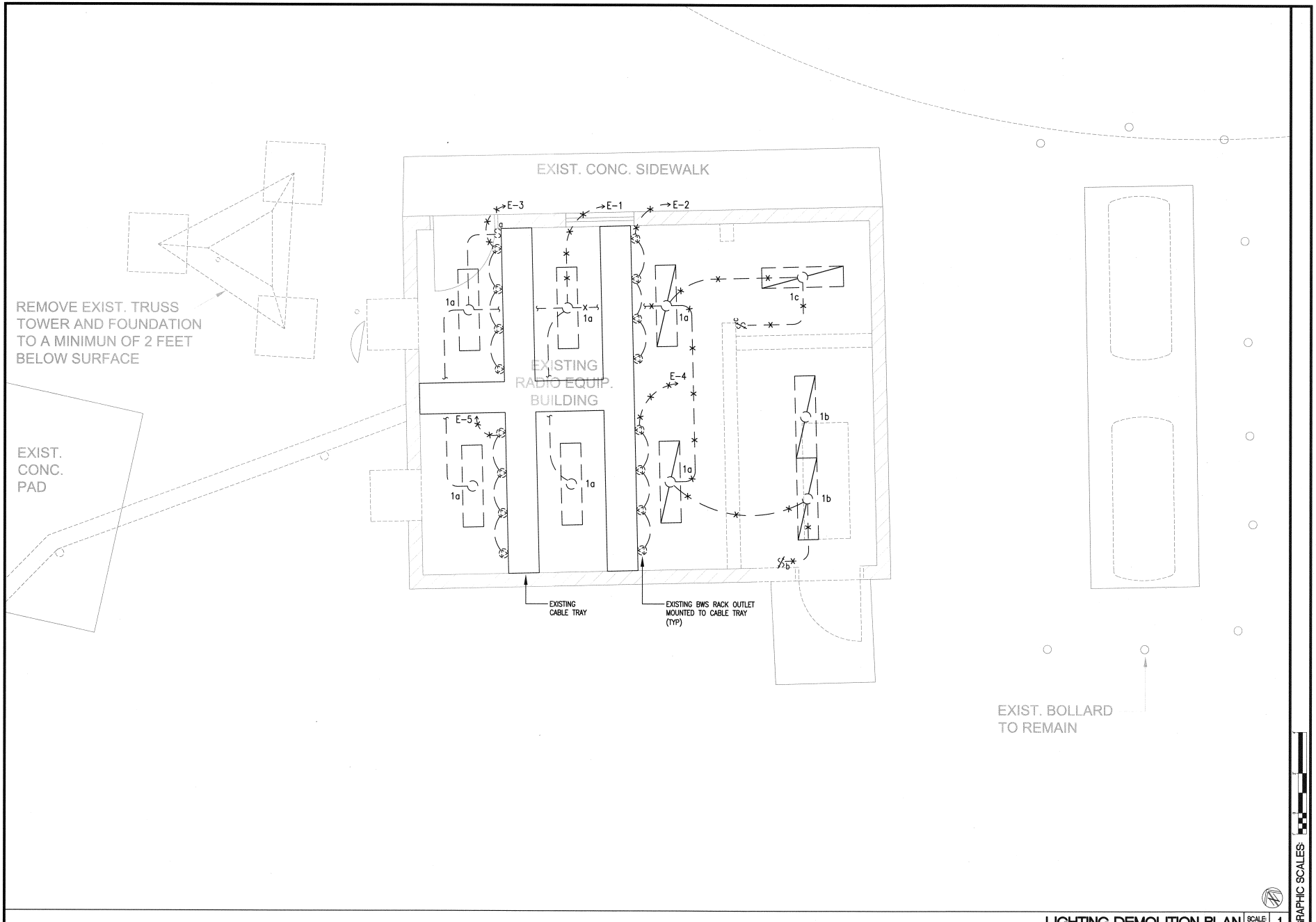
PROGRAM ADMINISTRATOR
MECHANICAL/ELECTRICAL DIVISION
Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 006

ENLARGED ELECTRICAL DEMOLITION SITE PLAN

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-3/R-1
SHEET NO.	18 OF 27
FILE	DRAW FOLDER



LIGHTING DEMOLITION PLAN SCALE: 1/2"=1'-0" 1

GRAPHIC SCALES:

REVISION	DATE	DESCRIPTION	SHT. NO.	APPROVED

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Jason Yogi 4/30/22
Registrar Date

ACCEPTED BY:
SS

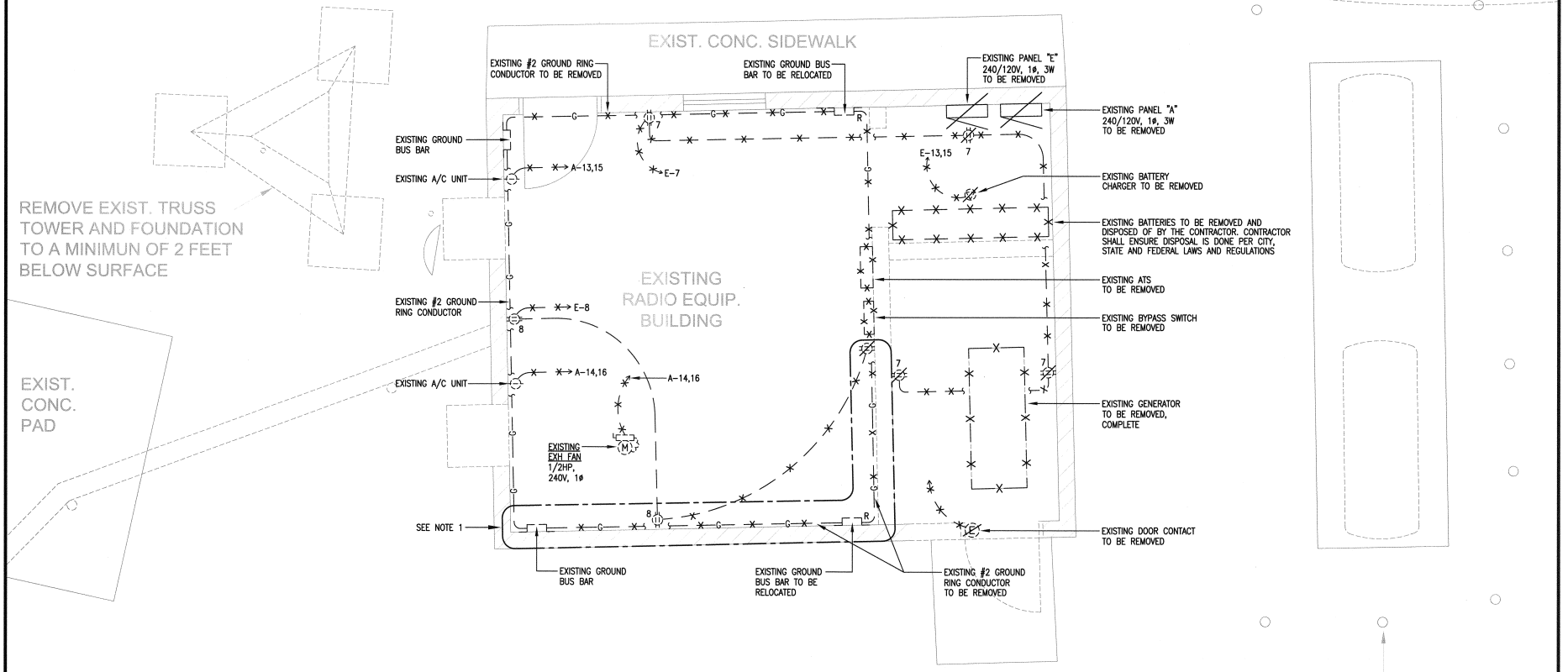
PROGRAM ADMINISTRATOR 10/9/20
MECHANICAL/ELECTRICAL DIVISION Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017 / 016

LIGHTING DEMOLITION PLAN

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-4
SHEET NO.	19 OF 27
FILE	DRAW FOLDER



NOTES:

1. EXISTING TELECOMMUNICATION EQUIPMENT, BACKBOARDS AND CABLING TO BE RELOCATED BY BWS.

GRAPHIC SCALES:

POWER and SIGNAL DEMOLITION PLAN | SCALE: 1/2"=1'-0" | 1

NO.	DESCRIPTION	DATE:	APPROVED

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9082-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Jason Yogi 4/30/22
Signature Date

ACCEPTED BY:

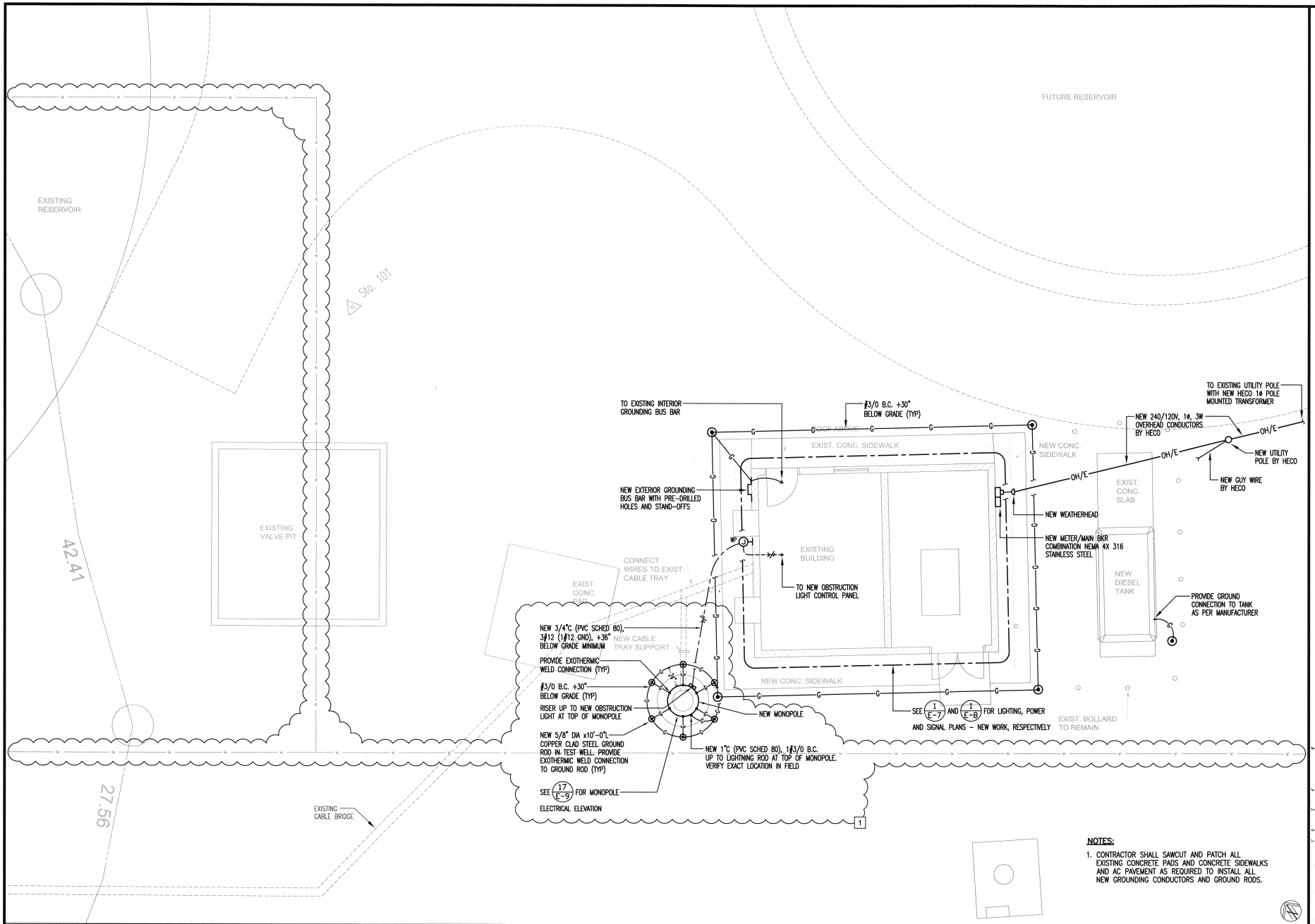
PROGRAM ADMINISTRATOR Date
MECHANICAL/ELECTRICAL DIVISION

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 006

POWER and SIGNAL DEMOLITION PLAN

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-5
SHEET NO.	20 OF 27
FILE	DRAW FOLDER



NOTES:

1. CONTRACTOR SHALL SAWCUT AND PATCH ALL EXISTING CONCRETE PADS AND CONCRETE SIDEWALKS AND AC PAVEMENT AS REQUIRED TO INSTALL ALL NEW GROUNDING CONDUCTORS AND GROUND RODS.

ENLARGED ELECTRICAL SITE PLAN - NEW WORK

SCALE: 1/4"=1'-0" 1

GRAPHIC SCALES

REVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
1	5/15/20	ADDENDUM NO. 4		

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

4/30/22 Date

ACCEPTED BY:

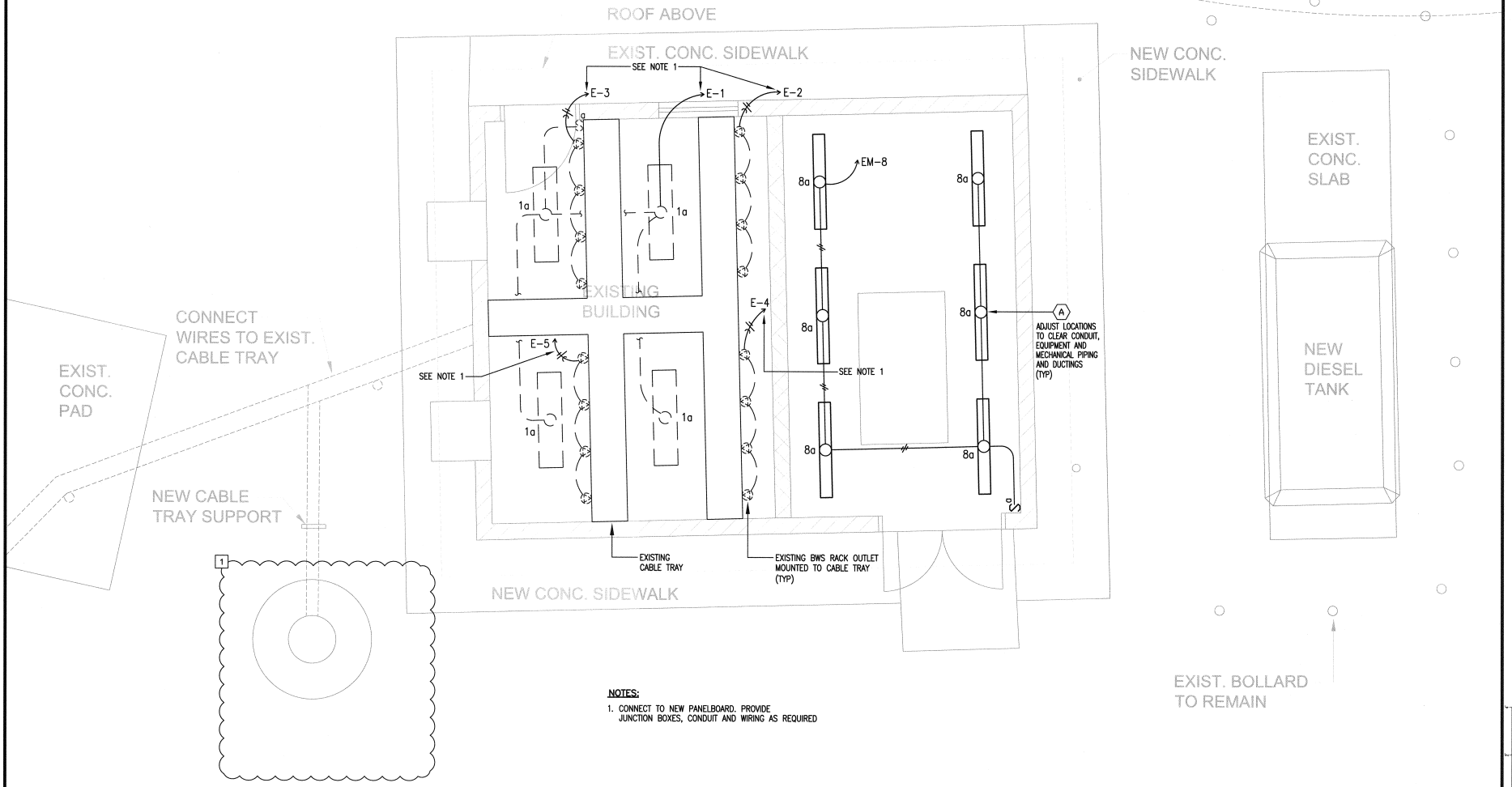
PROGRAM ADMINISTRATOR MECHANICAL/ELECTRICAL DIVISION Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 2 057 008

ENLARGED ELECTRICAL SITE PLAN - NEW WORK

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-6/R-1
SHEET NO.	21 OF 27
FILE	DRAW FOLDER



NOTES:

1. CONNECT TO NEW PANELBOARD. PROVIDE JUNCTION BOXES, CONDUIT AND WIRING AS REQUIRED

LIGHTING PLAN - NEW WORK | SCALE: 1/4"=1'-0" | 1

GRAPHIC SCALES

BY	DATE	DESCRIPTION	SHT. NO.
	5/15/20	ADDENDUM NO. 4	APPROVED
1			

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

5/30/22
Date

ACCEPTED BY:

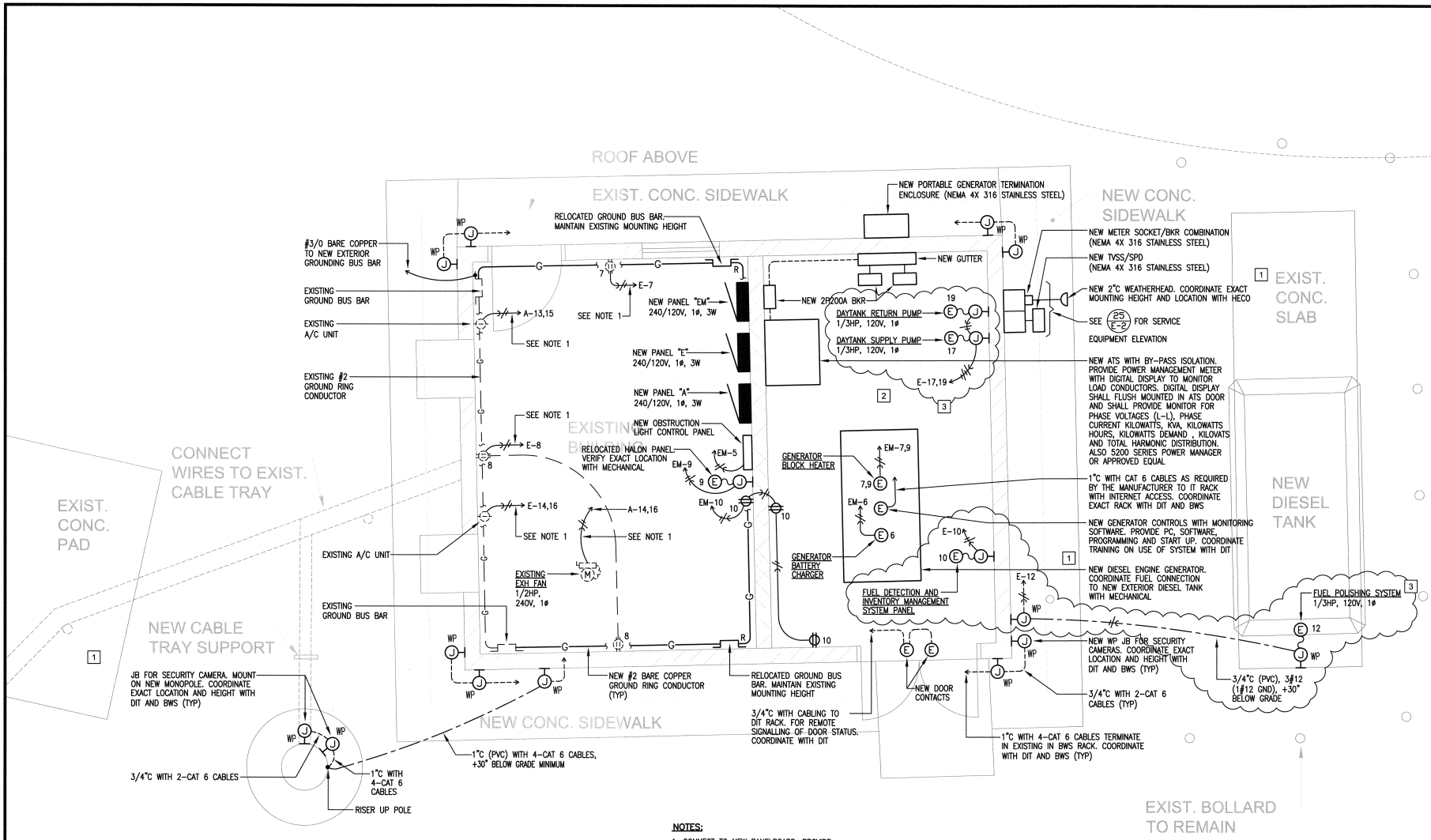
PROGRAM ADMINISTRATOR
MECHANICAL/ELECTRICAL DIVISION
Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
TAX MAP KEY: 4 - 057 - 006

LIGHTING PLAN - NEW WORK

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-7/R-1
SHEET NO.	22 OF 27
FILE	DRAW FOLDER



NOTES:

1. CONNECT TO NEW PANELBOARD. PROVIDE JUNCTION BOXES, CONDUIT AND WIRING AS REQUIRED

DIVISION	DATE:	DESCRIPTION	SHT. NO.	APPROVED
3	5/29/20	ADDENDUM NO. 7	OF	
2	5/20/20	ADDENDUM NO. 5	OF	
1	5/15/20	ADDENDUM NO. 4	OF	

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

4/30/20
Date

ACCEPTED BY:

PROGRAM ADMINISTRATOR
MECHANICAL/ELECTRICAL DIVISION
Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

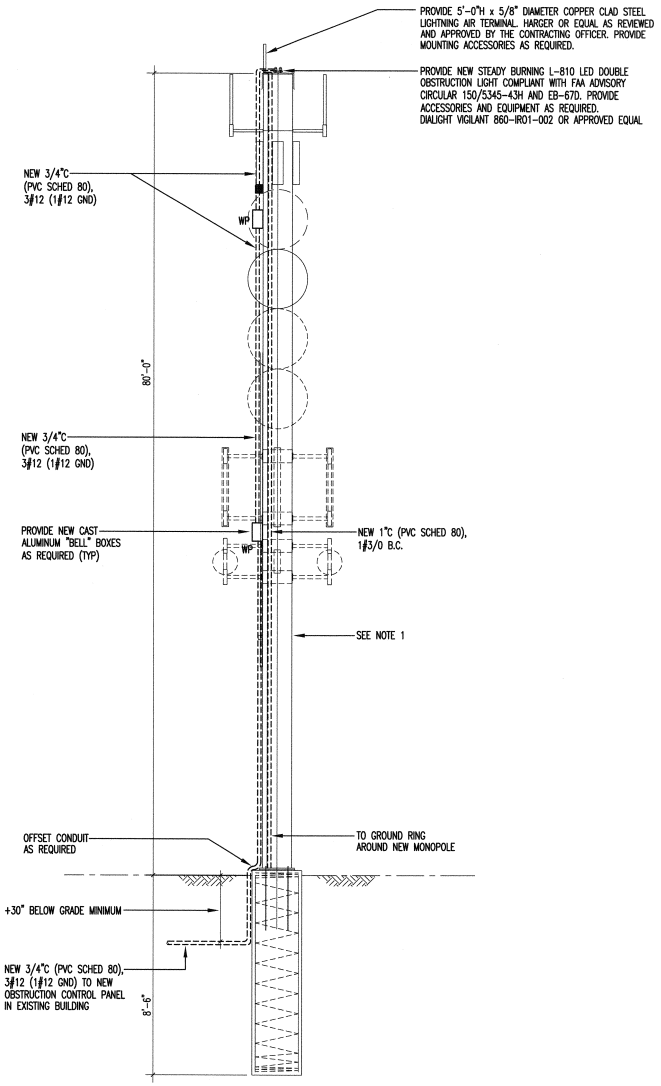
KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
TAX MAP KEY: 4 - 2 - 007: 005
888 MOKAPU BLVD, KAILUA-PCE, OAHU, HAWAII 96744

POWER and SIGNAL PLAN - NEW WORK

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-8/R-3
SHEET NO.	23 OF 27
FILE	DRAW FOLDER

GRAPHIC SCALES

POWER and SIGNAL PLAN - NEW WORK | SCALE: 1/4"=1'-0" | 1



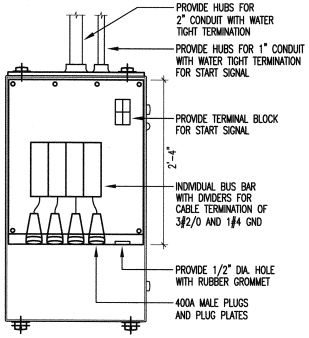
NOTES:

1. COORDINATE EXACT LOCATIONS AND HEIGHTS FOR JUNCTION BOXES FOR SECURITY CAMERAS WITH DIT AND BWS.

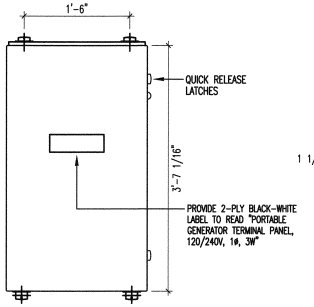
SEE (1/E-8) FOR POWER AND SIGNAL PLAN – NEW WORK.

MONOPOLE ELECTRICAL ELEVATION

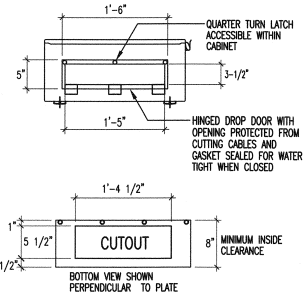
SCALE: N.T.S. 17



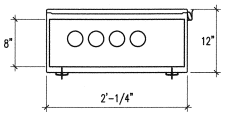
VIEW WITH DOOR REMOVED

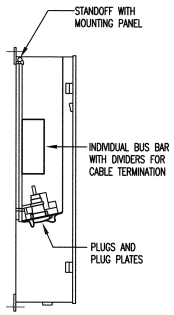


FRONT VIEW

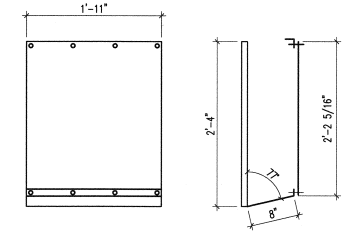


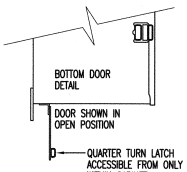
DEVICE MOUNTING PLATE AND COVER

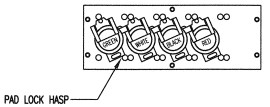




SIDE VIEW WITH COMPONENT DETAIL







PLUG AND PLUG PLATE DETAILS

NOTES:

1. THE OUTER DOOR SHALL INCLUDE NON-ADJUSTABLE QUICK RELEASE LATCHES REQUIRING NO TOOLS TO OPEN THE ENCLOSURE.
2. THE BOTTOM ACCESS DOOR SHALL INCLUDE CAPTIVE QUARTER TURN LATCHES ALLOWING ACCESS WITHOUT TOOLS.
3. A PADLOCK HASP SHALL BE PROVIDED FOR THE OUTER DOOR.
4. THE COMPLETE ASSEMBLY SHALL BE U.L. 508 LISTED AND ENCLOSURE SHALL BE 4X 316 STAINLESS STEEL.
5. PLUGS AND PLUG PLATES SHALL BE CROUSE-HANDS (OR APPROVED EQUAL) CAM-LOCK CONNECTIONS WITH 400A RATING AT 600V.
6. THE ENCLOSURE SHALL BE CROUSE-HANDS "N3R PDP SS IC19790-1" OR APPROVED EQUAL.
7. PROVIDE A SET OF FEMALE END CAM-LOK CONNECTIONS TO USER FOR FABRICATION OF EXTENSION CORD FOR PORTABLE GENERATOR.

PORTABLE GENERATOR TERMINATION ENCLOSURE DETAIL

SCALE: N.T.S. 1

GRAPHIC SCALES: NOT TO SCLAE

NO.	DESCRIPTION	DATE:	APPROVED

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9052-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

4/29/22
Date

ACCEPTED BY:

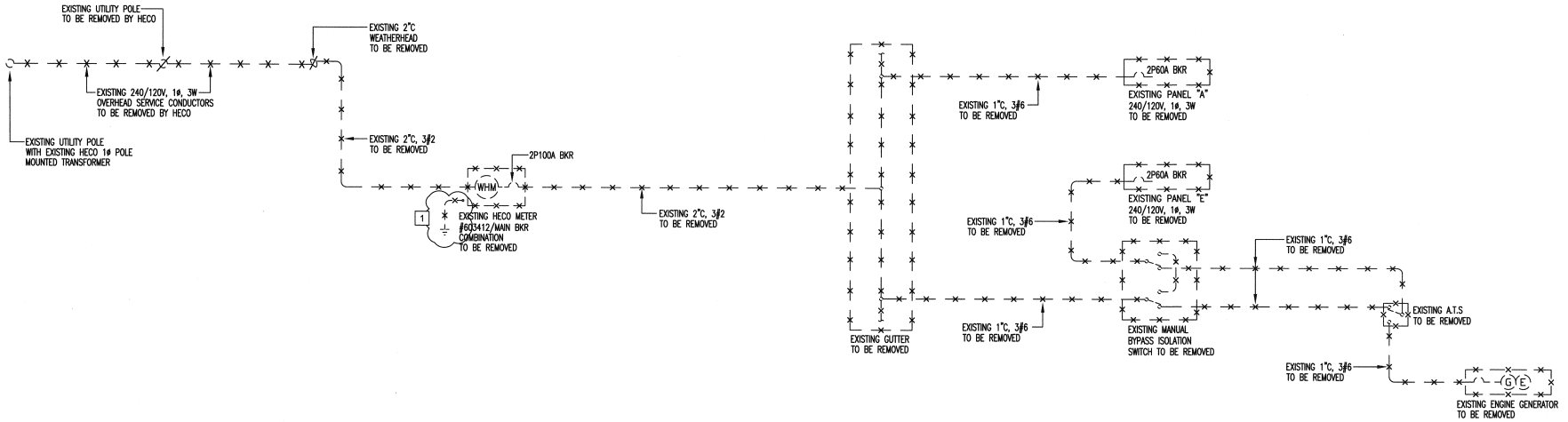
PROGRAM ADMINISTRATOR, MECHANICAL/ELECTRICAL DIVISION
4/29/22
Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

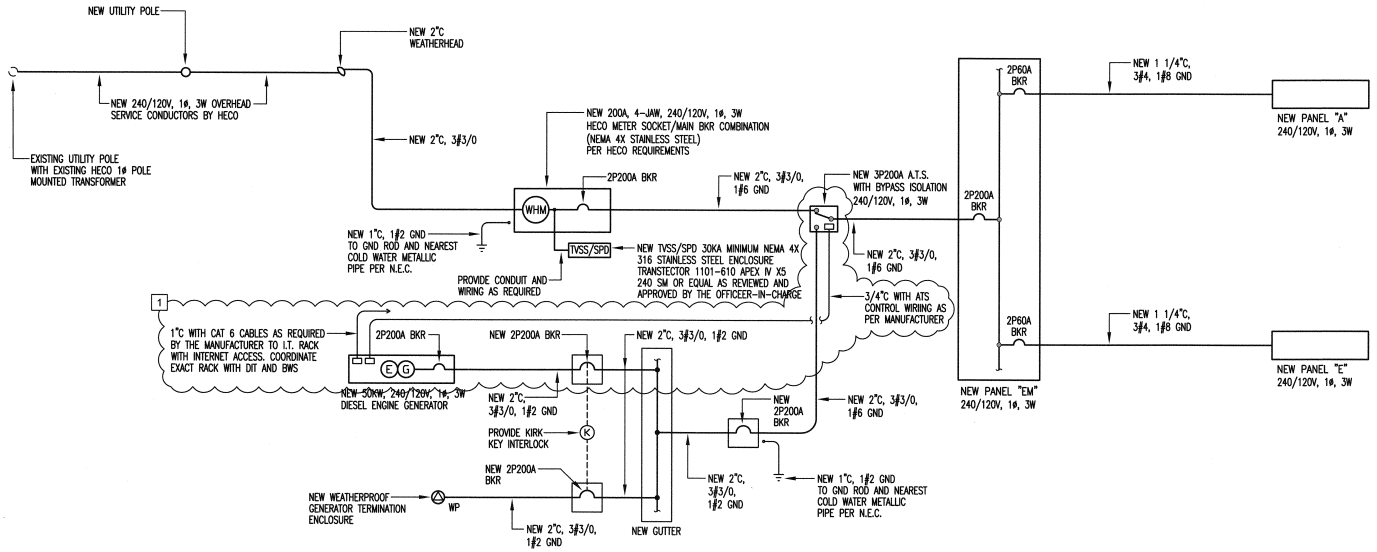
KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1691 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007 : 086

MONOPOLE ELECTRICAL ELEVATION, PORTABLE GENERATOR TERMINATION ENCLOSURE DETAIL

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-9
SHEET NO.	24 OF 27
FILE	DRAW FOLDER



SINGLE LINE DIAGRAM - DEMOLITION WORK | SCALE: N.T.S. | 3



SINGLE LINE DIAGRAM - NEW WORK | SCALE: N.T.S. | 1

GRAPHIC SCALES: NOT TO SCLAE

NO.	DESCRIPTION	DATE:	REVISION
OF	ADDENDUM NO. 4	5/15/20	1
OF			
OF			
OF			
OF			SHT. NO. APPROVED

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Jason Yogi 4/30/20
Signature Date

ACCEPTED BY:

PROGRAM ADMINISTRATOR MECHANICAL/ELECTRICAL DIVISION Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1850 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY 4 - 2 - 057 : 026

SINGLE LINE DIAGRAMS - DEMOLITION and NEW WORK

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-10/R-1
SHEET NO.	25 OF 27
FILE	DRAW FOLDER

NEW PANEL "EM" 240/120 VOLTS 1ø, 3WSN
2P200A MAIN BKR BRANCH BKR I.C. 25,000 AMPS
SURFACE, 20" WIDE CABINET, INDUSTRIAL-BOLTED

CKT NO.	BKR	LOAD	KVA L1	KVA L2	WIRE
1,3	2P70A	NEW PANEL "A" [2]	3.4	3.4	4
2,4	2P70A	NEW PANEL "E"	5.6	4.6	4
5	1P20A	OBSTRUCTION LIGHT CONTROL PANEL	1.0		12
6	1P20A	ENGINE GENERATOR BATTERY CHARGER	1.0		12
7,9	2P30A	ENGINE GENERATOR BLOCK HEATER	1.5	1.5	10
8	1P20A	LIGHTS		0.1	12
10	1P20A	RECEP	0.6		12
11		SPARE			
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
		[2]			
TOTAL			14.1	9.6	

NEW PANEL "A" 240/120 VOLTS 1ø, 3WSN
100A MAIN LUGS ONLY BRANCH BKR I.C. 1,000 AMPS
SURFACE, 20" WIDE CABINET, INDUSTRIAL-BOLTED

CKT NO.	BKR	LOAD	KVA L1	KVA L2	WIRE
1	1P20A	SPARE			
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13,15	2P20A	EXISTING A/C UNIT	1.7	1.7	12
14,16	2P20A	EXISTING A/C UNIT	1.7	1.7	12
17	1P20A	SPARE			
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
TOTAL			3.4	3.4	

NEW PANEL "E" 240/120 VOLTS 1ø, 3WSN
100A MAIN LUGS ONLY BRANCH BKR I.C. 25,000 AMPS
SURFACE, 20" WIDE CABINET, INDUSTRIAL-BOLTED

CKT NO.	BKR	LOAD	KVA L1	KVA L2	WIRE
1	1P20A	EXISTING LIGHTS	1.0		12
2		EXISTING RACK OUTLETS	1.0		
3				1.0	
4				1.0	
5			1.0		
6		EXISTING MOTORIZED DAMPER	0.1		
7		EXISTING RECEPTACLE		0.4	
8		EXISTING RECEPTACLE		0.6	
9		RELOCATED HALON PANEL	1.0		[3]
10		FUEL DETECTION AND INVENTORY MANAGEMENT SYSTEM PANEL	0.5		
11		SPARE			
12	*	FUEL POLISHING SYSTEM		0.9	12
13		SPARE			
14,16	2P20A	EXISTING EXHAUST FAN	0.6	0.6	12
15	1P20A	EXISTING BWS TEL EQUIPMENT		1.0	12
17	1P20A *	DAYTANK SUPPLY PUMP	0.9		12
18		SPARE [2]			
19	*	DAYTANK RETURN PUMP		0.9	12
20		SPARE			
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
		NOTES: 1. * - INDICATES LOCKABLE BKR. [3]			
TOTAL			6.1	6.4	

[2]

PANEL SCHEDULES | SCALE: N.T.S. | 1

GRAPHIC SCALES: NOT TO SCLAE

SHT. NO.	APPROVED
BY	
BY	
BY	
BY	
BY	

REVISION	DATE	DESCRIPTION
[3]	5/29/20	ADDENDUM NO. 7
[2]	5/20/20	ADDENDUM NO. 5

JASON YOGI
LICENSED PROFESSIONAL ENGINEER
No. 9062-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

4/30/22
Date

ACCEPTED BY:
SC

PROGRAM ADMINISTRATOR Date
MECHANICAL/ELECTRICAL DIVISION

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1881 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 017: 005

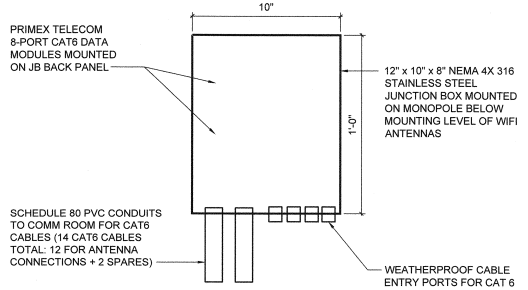
PANEL SCHEDULES

DESIGN BY:	JY
DRAWN BY:	JM
CHECKED BY:	JY
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	E-11/R2
SHEET NO.	26 OF 27
FILE	DRAW FOLDER

ANT NO	ANTENNA DESIGNATION ON TOWER DRAWING	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO		MANUFACTURER	MODEL	ANTENNA						LOADING					MOUNTING				
		AGENCY/USE	SYSTEM			GAIN	LENTH/DIAMETER OR WIDTH (INCHES)	TYPE	DESCRIPTION	TX (MHz)	RX (MHz)	ANTENNA BANDWIDTH (MHz)	WEIGHT (lbs (kg))	MAX WIND LOAD AREA (SQ INCH)	WINDLOAD	TRANS LINE	ELEV MEAS POINT	MOUNT LOCATION	ELEV (FEET)	AZIMUTH (TRUE NORTH)	PATH DIRECTION	COMMENTS
01	A	CITY DIT	KALUA POLICE STATION MICROWAVE LINK	ANDREW (COMMSCOPE)	WEHP6-59W	40.4 dBi	6 FT DIAM	6' DISH	6-FOOT DISH 155 MPH	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	LOWER 6 GHz BAND	297.00	28.3	AXIAL - 4027 lb SIDE - 1150 lb MOMENT - 2123 lb-ft	EW63 WAVE GUIDE	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	56.25	114.9	KALUA POLICE STATION	SINGLE DISH FOR KALUA POLICE STATION PATH (EXISTING ANTENNA RE-INSTALLED ON NEW MONOPOLE)
02	B	CITY DIT	KAMEHAMEHA RIDGE PATH MICROWAVE LINK [FUTURE]	ANDREW (COMMSCOPE)	WEHP6-59W	39.4 dBi	6 FT DIAM	6' DISH	6-FOOT DISH 155 MPH	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	LOWER 6 GHz BAND	297.00	28.3	AXIAL - 4302 lb SIDE - 1100 lb MOMENT - 2118 lb-ft	EW63 WAVE GUIDE	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	42.25	137.2	KAMEHAMEHA RIDGE	SINGLE DISH FOR KAMEHAMEHA RIDGE PATH (FUTURE)
03	C	CITY DIT	KALUA CORP. YARD MICROWAVE LINK (FUTURE)	ANDREW (COMMSCOPE)	WEHP6-59W	39.4 dBi	6 FT DIAM	6' DISH	6-FOOT DISH 155 MPH	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	LOWER 6 GHz BAND	297.00	28.3	AXIAL - 3919 lb SIDE - 1082 lb MOMENT - 2016 lb-ft	EW63 WAVE GUIDE	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	30.25	149.3	KALUA CORP. YARD	SINGLE DISH FOR KALUA CORP. YARD PATH (FUTURE)
04	D1	CITY DIT	5.8 GHz "AIRPRISM" WIFI ANTENNA	UBIQUITI	AP-5AC-90-HD	22 dBi	51.18/12.7	5.8 GHz 3-SECTOR PANEL ANTENNA	5.9 GHz UNLICENSED BAND ACCESS POINT ANTENNA	5150-5850	5150-5850	5150-5850	28.9 (13.1)		120 (53kt) [BKN3] - LATERAL WINDLOAD THRUST @ 125 mph/200 kph	CAT 5 CABLES (8) INSTALLED IN SCHEDULE 80 PVC CONDUIT(S); TERMINATE IN CAT 6 PATCH CABLE IN JB AT ANTENNA END OF CABLE RUNS (SEE DRAWINGS FOR DETAILS). CAT 6 CABLE JUMPERS FROM JB PATCH PANEL TO WIFI RADIO MOUNTED ON BACK OF ANTENNA. CONNECT RADIO TO ANTENNA USING WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RADIO.	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	47.9	0.0	N/A	ANTENNA HAS 3 INDIVIDUAL, VERTICALLY STACKED TX/RX SECTORS WITH SEPARATE TX AND RX TRANSMISSION LINE FEEDS. MOUNT ANTENNA AS SHOWN IN TOWER DRAWINGS.
04A	D1A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 04	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 04 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 04A.		SEE MOUNT LOCATION FOR ANTENNA 04	SEE ELEVATION FOR ANTENNA 04	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 04 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
04B	D2A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 04	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 04 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 04B.		SEE MOUNT LOCATION FOR ANTENNA 04	SEE ELEVATION FOR ANTENNA 04	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 04 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
04C	D3A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 04	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 04 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 04C.		SEE MOUNT LOCATION FOR ANTENNA 04	SEE ELEVATION FOR ANTENNA 04	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 04 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
05	D2	CITY DIT	5.8 GHz "AIRPRISM" WIFI ANTENNA	UBIQUITY NETWORKS	AP-5AC-90-HD	22 dBi	51.18/12.7	5.8 GHz 3-SECTOR PANEL ANTENNA	5.9 GHz UNLICENSED BAND ACCESS POINT ANTENNA	5150-5850	5150-5850	5150-5850	28.9 (13.1)		120 (53kt) [BKN3] - LATERAL WINDLOAD THRUST @ 125 mph/200 kph	CAT 6 CABLES (8) INSTALLED IN SCHEDULE 80 PVC CONDUIT(S); TERMINATE IN CAT 6 PATCH CABLE IN JB AT ANTENNA END OF CABLE RUNS (SEE DRAWINGS FOR DETAILS). CAT 6 CABLE JUMPERS FROM JB PATCH PANEL TO WIFI RADIO MOUNTED ON BACK OF ANTENNA. CONNECT RADIO TO ANTENNA USING WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RADIO.	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	47.9	90.0	N/A	ANTENNA HAS 3 INDIVIDUAL, VERTICALLY STACKED TX/RX SECTORS WITH SEPARATE TX AND RX TRANSMISSION LINE FEEDS. MOUNT ANTENNA AS SHOWN IN TOWER DRAWINGS.
05A	D2A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 05	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 05 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 05A.		SEE MOUNT LOCATION FOR ANTENNA 05	SEE ELEVATION FOR ANTENNA 05	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 05 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
05B	D2B	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 05	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 05 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 05B.		SEE MOUNT LOCATION FOR ANTENNA 05	SEE ELEVATION FOR ANTENNA 05	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 05 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
05C	D2C	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 05	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 05 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 05C.		SEE MOUNT LOCATION FOR ANTENNA 05	SEE ELEVATION FOR ANTENNA 05	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 05 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
06	D3	CITY DIT	5.8 GHz "AIRPRISM" WIFI ANTENNA	UBIQUITI	AP-5AC-90-HD	22 dBi	51.18/12.7	5.8 GHz 3-SECTOR PANEL ANTENNA	5.9 GHz UNLICENSED BAND ACCESS POINT ANTENNA	5150-5850	5150-5850	5150-5850	28.9 (13.1)		120 (53kt) [BKN3] - LATERAL WINDLOAD THRUST @ 125 mph/200 kph	CAT 6 CABLES (8) INSTALLED IN SCHEDULE 80 PVC CONDUIT(S); TERMINATE IN CAT 6 PATCH CABLE IN JB AT ANTENNA END OF CABLE RUNS (SEE DRAWINGS FOR DETAILS). CAT 6 CABLE JUMPERS FROM JB PATCH PANEL TO WIFI RADIO MOUNTED ON BACK OF ANTENNA. CONNECT RADIO TO ANTENNA USING WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RADIO.	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	47.9	180.0	N/A	ANTENNA HAS 3 INDIVIDUAL, VERTICALLY STACKED TX/RX SECTORS WITH SEPARATE TX AND RX TRANSMISSION LINE FEEDS. MOUNT ANTENNA AS SHOWN IN TOWER DRAWINGS.
06A	D3A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 06	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 06 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 06A.		SEE MOUNT LOCATION FOR ANTENNA 06	SEE ELEVATION FOR ANTENNA 06	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 06 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
06B	D3B	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 06	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 06 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 06B.		SEE MOUNT LOCATION FOR ANTENNA 06	SEE ELEVATION FOR ANTENNA 06	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 06 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
06C	D3C	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 06	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 06 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 06C.		SEE MOUNT LOCATION FOR ANTENNA 06	SEE ELEVATION FOR ANTENNA 06	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 06 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
07	D4	CITY DIT	5.8 GHz "AIRPRISM" WIFI ANTENNA	UBIQUITI	AP-5AC-90-HD	22 dBi	51.18/12.7	5.8 GHz 3-SECTOR PANEL ANTENNA	5.9 GHz UNLICENSED BAND ACCESS POINT ANTENNA	5150-5850	5150-5850	5150-5850	28.9 (13.1)		120 (53kt) [BKN3] - LATERAL WINDLOAD THRUST @ 125 mph/200 kph	CAT 6 CABLES (8) INSTALLED IN SCHEDULE 80 PVC CONDUIT(S); TERMINATE IN CAT 6 PATCH CABLE IN JB AT ANTENNA END OF CABLE RUNS (SEE DRAWINGS FOR DETAILS). CAT 6 CABLE JUMPERS FROM JB PATCH PANEL TO WIFI RADIO MOUNTED ON BACK OF ANTENNA. CONNECT RADIO TO ANTENNA USING WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RADIO.	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	47.9	270.0	N/A	ANTENNA HAS 3 INDIVIDUAL, VERTICALLY STACKED TX/RX SECTORS WITH SEPARATE TX AND RX TRANSMISSION LINE FEEDS. MOUNT ANTENNA AS SHOWN IN TOWER DRAWINGS.
07A	D4A	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 07	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 07 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 07A.		SEE MOUNT LOCATION FOR ANTENNA 07	SEE ELEVATION FOR ANTENNA 07	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 07 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
07B	D4B	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 07	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 07 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 07B.		SEE MOUNT LOCATION FOR ANTENNA 07	SEE ELEVATION FOR ANTENNA 07	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 07 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
07C	D4C	CITY DIT	UBIQUITI NETWORKS ROCKET AIRPRISM 5 GHz AC WIFI RADIO	UBIQUITY NETWORKS	RP-5AC-GEN2	N/A	MOUNTED ON BACK OF ANTENNA 07	N/A	5 GHz AC WIFI RADIO	5150-5850	5150-5850	N/A	14.11 oz. (400 grams)	N/A	INCLUDED IN ANTENNA 07 WINDLOADING	WEATHERPROOF RP-SMA JUMPERS PROVIDED WITH RP-5AC-GEN2 RADIO 07C.		SEE MOUNT LOCATION FOR ANTENNA 07	SEE ELEVATION FOR ANTENNA 07	N/A	N/A	3 RADIOS MOUNTED ON REAR OF ANTENNA 07 WITH EACH RADIO FEEDING ONE OF THREE ANTENNA SECTORS.
08	E	CITY DIT	KAPAA QUARRY MICROWAVE LINK (FUTURE)	ANDREW (COMMSCOPE)	WEHP6-59W	39.4 dBi	6 FT DIAM	6' DISH	6-FOOT DISH 155 MPH	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	LOWER 6 GHz BAND	297.00	28.3	AXIAL - 3566 lb SIDE - 1015 lb MOMENT - 1902 lb-ft	EW63 WAVE GUIDE	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	34.25	175.0	KAPAA QUARRY	SINGLE DISH FOR KAPAA QUARRY PATH (FUTURE)
09	G	CITY DIT	WAIMANALO RIDGE MICROWAVE LINK (FUTURE)	ANDREW (COMMSCOPE)	WEHP6-59W	39.4 dBi	6 FT DIAM	6' DISH	6-FOOT DISH 155 MPH	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	TBD - LOWER 6 GHz BAND: 5925 - 6425 MHz	LOWER 6 GHz BAND	297.00	28.3	AXIAL - 3566 lb SIDE - 1015 lb MOMENT - 1902 lb-ft	EW63 WAVE GUIDE	CENTER	MONOPOLE FACE MOUNT (SEE TOWER DRAWINGS)	18.25	137.9	WAIMANALO RIDGE	SINGLE DISH FOR WAIMANALO RIDGE PATH (FUTURE)
10	J	CITY DIT	700/900 MHz RADIO SYSTEM	SINCLAIR	SC473-HF1LDF	4 dbd	58.5/3.5	OMNIDIRECTIONAL YAGI ANTENNA	OMNIDIRECTIONAL TX/RX ANTENNA	769-775 MHz/ 854 MHz	799-805 MHz/ 935-850 MHz	123	17 (7.72)	0.65 (0.06)	LATERAL THRUST (100 MPH NO ICE) (BKIN) 33146.8 RATED WIND VELOCITY (NO ICE) - (MPH/km/h) 370/596 BENDING MOMENT - (100 MPH NO ICE) (lb-in/Nm) 51,189	7/8" COAXIAL CABLE	BASE	STANDOFF AT TOP OF MONOPOLE (SEE TOWER DRAWINGS)	74'0"	N/A (OMNI)	N/A	SEE TOWER DRAWINGS FOR MOUNTING DETAILS

ANTENNA SCHEDULE

SCALE: - | 3



CAT 6 JUNCTION BOX DETAIL

SCALE: N.T.S. | 1

GRAPHIC SCALES:

SHT. NO.	DESCRIPTION	DATE	REVISION	APPROVED
0F				
0F				
0F				
0F				
0F				

LLOYD M. HIDA
LICENSED PROFESSIONAL ARCHITECT
No. AR-6093
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

Signature 4/30/22 Date

ACCEPTED BY:

Chief, Facilities Division Date

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

KAPAA BWS RESERVOIR
MICROWAVE RADIO TOWER REPLACEMENT
1901 MOKAPU BLVD, KANEOHE, OAHU, HAWAII 96744
TAX MAP KEY: 4 - 2 - 007: 006

ANTENNA SCHEDULE AND DETAIL

DESIGN BY:	LMH
DRAWN BY:	KN
CHECKED BY:	LH
DATE:	APRIL 2020
PROJECT NO.:	II-31-19-C
DRAWING NO.:	R-1
SHEET NO.	27 OF 27
FILE	DRAW FOLDER

C:\Users\nakazawak\Desktop\Temp Files\2018-013 CCH Kapaa BWS_ Microwave Monopole\Working Dwgs\R-1.dwg Plotted:4/10/2020 2:22 PM

Appendix C
Management Plan - Hawaii Administrative Rules §13-5-22
P-14 Telecommunications Use D-1

Management Plan

Pursuant to Hawaii Administrative Rules §13-5-22 P-14 Telecommunications Use D-1, a management plan must be prepared for new telecommunications facilities under the requirements listed in HAR §13-5 Exhibit 3.

1. General description of the proposed use

The proposed use is an upgrade to the existing emergency communication facility. The existing communication facility is part of the City and County of Honolulu’s public safety and emergency communications system. The communication facility also provides use for state and federal emergency and public safety agencies.

2. Project location

The project is located on the Board of Water Supply (BWS) Kapa‘a Reservoir parcel. BWS Kapa‘a Reservoir parcel is located in the town Kāne‘ohe, on the island of O‘ahu. The parcel is on the Oneawa Ridge, hills dividing the towns of Kāne‘ohe and Kailua. The property is identified as Tax Map Key 4-2-017:016 with a total area of 98,550 sf. Please refer to attached location map and site plan.

3. Natural resource assessment including descriptive information about the natural resources in the project vicinity such as biological, archaeological, cultural, geological, coastal, recreational, scenic resources where applicable. The presence of any threatened or endangered species shall be disclosed.

The BWS Kapa‘a Reservoir parcel consists of grassed areas with high and dense vegetation primarily on the sloped terrain. Common plants found at the project site include koa haole (*Leucaena leuocephala*), klu, and natal redtop grass (*Rhynchelytrum*

repens). The existing 2.0 million gallon (MG) BWS reservoir site and Honolulu Police Department (HPD) emergency communication facility was developed and operating since 1958. There are no native plant or animal species located on the parcel or immediately adjacent areas. There are no known rare or endangered plant and/or animal species located at the project site. The project area is not located with a State designated Natural Reserve Area or located in an area designated as critical habitat according to the United States Fish and Wildlife Service (USFWS) Critical Habitat Mapper. Only introduced exotic birds such as Chestnut Mannikins, Waxbills, Sparrows, Red Avadavats and Doves were located on the parcel. The endangered Hawaiian Hoary Bat, Hawaiian Short-Eared Owls, or Hawaiian waterbirds may be present at the project location and found on the island of O'ahu; however, no Hawaiian Hoary Bats, Hawaiian Short-Eared Owl, or Hawaiian waterbirds have been observed. Endangered and threatened species may transit through the project area however none have been observed.

No historic properties or archaeological resources are located at the project area or within the area of potential effects of the proposed project.

No cultural resources have been observed within the project area or area of potential effects of the proposed project. No cultural practices are presently carried out nor recently carried out within the area of potential effects of the proposed project.

Soil for the entire property is Alaeloa silty clay, 40 to 70 percent slopes (ALF). The Alaeloa series consists of deep and very deep, well drained soils that formed in residuum weathered from basic igneous rock. The depth to water table is more than 80 inches with no frequency of flooding or ponding. The geology of the project location

consists of relatively steep slopes, with steeper mountain vistas, ridgelines, and cliffs to the southwest, and a flat residential area and shoreline to the northeast.

No coastal resources are located within the project area. The project site is located approximately 0.47 miles away from the nearest shoreline.

There are no recreational resources within the project area. The project area and access are secured and access to the property is not open to the public.

The proposed project is not expected to cause an adverse visual impact on any individual or community as the existing Kapa‘a Reservoir parcel has provided service to the region for over 60 years with the 2.0 MG reservoir being the dominant feature. The reservoir, microwave towers, utility poles and lines are currently visible. The parcel is located away from the shoreline; therefore, no direct effect on the quality of the coastal scenic resources or views of the coast are expected.

For further details on the natural resources in the area, please see the associated CDUP application prepared for the proposed project.

4. Natural hazard assessment including descriptive information of erosion, flooding, slope, tsunami, and volcanic hazards where applicable.

The project is located on a flat area cut into Oneawa Ridge. The ridge is consists of undeveloped relatively steep slopes, with steeper mountain vistas, ridgelines, and cliffs to the southwest. The proposed project will involve minimal grading and site preparation for the emergency facility upgrade will not alter the topography. The soil type will remain unchanged and erosion will be controlled. The upgrades will not involve

any change to the topography or soils since the construction will occur on flat portions of the property.

The project location is outside of the State of Hawaii Special Management Area (SMA), not located in a tsunami evacuation area or an area which will be affected by sea level rise. The project area is designated Zone D and X, outside flood prone areas, as determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). The Zone D designation is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted.

The upgrade to the existing emergency communication facility will address current deficiencies to mitigate the effects from natural disasters, such as hurricanes and earthquakes by providing a more stable tower design. The microwave communication system is a critical public infrastructure after a hurricane and other natural disasters. The proposed action will promote the long-term sustainability of public safety and welfare by ensuring structural integrity in the case of a Category IV hurricane or earthquake to provide service to the region for future emergency situations. The new communications tower is classified as a risk category III and Seismic Design Category D. Seismic Design Category D - Corresponds to buildings and structures in areas expected to experience severe and destructive ground shaking but not located close to a major fault. No specific seismic hazards have been identified on or adjacent to the project site. This seismic resistance class is based on the purpose and use of the new tower to provide emergency communications services.

5. A description of best management practices (BMPs) used during project construction and implementation.

Soil Erosion BMPs

The proposed project’s design features and construction would include suitable BMPs to prevent soil erosion. All disturbed soils would be replaced and stabilized to adhere to correct water drainage and wind erosion standards.

Biological Resources BMPs

To prevent impacting seabirds, no nighttime construction shall occur during the seabird fledgling period from September 15 to December 15. To minimize the threat of disorientation or downing of migratory birds, the construction or unshielded equipment maintenance lighting should not be permitted after dark between the months of April and October. All outdoor lights shall be fully shielded so bulbs can only be seen from below, and all outdoor lights shall be turned off when human activity is not occurring, or motion sensors shall be installed. If the top of the tower must be lighted with aviation warning lights or beacons to meet Federal Aviation Administration (FAA) regulations, USFWS recommend the use of a red flashing light versus the use of red or white solid light, if possible. The State of Hawaii’s Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) provided a resource related to seabird-friendly light styles protecting the dark, starry skies of Hawai‘i at the website https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

To prevent impacting the Hawaiian hoary bat, woody plants greater than 15’ tall shall not be disturbed, trimmed, or removed from June to September 15. Barbed-wire will

not be used for fencing, as bats can become ensnared and killed by barbed-wire fencing during flight.

To prevent impacting the pueo, before any potentially disturbing activity such as clearing vegetation, especially ground based disturbance, DOFAW recommends a qualified biologist conduct surveys during crepuscular hours and walk line transects through the area to detect any active pueo nests. If a nest is discovered, minimize time spent at the nest, and establish a minimum buffer distance of approximately 328 feet from the nest until the chicks are capable of flight. Non-native mammals such as mongoose, cats, dogs and ungulates should be removed from the nesting area. The pueo nest on the ground year round.

To prevent the spread of invasive fungal pathogens (e.g., Rapid Ohia Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetle), or invasive plant parts that could harm native species and ecosystems, movement of plant or soil material between work sites should be minimized. The contractor will be required to implement measures such as cleaning excess soil and debris from all equipment, materials, and personnel to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70 percent alcohol solution to prevent the spread of Rapid Ohia Death and other harmful fungal pathogens. Additional recommendations are the use of native plant species for landscaping appropriate for the area instead of invasive species.

<u>Transportation/Traffic/Noise BMPs</u>

Adverse traffic impacts during construction of the project are not anticipated. The scope and scale of the proposed communications facility is not anticipated to generate a high volume of construction traffic.

Air Quality BMPs

Proposed mitigation measures include the installation of dust screen barriers, periodic watering to minimize air borne particles, and proper maintenance of construction vehicles. Construction activities will be conducted in accordance with State air pollution control regulations as outlined in HAR §11-60 Fugitive Dust, DOH. Construction will employ BMPs to minimize or prevent such occurrences. Construction equipment would comply with State and County standards and would be in good working condition. Any on-site emissions of air pollutants would be minimized through BMPs.

6. A description of best management practices used during the lifetime of the project.

Soil Erosion BMPs

After construction is completed, any areas of exposed soil will be reseeded with desirable species. These mitigation measures would stabilize soils and prevent erosion.

Biological Resources BMPs

All outdoor lights shall be fully shielded so bulbs can only be seen from below, and all outdoor lights shall be turned off when human activity is not occurring, or motion sensors shall be installed. To prevent impacting the Hawaiian hoary bat, woody plants greater than 15' tall shall not be disturbed, trimmed, or removed from June to September 15.

All dead trees will be removed to prevent any potential breeding of the invasive Coconut Rhinoceros Beetle (CRB).

Transportation/Traffic/Noise BMPs

Periodic maintenance and service of the facility will be required. However, activity will not increase workers in the area on a daily basis and will have minimal impact of current traffic levels. Existing roads and right-of-way will be adequate to accommodate any access required to the site.

Changes in ambient noise levels at the project site will be negligible because the proposed action will not subsequently alter existing land use and activities. Long-term, significant adverse noise impacts are not anticipated as the noise generated by the emergency facility upgrade would be consistent with the existing ambient noise typical of a freeway, highway and residential environment. Once in operation, the new tower, renovated equipment building, and expanded generator building are not anticipated to lead to an increase in the generation of noise, as compared to the existing tower. Unlike the existing unenclosed emergency generator, the new emergency generator will be installed within an enclosed generator room. As such, there may be a perceptible reduction in noise. Furthermore, transmitting antennas do not typically generate noise. No other mitigation measures are recommended.

Air Quality BMPs

Due to the limited size of the project, no long-term impacts related to air quality are expected related to the operation of the project. The air quality levels would remain at baseline when normal operations begin and the construction is complete. The emergency communications facilities are unmanned except for periodic site visits by a technician to maintain the equipment and antennae, or emergency service repairs.

7. Description of short-term and long-term conservation methods and applications to be used in the short term and long term.

The proposed project is not anticipated to result in any significant short-term or long-term environmental or conservation impacts. In the short-term, construction will be limited to daylight hours to limit construction related impacts. Vegetation disturbance will be limited, and no landscaping will be utilized to limit impact to naturally occurring vegetation in the area. The project site is cleared of any vegetation due to the use of the site as an existing BWS reservoir facility. Minimal vegetation removal, grading, and grubbing will be required. None of the vegetation to be removed from the project site is endangered or threatened.

In the long-term, the proposed project has been designed to be limited in size and scope to mitigate potential impacts to the surrounding area and is located adjacent to similar existing uses to limit proliferation of telecommunications facilities in the surrounding area. The emergency communications facilities are unmanned except for periodic site visits by a technician to maintain the equipment and antennae, or emergency service repairs.

The site is limited in size and scope. New non-permeable surfaces will be limited in size to mitigate any potential drainage impacts. The new monopole tower will be installed on an existing natural non-permeable surface.

BMPs will be utilized during construction and during the lifetime of the project to mitigate potential impacts.

8. Description of existing uses and facilities, if any.

The primary structures at the project site are the Kapa‘a 272’ BWS 2.0 MG reservoir, reservoir related appurtenances, the police building and two (2) antennae towers. For further details on the existing uses and facilities, please see the associated Final Environmental Assessment (FEA) prepared for the proposed project.

9. Description of proposed facilities and uses, including phases if applicable.

The project proposes to replace one (1) existing microwave truss tower (50’-2” height) with a new monopole tower (80’-0” height); install a new concrete sidewalk around the existing communications building; remove two (2) existing propane tanks and replace with one (1) diesel fuel tank; modify the existing radio equipment building interior including removal of several existing concrete masonry unit (CMU) walls and installation of a new CMU wall; replace existing generator located inside the building with a new emergency generator. The total area of work will be approximately 305 sf. The work will commence as soon as all required permits and approvals are obtained.

10. Activity schedule. Project Schedule including description of project sequencing from project construction to project completion and on-going maintenance plans, including a description and timing of natural resource monitoring and maintenance plans. A description of the annual reporting requirements.

City and County of Honolulu permitting and bidding are completed for the Kapa‘a emergency communication upgrades. Project construction is expected to start as soon as all necessary permits and approvals are obtained. Construction of the new emergency communications monopole tower will take approximately four to eight months. Demolition of the existing truss tower will take approximately one to two

months. Renovation to the building and exterior utility work is expected to take one to two months. The entire project will be completed in one phase with the project to be completed in four to 12 months, with long lead times.

The emergency communication facilities require periodic maintenance and servicing through the City and County of Honolulu Department of Information Technology (DIT). DIT assists all branches of city government to maintain, secure and protect the various communications networks for the City and County of Honolulu, including those used by the Honolulu Police Department, Honolulu Fire Department, Department of Emergency Management, and Honolulu Emergency Services Department, to support public safety.

11. Any other information or data, as required by the department.

The Kapa‘a 272’ BWS 2.0 MG Reservoir Replacement project, already approved by the OCCL, has plans for removal of the existing reservoir and construction of a new 1.0 MG reservoir. The project includes excavation of the existing slope, installation of shotcrete, trenching and installation of a new electrical service duct system from existing pole to the existing BWS vault building, telephone connection, drainage, and roadway access. Refer to CDUP OA-3898 BWS Kapa‘a 272’ Reservoir Replacement Project for more information.

Appendix D
Draft Environmental Assessment Comment and Response Letters

DOH-CAB comments on new proposed DEA for upgrading communication system at HPD

From: DOH.CABPDTSS (doh.cabpdtss@doh.hawaii.gov)

Date: Thursday, February 15, 2024 at 09:29 AM HST

Subject: Draft Environmental Assessment (DEA) for the Honolulu Police Department – Communication Facilities Upgrade

Agency: AGY LLC
Aolani Yamasato-Gragas
615 Piikoi Street, Suite 1806
Honolulu, Hawaii 96814

Aloha,

Thank you for the opportunity to provide comments on the proposed DEA for the Upgrading Communication System at Honolulu Police Department. The Clean Air Branch (CAB) would like to make the following comments on the subject:

- For construction and other activities associated with the project, the applicable provisions of Hawaii Administrative Rules §11-60.1-33 shall be followed to mitigate fugitive dust impacts.
- Also, please see our standard comments at:

https://health.hawaii.gov/cab/files/2022/05/Standard-Comments-for-Land-Use-Reviews-Clean-Air-Branch-2022-1.pdf

Please let us know if you have any questions or concerns.

Thanks,

Anna

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 17, 2024

State of Hawaii
Department of Health
Clean Air Branch
Environmental Health Office

cab.general@doh.hawaii.gov

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Clean Air Branch,

Thank you for your email dated February 15, 2024 DOH-CAB comments on the DEA for upgrading the emergency communication system at the BWS Kapa'a Reservoir parcel.

We appreciate the information provided in the Standard Comments for Land Use Reviews regarding permitting and management practices required for the proposed project. The City and County of Honolulu Department of Information Technology (DIT) and Department of Design and Construction (DDC) understand the compliance with all applicable rules, regulations, and statues. In addition to the air pollution control regulations as outlined in HAR §11-60 Fugitive Dust, DOH, the Final Environmental Assessment will include the Standard Comments for Land Use Reviews Clean Air Branch Hawaii State Department of Health in Section 3.8 Biological Resources, Section 3.12 Clean Air, and Section 3.13 Noise. As the project will not generate an increase in traffic, the information regarding traffic studies and mitigation will not be included in the FEA.

Your letter, along with this response, will be reproduced and included in the forthcoming Final EA (FEA).

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
Office of Conservation and Coastal Lands
P.O. BOX 621
HONOLULU, HAWAII 96809

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:AA

Correspondence: OA 24-129

Feb 29, 2024

Aolani Yamasato-Gragas
AGY LLC
615 Pi'ikoi Street, Suite 1806
Honolulu, Hawai'i 96814

SUBJECT: Draft Environmental Assessment (DEA) for Honolulu Police Department (HPD) Communications Facilities Upgrade Located in Kailua, Oahu, TMK: (1) 4-2-017:016.

Dear Aolani Yamasato-Gragas,

The Office of Conservation and Coastal Lands (OCCL) has reviewed the draft environmental assessment and attached management plan. According to the information presented, the City and County of Honolulu (CCH) Department of Information Technology (DIT) and the CCH Department of Design and Construction (DDC) are proposing to upgrade the public safety radio communication system at the Board of Water Supply (BWS) Kapa'a Reservoir. Staff notes that the subject area lies within the General subzone of the Conservation District.

The project proposes to replace one (1) existing microwave truss tower (50'-2" height) with a new monopole (80'-0" height); install a new concrete sidewalk around the existing communication building; remove two (2) existing propane tanks and replace with one (1) diesel fuel tank; modify the existing radio equipment building interior including removal of several existing concrete masonry unit (CMU) walls and installation of a new CMU wall; and replace an existing generator located inside the building with a new emergency generator. Structural improvements to the existing radio equipment building will also be made to withstand hurricanes. The total area of work will be approximately 305 sq ft.

The OCCL concurs that the communication facility is an identified land use that could be applied for within the Conservation District pursuant to HAR §13-5-22. P-14 TELECOMMUNICATIONS (D-1) *New telecommunications facility. A management plan approved simultaneously with the permit, is also required.* To allow, modify or deny the proposal would be at the discretion of the Board of Land and Natural Resources.

Staff notes that the DEA includes a discussion regarding view planes with the height increase of the monopole. The new tower will replace the shorter, wider microwave truss tower with a taller single pole (monopole) that is meant to withstand an earthquake or Category IV hurricane. View-plane impacts for the parcel were addressed in the Visual Impact Assessment for the Kapa'a Reservoir Replacement. Avian surveys were completed and found no native, endangered, or protected species on the parcel. DOFAW indicated there are five listed species with the potential to visit or transit through in the vicinity of the project area.

Staff also notes the mention of co-location with other communications equipment to minimize the number of supporting structures and dispersal sites based on past comments from our office. For consistency with our conservation criteria HAR §13-5-30, please keep in mind the merits of a proposed land use regarding the project.

Should there be any questions regarding this correspondence, contact Alyssa Accardo of our Office at alyssa.m.accardo@hawaii.gov or at (808)-587-0048.

Sincerely,

S Michael Cain

S. Michael Cain, Administrator
Office of Conservation and Coastal Lands

CC: *O'ahu Division Land Office*
County of Honolulu, Planning Department
Board of Water Supply

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Michael Cain, Administrator
State of Hawaii
Department of Land and Natural Resources, Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawai‘i 96809

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa‘a Reservoir Kāne‘ohe, Island of O‘ahu TMK 4-2-017:016

Dear Administrator Cain,

Thank you for your letter dated February 29, 2024 (OA-24-129) with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa‘a Reservoir.

We appreciate the comment validating the project is an identified land use that could be applied for within the Conservation District pursuant to HAR §13-5-22.

Your letter, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

March 21, 2024

LD 0192

AGY, LLC
Aolani Yamasato-Gragas
615 Piikoi Street, Suite 1806
Honolulu, Hawaii 96814

Via email:aolani_y@yahoo.com

SUBJECT: **Draft Environmental Assessment for Comment, Honolulu Police Department Communications Facilities Upgrade- BWS Kapa'a Reservoir, Kaneohe and Kailua District, Island of Oahu, Hawaii, TMK: (1) 4-2-017:016**

Thank you for the opportunity to review and comment on the subject. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR), enclosed are also comments received from the Division of Forestry and Wildlife.

Should you have any questions, please feel free to contact Timothy Chee at timothy.chee@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

February 13, 2024

LD 0192

MEMORANDUM

FROM: **DLNR Agencies:**
_X_ Div. of Aquatic Resources *(via email: kendall.l.tucker@hawaii.gov)*
_X_ Div. of Boating & Ocean Recreation *(via email: richard.t.howard@hawaii.gov)*
_X_ Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
_X_ Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
_X_ Div. of State Parks *(via email: curt.a.cottrell@hawaii.gov)*
_X_ Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
_X_ Office of Conservation & Coastal Lands *(via email: sharleen.k.kuba@hawaii.gov)*
_X_ Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*
_X_ Aha Moku *(via email: leimana.k.damate@hawaii.gov)*

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Draft Environmental Assessment (DEA)**
Honolulu Police Department Communications Facilities Upgrade- BWS Kapa'a Reservoir

LOCATION: **Kaneohe and Kailua District, Island of Oahu, Hawaii**
TMK: (1) 4-2-017:016

APPLICANT: **AGY, LLC**

Transmitted for your review and comment is information on the above-referenced subject.

As part of this project, a Draft Environmental Assessment (DEA) was prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). Please use the title link below to read the full draft environmental assessment document, then send comments to the proposing/determining agency and copy the consultant.

https://files.hawaii.gov/dbedt/erp/Doc_Library/2024-02-08-OA-DEA-HPD-Communication-Facilities-Upgrade-at-Kapaa-Reservoir.pdf

Please submit any comments to *timothy.chee@hawaii.gov* at the Land Division by the internal deadline of **March 8, 2024**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Timothy Chee at the above email address. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.

(☑) Comments are included/
attached. Signed: Kathryn Stanaway
Print Name: Kathryn Stanaway, Acting
Wildlife Program Mgr.
Division: Forestry and Wildlife
Date: Mar 21, 2024

Attachments
Cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

March 21, 2024

Log no. 4435

MEMORANDUM

TO: RUSSEL Y. TSUJI, Administrator
Land Division

FROM: KATHRYN E. STANAWAY, Acting Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: **Division of Forestry and Wildlife Comments for the Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade- Board of Water Supply (BWS) Kapa'a Reservoir, Kane'ohe and Kailua District, O'ahu.**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received the consultation request regarding the Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade- Board of Water Supply Kapa'a Reservoir. The proposal is to upgrade the public safety radio communication system at the Kapa'a Reservoir parcel in Kane'ohe on the island of O'ahu; TMK: (1) 4-2-017:016. The existing communication facility is part of the City and County of Honolulu's public safety and emergency communications system. The project is located on the Board of Water Supply (BWS) Kapa'a Reservoir parcel on the Oneawa Ridge and encompasses a total area of 98,550 square feet. The project proposes to replace one (1) existing microwave truss tower (50'-2" height) with a new monopole tower (80'-0" height); install a new concrete sidewalk around the existing communications building, remove two (2) existing propane tanks and replace with one (1) diesel fuel tank; modify the existing radio equipment building interior including removal of several existing concrete masonry unit (CMU) walls and installation of a new CMU wall; and replace the existing generator located inside the building with a new emergency generator. The total area of work will be approximately 305 square feet.

We concur with the avoidance and minimization measures proposed in the DEA for the ʻōpeʻapeʻa, which could potentially occur in the vicinity of the project area. We also recommend avoiding the use of barbed wire, as bats can become ensnared and killed by such fencing during flight. DOFAW also concurs with the measures included in the DEA intended to avoid construction and operational impacts to State-listed species including pueo or Hawaiian Short-eared owl (*Asio flammeus sandwichensis),* aeʻo or Hawaiian Stilt (*Himantopus*

mexicanus knudseni), ʻalae keʻokeʻo or Hawaiian Coot (*Fulica alai*), ʻalae ʻula or Hawaiian Common Gallinule (*Gallinula chloropus sandvicensis*), and seabirds. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawaiʻi please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf. We also appreciate the measures outlined to minimize the movement of plant and soil material to prevent the spread of invasive species and for the use of native plant species. DOFAW provides the following additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area.

The State endangered pueo or Hawaiian Short-eared owl (*Asio flammeus sandwichensis*) could potentially occur in the project vicinity. Pueo are most active during dawn and dusk twilights. Remove and exclude non-native mammals such as mongoose, cats, dogs, and ungulates from the nesting area. Minimize habitat alterations and disturbance during pueo breeding season. Pueo nest on the ground and active nests have been found year-round. Before any potentially disturbing activity like clearing vegetation, especially ground-based disturbance, DOFAW recommends a qualified biologist conduct surveys during crepuscular hours and walk line transects through the area to detect any active pueo nests. If a pueo nest is discovered, notify DOFAW staff, minimize time spent at the nest, and establish a minimum buffer distance of 100 meters from the nest until chicks are capable of flight.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to www.plantpono.org for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

The invasive Coconut Rhinoceros Beetle (CRB) or Oryctes rhinoceros is found on the islands of O'ahu, Hawai'i Island, Maui and Kaua'i. On July 1, 2022, the Hawaiʻi Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of Oʻahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: Washingtonia, Livistona, and Pritchardia (all commonly known as fan palms), Cocos (coconut palms), Phoenix (date palms), and Roystonea (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.

We recommend that Best Management Practices are employed during and after construction to contain any soils and sediment with the purpose of preventing damage to near-shore waters and marine ecosystems.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Kathrine Cullison, Programmatic Habitat Conservation Planning Coordinator, at kathrine.cullison@hawaii.gov.

Sincerely,

Kathryn Stanaway

KATHRYN E. STANAWAY
Acting Wildlife Program Manager

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 18, 2024

Kathryn Stanaway, Acting Wildlife Program Manager
State of Hawaii
Department of Land and Natural Resources, Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, Hawai‘i 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa‘a Reservoir Kāne‘ohe, Island of O‘ahu TMK 4-2-017:016

Dear Wildlife Program Manager Stanaway,

Thank you for your letter dated March 21, 2024 (Log no. 4435) with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa‘a Reservoir.

We genuinely appreciate the validation of mitigation measures provided in the DEA and also providing additional measures to avoid construction and operational impacts for wildlife in the area. Additional information provided in the letter regarding sea-bird friendly lighting styles, information on the pueo, dangers of barbed-wire for native bats, native plants and the Coconut Rhinoceros Beetle will also be included in the Final Environmental Assessment (FEA). The additional information will be included in Section 3.8 Biological Resources of the FEA.

Your letter, along with this response, will be reproduced and included in the forthcoming FEA.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

March 11, 2024

LD 0192

AGY, LLC
Aolani Yamasato-Gragas
615 Piikoi Street, Suite 1806
Honolulu, Hawaii 96814

Via email:aolani_y@yahoo.com

SUBJECT: **Draft Environmental Assessment for Comment, Honolulu Police Department Communications Facilities Upgrade- BWS Kapa'a Reservoir, Kaneohe and Kailua District, Island of Oahu, Hawaii, TMK: (1) 4-2-017:016**

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various divisions for their review and comment.

Enclosed are comments received from our Division of Aquatic Resources. Should you have any questions, please feel free to contact Timothy Chee via email at *timothy.chee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

February 13, 2024

LD 0192

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources *(via email: kendall.l.tucker@hawaii.gov)*
X Div. of Boating & Ocean Recreation *(via email: richard.t.howard@hawaii.gov)*
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
X Div. of State Parks *(via email: curt.a.cottrell@hawaii.gov)*
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
X Office of Conservation & Coastal Lands *(via email: sharleen.k.kuba@hawaii.gov)*
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*
X Aha Moku *(via email: leimana.k.damate@hawaii.gov)*

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: **Draft Environmental Assessment (DEA)**
Honolulu Police Department Communications Facilities Upgrade- BWS Kapa'a Reservoir
LOCATION: **Kaneohe and Kailua District, Island of Oahu, Hawaii**
TMK: (1) 4-2-017:016
APPLICANT: **AGY, LLC**

Transmitted for your review and comment is information on the above-referenced subject.

As part of this project, a Draft Environmental Assessment (DEA) was prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). Please use the title link below to read the full draft environmental assessment document, then send comments to the proposing/determining agency and copy the consultant.

https://files.hawaii.gov/dbedt/erp/Doc_Library/2024-02-08-OA-DEA-HPD-Communication-Facilities-Upgrade-at-Kapaa-Reservoir.pdf

Please submit any comments to *timothy.chee@hawaii.gov* at the Land Division by the internal deadline of **March 8, 2024**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Timothy Chee at the above email address. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.

(☑) Comments are included/attached.

Signed:

Print Name: Brian Neilson

Division: State of Hawaii

Date: Mar 11, 2024

Attachments
Cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

Date: February 23, 2024
DAR # AR6576

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

MEMORANDUM

TO: Brian J. Neilson
DAR Administrator

FROM: Glenn Higashi GH, Aquatic Biologist

SUBJECT: Draft Environmental Assessment (DEA) Police Department Communication Facilities Upgrade - BWS Kapa'a Reservoir

Request Submitted by: Russell Y. Tsuji, Land Administrator
Kaneohe and Kailua District, Island of Oahu, Hawaii

Location of Project: TMK: (1) 4-2-017:16

Brief Description of Project:

The City and County of Honolulu Department of Design and Construction (DDC), Department of Information Technology (DIT), and Honolulu Police Department (HPD), intend to upgrade the public safety radio communication system at the Board of Water Supply (BWS) Kapa'a Reservoir parcel in Kāne'ohe, O'ahu. Situated on Oneawa Ridge between Kāne'ohe and Kailua, this property is identified as Tax Map Key 4-2-017:016. The existing communication facility, integral to Honolulu's emergency communications network, serves state, federal, and local public safety agencies, prohibiting public or commercial use. The project aims to replace one microwave
truss tower with an 80-foot monopole tower, install a concrete sidewalk, replace propane tanks with

Comments:

☐ No Comments ☒ Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: _____ Date: Mar 11, 2024
Brian J. Neilson
DAR Administrator

DAR# AR6576

Brief Description of Project

a single diesel tank, modify the building's interior, and upgrade the building and all critical appurtenances to withstand Category IV hurricanes. The project will cover approximately 305 square feet of improvements.

Topography of the project area consists of relatively steep slopes, with steeper mountain vistas, ridgelines, and cliffs to the southwest, and a flat residential area and shoreline to the northeast.

The proposed project will involve minimal grading and site preparation for the emergency facility upgrade will not alter the topography. The soil type will remain unchanged and erosion will be controlled. The upgrades will not involve any change to the topography or soils since the construction will occur on flat portions of the property.

Short - term construction related impacts associated with the construction may include minor soil loss, erosion, compaction, soil profile mixing and loss of soil productivity. Construction should employ Best Management Practices (BMPs) to minimize or prevent such occurrences. BMPs include silt fences, periodic watering to minimize dirt particles, and stabilized construction road access. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. If needed, imported fill should be limited to the use of clean and uncontaminated materials. Any graded or excavated material that cannot be reused should be disposed of at an approved waste facility in accordance with State and City regulations. Areas that are exposed as a result of earthwork should be properly handled using site - specific BMPs as required to ensure against the loss of sediment and soils due to storm water
runoff. BMPs may include structural (e.g., berms, silt fences, barriers), vegetative (e.g., grass, mulch, ground cover, soil stabilization), and other management measures (e.g., project phasing and good housekeeping practices), as appropriate.

DAR# AR6576

Comments

The proposed project will have no significant impacts to aquatic resources values in the area as there are no streams, water bodies or shorelines within close proximity to the project area.

Mahalo for the opportunity to provide comment.

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 18, 2024

Brian Neilson, DAR Administrator
State of Hawaii
Department of Land and Natural Resources, Resources Division of Aquatic Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawai‘i 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa‘a Reservoir Kāne‘ohe, Island of O‘ahu TMK 4-2-017:016

Dear Administrator Neilson,

Thank you for your letter dated March 11, 2024 (LD 0192) with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa‘a Reservoir.

We genuinely appreciate the comment validating the project will have no significant impacts to aquatic resources as there are no streams, water bodies or shorelines within close proximity to the project area.

Your letter, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

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

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

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
INTERIM DIRECTOR

Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Program

DTS202402131510NA

March 7, 2024

Ms. Aolani Yamasato-Gragas
AGY LLC
615 Piikoi Street, Suite 1806
Honolulu, Hawaii 96814

Subject: Draft Environmental Assessment
Honolulu Police Department Communication Facilities Upgrade – BWS Kapaʻa Reservoir;
Kāneʻohe and Kailua, Oʻahu
Tax Map Key (1) 4-2-017: 016.

Thank you for the opportunity to provide comments on the Draft Environmental Assessment (Draft EA) on the proposed Honolulu Police Department Communication Facilities Upgrade Project. The notification request was received by our office via memo dated February 8, 2024.

It is our understanding that the City and County of Honolulu, Department of Design and Construction; Department of Information Technology; and the Honolulu Police Department, intend to make improvements to the radio communication system at the Board of Water Supply Kapaʻa Reservoir parcel in Kāneʻohe, Oʻahu. The site is located on Oneawa Ridge along the H-3 Highway, between Kāneʻohe and Kailua. The existing communication facility is integral to the emergency communications network, and serves federal, state, and local public safety agencies.

The proposed improvements include the replacement of one microwave truss tower with an 80-foot monopole tower, installation of a concrete sidewalk, replacement of a propane tanks with a single diesel tank, and modification of the main building's interior. The upgrades to the facilities should be able to withstand Category IV hurricanes.

The Office of Planning and Sustainable Development (OPSD) has reviewed the submitted materials and we note the following:

Hawaiʻi Coastal Zone Management (CZM) Program

The Draft EA does not include analysis on the project and its adherence with the objectives and supporting policies of the Hawaiʻi CZM Program, as listed in HRS § 205A-2. The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" under HRS § 205A-1.

Therefore, as the project site is within the Hawai‘i CZM area, the Final Environmental Assessment should discuss how the proposed action will be consistent with CZM objectives and policies.

The objectives and supporting policies of the Hawai‘i CZM Program include: Recreational Resources; Historic Resources; Scenic and Open Space Resources; Coastal Ecosystems; Economic Uses; Coastal Hazards; Managing Development; Public Participation; Beach Protection; and Marine Resources.

For any questions regarding this comment letter, please contact Joshua Hekekia at (808) 587-2845 or by email to Joshua.K.Hekekia@hawaii.gov. If you wish to respond to this comment letter, please include DTS202402131510NA in the subject line.

Sincerely,

Mary Alice Evans

Mary Alice Evans,
Interim Director

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 17, 2024

Mary Alice Evans, Interim Director
State of Hawaii
Office of Planning and Sustainable Development
235 South Beretania Street, 6th Floor
Honolulu, Hawai'i 96804

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Director Evans,

Thank you for your letter dated March 7, 2024 (DTS202402131510NA) with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir.

We genuinely appreciate the information provided regarding the Hawai'i Coastal Zone Management Program. The City and County of Honolulu Department of Information Technology (DIT) and Department of Design and Construction (DDC) understand the compliance with all applicable rules, regulations, and statues regarding the construction of the proposed project. Objectives and the supporting policies outlined in HRS § 205A-2 will be included and addressed in Section 4.1.3 Coastal Zone Management of the Final Environmental Assessment (FEA).

Your letter, along with this response, will be reproduced and included in the forthcoming FEA.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

POLICE DEPARTMENT
KA 'OIHANA MĀKA'I O HONOLULU
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET • HONOLULU, HAWAI'I 96813
TELEPHONE: (808) 529-3111 • WEBSITE: www.honolulupd.org

RICK BLANGIARDI
MAYOR
MEIA

ARTHUR J. LOGAN
CHIEF
KAHU MĀKA'I

KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS
HOPE LUNA NUI MĀKA'I

OUR REFERENCE EO-SH

February 27, 2024

SENT VIA EMAIL

Ms. Aolani Yamasato-Gragas
aolani_y@yahoo.com

Dear Ms. Yamasato-Gragas:

This is in response to your correspondence received on February 13, 2024, requesting input for the proposed communications facilities upgrade at the Board of Water Supply Kapa'a Reservoir in Kāne'ohe.

Based on the information provided, the Honolulu Police Department does not have any comments at this time.

If there are any questions, please call Major Herbert Soria of District 4 (Kāne'ohe, Kailua, Kahuku) at (808) 723-8640.

Sincerely,

GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Glenn Hayashi, Assistant Chief of Police
City and County of Honolulu
Police Department
Support Services Bureau
801 South Beretania Street
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Assistant Chief Hayashi,

Thank you for your email dated February 27, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir.

We greatly appreciate the correspondence of no comment to the proposed project and DEA.

Your correspondence, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

HONOLULU FIRE DEPARTMENT
KA ʻOIHANA KINAI AHI O HONOLULU
CITY AND COUNTY OF HONOLULU

636 SOUTH STREET • HONOLULU, HAWAIʻI 96813
PHONE: (808) 723-7139 • FAX: (808) 723-7111 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

SHELDON K. HAO
FIRE CHIEF
LUNA NUI KINAI AHI

JASON SAMALA
DEPUTY FIRE CHIEF
HOPE LUNA NUI KINAI AHI

February 21, 2024

Ms. Aolani Yamasato-Gragas
AGY, LLC
615 Piʻikoi Street, Suite 1806
Honolulu, Hawaiʻi 96814

Dear Ms. Yamasato-Gragas:

Subject: Draft Environmental Assessment
Honolulu Police Department - Communication Facilities Upgrade
Board of Water Supply Kapaʻa Reservoir
Kāneʻohe and Kailua, Oʻahu Island, Hawaiʻi
Tax Map Key: 4-2-017: 016

In response to your letter dated February 8, 2024, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with:

1. The fire department access roads shall be in accordance with National Fire Protection Association (NFPA) 1; 2018 Edition, Section 18.2.3.

2. A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1.)

3. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (NFPA 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.)

4. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.

5. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting and route them to the HFD for review and approval.

The requirements above are required by the HFD. This project may have additional requirements to be met as determined by other agencies.

Should you have questions, please contact Battalion Chief Jean-Claude Bisch of our Fire Prevention Bureau at 808-723-7151 or jbisch@honolulu.gov.

Sincerely,

CRAIG UCHIMURA
Assistant Chief

CU/MD:jl

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 18, 2024

Keith Uchimura, Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South King Street
Honolulu, Hawai‘i 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa‘a Reservoir Kāne‘ohe, Island of O‘ahu TMK 4-2-017:016

Dear Assistant Chief Uchimura,

Thank you for your letter dated February 21, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa‘a Reservoir.

We appreciate the information provided regarding access roads, water supply and required drawing submittals required for the proposed project. The City and County of Honolulu Department of Information Technology (DIT) and Department of Design and Construction (DDC) understand the compliance with all applicable rules, regulations, and statues. This project is not expected to impact Honolulu Fire Department (HFD) operations or ability to provide fire protection services to the area. The existing project site meets the recommendations provided by HFD. Appropriate fire access roads are provided for the existing project site. The Honolulu Board of Water Supply has confirmed that adequate water supply is also provided for the site. Prior to construction of the project, civil drawings will be submitted to the HFD for review and approval.

The Final Environmental Assessment (FEA) will include the comments in Section 3.7 Circulation and Off-Street Parking and Section 3.10 Social Characteristics.

Your letter, along with this response, will be reproduced and included in the forthcoming FEA.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade at Kapaa Reservoir

From: Shoji, Joyce M.

Date: Tuesday, March 5, 2024 at 07:59 AM HST

Dear Aolani Yamasato-Gragas:

The Department of Planning and Permitting has reviewed the Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade at Kapaa Reservoir (Project), and has the following comment:

The Project is proposed on lands in the State Land Use Conservation District zoned P-1 Restricted Preservation District, and just outside the Special Management Area (SMA). Therefore, the proposed development is under the jurisdiction of the State of Hawaii, and the Project is not subject the SMA regulations of Revised Ordinances of Honolulu Chapter 25.

Should you have any questions, you may contact me at (808) 768-8014.

Sincerely,

Joyce Shoji

JOYCE SHOJI
Land Use Approval Branch
Land Use Permits Division
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Phone: (808) 768-8014

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Joyce Shoji
City and County of Honolulu
Department of Planning and Permitting
Land Use Approval Branch
Land Use Permits Division
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Ms. Shoji,

Thank you for your email dated March 24, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir.

We greatly appreciate the comment validating the project is proposed on lands in the State Land Use Conservation District zoned P-1 Restricted Preservation District, and just outside the Special Management Area (SMA), and also confirming the proposed development is under the jurisdiction of the State of Hawaii, and the Project is not subject the SMA regulations of Revised Ordinances of Honolulu Chapter 25.

Your correspondence, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

Draft Environmental Assessment (DEA) for Comment - Honolulu Police Department (HPD) Communication Facilities Upgrade - Board of Water Supply (BWS) Kapa'a Reservoir

From: Jacinto-Kawabata, Marie

Date: Wednesday, February 14, 2024 at 11:01 AM HST

Aloha,

Director Toiya has no comments to the DEA – HPD Communication Facilities Upgrade – BWS Kapa’a Reservior.

Mahalo,

Marie Jacinto-Kawabata
Office Assistant
City & County of Honolulu
Department of Emergency Management
Office: (808) 723-8960
Fax: (808) 768-1492

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Hirokazu Toiya, Director
City and County of Honolulu
Department of Emergency Management
650 South King Street, Basement
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Director Toiya,

Thank you for your email dated February 14, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir.

We greatly appreciate the correspondence of no comment to the proposed project and DEA.

Your correspondence, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

Re: Draft Environmental Assessment for Comment HONOLULU POLICE DEPARTMENT Communication Facilities Upgrade – BWS Kapa'a Reservoir

From: Rep. Natalia Hussey-Burdick (rephusseyburdick@capitol.hawaii.gov)

Date: Tuesday, February 13, 2024 at 03:30 PM HST

Aloha Aolani,

Thank you for sending this along. Would you like us to share with the residents of our district and solicit comments on the proposal?
Mahalo,
-Nadia

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Representative Natalia Hussey-Burdick
State Capitol, Rm 27 Room 327
415 S Beretania St
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Representative Hussey-Burdick,

Thank you for your email dated February 13, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir. We greatly appreciate your correspondence offering assistance to notify residents of the district and solicit comments on the proposed project.

Your correspondence, along with this response, will be reproduced and included in the forthcoming Final Environmental Assessment.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

Draft Environmental Assessment for Comment HONOLULU POLICE DEPARTMENT Communication Facilities Upgrade – BWS Kapa'a Reservoir

From: Liu, Rouen

Date: Tuesday, March 5, 2024 at 05:50 PM HST

Dear Mr. Yamasato-Gragas,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Honolulu Police Department Communication Facilities Upgrade project comes to fruition, please continue to keep us informed.

Please contact me at 808-772-2135 should there be any questions.

Rouen Liu (WA3 – PTA)
Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu Hawaii 96840-0001

CONFIDENTIALITY NOTICE: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and/or privileged information. Any unauthorized review, use, copying, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender immediately by reply e-mail and destroy the original message and all copies.

Management Plan.pdf
517.5kB

DDC Draft EA Publication Letter.pdf
537.7kB

Draft EA Letter HECO (2024.02.09).pdf
199.2kB

AGY, LLC

650 Piikoi Street Suite 1806 Honolulu, Hawaii 96814 * (808)447-9849 * aolani_y@yahoo.com

April 19, 2024

Rouen Liu, Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu Hawaii 96840-0001

SUBJECT: Draft Environmental Assessment (DEA) for the HONOLULU POLICE DEPARTMENT (HPD) Communication Facilities Upgrade – BWS Kapa'a Reservoir Kāne'ohe, Island of O'ahu TMK 4-2-017:016

Dear Mr. Liu,

Thank you for your email dated March 5, 2024 with comments for the DEA HPD Communication Facilities Upgrade BWS Kapa'a Reservoir.

We appreciate the correspondence of no objection to the proposed project. Hawaiian Electric Company (HECO) does not have existing easements on the property. The existing and proposed project does have electrical infrastructure including electrical poles and wires on the parcel. The City and County of Honolulu Department of Information Technology (DIT) and Department of Design and Construction (DDC) understand the importance of maintaining facilities and access will be continued to be provided to HECO.

Prior to construction of the project, necessary utility connection permits will be submitted to the HECO for review and approval.

Your correspondence, along with this response, will be reproduced and included in the forthcoming FEA.

We thank you for your interest and participation.

Sincerely,

AGY LLC
Aolani Yamasato-Gragas

Appendix E
Final Environmental Assessment Honolulu Police Department Communications Facilities Upgrade

1993-01-08-OA-FEA- Honolulu Police Dept. Communication Facility Upgrade

SAN 1893

FILE COPY

FINAL Environmental Assessment

Honolulu Police Department Communications Facilities Upgrade

Proposed by:
City and County of Honolulu
Building Department
650 South King Street
Honolulu, Hawaii 96813

Prepared by:
Lacayo Planning, Inc.

In association with:
SCHEMA Systems, Inc.
Leach Mounce Architects

December 1992

FINAL Environmental Assessment

Honolulu Police Department Communications Facilities Upgrade

Proposed by:
City and County of Honolulu
Building Department
650 South King Street
Honolulu, Hawaii 96813

Prepared by:
Lacayo Planning, Inc.

In association with:
SCHEMA Systems, Inc.
Leach Mounce Architects

December 1992

SUMMARY
Development Profile

APPLICANT: City and County of Honolulu
Building Department
650 South King Street
Honolulu, Hawaii 96813

CONSULTED AGENCIES: City and County of Honolulu
Department of Parks and Recreation
Fire Department
Police Department
Board of Water Supply
Department of Public Works
State of Hawaii
Department of Land and Natural Resources
Department of Health

PROJECT NAME: City and County of Honolulu
Honolulu Police Department
Communications System Upgrade

COMMUNICATIONS SITES:

1. Honolulu Municipal Building
1A. Kalihi Police Station
2. Makiki Roundtop
* 2A. Waikiki
3. Diamond Head-Kaimuki
4. Koko Head
5. Waimanalo Ridge
6. Kailua Police Station
6A. Kapaa 272 Reservoir
6B. Kaneohe Police Station
7. Aikahi Sewage Treatment Plant
8. Kaaawa Fire Station
9. Kahuku Police Station
* 9A. Sunset Beach Neighborhood Park
10. Kawela
11. Mokuleia
12. U.S. Navy-EASTPAC
12A. Wahiawa Police Station
13. Puu Manawahua
13A. Waianae 242 Reservior
13B. Waianae Police Station
* 13C. Keaau Beach Park
13D. Pearl City Police Station
* 14. Aliamanu 385 Reservoir
* 14A. HPD Telecom Service Section
15. Sand Island Sewage Treatment Plant

* New sites. All other sites are existing

Note: Sites are numbered starting from downtown Honolulu and following the "backbone system," counter-clockwise around the Island. Backbone sites are indicated by numerals only; letters indicate spur sites (refer to System Map).

TABLE OF CONTENTS

Section I.	**1**	**Introduction and Project Description**
	1	Introduction
	1	Background
	3	Project Description
	7	Alternatives
Section II.	**11**	**General Environmental Impacts**
	11	Economic Impacts
	11	Public Services and Utilities
	11	Air Quality and Noise
	11	Radio Frequency (RF) Radiation
Section III.	**17**	**Proposed Facilities on Hawaii Conservation District Lands**
	17	Makiki Round Top
	25	Diamond Head-Kaimuki
	29	Koko Head
	39	Waimanalo Ridge
	49	Kapaa 272 Reservoir
	57	Kawela
	67	Mokuleia
	75	Puu Manawahua
	83	Waianae 242 Reservoir
	87	Keaau Beach Park
	95	Aiamanu 385 Reservoir

Table of Contents (continued)

Section IV.	**101**	**Proposed Facilities Not Within Hawaii Conservation District**
	103	Honolulu Municipal Building
	109	Kaaawa Fire Station
	115	Sunset Beach Neighborhood Park
	123	Sand Island Sewage Treatment Plant
Section V.	**131**	**Proposed Facilities Exempt From Hawaii Environmental Impact Statement Requirements**
	133	Kalihi Police Station
	137	Waikiki
	143	Kailua Police Station
	147	Kaneohe Police Station
	151	Aikahi Sewage Treatment Plant
	155	Kahuku Police Station
	159	U.S. Navy-EASTPAC
	163	Wahiawa Police Station
	167	Waianae Police Station
	171	Pearl City Police Station
	175	HPD Telecom Service Section
Section VI.	**177**	**Determination**
Section VII.	**177**	**Findings**
Section VIII.	**179**	**Consulted Parties in the Preparation of the Environmental Assessment**

Section I. Introduction and Project Description

Introduction

Background

Project Description

Alternatives

I. INTRODUCTION AND PROJECT DESCRIPTION

A. Introduction

The City and County of Honolulu is proposing to upgrade its existing public safety telecommunications system. The new upgraded system, described below, would be supported by facilities at 26 sites on the island of Oahu, 22 of which are existing sites. The project is being funded jointly by the City and County of Honolulu and the State of Hawaii.

Compliance with Hawaii Environmental Impact Statement Law

This Environmental Assessment (EA) was prepared in accordance with Chapter 343, Hawaii Revised Statutes, Environmental Impact Statements (EIS), and Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules. Under Hawaii's Environment Impact Statement rules, a group of actions proposed by an agency will be treated as a single action when an individual project is a necessary precedent for a larger project [§11-200-7 (1), Hawaii Administrative Rules]. Since each of the 26 facilities is an integral part of the Public Safety Telecommunications System, the EA addresses improvements at all sites.

Report Organization

This report is divided into eight sections. Section I presents background information, a description of the project and a discussion of alternatives. Section II provides a discussion of general environmental impacts, including socio-economic, air quality, noise and radiation impacts. Because the improvements proposed for each of the 26 facilities vary and have varying EIS and land use permit requirements, the individual facilities are divided and detailed in the following three sections. Section III describes the 11 sites within the Conservation District and presents information required by both the Hawaii EIS regulations and the Department of Land and Natural Resources (DLNR). Section IV details the four sites subject only to the EIS rules, and Section V presents the 11 sites that are exempt from both DLNR and EIS requirements. The determination and findings of the EA are presented in Section VI and Section VII.

The notice of availability of the Draft EA was published in the *OEQC Bulletin* by the Office of Environmental Quality Control on September 8, 1992 and September 23, 1992. Copies of the Draft EA were distributed to interested public agencies and community organizations. In addition, representatives from the Building Department consulted with a number of these agencies and organizations. Various changes were made to the Draft EA as a result of these consultations and are indicated in this Final EA as underlined text. A list of consulted parties and copies of the correspondence are presented in Section VIII.

B. Background

The project to upgrade the public safety telecommunications system is based on a Master Plan prepared for the City and County of Honolulu during 1990-1991. The result of an extensive consultant study, the Master Plan identifies problems in the current telecommunications system and the current and future needs of the Honolulu Police Department. It also anticipates future use of the system by other City and County agencies. With the concurrence of the Police Department, the Building Department has adopted the Master Plan as the basis for the design, procurement, installation and implementation of the upgraded communications system.

The system consists essentially of two elements which share common towers and equipment rooms: (1) an islandwide microwave system, also referred to as the "backbone system", which relays signals around the island and to police stations; and (2) a land mobile two-way radio system, which provides coverage between fixed stations and mobile or portable radios.

The microwave relay and terminal stations transmit and receive microwave signals across relatively short distances using round, dish-shaped antennas usually mounted at or near the top of a supporting tower or occasionally on top of a building. The antenna height above ground level varies with the radio site, ranging from a low of about 25 feet to a high of 200 feet.

The mobile two-way radio system uses fixed stations at City and County communications sites to transmit and receive signals. The number of stations varies from 1-2 at minor sites to 5-10 at major sites, such as remote repeater locations. Antennas are typically the vertical "whip" type, mounted on towers and/or buildings at heights which are adequate to provide reliable coverage in the subject area. At sites where multiple frequencies are in use, transmitter combining and receiver multi-coupling techniques will be employed to minimize the number of antennas.

The problems and needs identified in the Master Plan are summarized below.

Microwave system

- Existing equipment aging and nearing end of useful life
- Need to change from the existing analog system to a digital system that will improve reliability, make more efficient use of equipment, reduce dispatch workload, and accommodate data transmission

Mobile two-way system

- Inadequate coverage in some areas
- Existing system uses channels in two different bands, each requiring different mobile radio equipment
- Congestion in the existing system
- Need for a trunked system to provide increased efficiency, flexibility and expansion capability
- Need for digital mobile radio system that can accommodate data transmission

Towers and equipment rooms

- Degradation of equipment being caused by poor condition of facilities and intrusion of pests
- Some towers are not high enough to provide adequate coverage

While the primary motivation of the project is to solve the pressing and serious needs of the Police Department, the Master Plan calls for implementing new communications technology that will have sufficient system capacity to address future communications needs of other City and County agencies. Rather than obtain separate, stand-alone mobile radio systems, other agencies will be able to utilize surplus capacity on the new trunked public safety system at substantially less cost. The microwave backbone system will continue to support other City and County users, as well as certain other users, including some State agencies.

C. Project Description

The Master Plan calls for implementation of the communications facilities upgrade project in four major phases: (1) facilities upgrading and new construction; (2) new microwave backbone system; (3) 800 MHz mobile voice system; and (4) 800 MHz mobile data system.

The first phase will entail the preparation of the radio facilities, including police station radio rooms, to house the new equipment. Most of the existing facilities will be upgraded to professional communications standards and a few new sites will be constructed as necessary to accomplish the desired radio coverage objective.

In the second phase, the existing analog microwave system will be replaced with a new digital backbone system. This phase will also include any new links in the backbone, plus the spur links to the police stations and other new locations, if constructed.

The third and fourth phases represent implementation of the two components of the new trunked mobile radio system: the mobile voice radio and mobile data systems. Though separable with regard to both procurement and installation, the two components are technically parts of the single integrated mobile system and can be implemented simultaneously, depending on funds.

The voice radio system will consist of the fixed, mobile, and portable radios used for voice communications. The data radio system will consist of similar equipment but will also include vehicle-mounted computer devices and possibly portable units carried by individuals.

Following this section are a "HPD Communications System Map" showing the location of existing and proposed communications facilities and microwave links and a "Facility Improvement Summary"—a table showing the nature of facility improvements proposed at each site.

Facilities Upgrade and New Construction

Nearly all of the radio facilities, including some equipment rooms at district police stations, are in need of upgrading. Most lack air conditioning, and most buildings at the remote sites are subject to the intrusion of dust, blowing trash, leaves, small animal life (rodents and geckos) and, at some sites, vegetation growth. Over the long term, intrusion of foreign elements results in degradation of the costly electronic equipment, which in turn leads to unit failures, increased downtime, and escalated maintenance obligations.

The project goal is to upgrade the City and County's radio facilities, whether existing or new, to provide maximum protection to equipment and personnel. To meet professional communications standards, all sites will be environmentally controlled (air conditioned) and will have proper equipment grounding and appropriate emergency and uninterruptible power sources.

Improvements include upgrading existing facilities and constructing new sites as necessary to meet the coverage requirements.

Remote Site Upgrading

Each of the existing remote sites will receive some degree of upgrading. In addition to the installation of air conditioning, some facilities will require substantial repairs to roofs, walls (inside and out), ceilings, and doors, as well as painting and fencing. Others will require only air conditioning and minor repairs and maintenance.

Existing sites to be upgraded include the following:

Honolulu Municipal Building	Kawela
Makiki Roundtop	Mokuleia
Koko Head	US Navy-EASTPAC
Waimanalo Ridge	Puu Manawahua
Aikahi Sewage Treatment Plant	Sand Island Sewage Treatment Plant
Kaaawa Fire Station	

Smaller equipment buildings at Kawela and USN-EASTPAC sites will require expansion in order to house the new equipment. Existing towers will be analyzed to determine their structural capability to accommodate proposed height extensions and antenna loading and to meet wind stress specifications. Most have sufficient height and are of sufficiently heavy construction to meet requirements.

Due to age, type of construction, insufficient height, and lack of adequate surface mounting space, the existing tower at Koko Head is scheduled for replacement. Other towers will be replaced to accommodate height extensions. All replacement towers will be designed to withstand Category 5-Hurricane Forces. In addition, where required, new waveguide ladders and cable bridges will be installed on towers to allow for a clean routing of transmission lines.

Similar to the Koko Head site, the poles at the existing Diamond Head facility lack adequate surface mounting space and height, and require replacement. In 1992, however, the Hawaii State Legislature passed Act 313, expanding the boundaries of the Diamond Head State Monument to include the entire crater, its interior slopes and all state lands along the exterior slopes extending to Diamond Head Road. The Act also requires compliance with the Diamond Head State Monument Plan of 1979, which calls for reforestation of the crater slopes and phasing out of all facilities not related to park use. The Act 313 restricts expansion of buildings and other structures and construction activity within the boundaries of the Diamond Head State Monument unless consistent with park use according to the Plan.

As a result, and after consultation with the Diamond Head Neighborhood Board and the Department of Land and Natural Resources, the City and County has decided to explore alternative sites to its Diamond Head facility. A location will largely depend on its ability to relay signals between the Makiki Round Top and Koko Head sites, results of radio coverage surveys for the Kaimuki-Palolo-Waialae area, and land availability. The City and County will submit a supplemental Environmental Assessment for the Diamond Head-Kaimuki facility once a site has been selected and studies have been completed.

Police Station Radio Room Upgrading

Generally, the existing police station radio equipment rooms are of adequate size to house the new radio equipment. Each room will require some upgrading, which will generally include repair of ceilings, walls (inside and outside), painting, closing of outside vents, general cleanup, the installation or extension of air conditioning, and the installation of an adequate electrical grounding system for all radio and data equipment. Some of the rooms also house file servers for the data system. Special attention will be required to provide radio frequency isolation and filtering for co-located file servers or other data equipment.

Existing police station radio rooms to be upgraded are as follows:

Pearl City Police Station
Kalihi Police Station
Kailua Police Station
Kaneohe Police Station
Kahuku Police Station
Wahiawa Police Station
Waianae Police Station

New Facilities to be Implemented or Constructed

In order to reconfigure the existing system to accommodate coverage requirements, four new remote sites have been selected based on the results of the field coverage surveys:

Aliamanu 385 Reservoir (new microwave backbone site)
Sunset Beach Park (new mobile receive site)
Keaau Beach Park (new mobile two way site)
HPD Telecommunications Service Section (new shop near Honolulu Airport)
Diamond Head-Kaimuki (replacement site for the existing Diamond Head facility, to be selected)

The "Facility Improvement Summary" table shows the type of improvements which will be constructed. In addition, the Kapaa 272 Reservoir site will be converted from a passive facility to an active microwave facility, with the addition of an equipment building and the replacement of one tower. Both new and replacement towers will be designed to withstand Category 5-Hurricane Forces.

Finally, the Waikiki site will be altered to improve hand-held radio coverage. The Waikiki site consists of three sub-sites, all on top of tall buildings. The existing mobile receive sub-site on top of the Outrigger Hobron would be retained and improved. The mobile two-way site at the Outrigger West would be abandoned and replaced with a new two-way site on top of the Outrigger Malia. The existing mobile receive site at the Honolulu Zoo would also be abandoned and replaced with a new receive site on top of the Prince Kuhio.

Microwave System Replacement

The present microwave system was installed in 1978. It is an analog system operating in the 6 GHz microwave band and is configured in a protected loop configuration with several spur links off the loop to police sub-stations. Including the spurs, there are 20 microwave station locations throughout the island. The majority of the microwave radio equipment is Motorola, Model MR-600, which is no longer in production. The age of this equipment is fast approaching its normal life span of roughly 15 years.

A new digital microwave system will be implemented to replace the older analog system. Digital microwave equipment is a more modern design that will provide superior performance and better support of modern communications requirements, particularly electronic data transmission and digital voice systems.

The new system will serve all the existing remote sites and police stations plus the new sites shown in the "HPD Communications System Map". It will support all two-way voice and mobile data systems and point-to-point data transmission for the Police Department and other City and County and State users. The system channel capacity will allow for the addition of new users in the future.

Types of communications will include two-way voice radio, telemetry, data, and telephone. With digital microwave, increased channel capacity can be obtained by various technical means, such as multiplexing more than one communications circuit per microwave channel. Pending selection of a

vendor, the specific number of individual communications channels that can be carried on the microwave cannot be firmly identified. At a minimum, however, the system should support 672 voice equivalent channels.

Two Way Voice Radio System Replacement

The existing police radio system uses channels in two different radio bands: VHF and UHF. The VHF system operates in the simplex mode (non-repeater) and is controlled from the police dispatch center. It is primarily used by police patrol units.

The UHF system operates in the repeater (mobile relay) mode and is controlled islandwide from the main offices of the Intelligence Unit (IEU), the Special Service Division (SSD), and the Vice Division. Islandwide radio access is over the microwave backbone system. Both systems have problems, which are briefly described below.

There is unreliable two way mobile and portable radio coverage in certain locations, particularly in the country districts. Areas with unreliable coverage include the Mokuleia-Kaena Point-Yokohama Bay area, Waimea Bay and Sunset Beach, the Helemano area, Waikakalaua and Kipapa gulches, Lanikai, Kahana Bay, and Sacred Falls.

Islandwide radio coverage is needed for all users throughout the system. The police dispatch center needs islandwide coverage with every patrol unit. In addition, certain specialized divisions or sections need system access directly from their offices for communicating with their own field units. There is a need to provide an adequate number of radio channels to support the varied police activities for both voice and digital communications.

Because of technical limitations, one single radio cannot transmit on both the VHF and UHF bands, so units that need to communicate with all units in the department, such as investigators, must carry two separate radios, one VHF and one UHF. Conversely, officers with only a single radio in one band cannot talk to officers with a radio in the other band.

The number of units on some radio channels result in an excessive congestion problem. There are too few radio channels, requiring the dispatch channels to be used for tasks that could otherwise be transferred to a different channel. This adds to the congestion problem.

To improve the Department's operation, the existing two-way radio network will be replaced with a modern, high-technology, 800 MHz trunked system. The new system will be integrated, permitting an officer to communicate with any other officer using a single radio. The new 800 MHz radio equipment will be installed at all the site locations shown on the system map.

Implementing an 800 MHz trunked system is inherently more costly and complex, but it offers several major technological and operational advantages. It provides low potential for radio interference, more privacy, flexibility for restructuring, protection from loss of an individual repeater, and multiple features, such as the ability to add a mobile data component. 800 MHz trunking offers frequency efficiency, and, if implemented on an islandwide basis, it will provide maximum flexibility for multiple users, operational applications, and expansion capability.

While HPD has a large number of radios, the islandwide trunked system will be capable of supporting a significantly larger number of field units. The initial capacity of the system will be sufficient to accommodate other government users who operate throughout the island. These users would only need to purchase their own mobile, portable, and control radio units, and they would essentially

become "subscribers" on the islandwide trunked backbone system. Adding new users will not require additional remote site equipment, such as new repeaters and antennas, until the new system reaches a very high threshold of new utilization.

Moreover, the cost of adding radio channels to an existing trunked system is *less* than a linear cost when compared to building the initial system. Thus, from a global view of government radio system needs, it is much less expensive to add a few channels in the future to a large trunked network than to build independent radio systems for each separate government user. With correct design, each user agency will perceive that it operates on its own network and will never know that the system resources are, in fact, shared.

Mobile Data Radio System Implementation

There is a need to automate certain field operations to improve the efficiency of field officers. Current needs include report writing and submittal, traffic citation issuance, gang contact documentation, and electronic mail. Future requirements include warrant information, mug image information and access to yet unbuilt automated data systems.

The use of mobile digital communications equipment will greatly reduce the amount of voice radio traffic and alleviate the operational problems that can be expected with a voice-only system.

The proposed new 800 MHz mobile data radio system will fully support data base access, computer aided dispatch access, mobile terminal-to-mobile terminal communications, and integration of field-initiated report writing with the records management system. The data radio units will utilize the same sites as the mobile voice radio units.

D. Alternatives

Do Nothing

The "do nothing" alternative poses an unacceptable risk to public safety because existing radio facilities are deteriorating and need to be replaced or repaired. In addition, public safety is jeopardized by poor communications coverage in certain areas of the island. In addition, taking no action to improve the public safety communications system would mean forgoing significant gains in the effectiveness and efficiency of the system and of the police force itself.

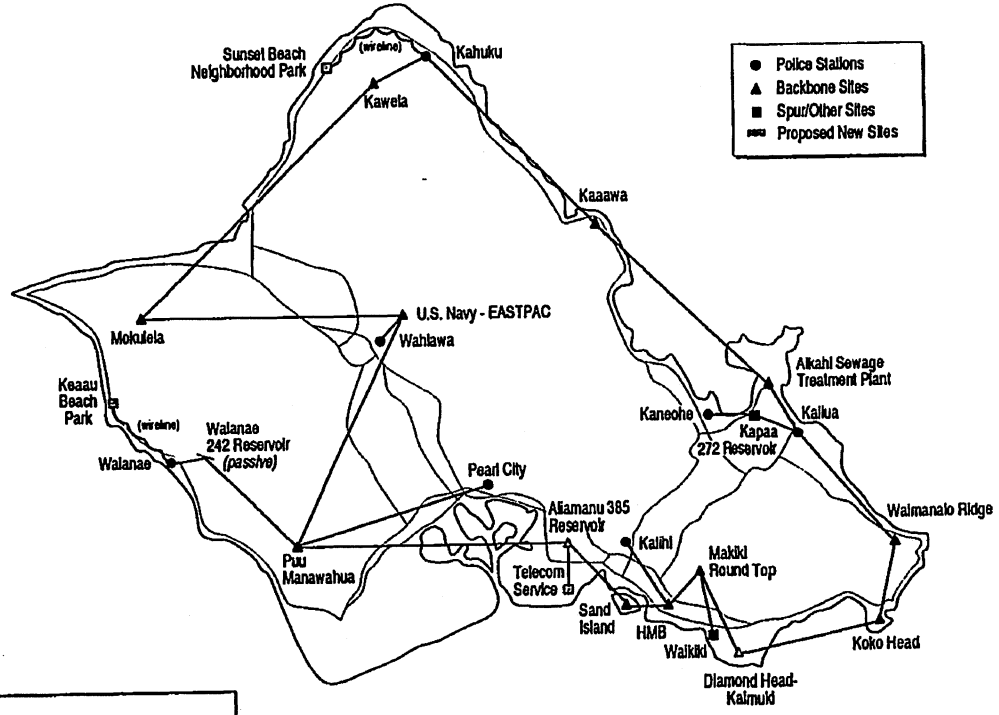
Alternative System Design

The Master Plan considered alternative system designs. Some alternatives would be less costly in the short-term but (1) would provide fewer opportunities for expansion of communications applications; (2) would not accommodate new users; and/or (3) would lead to long-term higher costs for system expansion.

Alternative Sites

All but five of the sites are existing and are planned for relatively minor modifications. New sites were selected on the basis of radio coverage surveys and land availability. In many cases, such as the Aliamanu 385 Reservoir site, the location was largely determined by topography. Unless sites at higher elevations are used, communications facilities will need tall towers to achieve similar radio coverage. All of the new sites (with the exception of Diamond Head-Kaimuki, which has yet to be decided) are on City and County-controlled property, which reduces costs and security problems.

HONOLULU POLICE DEPARTMENT 8 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU

HPD COMMUNICATIONS SYSTEM MAP

SITE	TMK	EIS/PERMIT REQUIREMENTS		BUILDING		TOWER		
		ENVIRONMENTAL ASSESSMENT	MAJOR PERMITS	Addition	New	Extension	Replace-ment	New
1. Honolulu Municipal Building	2-1-033: 010	X						
1A. Kalihi Police Station	1-3-024: 006	exempt						
2. Makiki Round Top	2-5-019: 011	X	CDUA					
2A. Waikiki: Outrigger Hobron	2-6-012: 047	exempt						
Outrigger Malia	2-6-019: 021	exempt						
Outrigger Prince Kuhio	2-6-025: 024	exempt						
3. Diamond Head-Kalmuki	3-1-042: 014	*to be selected*						
4. Koko Head	3-9-012: 004	X	CDUA / SMA				40 to 50-ft.	
5. Waimanalo Ridge	3-9-009: 001	X	CDUA				70-ft.	
6. Kailua Police Station	4-3-056: 008	exempt						
6A. Kapaa Reservoir	4-2-017: 016	X	CDUA / SMA		X		50-ft.	
6B. Kaneohe Police Station	4-5-018: 002	exempt						
7. Alkahi Sewage Treatment Plant	4-4-011: 081	exempt						
8. Kaaawa Fire Station	5-1-011: 051	X						
9. Kahuku Police Station	5-6-006: 020	exempt						
9A. Sunset Beach Neighborhood Park	5-9-005: 070	X		X				
10. Kawela	5-7-004: 002	X	CDUA	X				
11. Mokuleia	6-8-001: 001	X	CDUA				70-ft.	
12. U.S. Navy-EASTPAC	7-1-002: 007	exempt		X				
12A. Wahiawa Police Station	7-4-007: 006	exempt						
13. Puu Manawahua	9-2-005: 014	X	CDUA					
13A. Puu Paheehee	8-6-001: 048	X	CDUA					
13B. Waianae Police Station	8-5-008: 051	X					50-ft.	
13C. Keaau Beach Park	8-3-001: 001	X	CDUA / SMA		X			25-ft.*
13D. Pearl City Police Station	9-7-094: 022	exempt						
14. Salt Lake Reservoir	1-1-063: 010	X	CDUA		X			50-ft.
14A. HPD Telecom Service Section	1-1-015: 013	exempt						
15. Sand Island Sewage Treatment Plant	1-5-041: 005	X				20-ft.		

*antenna pole

Facility Improvement Summary
HPD Communications Facilities

Section II. **General Environmental Impacts**

Economic Impacts

Public Services and Utilities

Air Quality and Noise

Radio Frequency (RF) Radiation

II. GENERAL ENVIRONMENTAL IMPACTS

This section discusses environmental impacts common to all sites, including socio-economic impacts, radiation impacts, and impacts on public services, air quality and noise. Sections 3 and 4 discuss physical impacts to specific sites within the State Conservation District and other sites which will receive significant improvements.

A. Economic Impacts

Construction of the proposed improvements will generate some short-term employment opportunities and will likely involve the temporary mobilization of existing labor. Following completion, the facilities will be operated and maintained by existing Police Department and Building Department personnel.

Appropriations for planning, architecture and engineering, construction and equipment procurement total $21.3 million to date, with a total project budget of $36.4 million. Total project cost will be equally shared between the State and the City and County. High initial facility costs will be offset by the low cost of future expansion to accommodate the communications needs of not only the Police Department but also other government agencies.

B. Public Services and Utilities

All sites require electrical power, except for the Waianae 242 Reservoir site (passive reflector). Power is currently provided to the existing sites and is available at the new sites. No water, wastewater disposal, solid waste disposal, or other public services are required.

The project to upgrade the communications system will have a direct, positive impact on police services, as described above. In the future, it is also expected to have a positive impact on other agencies, as they discontinue their individual systems and are added to the upgraded public safety system. Other City agencies which could take advantage of the upgraded system include the Fire Department, the Department of Public Works, the Oahu Civil Defense Agency, the Department of Parks and Recreation (Water Safety Division), and the Transit Authority. The enhanced coverage and reliability offered by the upgraded system will benefit all new users.

C. Air Quality and Noise

Construction of the proposed improvements may temporarily impact existing air quality and noise levels. Construction at some sites may increase the amount of dust in the air; and construction machinery may raise noise levels. These impacts are expected to be minimal, since most of the sites where exterior construction will occur are remote from populated areas. Construction activities will comply with State Department of Health regulations requiring mitigation of potential impacts to air quality and noise levels.

D. Radio Frequency (RF) Radiation

Within the last several decades, the proliferation of radio frequency (RF) emitters in the environment has spurred extensive and ongoing research efforts to investigate the biological and public health effects of low-level non-ionizing radiation. In addition to increases in radio and television broadcast stations and in police and other public agency radio systems, there has been substantial growth in

private sector development and use of land mobile radio systems. These include fast-growing new technologies, such as cellular telephone.

It should be emphasized that environmental levels of RF radiation routinely encountered by the public are well below hazardous levels. The U.S. Environmental Protection Agency has estimated that 98-99 percent of the population in seven U.S. urban areas studied is exposed to less than 0.001 milliwatts per centimeter squared (mW/cm^2).[1]

By far the greatest amounts of RF radiation affecting populated areas are emitted by the more than 11,000 AM, FM, and TV stations operating in the United States today. These stations broadcast on various RF frequencies, ranging from 550-1,600 kilohertz (kHz) for AM, 88-106 megahertz (MHz) for FM, and 56-800 MHz for VHF and UHF television stations. In contrast to two-way radio systems which broadcast intermittently, broadcast stations operate at much higher magnitudes of radiated power, and they typically broadcast *continuously up to 24 hours per day*. Radiated power, including antenna gain, from these stations can range from a several hundred watts upwards to several thousand watts.

RF Radiation Exposure Guidelines

In the United States, there is presently no mandatory federal standard for protection of the public or workers from potentially hazardous exposure to RF radiation. Nonetheless, several federal agencies and non-government organizations have adopted general guidelines. The Occupational Safety and Health Administration (OSHA) generated a guideline for workers in 1971, but it was later ruled to be advisory only. The National Institute for Occupational Safety and Health (NIOSH) has been working on a recommended worker standard for some time. However, there is no evidence that NIOSH will issue a recommendation in the near future.

The Center for Devices and Radiological Health (CDRH), a part of the U. S. Food and Drug Administration, has regulated radiation from microwave ovens since 1971. CDRH has established a radiation performance standard for microwave ovens that allows leakage (measured at five centimeters from the oven surface) of 1.0 mW/cm^2 at the time of manufacture and a maximum level of 5.0 mW/cm^2 during the lifetime of the oven.

By far the most widely-used guideline is that issued by the American National Standards Institute (ANSI), a non-profit organization that develops recommended standards for a variety of applications. In 1982, ANSI issued revised RF protection standards (C-95.1, 1982) which were based on data regarding the interaction of RF radiation with the human body.

The standards are intended to apply to non-occupational as well as to occupational exposures. Compliance with the ANSI standards is voluntary but they are widely used by federal, state, and local authorities. The FCC uses the 1982 ANSI standards for purposes of evaluating the environmental impacts of the RF transmitters it regulates.

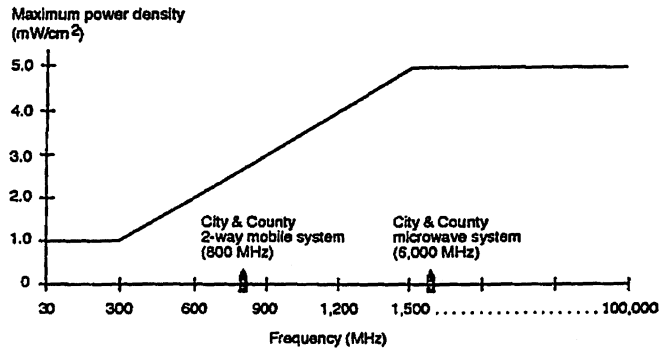
The 1982 ANSI standard shows that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits apply to the frequency range of 30-300 MHz, where a maximum level of 1 milliwatt (mW) per centimeter squared (cm^2), as averaged over any six-minute period of exposure, is recommended. At frequencies between 300-1,500 MHz, the levels are calculated

---

[1] Athey, et. al., "Radio Frequency Radiations Levels and Population Exposure in Urban Areas of the Eastern United States", Technical Report EPA-520/2077-008, 1978.

by dividing the frequency by a factor of 300 (freq/300). Thus, the levels range from 2.6 mW/cm^2 at 800 MHz to 3.0 mW/cm^2 at 900 MHz. Frequencies between 1,500-100,000 have a maximum power density of 5.0 mW/cm^2 (see figure below).

ANSI Exposure Standards and City and County Proposed Frequencies



ANSI has been in the process of revising its 1982 standard, and in early 1992, a new proposed standard (C-95.1, 1990) was released from committee. The new proposal differentiates between occupational standards for workers and standards for the general public. The proposed occupational standard is 1.0 mW/cm^2 for a six-minute exposure (no change from the 1982). The proposed general public standard is 0.2 mW/cm^2 for a 30-minute exposure. It should be noted that the new standards have not yet been accepted by the FCC or other regulatory agencies.

The intensity of the radiation depends on the source, the distance from the source, and the radiation pattern. Given the source level and any given distance, the field intensity can be calculated fairly accurately, usually in fractions of a watt (milliwatts or microwatts) that pass through the standard unit area of one square centimeter.

Radiated RF energy from a given source decreases rapidly as distance is increased. In fact, the level decreases according to the inverse square law—i.e., it is inversely proportional to the square of the distance. Simply stated, as the distance doubles, the level of radiation decreases by a factor of four.

RF Exposure to City Microwave Transmitters

The microwave antennas used in the City and County system operate in the 6 gHz band (6 gHz equals 6,000 MHz) and have a highly directional beam for point-to-point communications. They are generally tower-mounted and range in height from 25 to 200 feet above ground level. Depending on the transmitter power output (0.5 watts to 1.0 watts), branching losses, transmission line losses, and size (diameter) and gain of antenna, the effective radiated power (ERP) from the antenna in the focused beam can range from 500 to 7,000 watts.

The microwave signals from these antennas travel in a line-of-sight path with a highly directional beam, similar to a spotlight, from one antenna to the next. The dispersion of microwave energy outside of the relatively narrow beam is minimal.

Because of the microwave antennas' highly directional beam and typical height above ground, power densities at ground level are markedly below the ANSI standards. An individual would have to stand *directly in front of the antenna for a significant period of time* in order to be exposed to a radiation level that might be considered harmful. This is generally not possible due to the height of the antenna above ground.

Using the ANSI standard of 5.0 mW/cm^2 for 6 gHz (see figure above) and assuming a typical six-ft.-diameter antenna with an approximate ERP of 7,000 watts, the location of maximum power density in *the focal plane of the antenna is as follows:*[2]

Location of Maximum Power Density	Calculated Level of Maximum Power Density
45 feet from antenna	0.1849 mW/cm^2

These calculations indicate that the exposure levels to City microwave antenna radiations at 45 feet are well below the ANSI standard of 5.0 mW/cm^2. Beyond that distance, the level would continue to decrease significantly.

RF Exposure to City Two-Way Mobile Radio Transmitters

The new City two-way system will be licensed in the 821-824 and 866-869 MHz portion of the 800 MHz band allocated by the FCC for public safety. The band is commonly called the NPSPAC band after the National Public Safety Frequency Advisory Committee, which was instrumental in developing the national recommendations for its use.

The 800 MHz system will be designed to provide islandwide radio coverage with fixed stations located at various radio sites around the island. The fixed stations will be located in secure facilities with the antennas mounted at heights sufficient to provide good radio coverage. The majority of 800 MHz antennas will be tower-mounted at heights ranging from roughly 50 to 200 feet above ground, with an average antenna height of about 100 feet. The antennas are designed to convey the signals in the direction of the horizon with very little emission in other directions, such as above or directly below the tower; therefore, the power density around antennas at ground level will be significantly less than the ANSI guideline. Neither the stations nor the antennas are accessible to the general public.

A typical 800 MHz radio site will consist of a number of fixed transmitter stations, varying from 1-2 at minor sites to 5-10 at major sites, such as remote repeater locations. At sites where multiple 800 MHz frequencies are in use, transmitter combining and receiver multi-coupling techniques will be used to minimize the number of antennas. Of the new sites, Aliamanu 385 Reservoir will have 5-10 stations; Sunset Beach Park will have no transmitter stations; and Keaau Beach Park will have only two stations.

The fixed stations will operate with a transmitter power output of 75 to 125 watts. The average ERP from the antenna for a single 800 MHz transmitter will be approximately 200 watts, including transmitter combiner and transmission line loss plus antenna gain (10 db). Maximum combined ERP for one of the

---

[2] Bickmore and Hansen, "Antenna Power Densities in the Fresnel Region", Proceedings of the IRE, 1959.

larger sites would occur on occasions when all 10 stations are transmitting simultaneously. In such a case, the combined ERP would be around 2,000 watts. It should be understood, however, that the City's fixed stations *will not transmit continuously but will transmit intermittently and only when needed to carry public safety-related communications.*

Using an average of 850 MHz to represent the frequency the City and County will be using, the ANSI standard is calculated as follows: 850 MHz/300 = 2.8 Mw/cm^2 (see figure above). This level is used for calculating the exposure levels at varying distances from an antenna with a single transmitter of 200 watts ERP and multiple transmitters with a combined ERP of 2,000 watts (10 x 200 watts), as follows:

Calculated Level of Power Density

Distance	*200 watts ERP*	*2,000 watts ERP*
50 feet	0.0274100 mW/cm^2	0.274100 mW/cm^2
500 feet	0.0002709 mW/cm^2	0.002709 mW/cm^2
5,000 feet	0.0000027 mW/cm^2	0.000027 mW/cm^2

The above calculations indicate that, for either level of effective radiated power, the exposure levels to City two-way radio antennas fall well below the 2.8 mW/cm^2 standard established by ANSI.

Section III. Proposed Facilities on Hawaii Conservation District Lands

Makiki Round Top

Diamond Head-Kaimuki

Koko Head

Waimanalo Ridge

Kapaa 272 Reservoir

Kawela

Mokuleia

Puu Manawahua

Waianae 242 Reservoir

Keaau Beach Park

Aliamanu 385 Reservoir

III. PROPOSED FACILITIES ON HAWAII CONSERVATION DISTRICT LANDS

This section assesses the environmental impacts of the proposed improvements to the facilities located within the State Conservation District. Each site description is accompanied by Site Location, Site Vicinity, Site Profile, Existing Tower and New Tower plans. The Site Vicinity Plan and Site Profile Plan depict the proposed towers and equipment rooms relative to existing structures and natural features. Refer to the tower plans for accurate representation of antenna and dish placements and orientations. Note however, that all vertical antennas are drawn at their maximum heights of thirteen feet. The actual antenna lengths, however, will vary from site to site and cannot be determined until the system is installed. Nevertheless, no antenna will exceed thirteen feet in length. The total *number* of antennas are accurately represented on the tower plans.

Makiki Roundtop Communications Facility (2)
Development Profile

TMK:	2-5-019: 011
AREA OF SITE:	3,920 sq.ft.
Area of Use:	less than 3,900 sq.ft.
LANDOWNER:	State of Hawaii
NEAREST TOWN/LANDMARK:	Manoa neighborhood
Distance from Site:	0.25 miles
EXISTING USE:	Communications facility
PROPOSED ACTIONS:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Resource (R)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The existing communications facility is located at the 1,079-ft. elevation in Puu Ualakaa State Park on Round Top Drive. Use of the site by the City and County is authorized under an Executive Order dated December 9, 1947.

The facility is a backbone link to the Honolulu Municipal Building and Diamond Head sites. In addition to the Police Department, the Fire Department, Water Safety, Department of Transportation Services, other local government, State of Hawaii (specific departments not available) and U.S. Secret Service use the facility.

The facility consists of two equipment buildings totaling 830 square feet and one 100-ft.-tall tower. The larger, newer building measures 650 square feet and is attached to an older 180-sq.ft. building. Both are of CMU construction with a concrete slab roof. Four six-ft.-diameter microwave dishes, one corner reflector, five dipole antennas and eight vertical antennas are attached to the tower. A water tank is hidden behind a five-ft.-high mound of dirt and vegetation about ten feet from the buildings. The entire facility is secured by a six-ft.-high chain link fence.

Surrounding uses include State communications equipment consisting of: one 100-ft.-tall tower located just east of the City and County's tower; one 25-ft.-tall tower along the northern portion of the equipment building; and one 40-ft.-tall monopole on the southwest corner of the building. Various dishes and antennas are attached to the towers and pole. Restrooms for the park are located between the existing communications site and the upper parking area (the lower parking area is located at the front of the ridge). The site is about 0.25 miles from the nearest houselot in Manoa Valley.

B. Proposed Action

Improvements proposed for this facility are limited to constructing a five-ft.-wide perimeter concrete walkway, making various interior alterations, and general cleanup and repainting of the building. Weeds will also be cleared away from the structures.

The construction cost for the proposed improvements is estimated at $100,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site has slopes of ten to 15 percent, leading to slopes of more than 40 percent beyond the security fence. The parking area is relatively flat with a gentle slope to the lookout area. According to the U.S. Soil Conservation Service, soils in the area are of the Tantalus series and consist of well-drained, silty clay loam. Runoff is medium and erosion hazard is moderate.

The improvements proposed for the facility will require minimum alteration to the site. Although limited grading will be performed to allow construction of a perimeter concrete walkway, this activity will not result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages 40 to 50 inches per year. According to the Federal Flood Insurance Rate Maps, the site lies outside the 500-year floodplain. The minor improvements proposed for the facility will not result in any flooding of lower elevation properties.

Flora and Fauna

The north, south and western sides of the facility are surrounded by stands of ironwood trees (previously topped), koa haole and tall grass. Along the eastern fence line is a level area measuring three

to four feet wide and covered with grass, more ironwood trees and a tall stand of Norfolk Island pine trees. No threatened or endangered flora or fauna exist in the area.

The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources
According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes
The proposed improvements will not impact existing public views.

Access and Traffic
Access to the site is from Round Top Drive. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Land Use Approvals Required

Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone
The project site lies within the Resource (R) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

Prior CDUA Approvals

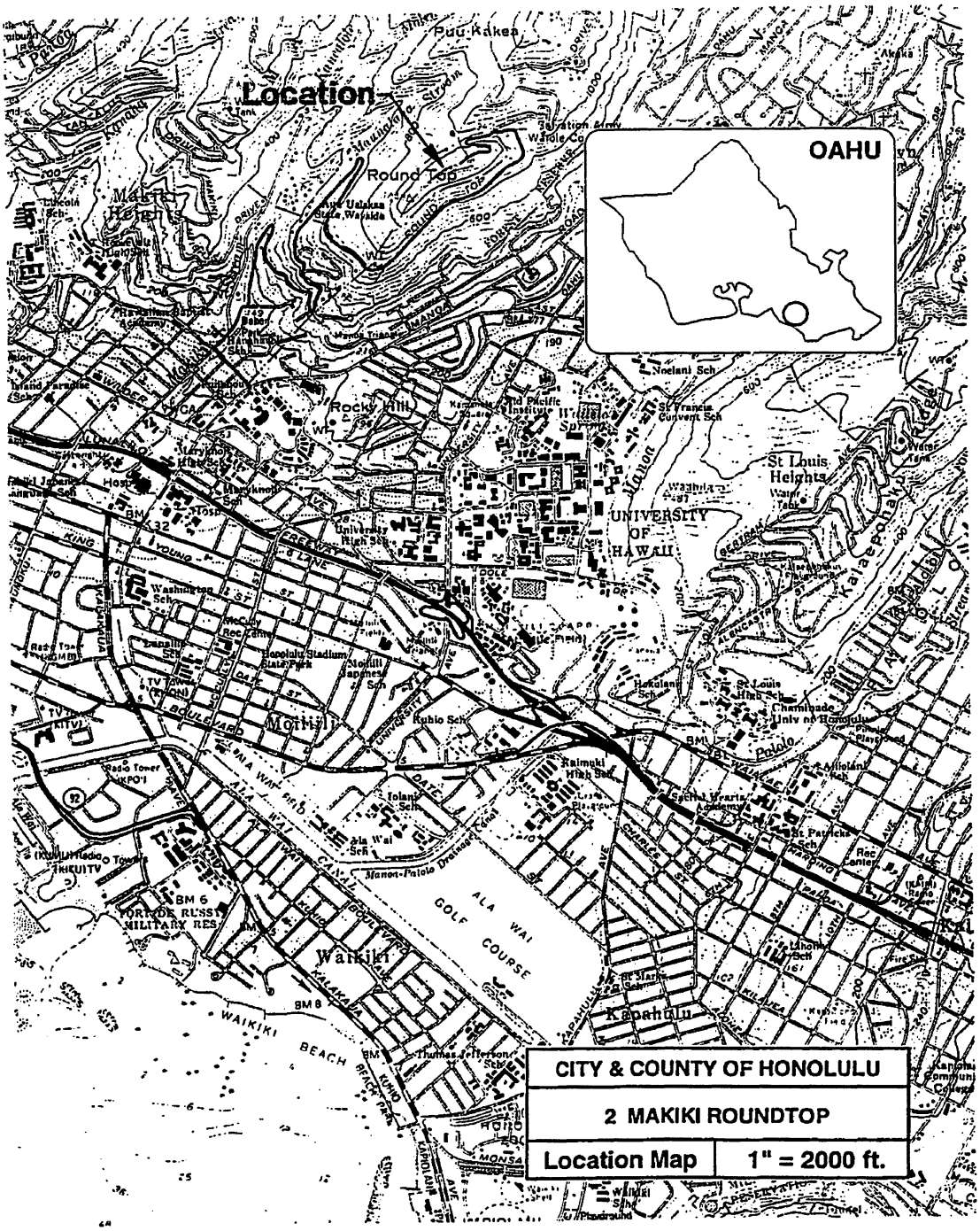
OA-0444: *October 1973* - Construct a 625-sq.ft. CMU building addition, and install a 100-ft.-tall steel tower and five microwave dishes (two six-ft. diameter and three four-ft. diameter dishes).

August 1974 - Temporarily install one 12-ft. omni-directional antenna onto existing transmission building.

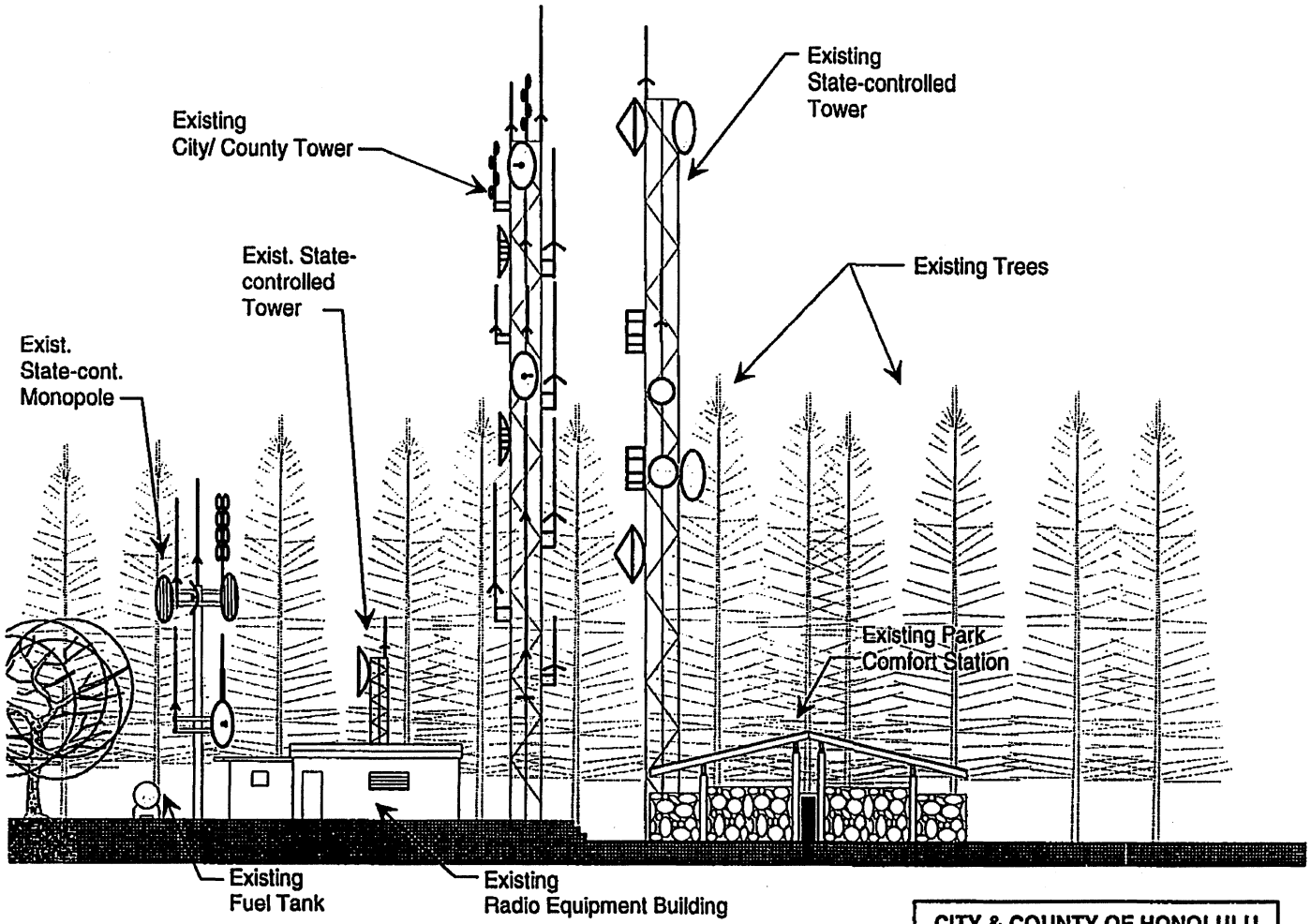
October 1974 - Replace fuel tank.

November 1974 - Install one five-ft. omni-directional antenna onto existing transmission building.

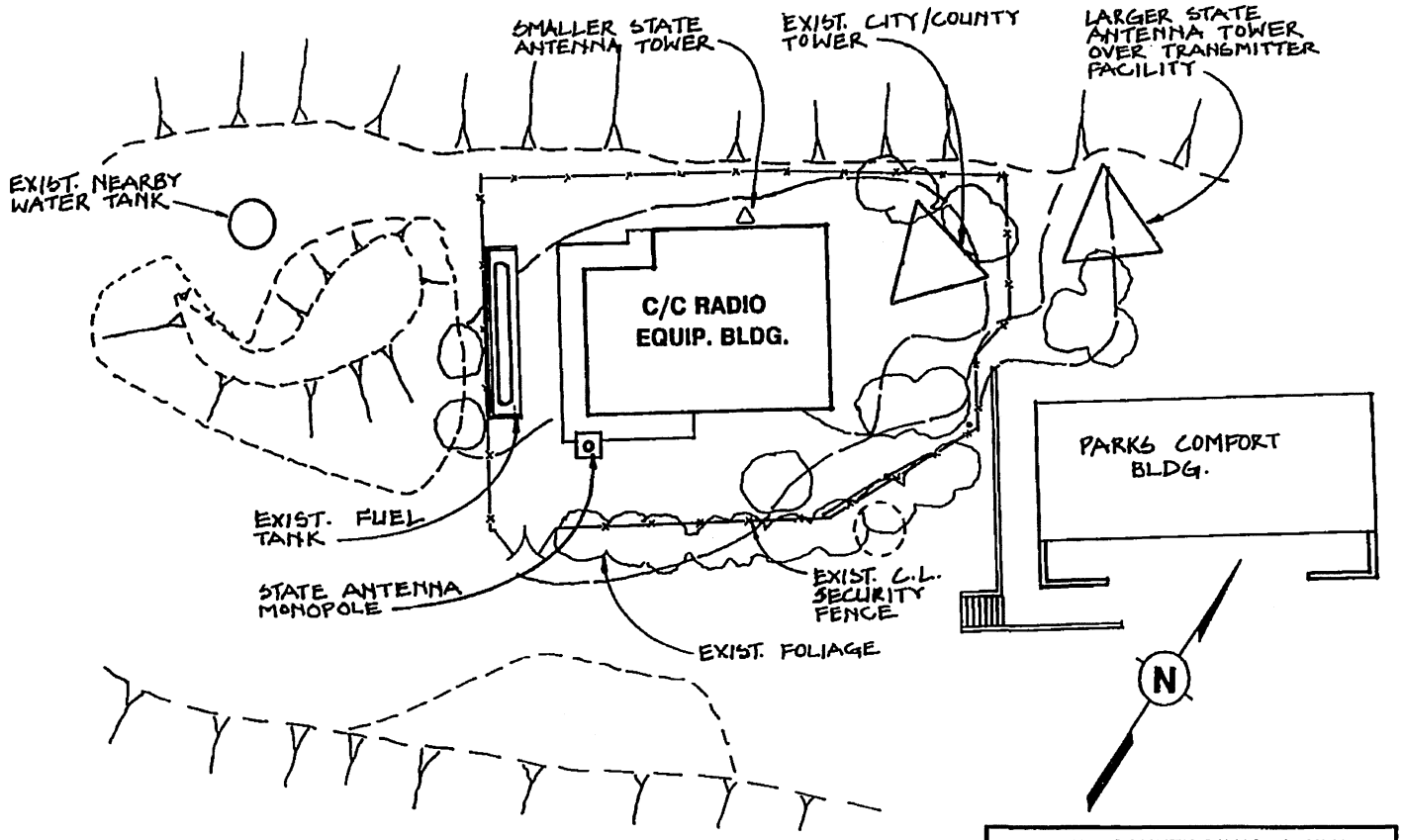
December 1975 - Mount a 3.5-ft. antenna onto existing antenna pole.


Location
OAHU
Puu Kakea
Round Top
Makiki Heights
Rocky Hill
UNIVERSITY OF HAWAII
St Louis Heights
Moiliili
Waikiki
Kapahulu
ALA WAI GOLF COURSE
WAIKIKI BEACH
CITY & COUNTY OF HONOLULU
2 MAKIKI ROUNDTOP
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 21 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU	
2 MAKIKI ROUNDTOP Looking toward the northwest	
Site Profile	1" = 20'-0"

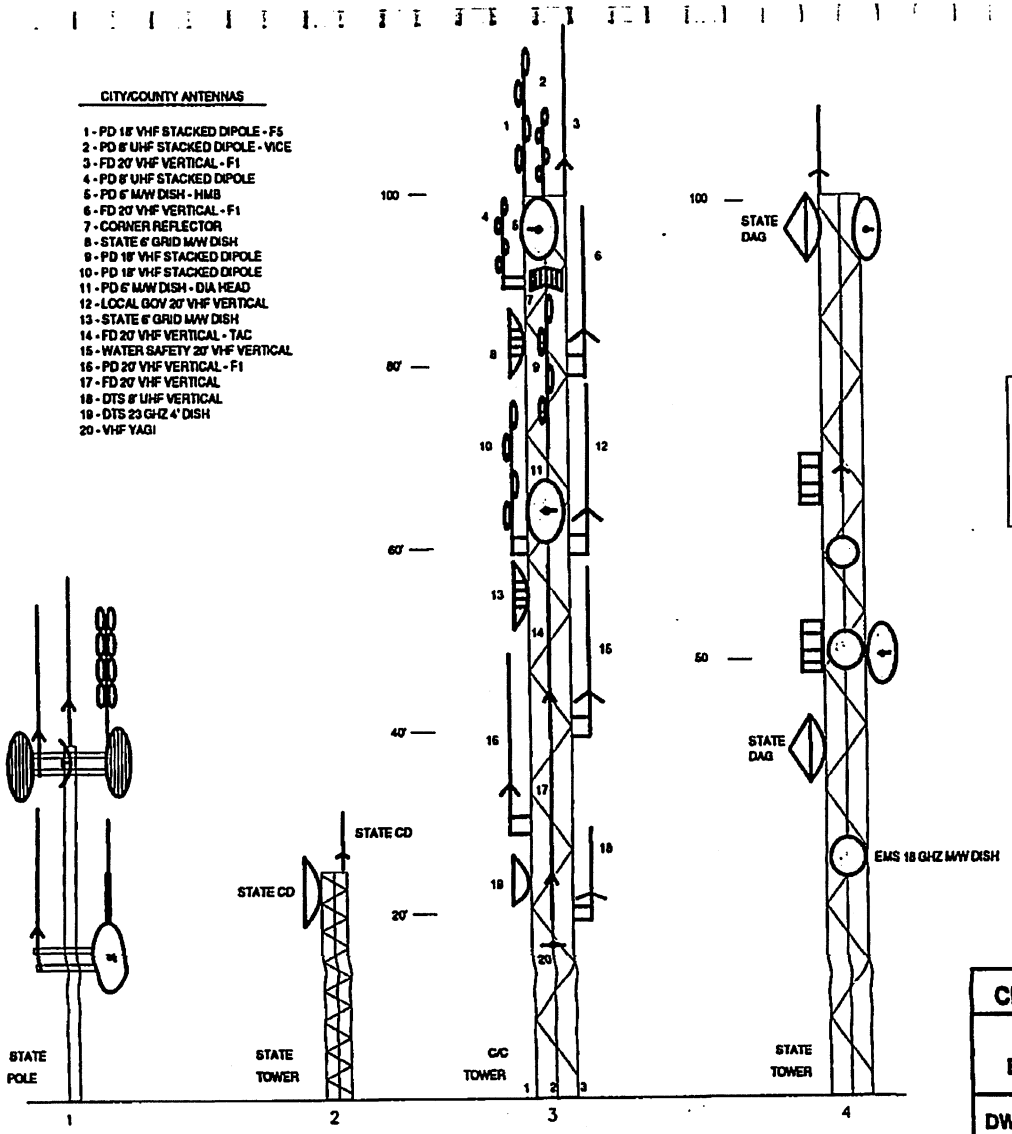


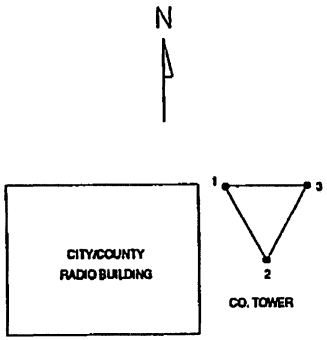
CITY & COUNTY OF HONOLULU	
2 MAKIKI ROUNDTOP	
Site Vicinity Plan	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 23 COMMUNICATIONS FACILITIES UPGRADE

CITY/COUNTY ANTENNAS

1 - PD 18' VHF STACKED DIPOLE - F5
2 - PD 8' UHF STACKED DIPOLE - VICE
3 - FD 20' VHF VERTICAL - F1
4 - PD 8' UHF STACKED DIPOLE
5 - PD 6' M/W DISH - HMB
6 - FD 20' VHF VERTICAL - F1
7 - CORNER REFLECTOR
8 - STATE 6' GRID M/W DISH
9 - PD 18' VHF STACKED DIPOLE
10 - PD 18' VHF STACKED DIPOLE
11 - PD 6' M/W DISH - DIA HEAD
12 - LOCAL GOV 20' VHF VERTICAL
13 - STATE 6' GRID M/W DISH
14 - FD 20' VHF VERTICAL - TAC
15 - WATER SAFETY 20' VHF VERTICAL
16 - PD 20' VHF VERTICAL - F1
17 - FD 20' VHF VERTICAL
18 - DTS 8' UHF VERTICAL
19 - DTS 23 GHZ 4' DISH
20 - VHF YAGI



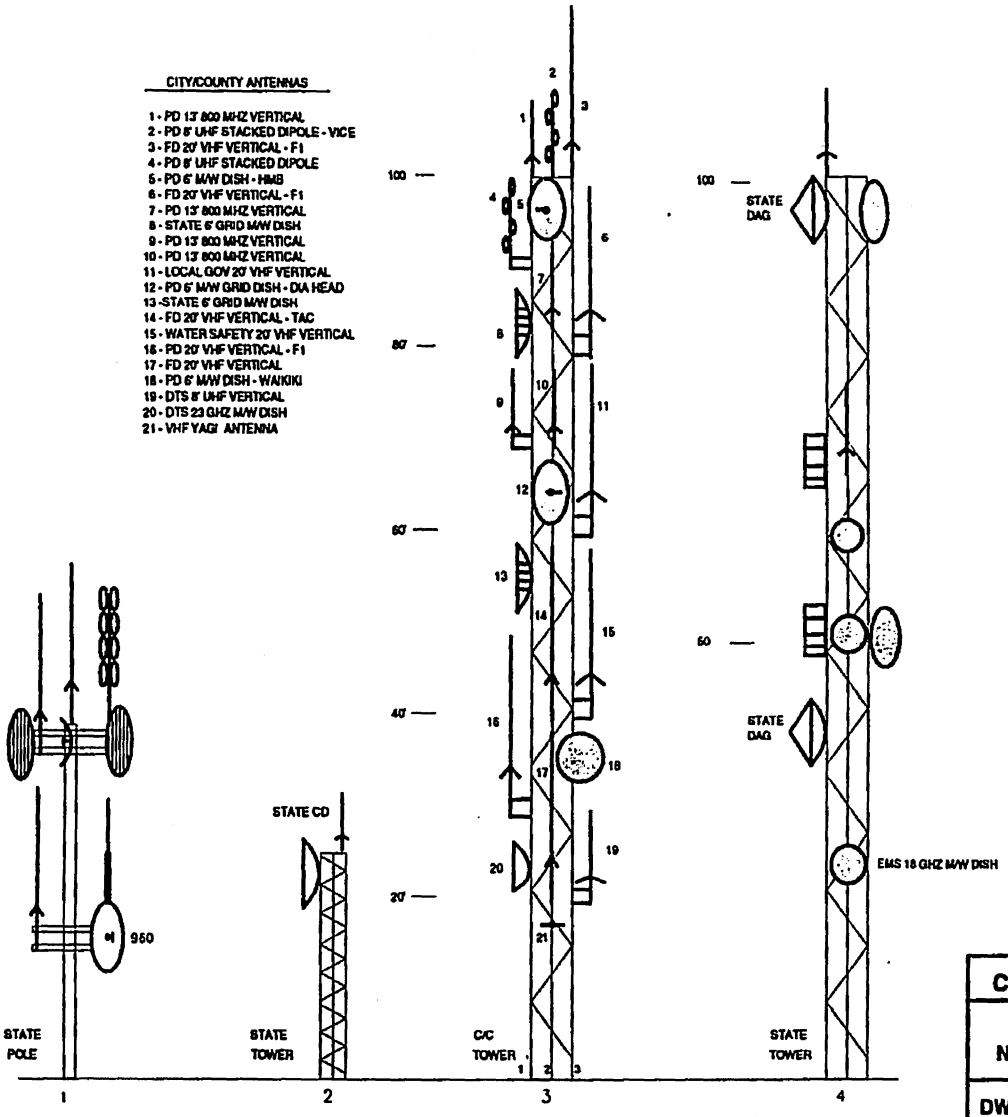


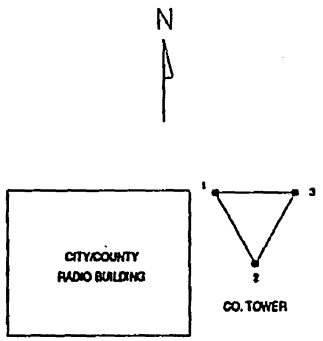
CITY & COUNTY OF HONOLULU		
MAKIKI ROUND TOP EXISTING ANTENNA STRUCTURE		
DWG # 1	REV #2	06/30/92

HONOLULU POLICE DEPARTMENT 24 COMMUNICATIONS FACILITIES UPGRADE

CITY/COUNTY ANTENNAS

1 - PD 13' 800 MHZ VERTICAL
2 - PD 8' UHF STACKED DIPOLE - VICE
3 - FD 20' VHF VERTICAL - F1
4 - PD 8' UHF STACKED DIPOLE
5 - PD 6' M/W DISH - HMB
6 - FD 20' VHF VERTICAL - F1
7 - PD 13' 800 MHZ VERTICAL
8 - STATE 6' GRID M/W DISH
9 - PD 13' 800 MHZ VERTICAL
10 - PD 13' 800 MHZ VERTICAL
11 - LOCAL GOV 20' VHF VERTICAL
12 - PD 6' M/W GRID DISH - DIA HEAD
13 -STATE 6' GRID M/W DISH
14 - FD 20' VHF VERTICAL - TAC
15 - WATER SAFETY 20' VHF VERTICAL
16 - PD 20' VHF VERTICAL - F1
17 - FD 20' VHF VERTICAL
18 - PD 6' M/W DISH - WAIKIKI
19 - DTS 8' UHF VERTICAL
20 - DTS 23 GHZ M/W DISH
21 - VHF YAGI ANTENNA





CITY & COUNTY OF HONOLULU		
MAKIKI ROUND TOP NEW SYSTEM ANTENNA LOCATIONS		
DWG # 1	REV #2	06/30/92

Diamond Head-Kaimuki Communications Facility (3)

Existing Diamond Head Facility Profile

TMK:	3-1-042: 014
AREA OF SITE:	303.26 acres
Area of Use:	100.00 sq.ft.
LANDOWNER:	State of Hawaii
NEAREST TOWN/LANDMARK:	Waikiki district
Distance from Site:	0.75 miles
EXISTING USE:	Communications facilities
STATE LAND USE DISTRICT:	Conservation
Subzone:	General (G)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Preservation
Public Facilities Designation:	Add Park/Modify
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Located within SMA

A. Site Location and Existing Uses

The existing communications facility is located at the 367-ft. elevation on the southeast portion of Diamond Head Crater. Use of the site by the City and County is authorized under a Use Permit granted by the Hawaii Department of Defense.

The facility is a backbone link to the Koko Head and Makiki Round Top sites. In addition to the Police Department, the Fire Department and the State Department of Health use the facility.

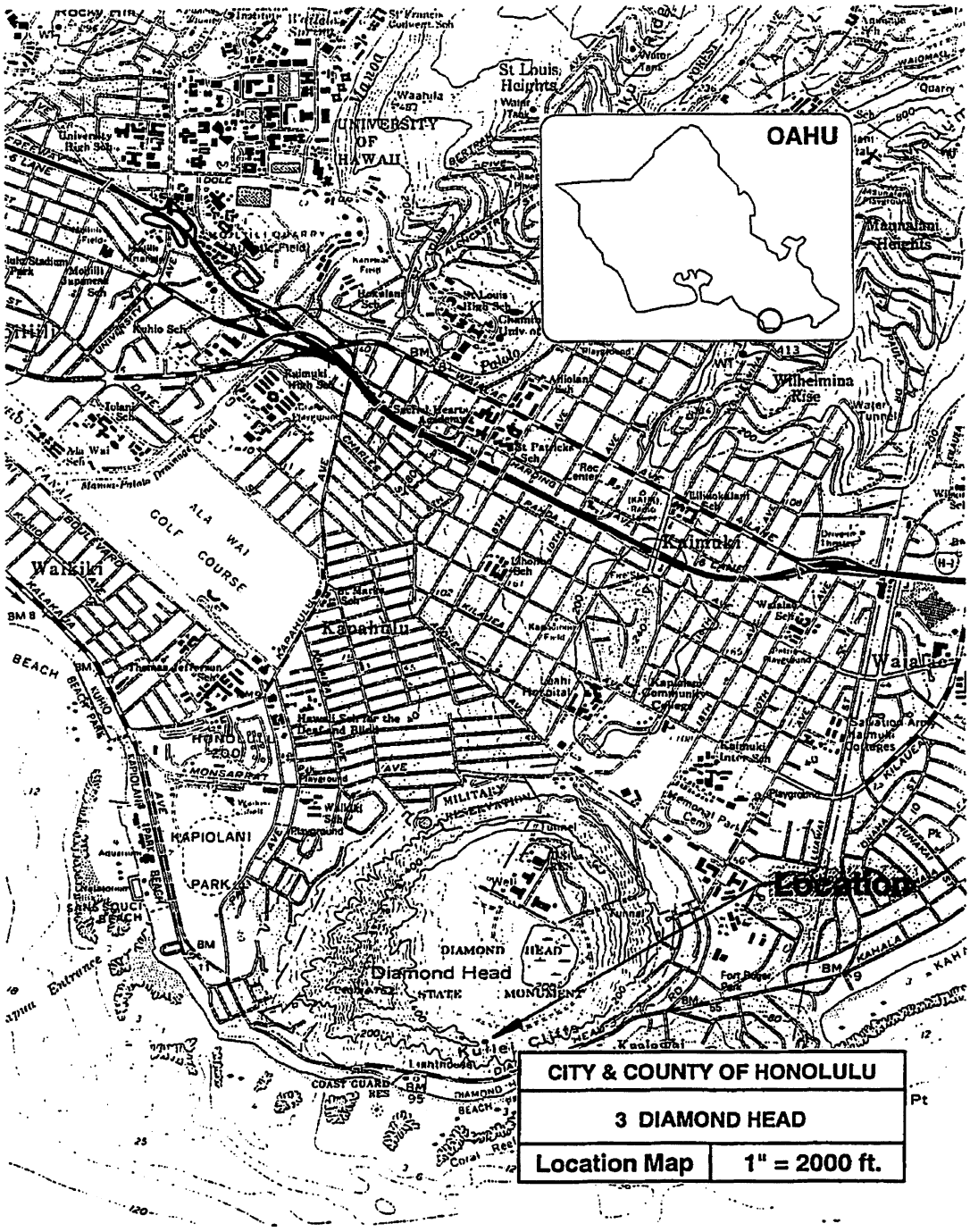
The facility consists of a 180-sq.ft. equipment room, two 12-ft.-tall towers and three wooden pole antennas. The equipment room is located within the fully improved bunker tunnel system inside the crater rim. The two towers are located below the crest along the inside slope of the crater. One six-ft.-diameter microwave dish is attached to each of the towers. The three wooden poles are near the ridge crest and support two-three antennas on each pole. An antenna cable runs horizontally over an office space and rises through a vertical shaft to the pole antennas.

Isolated from habitation along the crater ridge, the site is directly above the Diamond Head Beach Park. Other uses within the crater include a Federal Aviation Administration facility, Kapiolani Community College facilities and other institutional uses. The Diamond Head Crater Park is also within the crater. The area is surrounded by primarily residential neighborhoods. The site is about 0.5 miles from the nearest houselot on Diamond Head Ridge.

B. Proposed Action

Due to the age, type of construction, insufficient height and lack of adequate surface mounting space, the existing poles at Diamond Head must be replaced. However, in 1992, the Hawaii State Legislature passed Act 313, expanding the boundaries of the Diamond Head State Monument and requiring compliance with the Diamond Head State Monument Plan of 1979. The Act restricts expansion of buildings and other structures and construction activity within the boundaries of the Diamond Head State Monument unless consistent with park use according to the Plan.

As a result, and after consultation with the Diamond Head Neighborhood Board and the Department of Land and Natural Resources, the City and County has decided to explore alternative sites to its Diamond Head facility. The location will largely depend on radio coverage surveys for the Kaimuki-Palolo-Waialae area, and land availability. Alternative sites currently being considered are Puu O Kaimuki Mini Park and on top of Leahi Hospital. The City and County will submit a supplemental Environmental Assessment for the replacement facility once a site has been selected and studies have been completed.


OAHU
Location
CITY & COUNTY OF HONOLULU
3 DIAMOND HEAD
Location Map
1" = 2000 ft.

Koko Head Communications Facility (4)
Development Profile

TMK:	3-9-012: 004
AREA OF SITE:	6.34 acres
Area of Use:	less than 3,000.00 sq.ft.
LANDOWNER:	City and County of Honolulu
NEAREST TOWN/LANDMARK:	Portlock neighborhood
Distance from Site:	0.3 miles
EXISTING USE:	Communications facilities
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	General (G)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	East Honolulu
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application Special Management Area Use Permit

A. Site Location and Existing Uses

The existing communications facility is located at the 632-ft. elevation at the crest of Koko Head overlooking Hanauma Bay to the north and Maunalua Bay to the west. The facility is a backbone link to the Waimanalo Ridge and Diamond Head sites. In addition to the Police Department, Water Safety, the State Civil Defense, Emergency Medical Service and U.S. Federal Bureau of Investigation use the facility.

The facility consists of a 400-sq.ft. equipment building, one 20-ft.-tall tower and four pole antennas. The tower is located along the southeastern corner of the equipment building and supports two six-ft.-diameter microwave dishes, three vertical antennas and two yagi antennas. The four wooden poles are distributed along the eastern edge of the building with various antennas attached to each of the poles. A generator room is located within an older, semi-subterranean bunker south of the equipment building and a fuel tank lies just west of the bunker.

Isolated from habitation along Koko Head Ridge, the site also harbors facilities operated by Hawaiian Telephone Company, GTE Mobile Net, McCaw Television, Tel-Net Joint Ventures and Honolulu Cellular Telephone Company, Kaiser Cable Television and the Federal Aviation Administration. The site is about 0.3 miles from the nearest houselot in the Portlock area.

B. Proposed Action

Improvements proposed for this facility include replacing the four pole antennas with a new 50-ft.-tall tower and attaching one microwave dish and nine vertical antennas to the new tower. The replacement tower will be designed to withstand Category 5-Hurricane Forces and soils testing will be conducted to ensure that the site can accommodate the proposed tower. Other improvements include constructing a five-ft.-wide perimeter concrete walkway, upgrading the security chain link fence, making various interior alterations, and general cleanup and repainting.

The construction cost for the proposed improvements is estimated at $400,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site is located on a relatively level area with slopes ranging from three to five percent. According to the U.S. Soil Conservation Service, soils in the area consist primarily of rock. The rock material is mainly basalt and andesite. Because of the site's exposure to wind and poor soil condition, vegetation is relatively sparse and runoff is fairly rapid.

To support the new 50-ft.-tall tower, either one 11-ft. x 11-ft. x six-ft.-deep monolithic footing or three cylindrical footings, measuring four feet in diameter by 12 feet deep, will be dug south of the existing 20-ft.-tall tower. Reinforcing steel will be placed into the hole and then concrete will be pumped to the site and filled into the holes. The tower base plate will be cast into the wet concrete. After the concrete cures, the tower will be transported to the site by a crane and bolted onto its base plate. Other than the crane, no heavy machinery will be used during construction, and no significant erosion or sedimentation impacts are anticipated. The old pole antennas will be removed once the new communications system is in place. Limited grading will also be performed to allow construction of the perimeter concrete walkway and weeds will be cleared away from the structures. None of these activities, however, will result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages 20 to 30 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 632-ft. site elevation, flooding is unlikely. In addition, the proposed improvements should not result in any flooding of lower elevation properties.

Flora and Fauna

The project site is relatively bare of vegetation, only sparsely covered with hilahila and fingergrass. Immediately west of the property, along the mountain slopes, is heavier vegetation consisting primarily of kiawe, koa haole, ilima-ku-kahakai, hilahila and various grasses. No threatened or endangered plants or animals exist in the area.

Marsilea villosa, a rare aquatic fern endemic to the Hawaiian Islands, is found at Ihiihilaukea Crater, northeast of the site. Since the crater is more than 3,000 feet from the project site, this rare fern will not be affected by the proposed project.

Hanauma Bay is located more than one-half mile to the northeast of the site and is designated as a Marina Life Conservation District under the jurisdiction of the State Department of Land and Natural Resources. The proposed improvements will not adversely impact any marine life in Hanauma Bay.

The proposed exterior improvements will be limited to constructing a new tower foundation and perimeter access walkway, and clearing weeds away from the structures. These activities will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources
According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes
The most significant views of Koko Head from the west and north are the distant views across Maunalua Bay from Kalanianaole Highway heading east and from Maunalua Bay Beach Park. From these viewpoints, the existing City and County facility and other communications can be faintly distinguished on the skyline. The City and County equipment building lies below the skyline when viewed from this direction. From Portlock and Hawaii Kai neighborhoods, the facility is not visible due to topography and vegetation.

The City facility is visible against the skyline when viewed across Hanauma Bay from Kalanianaole Highway heading west. From this viewpoint (about one mile away), the City facility and two or three other communications facilities which occupy the ridge are faintly visible against the skyline.

The proposed project would replace two 30-ft.-tall antenna-bearing poles and a shorter pole with a 50-ft.-tall antenna tower. While the tower would be somewhat more visible from the highway viewpoint east of Hanauma Bay, it would not be more visible than other existing facilities on Koko Head (e.g., the Tel-Net Joint Venture and the Honolulu Cellular Telephone facilities) and would not cause a substantial change to the view.

Because of the topography, the existing facility is not visible from Hanauma Bay Beach Park or from the park entry road.

Access and Traffic
Access to the site is from Kalanianaole Highway and a service roadway at the entrance to Hanauma Bay Park. A locked gate limits use of the roadway to personnel who maintain the existing facilities. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

Although vehicular access to the communications site is prohibited to the general public by the locked gate, hikers can gain access and use the trails that lead down from the ridge to the rocky coastline. The proposed activities will not affect access to the shoreline or any publicly owned or used beach, recreation area or natural reserve.

Airspace and Frequency Evaluation
As requested by the Federal Aviation Administration (FAA), a "Notice of Proposed Construction of Alteration" (FAA form 7460-1) was submitted so an airspace and frequency evaluation could be

conducted for both the Koko Head and Waimanalo Ridge sites. Although no significant impacts are anticipated, the Building Department will comply with all FAA requirements.

D. Summary of Major Impacts and Mitigative Measures

Viewplanes

The new tower will be painted gray to blend with the sky.

E. Land Use Approvals Required

Conservation District Use Application

The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone

The project site lies within the General (G) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to designate open space where specific conservation uses may not be defined, but where urban use would be premature". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

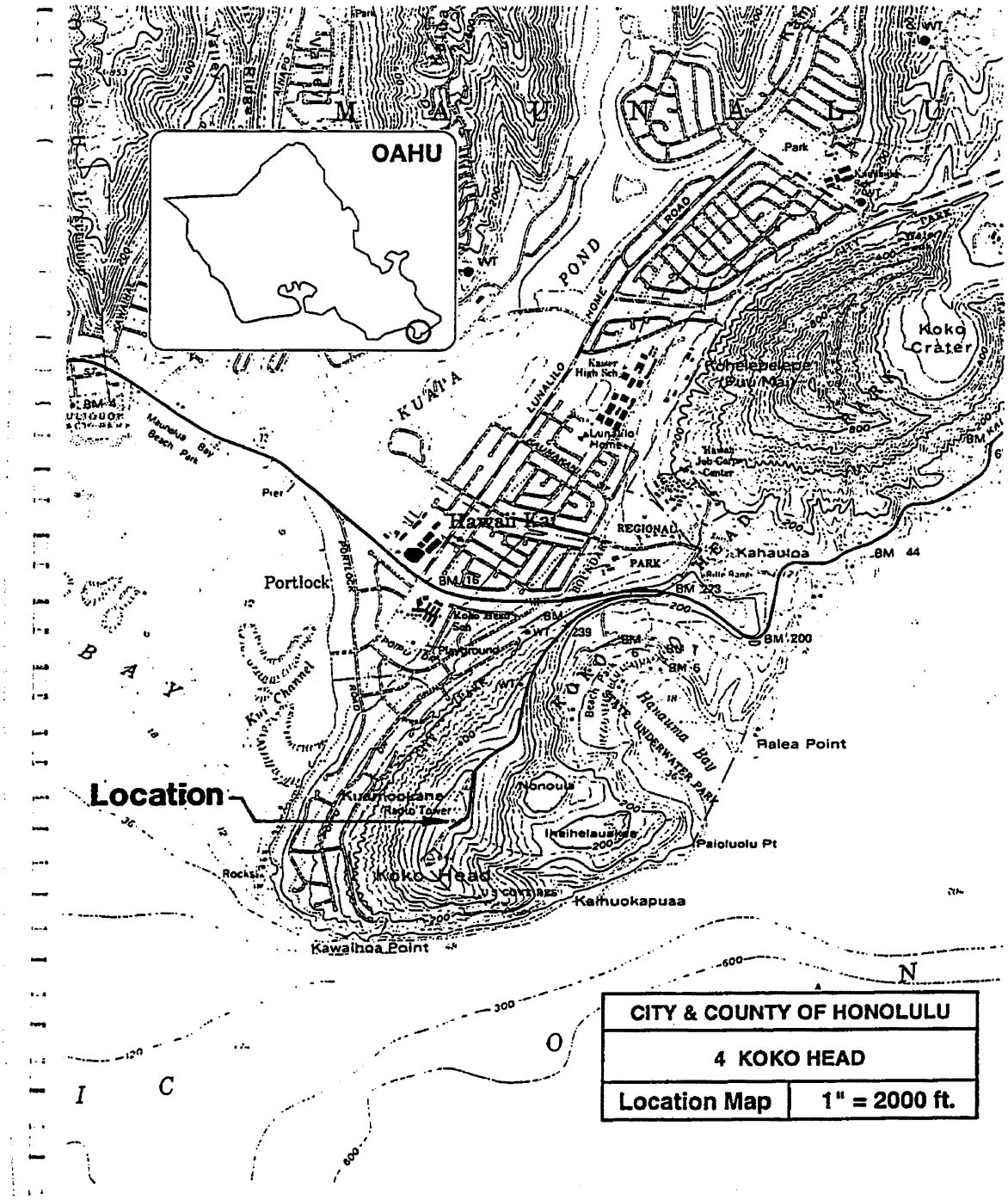
Prior CDUA Approvals

OA-0444: *October 1973* - Construct a 400-sq.ft. CMU building and install four four-ft.- to six-ft.-diameter microwave dishes on top of the building.

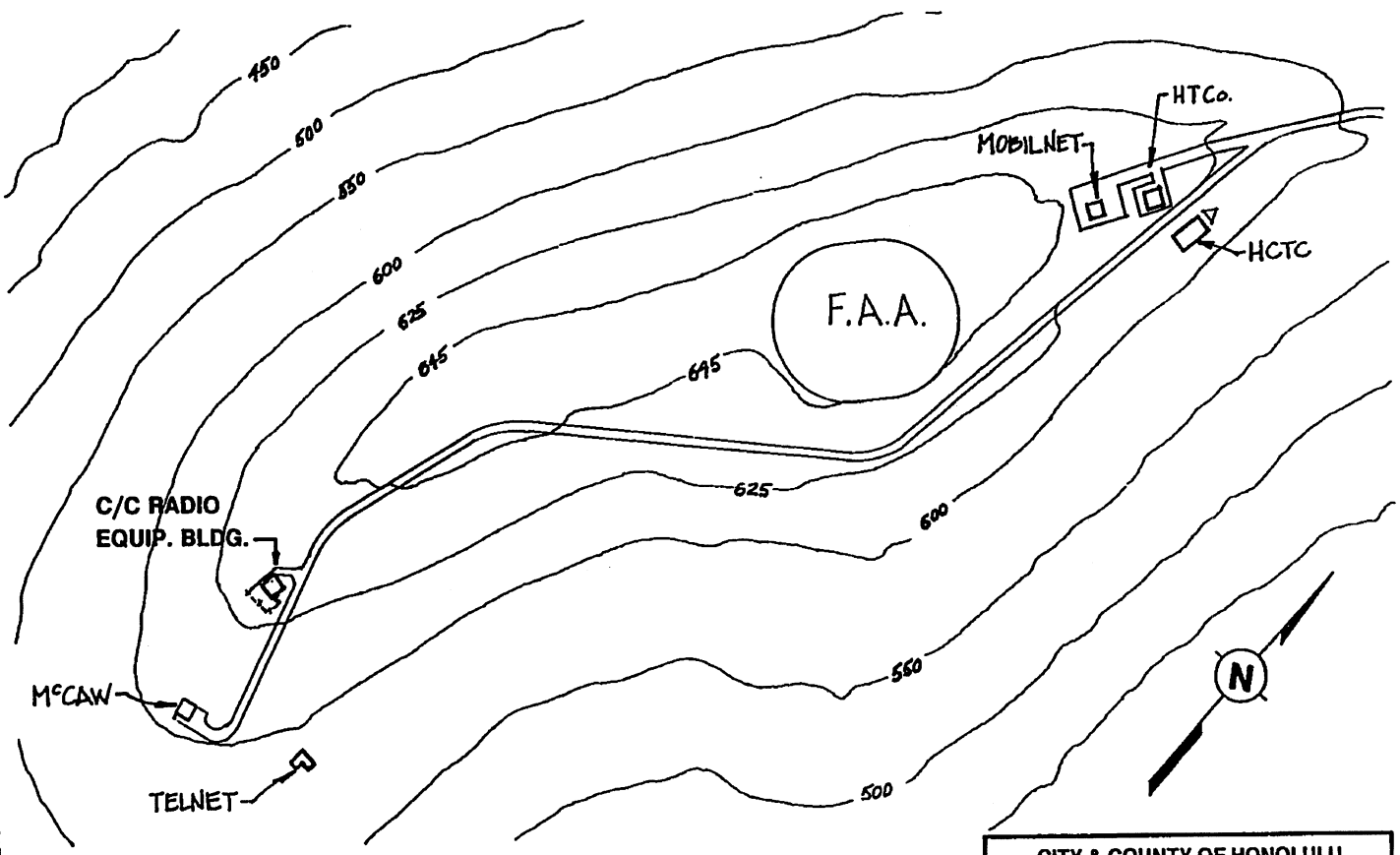
90-677: *June 1990* - Repaint antenna. (emergency authorization)

Special Management Area Use Permit

The site is within the Special Management Area, approximately 0.25 miles from the shoreline. A Special Management Area Use Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization prior to submittal of the CDUA.

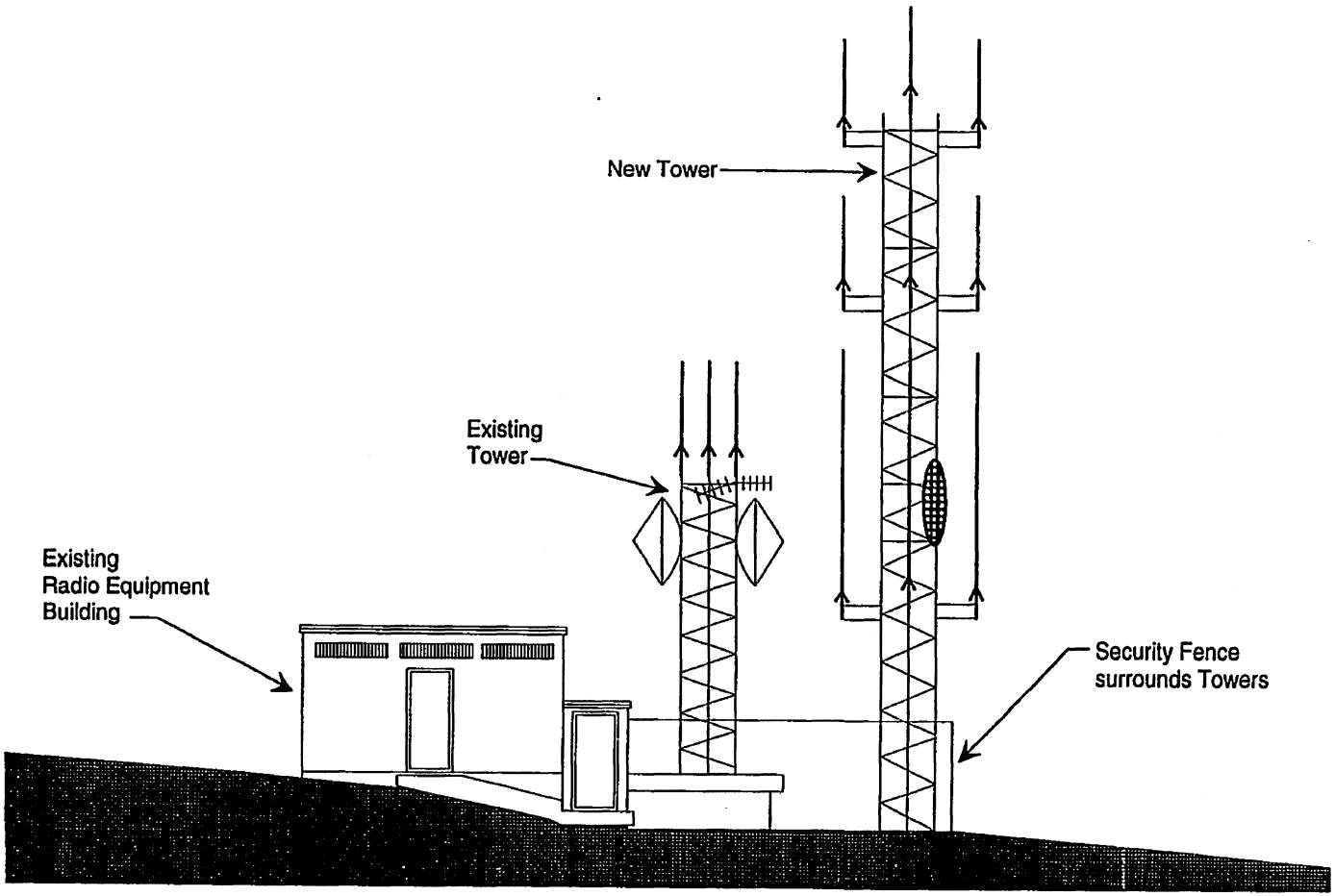

OAHU
Location
Portlock
Hawaii Kai
Kahauloa
Koko Crater
Koko Head
Kawaihoa Point
Kuauhookano
Kalihi Channel
Maunalua Bay Beach Park
Hanauma Bay
Ralea Point
Palolulu Pt
Kalhuokapuaa
Inaihelauulaa
Honoula
Kuliouou
Kuapa Pond
Kuamoa
Lunalilo Home
Kaiser High Sch
Hawaii Job Corps Center
Koko Beach Park
Regional Park
Rocks
Pier
CITY & COUNTY OF HONOLULU
4 KOKO HEAD
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 34 COMMUNICATIONS FACILITIES UPGRADE



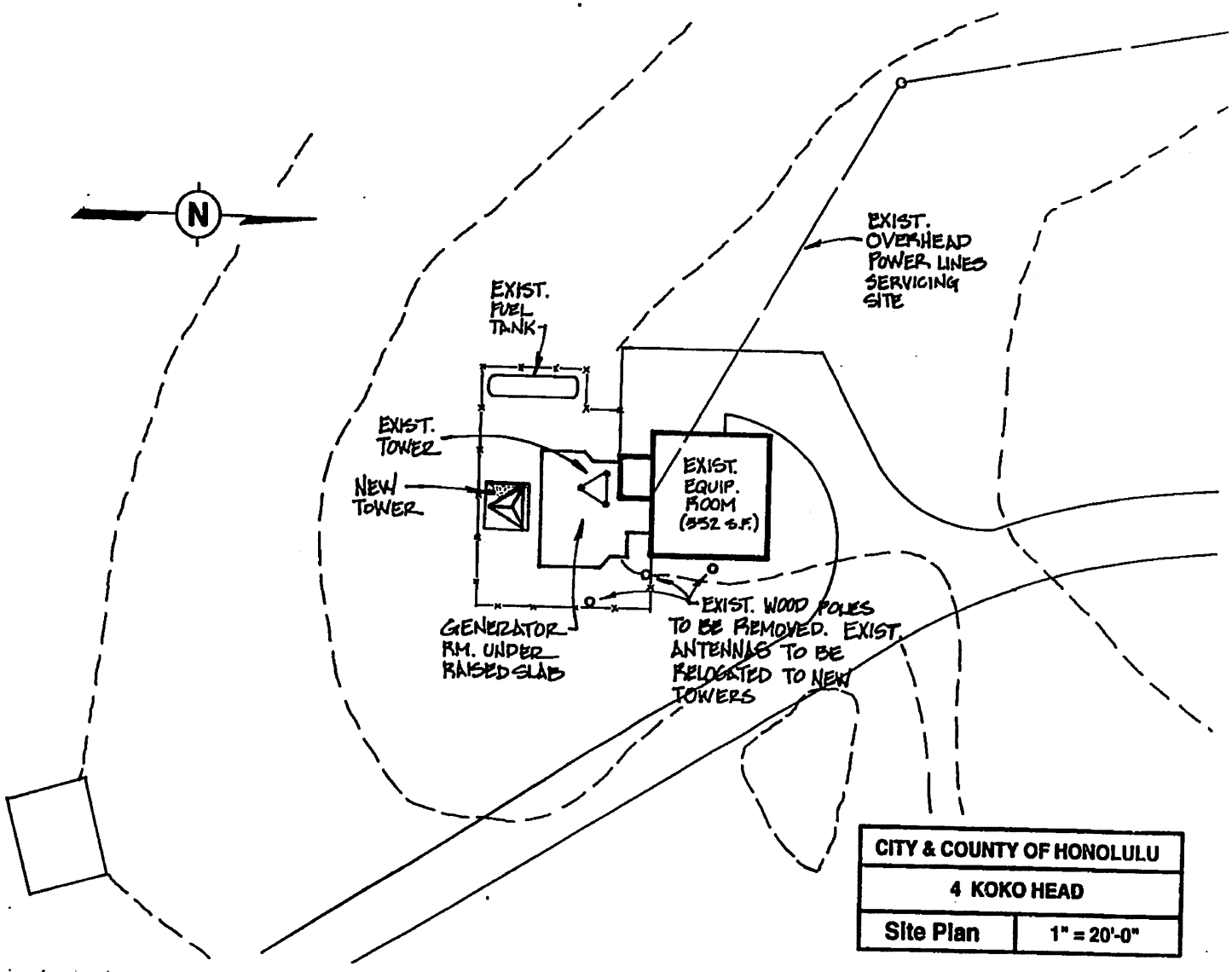
CITY & COUNTY OF HONOLULU	
4 KOKO HEAD	
Site Vicinity Plan	1" = 200'-0"

HONOLULU POLICE DEPARTMENT 35 COMMUNICATIONS FACILITIES UPGRADE



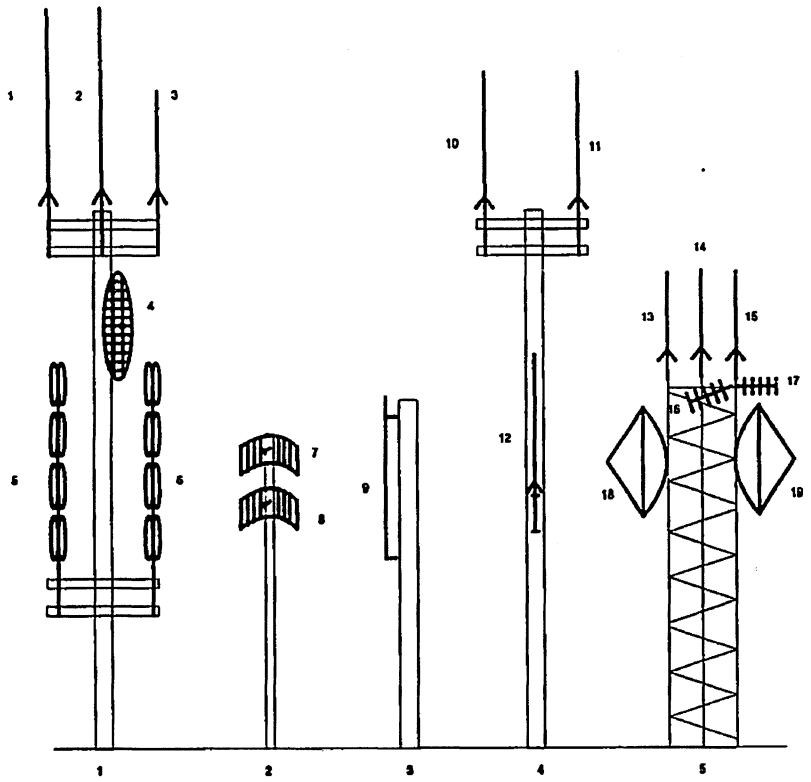
CITY & COUNTY OF HONOLULU	
4 KOKO HEAD Looking toward the east	
Site Profile	1" = 10'-0"

HONOLULU POLICE DEPARTMENT 36 COMMUNICATIONS FACILITIES UPGRADE



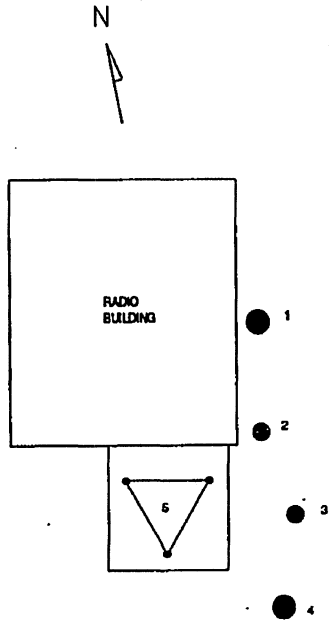
CITY & COUNTY OF HONOLULU	
4 KOKO HEAD	
Site Plan	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 37 COMMUNICATIONS FACILITIES UPGRADE



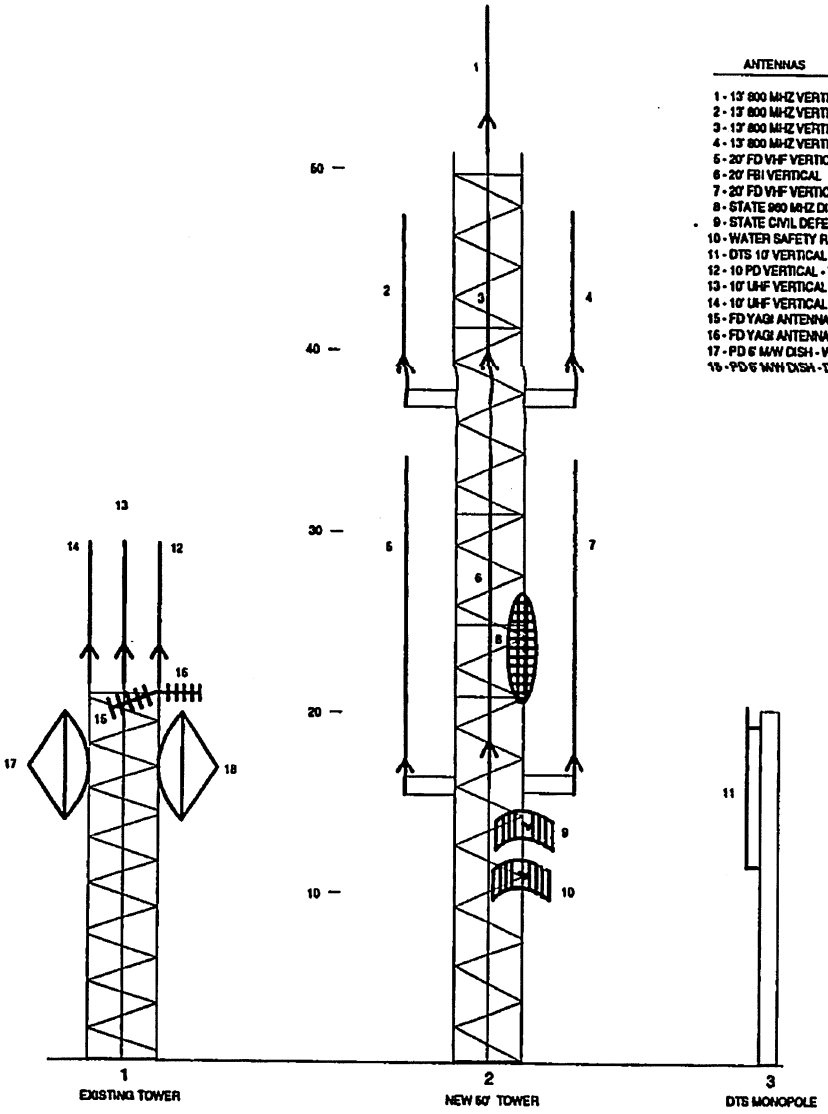
ANTENNAS

1 - 20' PD VHF VERTICAL F5
2 - 20' PD VHF VERTICAL F1
3 - 10' PD UHF VERTICAL VICE
4 - STATE CD 960 MHZ DISH
5 - 20' PD VERTICAL OLD F1
6 - 20' PD VERTICAL F9
7 - STATE CIVIL DEFENSE REFLECTOR
8 - WATER SAFETY REFLECTOR
9 - DTS UHF VERTICAL
10 - 10' UHF VERTICAL
11 - 10' UHF VERTICAL
12 - 10' UHF VERTICAL
13 - 10' PD UHF VERTICAL - VICE
14 - 10' PD UHF VERTICAL - SSD
15 - 10' PD UHG VERTICAL - IEU
16 - FD YAGI ANTENNA ?
17 - FD YAGI ANTENNA ?
18 - PD 6' M/W DISH - WAIMANALO
19 - PD 6' M/W DISH - DIAMOND HEAD



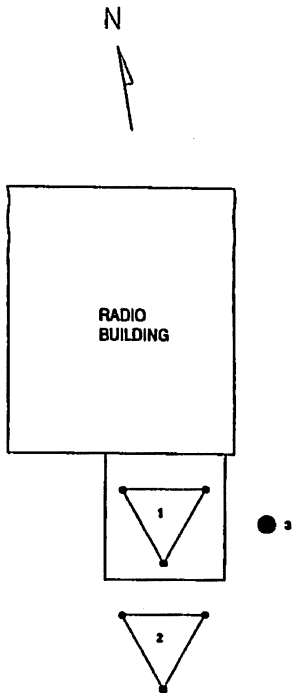
CITY & COUNTY OF HONOLULU		
KOKO HEAD EXISTING ANTENNA STRUCTURES		
DWG # 1	REV #2	06/23/92

HONOLULU POLICE DEPARTMENT 38 COMMUNICATIONS FACILITIES UPGRADE



ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - 13' 800 MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - 20' FD VHF VERTICAL
6 - 20' FBI VERTICAL
7 - 20' FD VHF VERTICAL
8 - STATE 960 MHZ DISH
9 - STATE CIVIL DEFENSE REFLECTOR
10 - WATER SAFETY REFLECTOR
11 - DTS 10' VERTICAL
12 - 10 PD VERTICAL - VICE
13 - 10' UHF VERTICAL - SSD
14 - 10' UHF VERTICAL - IEU
15 - FD YAGI ANTENNA ?
16 - FD YAGI ANTENNA ?
17 - PD 6' M/W DISH - WAIMANALO
18 - PD 6' M/W DISH - DIAMOND HEAD



CITY & COUNTY OF HONOLULU		
KOKO HEAD NEW SYSTEM 50' TOWER/ANTENNAS		
DWG # 1	REV #2	06/23/92

Waimanalo Ridge Communications Facility (5)
Development Profile

TMK:	3-9-009: 001
AREA OF SITE:	1,326.5 acres
Area of Use:	less than 5,000.0 sq.ft.
LANDOWNER:	Kamehameha Schools/Bernice Pauahi Bishop Estate
NEAREST TOWN/LANDMARK:	Kamehame Ridge subdivision
Distance from Site:	0.75 miles
EXISTING USE:	Communications facilities
PROPOSED USE:	*Upgrade communications facility*
STATE LAND USE DISTRICT:	Conservation
Subzone:	Limited (L)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	East Honolulu
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within Special Management Area
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

This existing communications facility is located at the 1,307-ft. elevation of Waimanalo Ridge in East Honolulu and occupies the westernmost portion of a decommissioned Nike missile site. The site is leased by the Federal Aviation Administration (FAA) from the Kamehameha Schools/Bernice Pauahi Bishop Estate. Use of the site by the City and County is authorized under FAA License No. DOT-FA76PC-2773.

The facility is a backbone link to the Koko Head and Kailua Police Station sites. In addition to the Police Department, the Department of Transportation Services uses the facility.

The communications building is comprised of an older 335-sq.ft. area housing equipment and generator rooms and a newer 182-sq.ft. equipment room addition. The building is of CMU construction and has a flat reinforced concrete roof. A 50-ft.-tall tower is located north of the main building and a fuel tank is located to the southeast. Two six-ft.-diameter microwave dishes, six vertical antennas, two yagi antennas and one corner reflector are attached to the tower. The facility is enclosed by a chain-link fence. Additional antenna equipment is located on a concrete platform at the ridge summit above and to the northeast of the fenced facility.

Isolated from habitation at the Koolau Ridge summit, the former Nike site also harbors FAA facilities, a joint Tel-Net and Honolulu Cellular Telephone Company facility and a Police Department training

facility. A helipad and a hang-glider staging and launch area are also located in the area. The site is about 0.75 miles from the nearest houselot on Kamehame Ridge.

B. Proposed Action

Improvements proposed for this facility include replacing the existing 50-ft.-tall tower with a new 70-ft.-tall tower and making minor antenna modifications. The replacement tower will be designed to withstand Category 5-Hurricane Forces and soils testing will be conducted to ensure that the site can accommodate the proposed tower. Other improvements include constructing a five-ft.-wide perimeter concrete walkway, upgrading the existing security fence, various interior alterations, and general cleanup and repainting. Weeds will also be cleared away from the structures.

The construction cost for the proposed improvements is estimated at $400,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site is located on a relatively level area near the top of the Koolau Ridge. Slopes in the adjacent areas are very steep, ranging from 20 to 60 percent. According to the U.S. Soil Conservation Service, soils in the project area are of the rock outcrop series. Centuries of weathering, however, has created a layer of soil deposits on large sections of the property, and vegetation has taken hold in many of these areas.

To support the new 70-ft.-tall tower, three cylindrical footings, measuring approximately four feet in diameter by 12 feet deep, will be dug adjacent to the existing 50-ft.-tall tower. Reinforcing steel will be placed into the holes and then concrete will be pumped to the site and filled into the holes. Tower base plates will be cast into the wet concrete. After the concrete cures, the tower will be transported to the site by a crane and bolted onto its base plates. Other than the crane, no heavy machinery will be used during construction, and no significant erosion or sedimentation impacts are anticipated. The old tower will be removed once the new communications system is in place.

Flood Hazard

Rainfall in the area averages 30 to 40 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 1,307-ft. site elevation, flooding is unlikely. In addition, the proposed improvements should not result in any flooding of lower elevation properties.

Flora and Fauna

The site is covered by a variety of grass and shrubs and a mixture of mid-elevation trees. The predominant groundcover species include Mexican creeper, false daisy, Mauna Loa vine, vervain and grass. Guava, Christmas berry tree, koa haole and kiawe comprise the predominant tree species. No threatened or endangered flora or fauna exist in the area.

The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

City and County and other communications facilities located on Waimanalo Ridge are only faintly visible on the skyline from Kamiloiki Valley, the closest Hawaii Kai neighborhood. The facilities are located about 1.7 miles from Kamiloiki Neighborhood Park. More visible on the ridge top are electric power poles and towers, which are concentrated near the top of Kamehame Ridge.

On the Waimanalo side, the site is shielded from view by very steep cliffs. It is not visible from Kaiona Beach Park, the nearest public park. The site may be faintly visible on the skyline from parts of Kalanianaole Highway in Waimanalo Town, over 1.5 miles away.

Because of the site's elevation and distance from populated areas, replacing the 50-ft.-tall tower with a 70-ft.-tall tower will not have a significant effect on public views.

Recreational

A hang gliding launch area is located about 1,350 feet east of the communications facility. The proposed improvements will not interfere with the recreational activities conducted there.

Access and Traffic

Access to the site is via a 2.2 mile one-lane paved road that starts at the top of Kamehame Ridge. The road is private and secured by lock and key. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

A helipad is located about 800 feet east of the facility. Replacement of the existing 50-ft.-tall tower with a 70-ft.-tall tower will not interfere with existing helicopter operations.

Airspace and Frequency Evaluation

As requested by the Federal Aviation Administration (FAA), a "Notice of Proposed Construction of Alteration" (FAA form 7460-1) was submitted so an airspace and frequency evaluation could be conducted for both the Waimanalo Ridge and Koko Head sites. Although no significant impacts are anticipated, the Building Department will comply with all FAA requirements.

D. Summary of Impacts and Mitigative Measures

Viewplanes

The tower will be painted gray to blend with the sky.

E. Land Use Approval Required

Conservation District Use Application

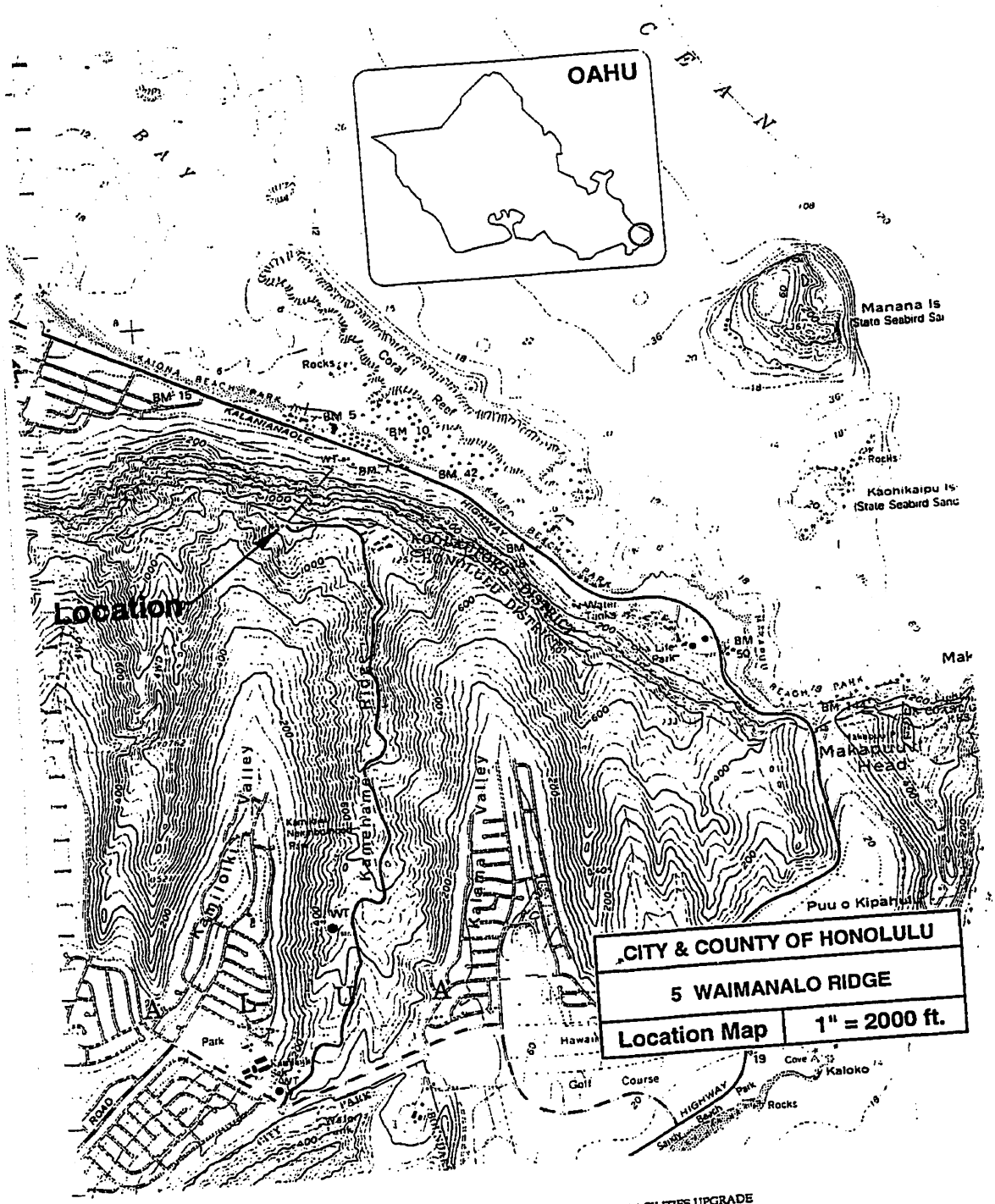
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone

The project site lies within the Limited (L) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to limit uses where natural conditions suggest constraints on human activities". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

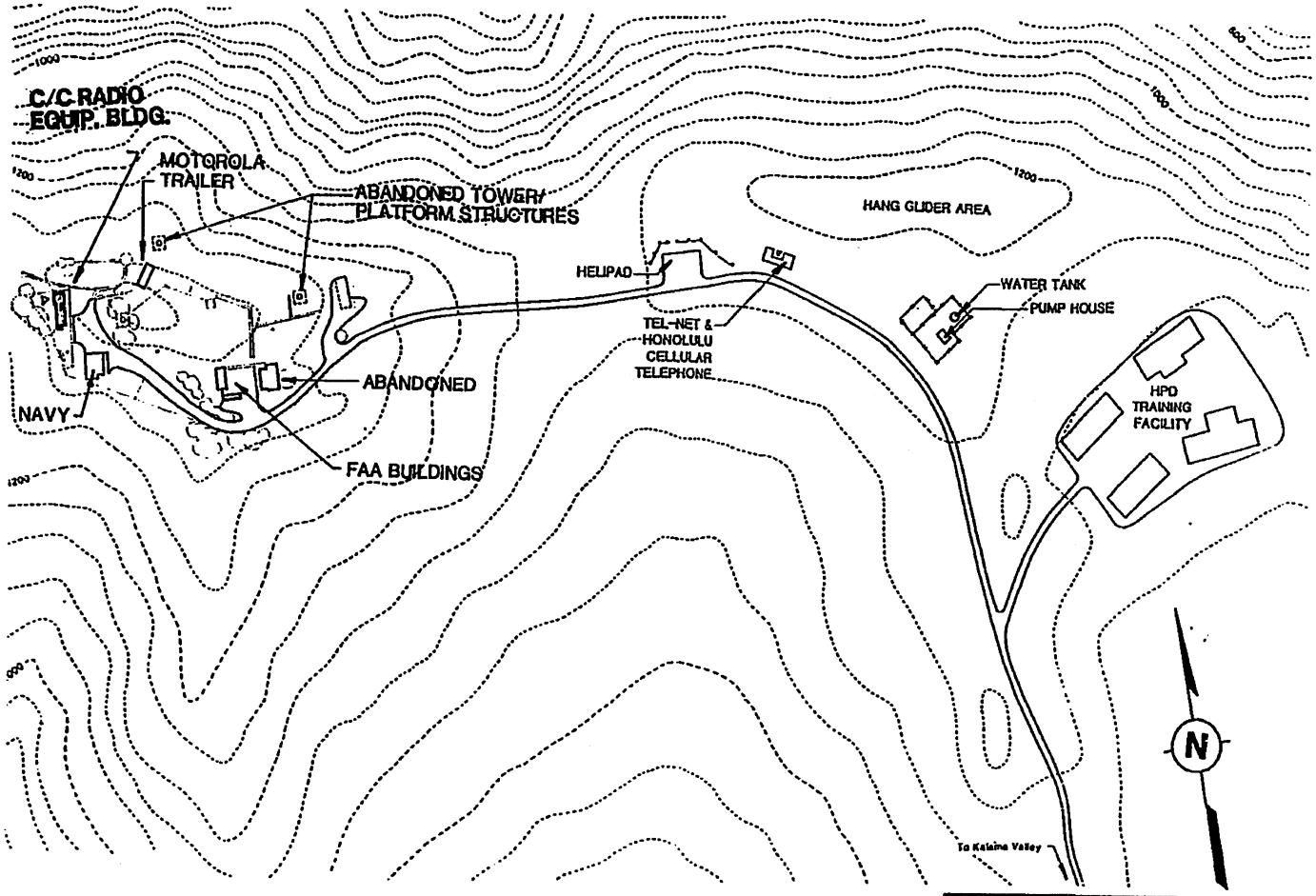
Prior CDUA Approvals

OA-1019: *October 1984* - Install a fuel tank.



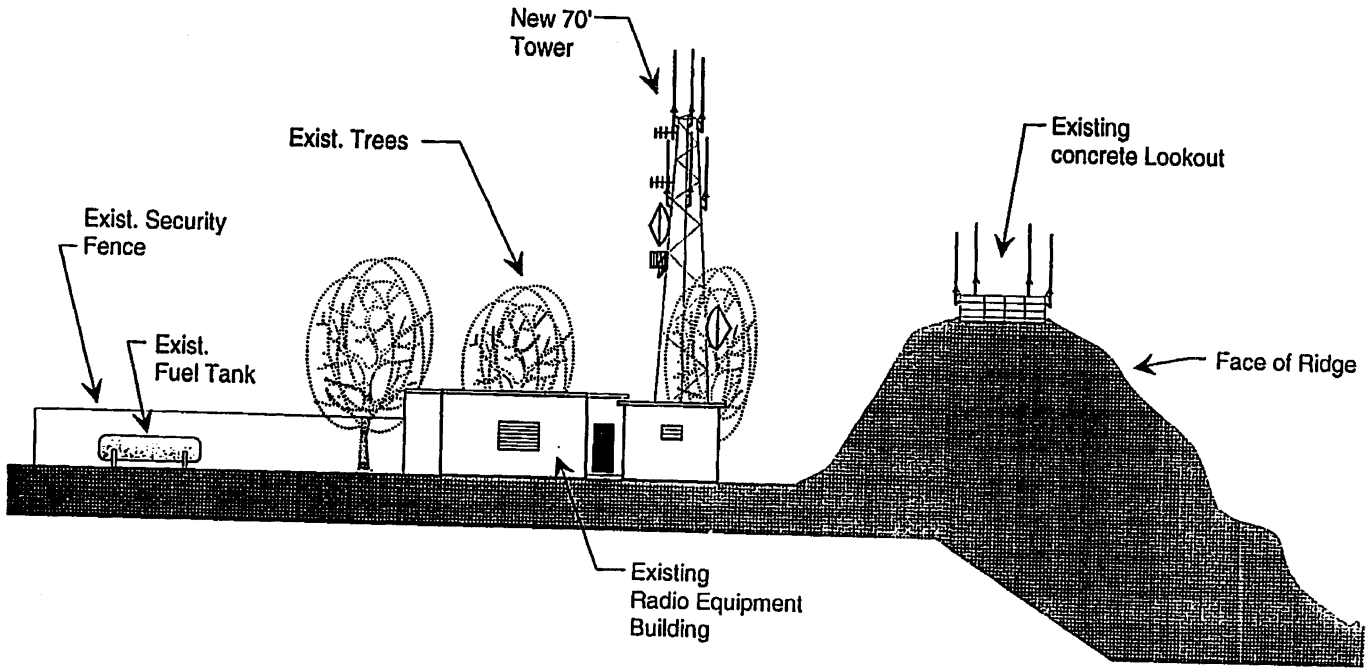
HONOLULU POLICE DEPARTMENT 43 COMMUNICATIONS FACILITIES UPGRADE

HONOLULU POLICE DEPARTMENT 44 COMMUNICATIONS FACILITIES UPGRADE



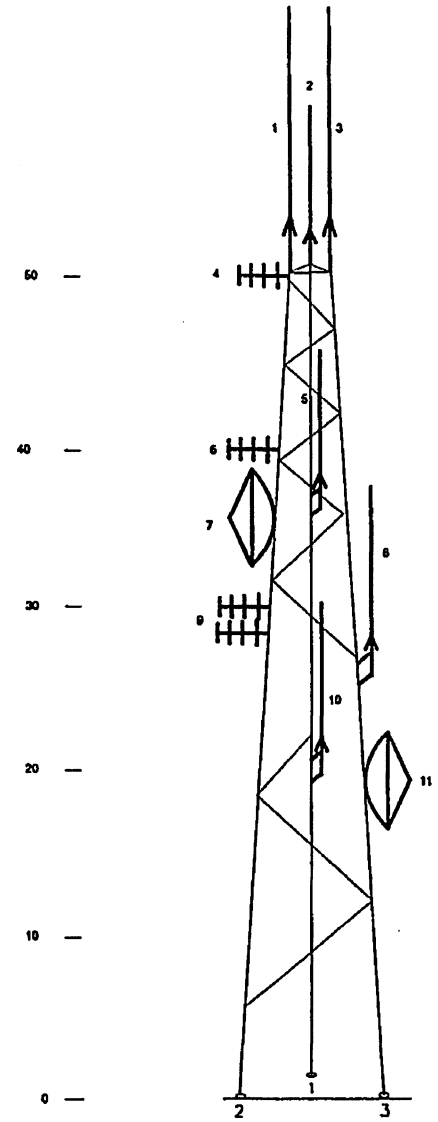
CITY & COUNTY OF HONOLULU	
5 WAIMANALO RIDGE	
Site Vicinity Plan	1"= 200'-0"

HONOLULU POLICE DEPARTMENT 45 COMMUNICATIONS FACILITIES UPGRADE



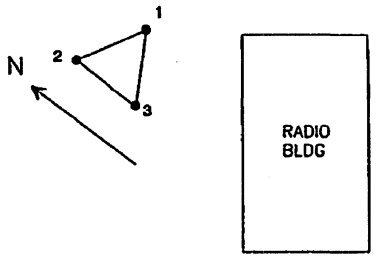
CITY & COUNTY OF HONOLULU	
5 WAIMANALO RIDGE Looking toward the northwest	
Site Profile	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 46 COMMUNICATIONS FACILITIES UPGRADE



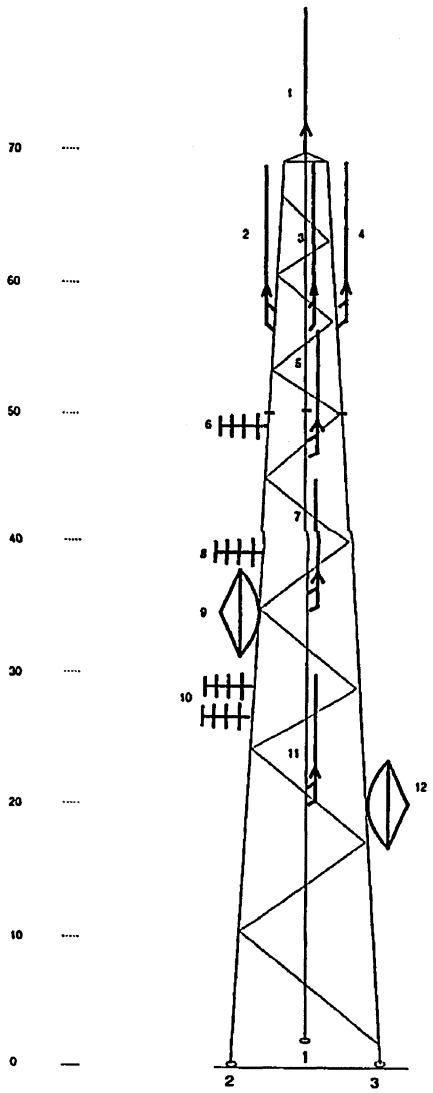
ANTENNAS

1 - PD 20' VHF VERTICAL
2 - PD 10' UHF VERTICAL
3 - PD 20' VHF VERTICAL
4 - PD UHF YAGI
5 - PD 10' UHF VERTICAL
6 - PD 20' UHF VHF YAGI
7 - PD 6 GHZ M/W DISH
8 - PD 20' UHF VERTICAL
9 - DTS UHF YAGI ANTENNAS
10 - PD 10' UHF VERTICAL
11 - PD 6' M/W DISH



CITY & COUNTY OF HONOLULU		
WAIMANALO RIDGE EXISTING TOWER/ANTENNA LOCATIONS		
DWG # 1	Rev #2	06/30/92

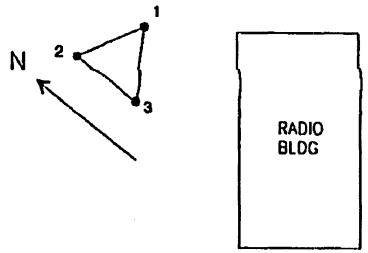
HONOLULU POLICE DEPARTMENT 47 COMMUNICATIONS FACILITIES UPGRADE



New 70' Tower

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 3' 800 MHZ VERTICAL
3 - 13' 800 MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - 10' PD UHF VERTICAL
6 - PD UHF YAGI
7 - PD 10' UHF VERTICAL
8 - PD UHF YAGI
9 - PD 6' M/W DISH KAILUA
10 - DTS UHF YAGI ANTENNAS
11 - PD 10' UHF VERTICAL
12 - PD 6' M/W DISH - KOKO HEAD



CITY & COUNTY OF HONOLULU		
WAIMANALO RIDGE NEW 70' TOWER NEW SYSTEM ANTENNA LOCATIONS		
DWG # 1	Rev #1	06/06/92

Kapaa 272 Reservoir Communications Facility (6A)
Development Profile

TMK:	4-2-017: 016
AREA OF SITE:	27,021 sq.ft.
Area of Use:	less than 2,500 sq.ft.
LANDOWNER:	Board of Water Supply
NEAREST TOWN/LANDMARK:	Kaneohe town
Distance from Site:	0.28 miles
EXISTING USE:	Water tank Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	General (G)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Koolaupoko
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application Special Management Area Use Permit

A. Site Location and Existing Uses

The existing communications facility is located within the Kapaa 272 Reservoir site at the 280-ft. elevation above Mokapu Saddle Road. The facility is a spur link to the Kailua Police Station site. Currently, only the Police Department uses the site.

The site is primarily used by the Board of Water Supply for its two million gallon water tank, measuring 38-ft. high. The communications facility consists of one 20-ft.-tall tower on the western side of the water tank and one 30-ft.-tall tower along the eastern side of the tank. A 12-ft.-diameter microwave dish is attached to each tower. The site is completely enclosed within a chain link fence.

Surrounding uses include the highway and undeveloped, conservation-classified land. The site is about 0.28 miles from the nearest houselot in Kaneohe Town.

B. Proposed Action

Improvements proposed for this facility include constructing a new 360-sq.ft. equipment room of CMU construction, replacing the existing 30-ft.-tall tower with a new 50-ft.-tall tower and attaching four vertical antennas to the new tower (No changes will be made to the existing 20-ft.-tall tower). The

building will lie next to the existing 30-ft.-tall tower and the new tower will be located just left of the new building. All new structures will be designed to withstand Category 5-Hurricane Forces. A new emergency generator and fuel tank will be installed behind the new building and a new paved area measuring about 1,250 square feet will be constructed in the front of the building.

The construction cost for the proposed improvements is estimated at $575,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing reservoir site is a flat area cut into Oneawa Ridge, which divides Kailua and Kaneohe. Adjacent slopes range from 15 to 20 percent. Soils testing completed in July 1992 uncovered solid rock in the proposed area. According to the U.S. Soil Conservation Service, runoff in this area is medium and erosion hazard is moderate.

To support the new 60-ft.-tall tower, three drilled-shaft footings measuring two feet in diameter by five feet deep, will be drilled into solid rock, adjacent to the existing 30-ft.-tall tower. Reinforcing steel will be placed into the hole and then concrete will be pumped to the site and filled into the holes. The tower base plates will be cast into the wet concrete. After the concrete cures, the tower will be transported to the site by a crane and bolted onto its base plates. Other than the crane, no heavy machinery will be used during construction, and no significant erosion or sedimentation impacts are anticipated. The old tower will be removed once the new communications system is in place.

Flood Hazard

Rainfall in the area averages 40 to 50 inches per year. According to the Federal Flood Insurance Rate Maps, the site lies outside the 500-year floodplain. The improvements proposed for the facility will not result in any flooding of lower elevation properties.

Flora and Fauna

The site is completely covered with grass, and no threatened or endangered flora or fauna exist in the area. The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

The Kapaa 272 Reservoir is located on a visually-prominent site near the cut where the Mokapu Saddle Road crosses the Oneawa Hills between Kailua and Kaneohe. Over 90 feet in diameter and over 40 feet tall, the reservoir itself is a very large feature in the landscape. The existing 20-ft.- and 30-ft.-tall towers and microwave dishes located on either side of the reservoir are clearly visible to users of the Saddle Road, the H-3 Freeway, and the Kapaa Quarry Road traveling toward Kaneohe, though they do not have nearly as great a visual impact as the reservoir.

The proposed new Radio Equipment building, only 12 feet tall, will be sited on the Kailua side of the reservoir behind existing trees and shrubbery. Because of the vegetation and the elevation of the site above the surrounding roadways, the building will not be visible.

The proposed new 50-ft.-tall tower, also on the Kailua side of the reservoir, will rise above the top of the reservoir and will be more visually prominent within the Kailua viewshed than the existing 30-ft.-tall tower. New vertical antennas will be placed at the top of the tower, but the larger, more noticeable microwave dish will remain at its existing elevation.

Access and Traffic
Access to the site is from Mokapu Saddle Road and a Board of Water Supply access road. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Summary of Impacts and Mitigative Measures

Viewplanes
The new tower and building will be painted a dark earth-tone color, with the intention of making the facilities appear to recede into, rather than match, the lighter colors of the earth, grasses and shrubs covering the hillside.

E. Land Use Approvals Required

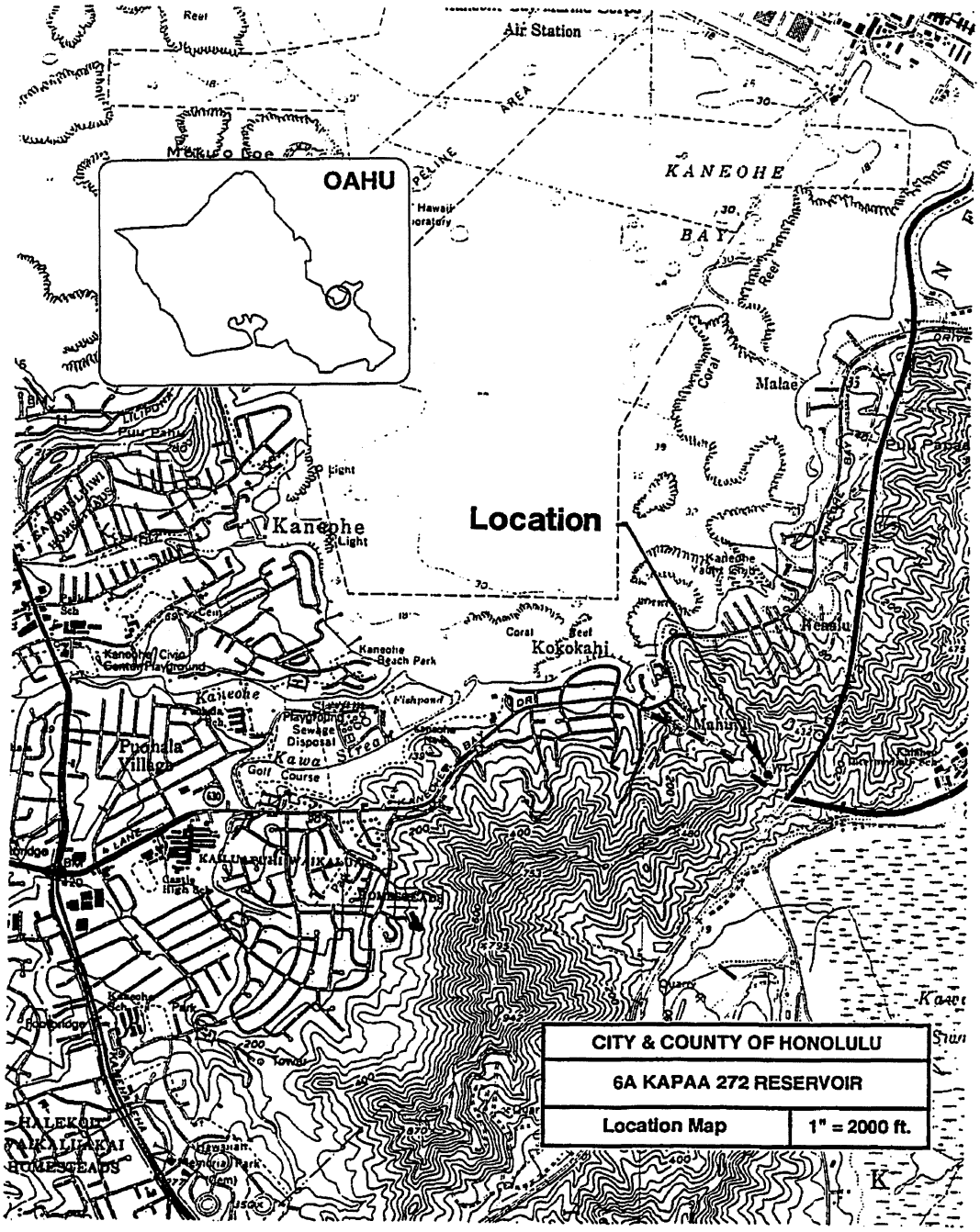
Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone
The project site lies within the General (G) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to designate open space where specific conservation uses may not be defined, but where urban use would be premature". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

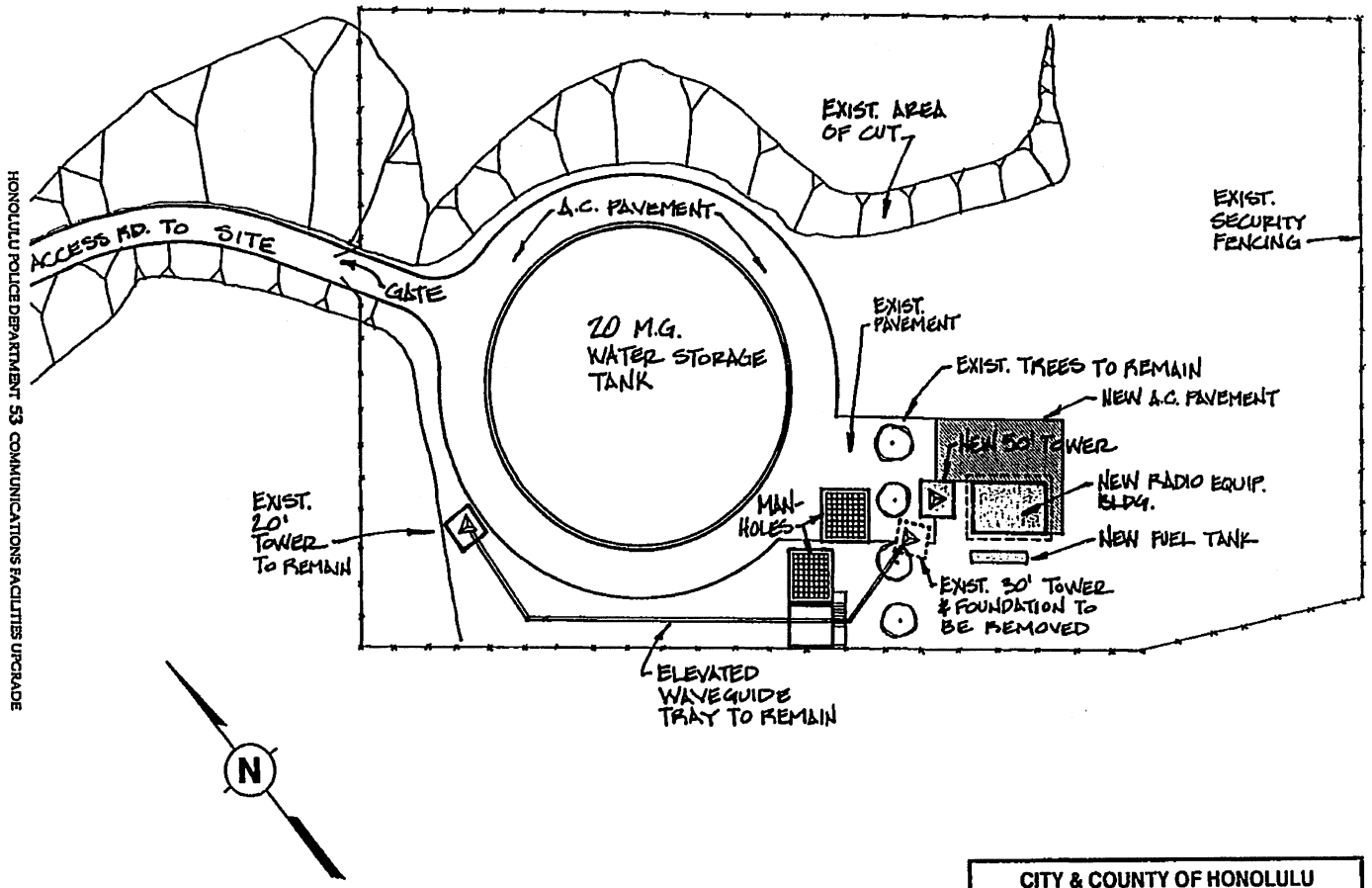
Prior CDUA Approvals

OA-2105: *February 1988* - Install one 20-ft.-tall tower, one 30-ft.-tall tower, and one 12-ft.-diameter microwave dish on each tower.

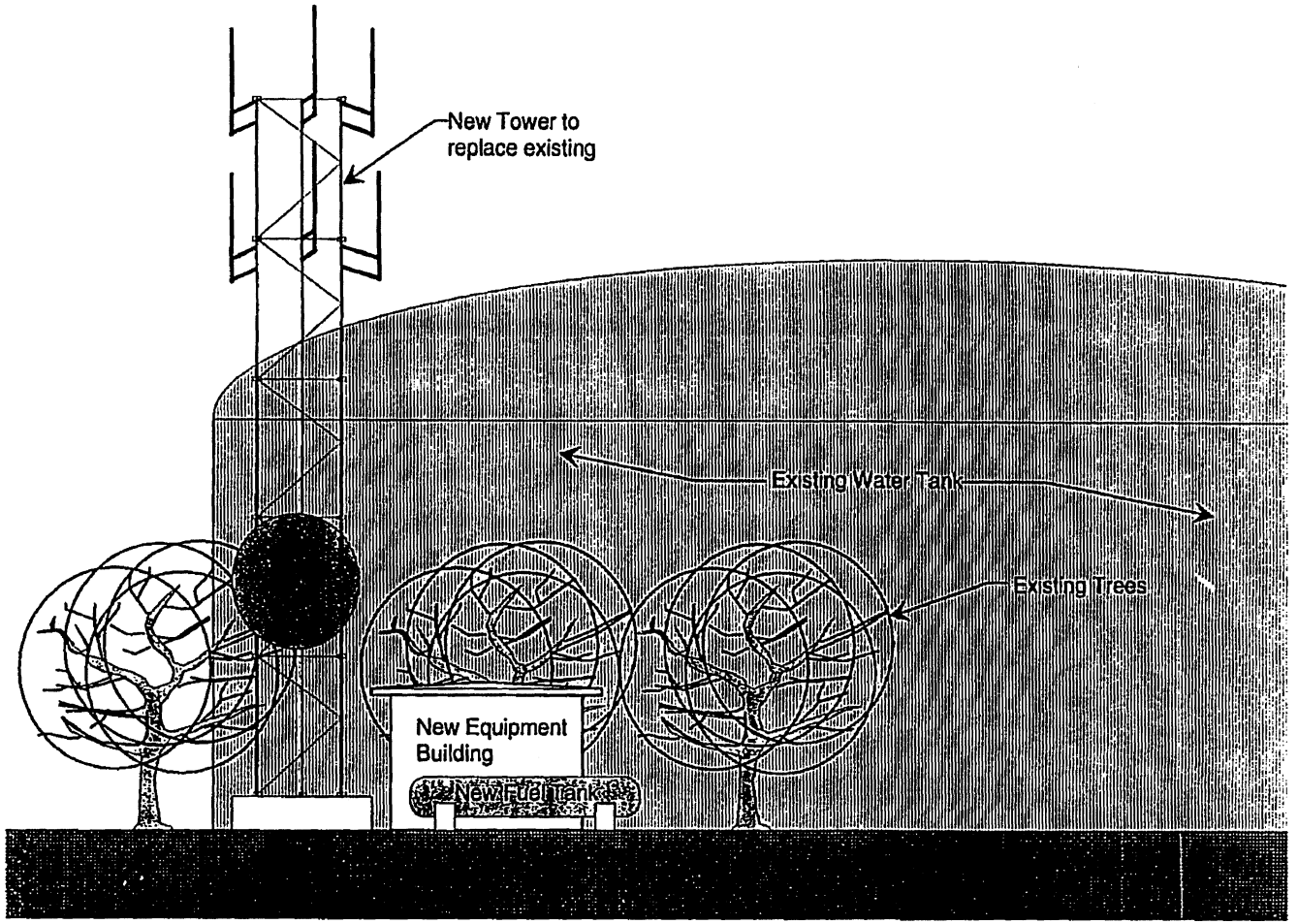
Special Management Area Use Permit
The site is within the Special Management Area, approximately 0.23 miles from Kawainui Marsh and about 0.42 miles from the shoreline. A Special Management Area Use Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization prior to submittal of the CDUA.


OAHU
Location
Air Station
KANEOHE
BAY
Malae
Kaneohe
Kokokahi
Kaneohe Beach Park
Kaneohe Civic Center Playground
Puohala Village
Kawa Stream
Golf Course
Sewage Disposal
Playground
Fishpond
Coral Reef
Reef
Mahinui
Kaneohe Yacht Club
Kaneohe Sch
Castle High Sch
Hawaiian Memorial Park
HALEKOU
WAIKALUAKAI
HOMESTEADS
CITY & COUNTY OF HONOLULU
6A KAPAA 272 RESERVOIR
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 53 COMMUNICATIONS FACILITIES UPGRADE

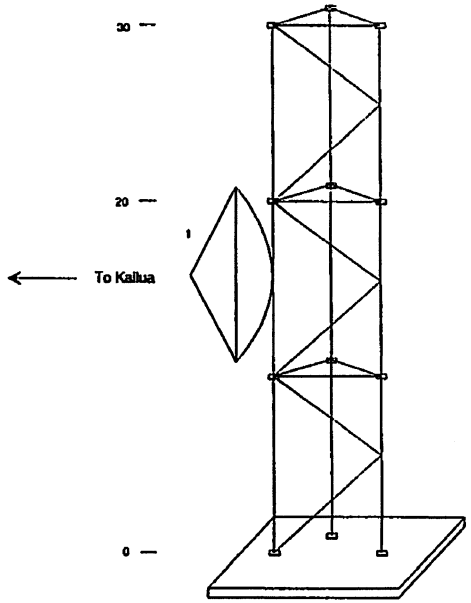


CITY & COUNTY OF HONOLULU	
6A KAPAA 272 RESERVOIR	
Site Plan	1" = 40'-0"

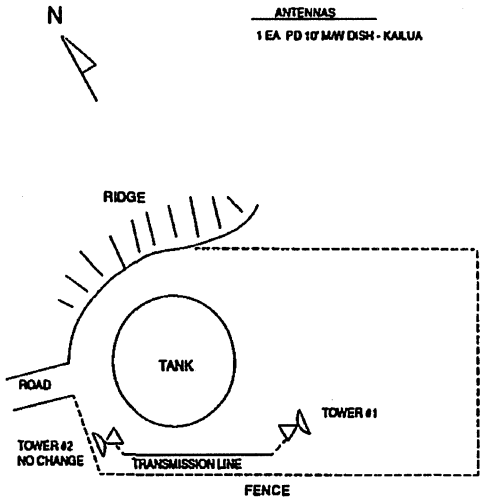


CITY & COUNTY OF HONOLULU	
6A KAPAA 272 RESERVOIR Looking toward the northwest	
Site Profile	1" = 10'-0"

HONOLULU POLICE DEPARTMENT 55 COMMUNICATIONS FACILITIES UPGRADE

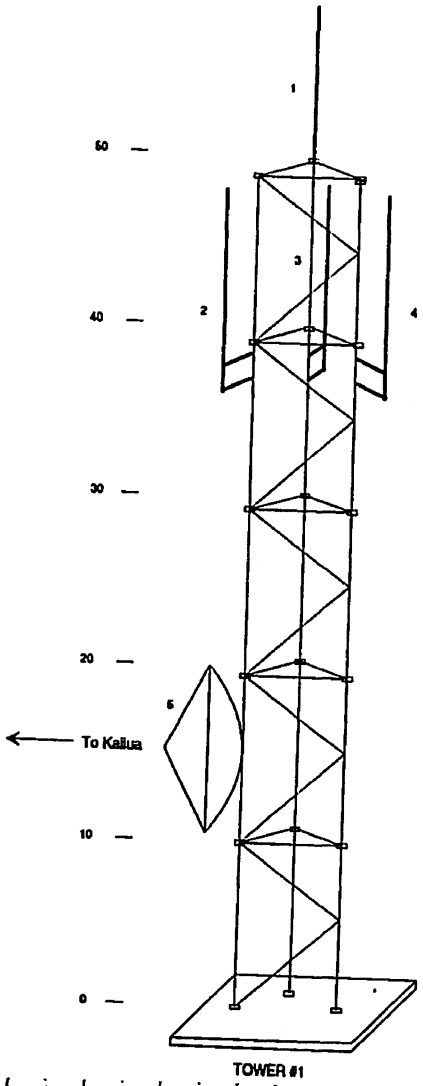


TOWER #1



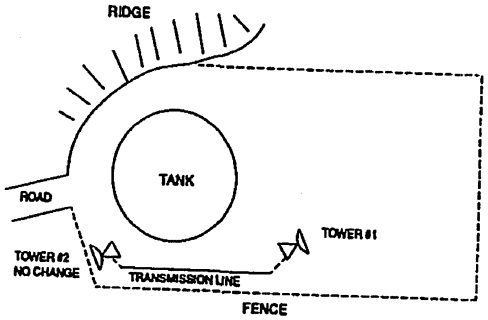
CITY & COUNTY OF HONOLULU		
6A KAPAA 272 RESERVOIR EXISTING TOWER		
DWG #1	REV #1	11/16/92

HONOLULU POLICE DEPARTMENT 56 COMMUNICATIONS FACILITIES UPGRADE



Antennas

1 Thru 4 – 13' MHz 8' Verticals
5 - PD 10' Dish - Kailua



CITY & COUNTY OF HONOLULU		
6A KAPAA 272 RESERVOIR NEW 50-FOOT TOWER/ANTENNAS		
DWG #1	REV #1	11/[illegible]

Kawela Communications Facility (10)
Development Profile

TMK:	5-7-004: 002
AREA OF SITE:	45,650 sq.ft.
Area of Use:	less than 3,000 sq.ft.
LANDOWNER:	U.S. Army
NEAREST TOWN/LANDMARK:	Kawela neighborhood
Distance from Site:	2.0 miles
EXISTING USE:	Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Resource (R)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Koolauloa
Land Use Designation:	Agricultural
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The existing communications facility is located at the 1,307-ft. elevation at the northern tip of Oahu and occupies a portion of a decommissioned Nike missile site. Use of the site by the City and County is authorized under U.S. Army Contract No. DACA84-1-77-30.

The facility is a backbone link to the Mokuleia and Kahuku Police Station sites. In addition to the Police Department, the Fire Department uses the site.

The 220-sq.ft. communications equipment room is housed within an extension of the U.S. Army's "Building 84" and is of CMU construction. A 90-ft.-tall tower is located north of the equipment room. Two six-ft.-diameter microwave dishes, six stacked dipole antennas and four vertical antennas are attached to the tower. A fuel tank lies approximately ten feet from the southwest corner of Building 84.

Isolated from habitation within the Kahuku Forest Reserve in the foothills of the Koolau mountain range, the former Nike site also harbors facilities operated by Honolulu Cellular Telephone Company and the U.S. Army. The site is about 2.0 miles from the nearest houselot in Kawela.

B. Proposed Action

Improvements proposed for the facility include constructing a new 144-sq.ft. equipment room addition to the existing building and a five-ft.-wide perimeter concrete walkway. The proposed building

addition will be located adjacent to the existing generator room and will incorporate an existing 10-ft. x 15-ft. concrete slab for its floor. Soils testing will be conducted to ensure that the site can accommodate the proposed building addition. Other improvements include making minor antenna modifications and various interior alterations, and general cleanup and repainting. Weeds will also be cleared away from the structures.

The construction cost for the proposed improvements is estimated at $200,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site has slopes ranging from 10 to 35 percent. According to the U.S. Soil Conservation Service, soils in the area are of the Kaena series and consist of very deep, poorly-drained soils or clays underlain by alluvium, with many stones on the surface and in the profile. Runoff is medium to rapid and erosion hazard is moderate to severe.

The proposed improvements will require minimum alteration to the site. The new equipment room will be constructed using the existing concrete slab. Limited grading will be performed to allow construction of the perimeter concrete walkway and some weeds will be cleared from the structures. These activities, however, will not result in any significant erosion or sedimentation impacts.

Flood Conditions

Rainfall in the area averages 50 to 75 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 1,040-ft. site elevation, flooding is unlikely. In addition, the proposed improvements should not result in any flooding of lower elevation properties.

Flora and Fauna

The natural vegetation in this area include ironwood, guava, christmas berry, ferns, clydemia, buffalo grass, ti, various weeds and grasses, and one coconut tree. No threatened or endangered flora or fauna exist in the area. The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

The proposed building improvements will not be visible from public roads and will not impact public views.

Access and Traffic

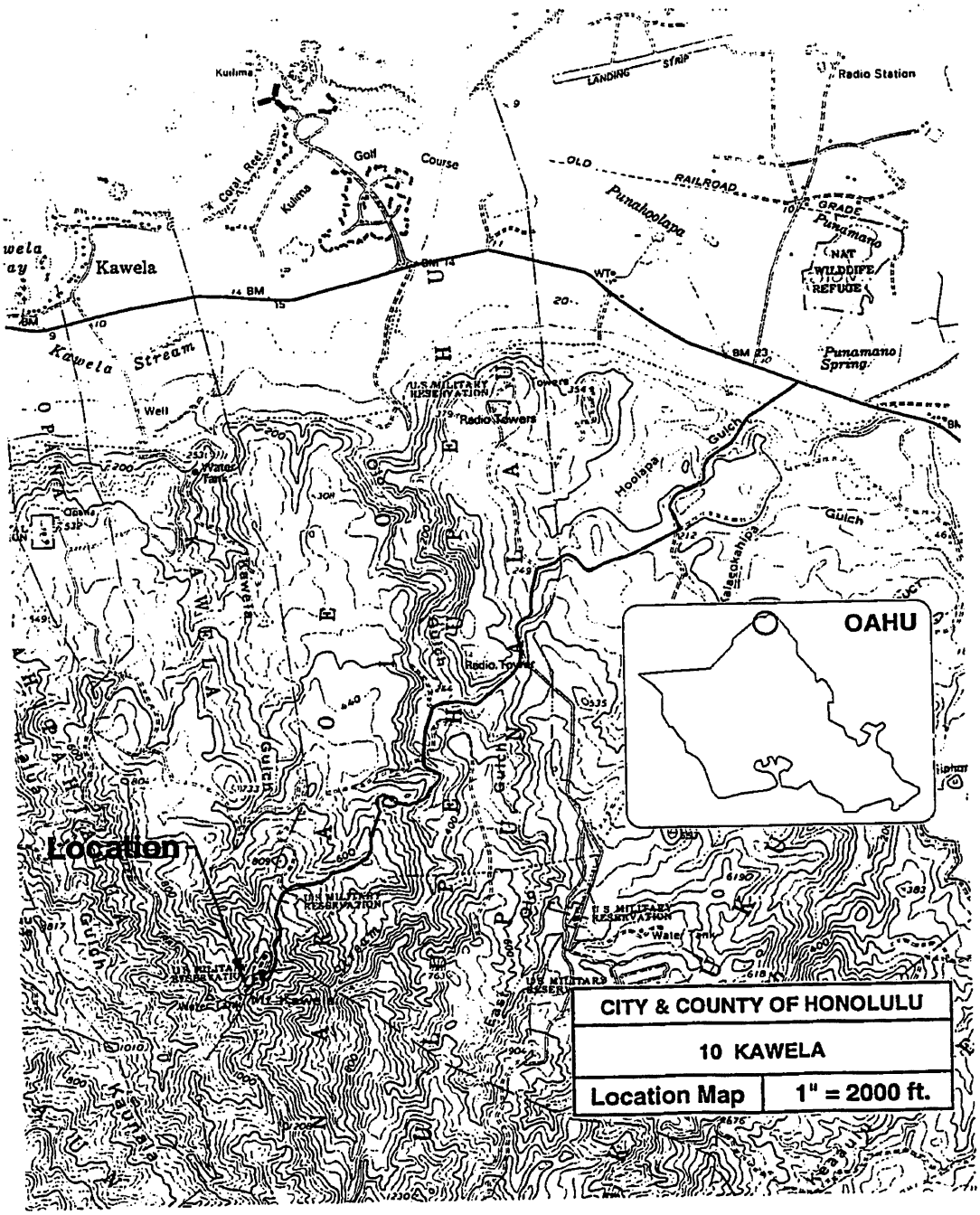
Access to the site is from Kamehameha Highway and Kawela Camp Road. Kawela Camp Road also provides access to the U.S. Army's Kahuku Training area. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Land Use Approvals Required

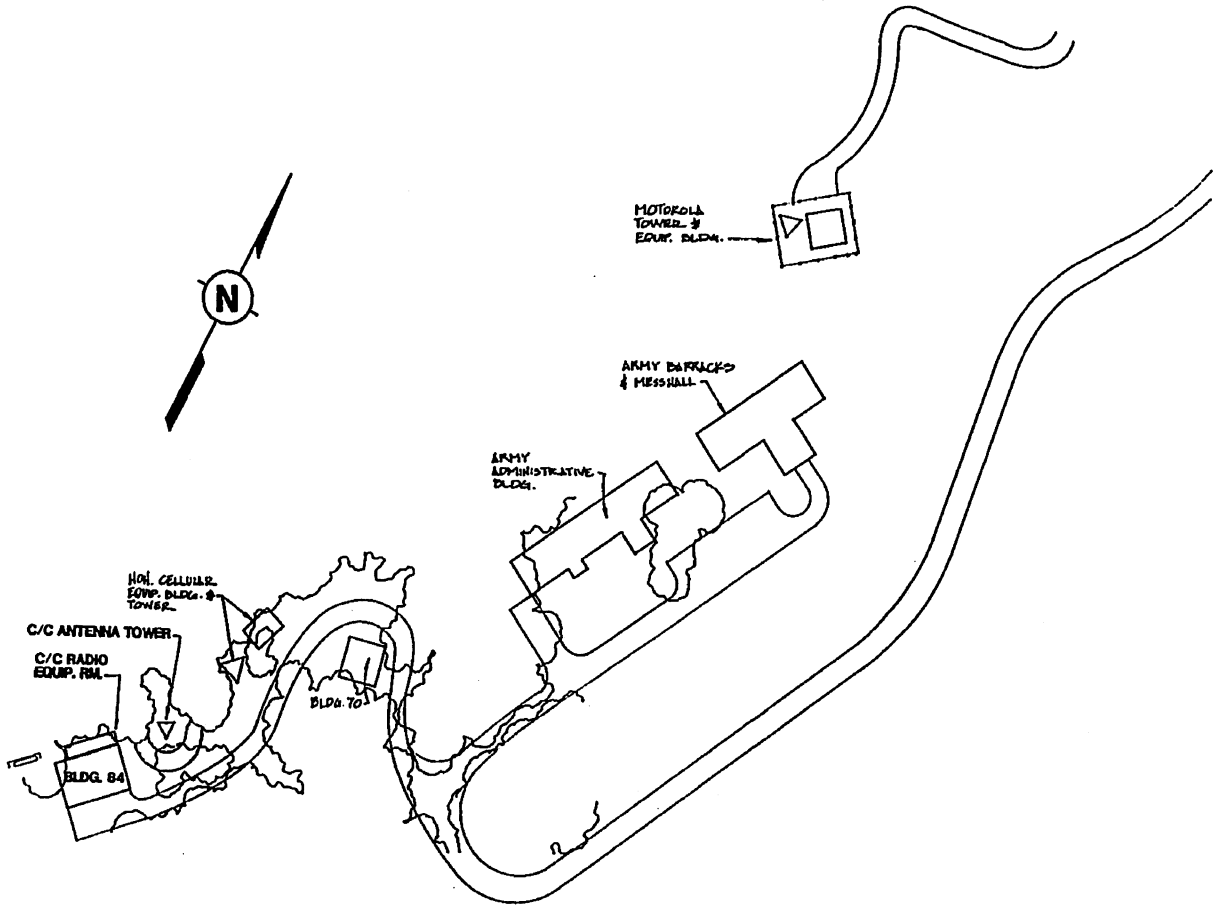
Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone
The project site lies within the Resource (R) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

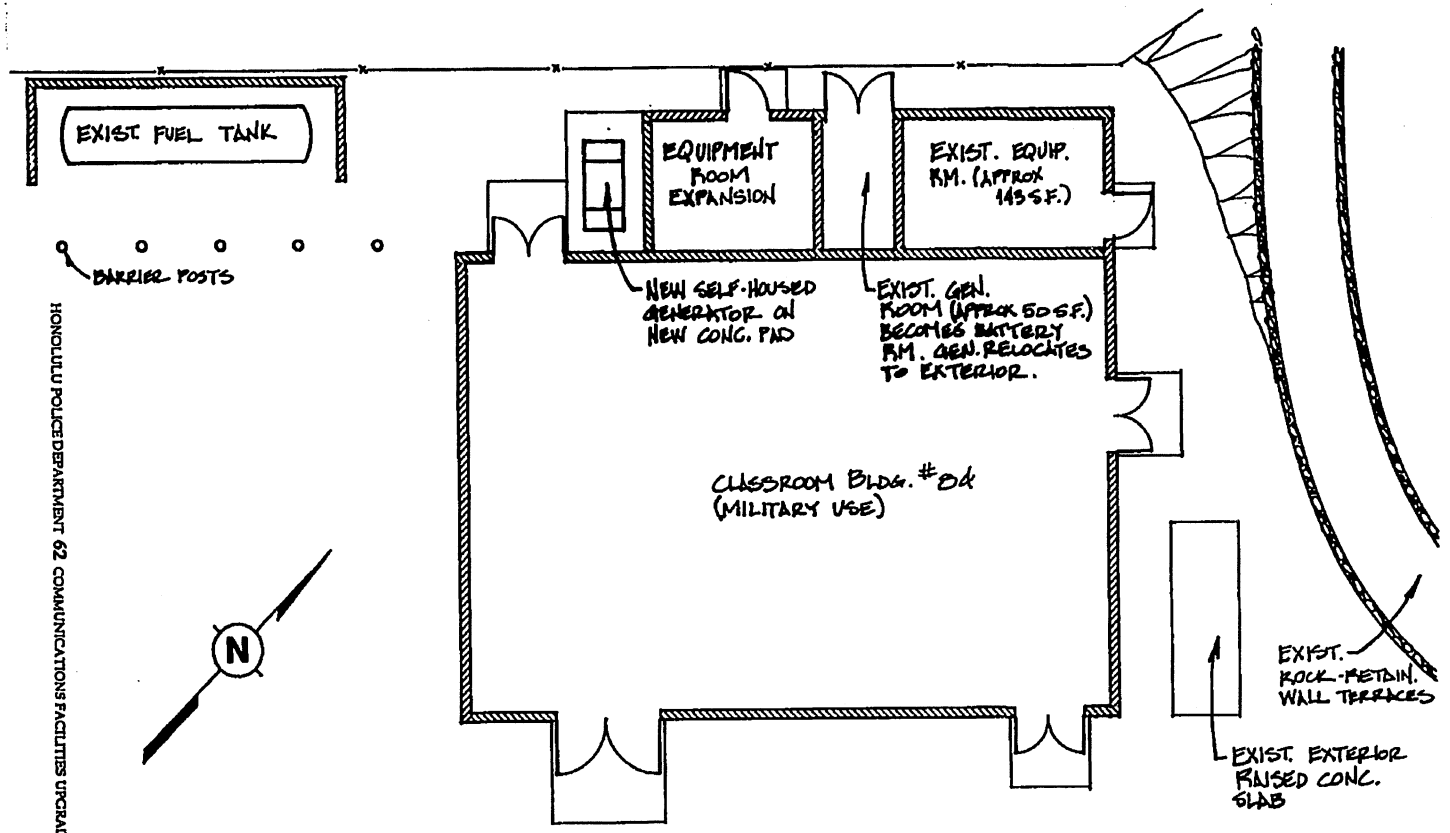
Prior CDUA Approvals
No record of previous approvals.


Kuilima
Golf
Course
Coral Reef
Kuilima
Kawela
Kawela Stream
Well
Water Tank
Radio Station
LANDING STRIP
OLD RAILROAD GRADE
Punahoolapa
Punamano
NAT WILDLIFE REFUGE
Punamano Spring
U.S. MILITARY RESERVATION
Radio Towers
Hoolapa Gulch
Gulch
Radio Tower
Location
OAHU
CITY & COUNTY OF HONOLULU
10 KAWELA
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 61 COMMUNICATIONS FACILITIES UPGRADE

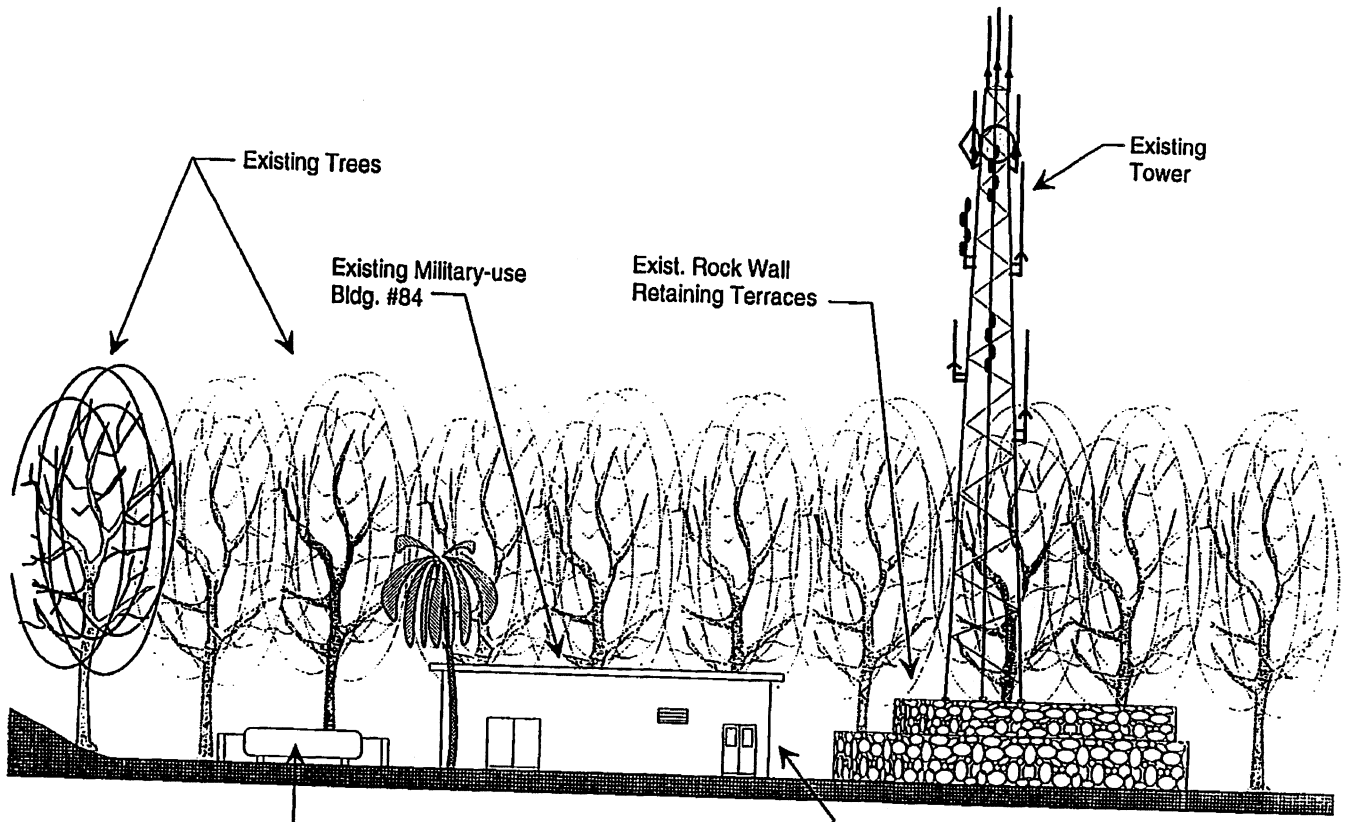


CITY & COUNTY OF HONOLULU	
10 KAWELA	
Site Vicinity Plan	1"=100'-0"



HONOLULU POLICE DEPARTMENT 62 COMMUNICATIONS FACILITIES UPGRADE

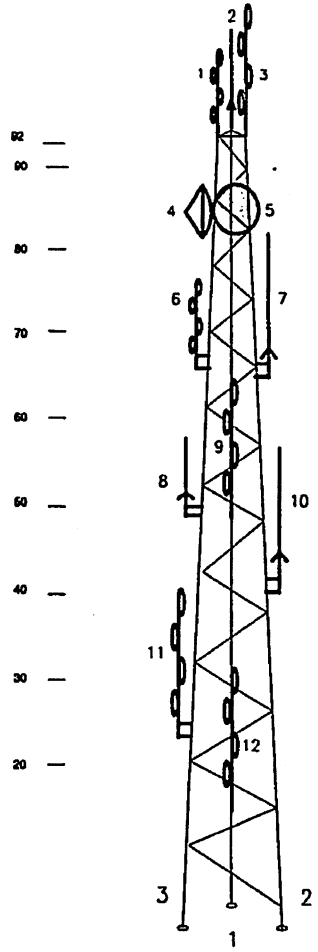
CITY & COUNTY OF HONOLULU	
10 KAWELA	
Site/ Floor Plan	1" = 10'-0"

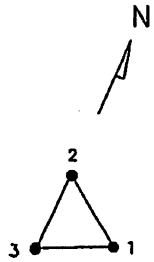


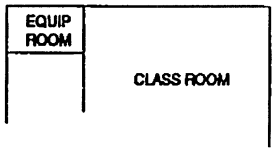
CITY & COUNTY OF HONOLULU	
10 KAWELA Looking toward the northwest	
Site Profile	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 64 COMMUNICATIONS FACILITIES UPGRADE

1 - 6' PD UHF STACKED DIPOLE - VICE
2 - 6' PD UHF VERTICAL
3 - 15' PD VHF STACKED DIPOLE - F6
4 - PD 6' M/W DISH - MOKULEIA
5 - PD 6' M/W DISH - KAHUKU
6 - 6' PD STACKED UHF DIPOLE - CIU
7 - 20' FD VERTICAL
8 - 6' PD UHF VERTICAL - IEU
9 - 6' PD UHF STACKED DIPOLE
10 - 20' FD VHF VERTICAL
11 - 15' PD VHF STACKED DIPOLE - F9
12 - 15' PD VHF STACKED DIPOLE - F1





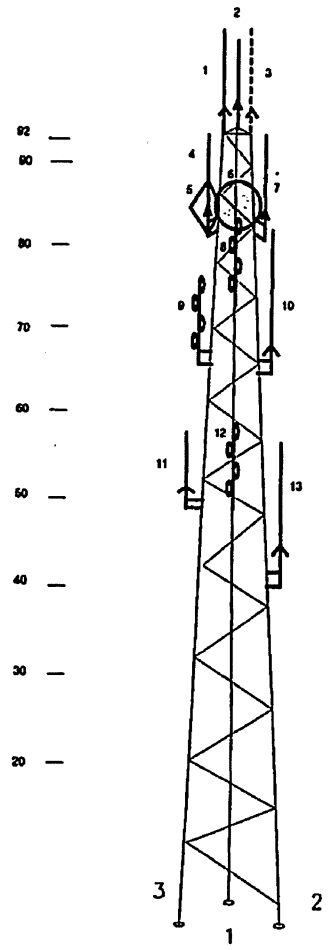


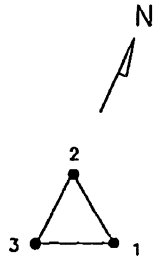
CITY & COUNTY OF HONOLULU		
KAWELA EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

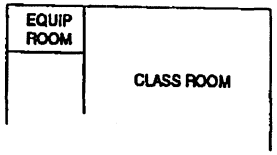
HONOLULU POLICE DEPARTMENT 65 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 10' UHF VERTICAL
3 - 13' 800 MHZ VERTICAL - RSVD FOR FUTURE
4 - 13' 800 MHZ VERTICAL
5 - 6' M/W DISH - KAHUKU
6 - 6' M/W DISH - MOKULEIA
7 - 13' 800 MHZ VERTICAL
8 - 6' PD UHF VERTICAL - VICE (RELOCATED)
9 - 6' PD UHF STACKED DIPOLE - IEU
10 - 20' FD VHF VERTICAL
11 - 6' PD UHF VERTICAL
12 - 6' PD UHF VERTICAL
13 - 20' FD VHF VERTICAL







CITY & COUNTY OF HONOLULU		
KAWELA NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

Mokuleia Communications Facility (11)
Development Profile

TMK:	6-8-001: 001
AREA OF SITE:	1,543.0 acres
Area of Use:	less than 2,500.0 sq.ft.
LANDOWNER:	State of Hawaii
NEAREST TOWN/LANDMARK:	Mokuleia neighborhood
Distance from Site:	2.6 miles
EXISTING USE:	Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Resource (R)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	North Shore
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The existing communications facility is located at the 2,027-ft. elevation within the Mokuleia Forest Reserve and occupies a portion of a decommissioned Nike missile site. The City and County has a right-of-entry authorization from the State Department of Land and Natural Resources, dated August 6, 1975.

The facility is a backbone link to the U.S. Navy-EASTPAC and Kawela sites. In addition to the Police Department, the Department of Transportation Services uses the facility.

The existing equipment building measures 744-sq.ft. and is of CMU construction with a metal deck roof over steel joists. Set into the hillside, the building is surrounded by an earth embankment along its three sides where overgrown weeds prevent access to the perimeter of the building. A 50-ft.-tall tower and one 20-ft.-tall metal monopole are located east of the building. Two six-ft.-diameter microwave dishes, five stacked dipole antennas and one vertical antenna are attached to the tower; one vertical antenna is attached to the monopole. A fuel tank for the backup generator is located west of the equipment building.

Isolated from habitation within the forest reserve, the former Nike site also harbors a number of abandoned platforms and buildings. The site is about 2.6 miles from the nearest houselot in Mokuleia.

B. Proposed Action

Improvements proposed for the facility include replacing the existing 50-ft.-tall tower with a new 70-ft.-tall tower and making minor antenna modifications. The replacement tower will be designed to withstand Category 5 - Hurricane Forces. Other improvements include excavating the existing earth embankment along the building's three sides. Soils testing will be conducted prior to construction to determine whether a new retaining wall is needed. If the test uncovers a rock foundation, a new wall may not be required. A five-ft.-wide perimeter concrete walkway will also be constructed, and various interior alterations, and general cleanup and repainting will be conducted. Weeds will also be cleared away from the structures.

The construction cost for the proposed improvements is estimated at $500,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site is located on a relatively flat area with surrounding slopes ranging from six to 12 percent, leading to steeper slopes to the east (35 to 45 percent). According to the U.S. Soil Conservation Service, soils in the area are of the Kaena series and consists of well-drained silty clay loam. Runoff is slow to medium and erosion hazard is slight to moderate.

To support the new 70-ft.-tall tower, three cylindrical footings, measuring approximately four feet in diameter by 12 feet deep, will be dug adjacent to the existing 50-ft.-tall tower. Reinforcing steel will be placed into the holes and then concrete will be pumped to the site and filled into the holes. Tower base plates will be cast into the wet concrete. After the concrete cures, the tower will be transported to the site by a crane and bolted onto its base plates. Other than the crane, no heavy machinery will be used during construction, and no significant erosion or sedimentation impacts are anticipated. The old tower will be removed once the new communications system is in place.

The existing earth embankment will be excavated from the building's three sides and approximately 2,600 cubic feet of material may be removed. Based on the results from the soils testing, a new retaining wall may be constructed between the equipment building and the hillside. If, however, the tests uncover a rock foundation, a new wall may not be needed.

Limited grading will also be performed to allow construction of the perimeter concrete walkway and weeds will be cleared away from the structures. None of these acuvities, however, should result in any significant erosion or sedimentation impacts.

Flood Hazards

Rainfall in the area averages 30 to 40 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 2,027-ft. site elevation, flooding is unlikely. In addition, the proposed improvements will not result in any flooding of lower elevation properties.

Flora and Fauna

Natural vegetation within the area include kiawe, aalii, ricegrass, molassesgrass, silver oak, yellow foxtail and lantana. No threatened or endangered flora or fauna exist in the area. The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources
According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes
The proposed building improvements and tower replacement will not be visible from Farrington Highway in Mokuleia, which is more than two miles distant. The new 70-ft.-tall tower may be visible from the four-wheel-drive government road at the Waianae summit and from Peacock Flats, a State hiking destination a the 1,600-ft. elevation above Mokuleia. However, there are also power lines in the area, and the additional height is too small to have a significant effect on public views.

Access and Traffic
Access to the site is by a 20-foot right-of-way road from Farrington Highway that is used for water and cable lines. This road was recently severely damaged and is currently being repaired. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on the newly-restored road and current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Summary of Major Impacts and Mitigative Measures

Viewplanes
The tower will be painted gray to blend with the sky.

E. Land Use Approvals Required

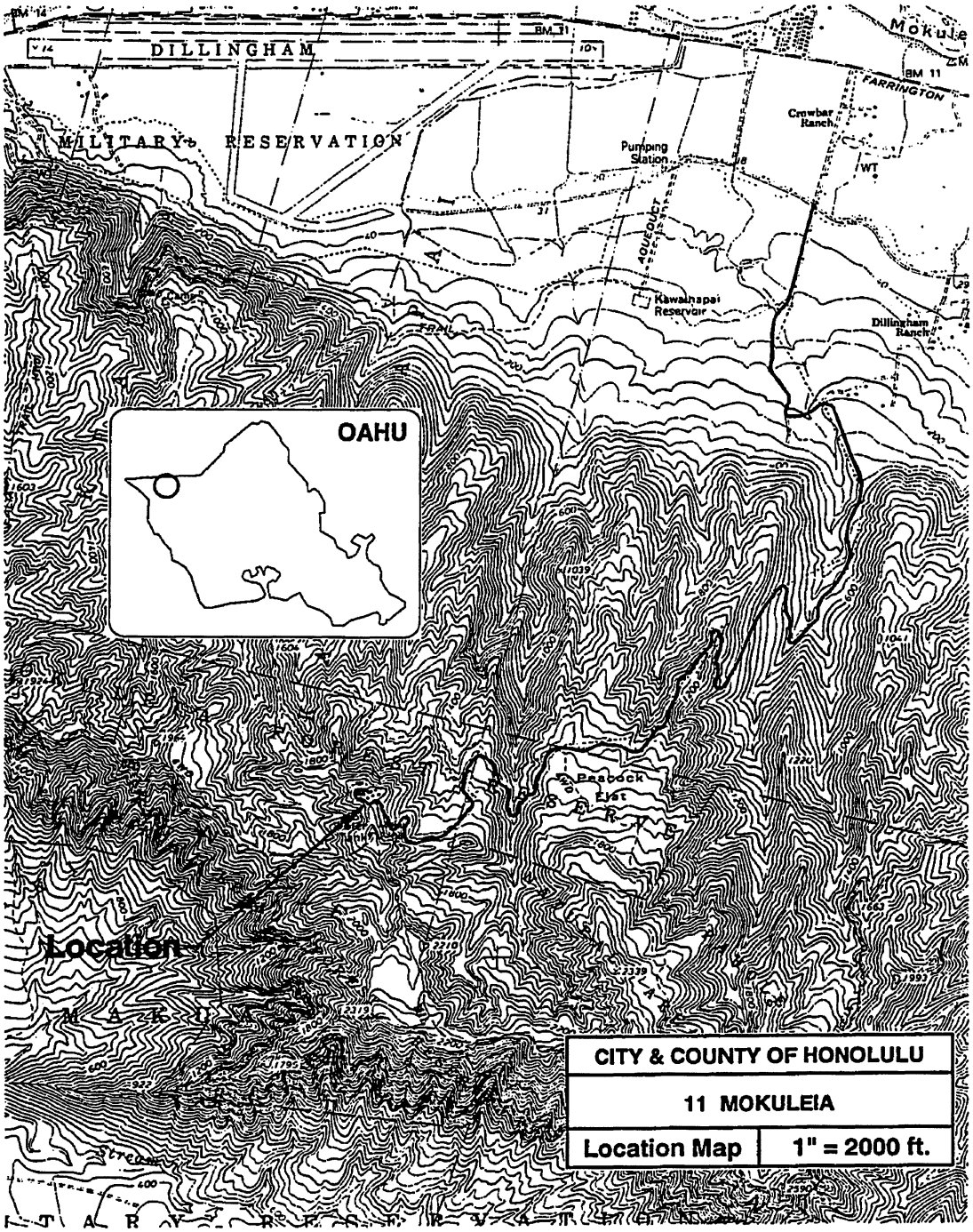
Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone
The project site lies within the Resource (R) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

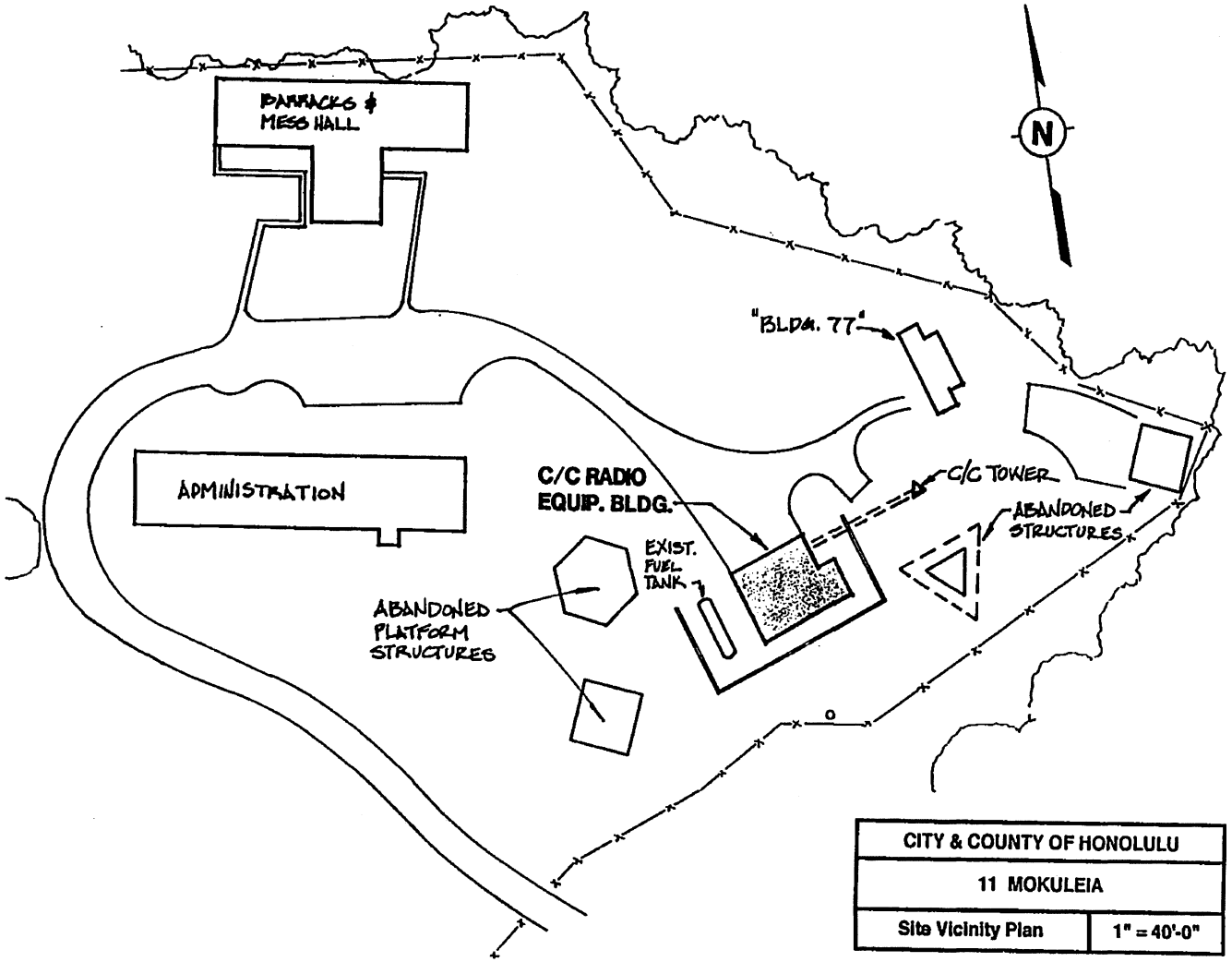
Prior CDUA Approvals

OA-1019: *January 1978* - Install a 50-ft.-tall tower and two six-ft.-diameter microwave dishes.

October 1984 - Install a fuel tank.

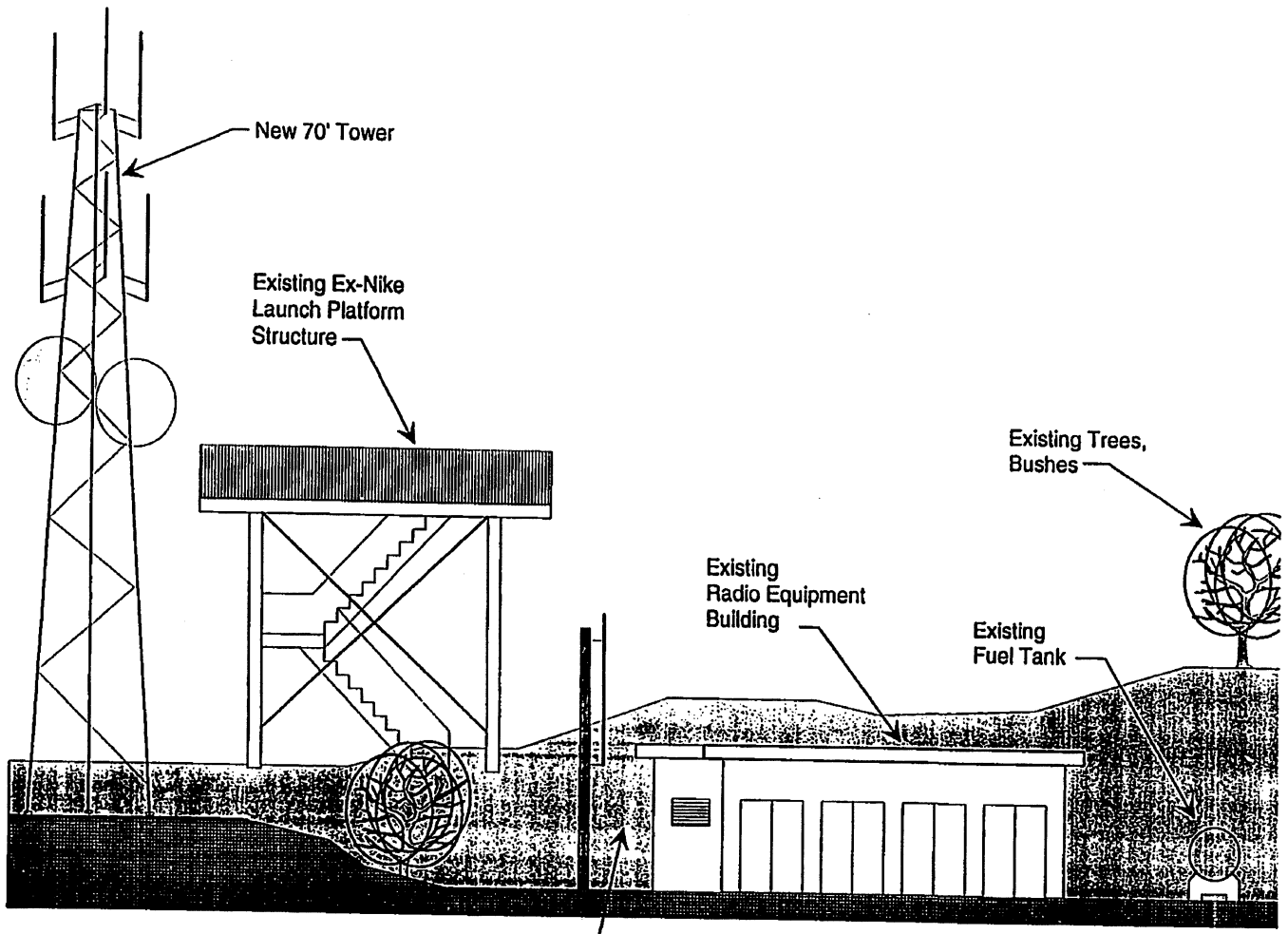

DILLINGHAM
MILITARY RESERVATION
FARRINGTON
Pumping Station
Kawaihapai Reservoir
Dillingham Ranch
OAHU
Location
CITY & COUNTY OF HONOLULU
11 MOKULEIA
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 71 COMMUNICATIONS FACILITIES UPGRADE



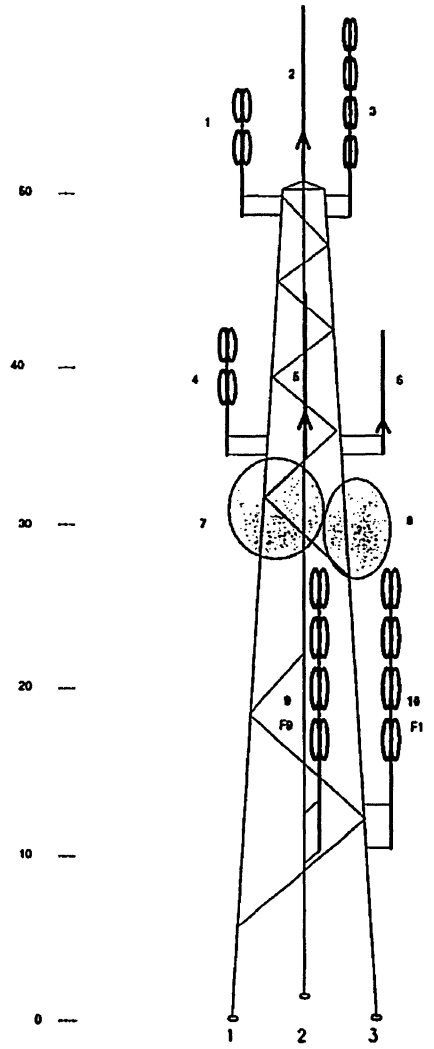
CITY & COUNTY OF HONOLULU	
11 MOKULEIA	
Site Vicinity Plan	1" = 40'-0"

HONOLULU POLICE DEPARTMENT '92 COMMUNICATIONS FACILITIES UPGRADE



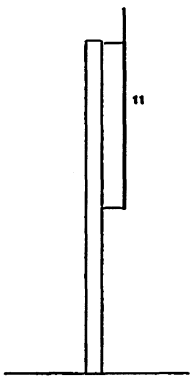
CITY & COUNTY OF HONOLULU	
11 MOKULEIA Looking toward the south	
Site Profile	1" = 10'-0"

HONOLULU POLICE DEPARTMENT 73 COMMUNICATIONS FACILITIES UPGRADE

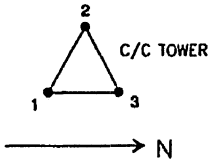


ANTENNAS

1 - PD 10' UHF STACKED DIPOLE
2 - FD 20' VHF VERTICAL
3 - PD 18' PD VHF STACKED DIPOLE
4 - PD 10' UHF VERTICAL
5 - FD 20' VHF VERTICAL
6 - PD 10' UHF VERTICAL
7 - PD 6' M/W DISH - KEWELA
8 - PD 6' M/W DISH - USN COMM
9 - PD 18' VHF STACKED DIPOLE
10 - PD 18' VHF STACKED DIPOLE
11 - DTS 10' UHF VERTICAL

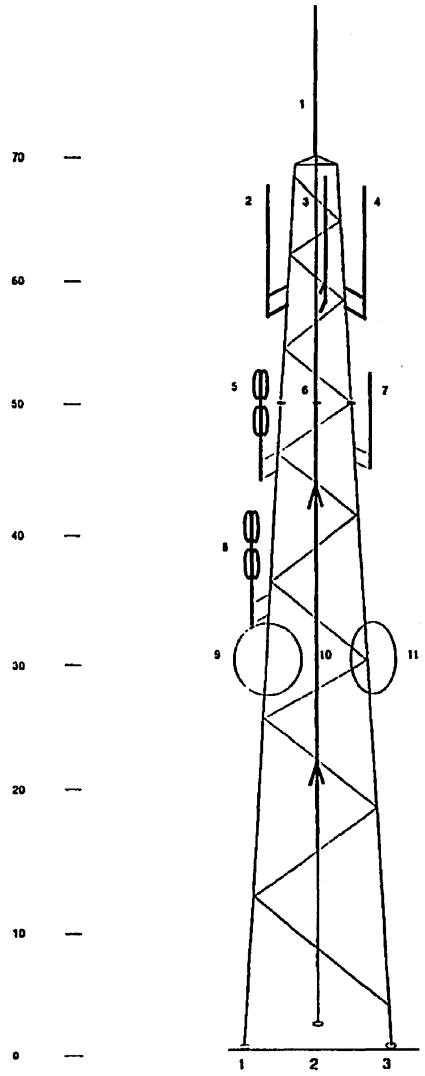


O
OTS MONOPOLE



CITY & COUNTY OF HONOLULU		
MOKULEIA EXISTING TOWER/ANTENNA LOCATIONS		
DWG # 1	REV #2	06/30/92

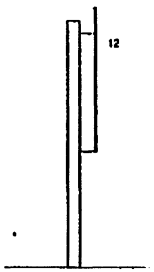
HONOLULU POLICE DEPARTMENT 74 COMMUNICATIONS FACILITIES UPGRADE



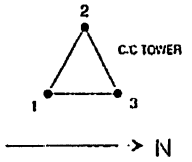
New 70' Tower

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - 13' 800MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - PD 10' UHF STACKED DIPOLE - VICE
6 - FD 20' VHF VERTICAL
7 - PD 10' UHF VERTICAL - IEU
8 - PD 10' UHF STACKED DIPOLE - CIU
9 - PD 6' MW DISH - KAWELA
10 - FD 20' VHF VERTICAL
11 - PD 6' MW DISH - USN COMM
12 - DTS 10' UHF VERTICAL



O
OTS MONOPOLE



CITY & COUNTY OF HONOLULU		
MOKULEIA NEW 70' TOWER NEW SYSTEM ANTENNA LOCATIONS		
DWG # 1	REV #3	06/30/92

Puu Manawahua Communications Facility (13)
Development Profile

TMK:	9-2-005: 014
AREA OF SITE:	34.3 acres
Area of Use:	less than 4,000.0 sq.ft.
LANDOWNER:	State of Hawaii
NEAREST TOWN/LANDMARK:	Nanakuli neighborhood
Distance from Site:	2.0 miles
EXISTING USE:	Communications facilities
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Resource (R)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Ewa
Land Use Designation:	Preservation
Public Facilities Designation:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The existing communications facility is located at the 2,400-foot elevation on Palehua Ridge along the Waianae mountain range and occupies a portion of a decommissioned Nike missile site. Use of the facility by the City and County is authorized under State Revocable Permit No. S-5563.

The facility is a backbone link to the U.S. Navy-EASTPAC, Pearl City Police Station, Sand Island Sewage Treatment Plant and Waianae Police Station sites. In addition to the Police Department, the Fire Department, Department of Transportation Services, Board of Water Supply, other local government and State Department of Health use the facility.

The communications building measures 1,030 square feet and is of CMU construction with a metal deck roof over steel joists. The front of the building has five door penetrations measuring about eight feet tall. All but one are sealed off with plywood panels. A 200-ft.-tall tower is located east of the equipment building. Four six-ft.-diameter microwave dishes, six stacked dipole antennas and ten vertical antennas are attached to the tower. A fuel tank lies north of the equipment building.

Isolated from habitation within the Honouliuli Forest Reserve, the former Nike site also harbors Hawaiian Electric Company and the State Department of Land and Natural Resources, Division of Forestry and Wildlife facilities. The site is about 2.0 miles from the nearest houselot in Nanakuli.

B. Proposed Action

Improvements proposed for the building include sealing off four of the five door penetrations with new CMU construction and constructing a five-ft.-wide perimeter concrete walkway. Other improvements include making minor antenna modifications and various interior alterations, and general cleanup and repainting. Weeds will also be cleared away from the structures.

The construction cost for the proposed improvements is estimated at $150,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing site is located on a relatively flat area with slopes ranging from zero to ten percent. Slopes in the adjacent areas vary dramatically, ranging from about 20 percent on the eastern side of the ridge to 70 percent on the western side of the ridge. According to the U.S. Soil Conservation Service, the soil is reddish-brown silty clay, within the Tropohumults-Dystrandepts association.

The improvements proposed for the facility will require minimum alteration to the site. Limited grading will be performed to allow construction of a perimeter concrete walkway. In addition, some weeds will be cleared away from the structures. These activities, however, will not result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages 20 to 30 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 2,386-ft. site elevation, flooding is unlikely. In addition, the proposed improvements will not result in any flooding of lower elevation properties.

Flora and Fauna

The natural vegetation consists of lantana, molassesgrass, and yellow foxtail. At the higher elevations, the vegetation is mainly ohia, puakiawe, koa, aalii and ferns. No threatened or endangered flora or fauna exist in the area. The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

The proposed improvements will not impact existing public views.

Access and Traffic

Access is from Palehua Road, a 20-foot wide easement running roughly 3.8 miles. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Land Use Approvals Required

Conservation District Use Application

The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone

The project site lies within the Resource (R) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

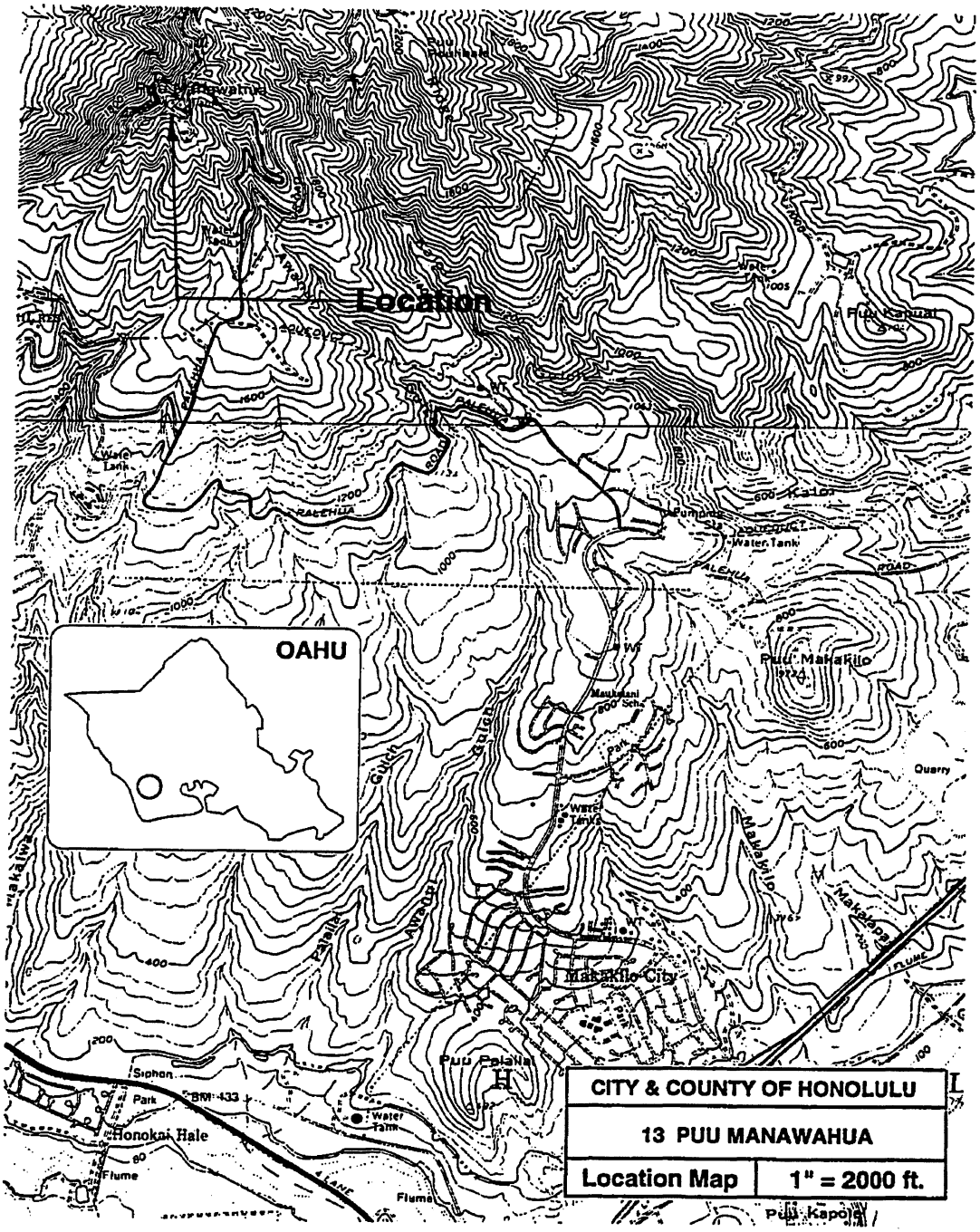
Prior CDUA Approvals

OA-1019: *January 1978* - Install a 220-ft.-tall tower and two six-ft.-diameter microwave dishes.

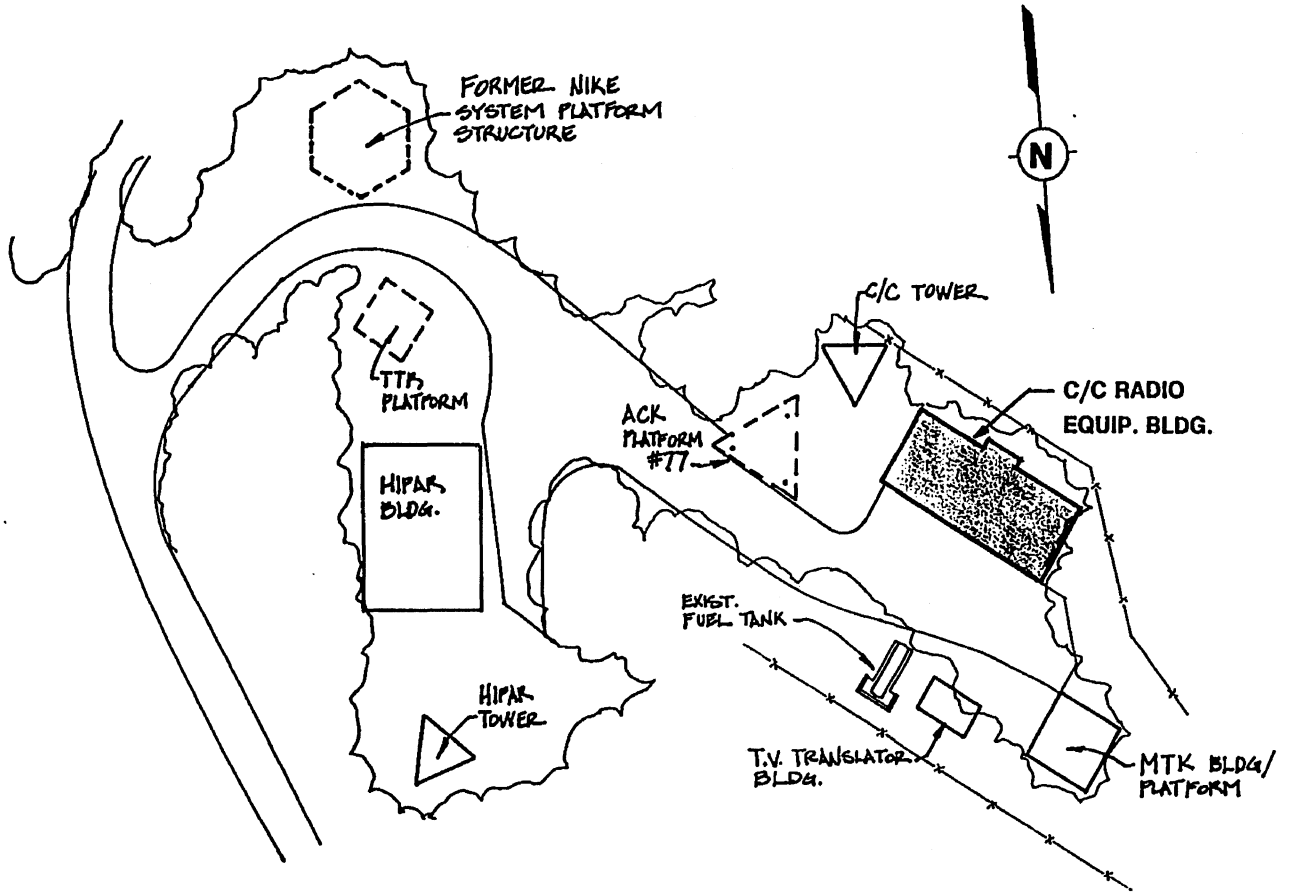
October 1984 - Install a fuel tank.

January 1988 - Construct a 196-sq.ft. building extension.

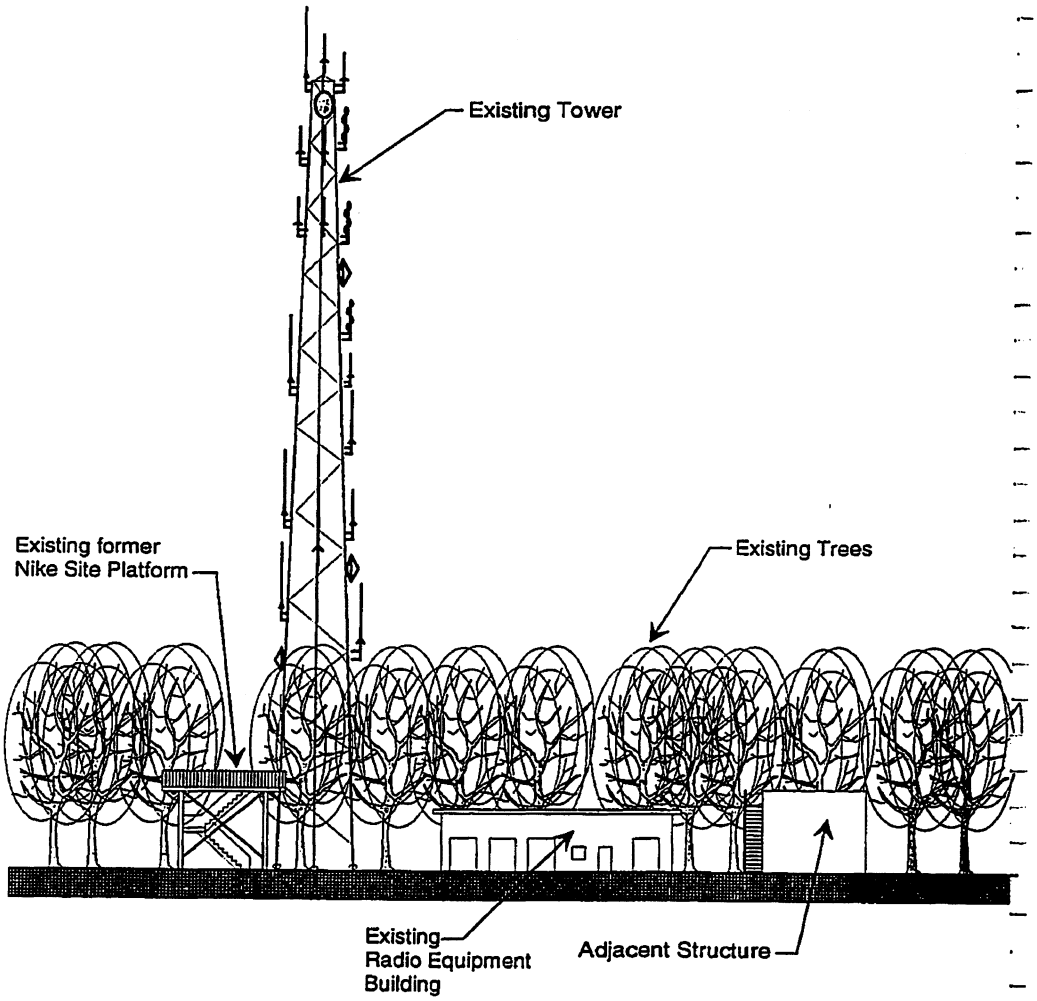
90-677: *June 1990* - Replace batteries and battery charges (emergency authorization)


Location
OAHU
Puu Makakilo
Makakilo City
Puu Palailai
Honokai Hale
Siphon
Flume
Quarry
Water Tank
Puu Kapolei
CITY & COUNTY OF HONOLULU
13 PUU MANAWAHUA
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 79 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU	
13 PUU MANAWAHUA	
Site Vicinity Plan	1" = 40'-0"

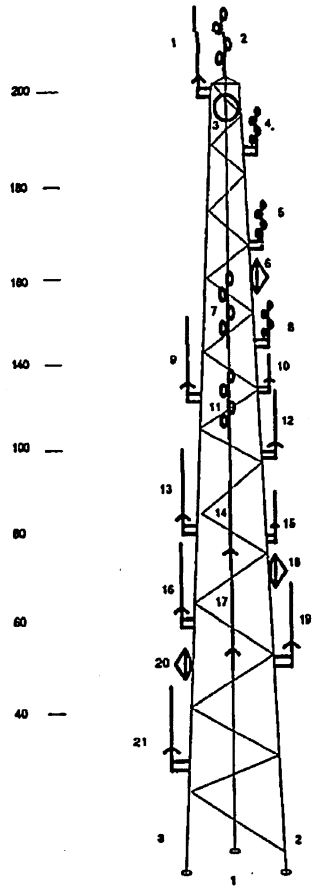


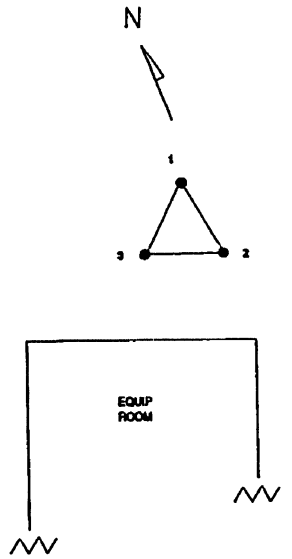
CITY & COUNTY OF HONOLULU	
13 PUU MANAWAHUA Looking toward the southwest	
Site Profile	1" = 30'-0"

HONOLULU POLICE DEPARTMENT 91 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 20' FD VHF VERTICAL - F 3-4
2 - 16' PD VHF STACKED DIPOLE - F6
3 - PD 6' M/W DISH - UBN
4 - 8' PD UHF STACKED DIPOLE - VICE
5 - 8' PD UHF STACKED DIPOLE - CIU
6 - PD 6' M/W DISH - PEARL CITY
7 - 16' PD VHF STACKED DIPOLE - F7
8 - 8' PD UHF STACKED DIPOLE - IEU
9 - 20' LOCAL GOV VHF VERTICAL - F2
10 - 8' PD UHF VERTICAL - VICE
11 - 20' PD VHF STACKED DIPOLE - F1
12 - 20' HEALTH VHF VERTICAL
13 - 20' LOCAL GOV VHF VERTICAL - F3
14 - 20' FD VHF VERTICAL - F2
15 - 8' DTS UHF VERTICAL
16 - 20' CITY PAGING VHF VERTICAL
17 - 20' PD VHF VERTICAL - F8
18 - PD 6' M/W DISH - SAND ISLAND
19 - 20' HEALTH VHF VERTICAL
20 - PD 6' M/W DISH - WAIANAE
21 - BWS 15' VERTICAL



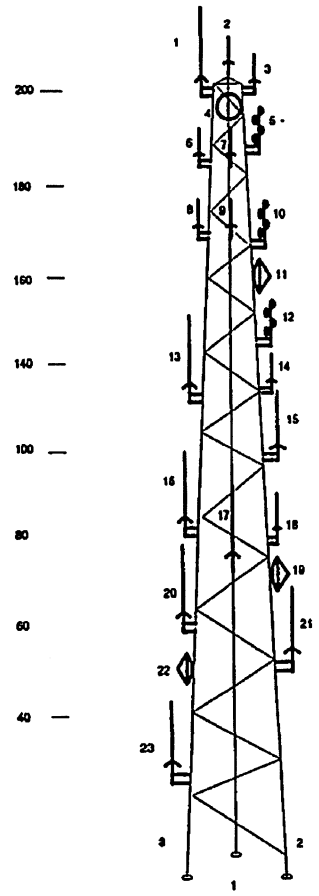


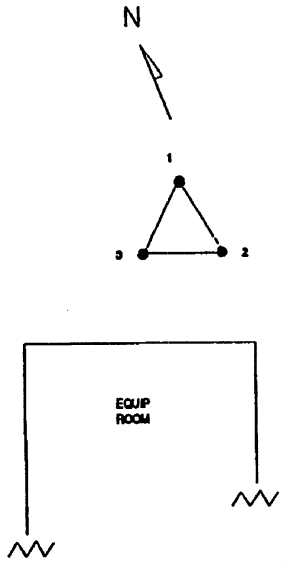
CITY & COUNTY OF HONOLULU		
PUU MANAWAHUA EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

HONOLULU POLICE DEPARTMENT 92 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 20' FD VHF VERTICAL - F 3-4
2 - 13' 800 MHZ VERTICAL
3 - 13' 800 MHZ VERTICAL
4 - PD 6' M/W DISH - USN
5 - 8' PD UHF STACKED DIPOLE - VICE
6 - 13' 800 MHZ VERTICAL
7 - 13' 800 MHZ VERTICAL
8 - 13' 800 MHZ VERTICAL
9 - 13' 800 MHZ VERTICAL
10 - 8' PD UHF VERTICAL - CIU
11 - PD 6' M/W DISH - PEARL CITY
12 - 8' PD UHF STACKED VERTICAL - IEU
13 - 20' LOCAL GOV VHF VERTICAL
14 - 8' PD UHF VERTICAL - VICE DVP
15 - 20' HEALTH VHF VERTICAL
16 - 20' LOCAL GOV VHF VERTICAL
17 - 20' FD VHF VERTICAL - F2
18 - 8' OTS UHF VERTICAL
19 - PD 6' M/W DISH - SAND ISLAND
20 - 20' CITY PAGING VHF VERTICAL
21 - 20' HEALTH VHF VERTICAL
22 - PD 6' M/W DISH - WAIANAE
23 - BWS 15' VERTICAL





CITY & COUNTY OF HONOLULU		
PUU MANAWAHUA NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

Waianae 242 Reservoir Communications Facility (13A)
Development Profile

TMK:	8-6-001: 048
AREA OF SITE:	3.1 acres
Area of Use:	less than 50.0 sq.ft.
LANDOWNER:	Board of Water Supply
NEAREST TOWN/LANDMARK:	Waianae neighborhood
Distance from Site:	0.2 miles
EXISTING USE:	Water tank Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Limited (L)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Waianae Development Plan Area
Land Use Map:	Preservation
Public Facilities Map:	None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The existing communications facility is located at the 240-ft. elevation at the Paheehee headland. Currently only used by the Police Department, this passive facility is comprised of a reflector billboard measuring 96-sq.ft. and mounted on the Board of Water Supply water tank. The board reflects the signal from Puu Manawahua to the Waianae Police Station.

Primarily used for the water tank, the site is located on the makai end of Paheehee Ridge. Surrounding uses include a cemetery and private residences. The site is about 0.2 miles from the nearest houselot in Waianae.

B. Proposed Action

No changes to the existing facility are anticipated.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing facility sits on a flat site cut into the headland. Surrounding slopes range from 20 and 25 percent. According to the U.S. Soil Conservation Service, the area is made up of rock outcrops of mainly

basalt and andesite. Centuries of weathering, however, has created a layer of soil deposits and vegetation has already taken hold in most of the area.

Flood Hazard
Rainfall in the area averages 20 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 650-ft. site elevation, flooding is unlikely.

Flora and Fauna
The natural vegetation at the lower elevations consists mainly of kiawe, piligrass and koa haole. Lantana, guava, Natal redtop and molassesgrass are dominant at the higher elevations. No threatened or endangered flora or fauna exist on the site.

Cultural Resources
According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes
There will be no impact to existing public views.

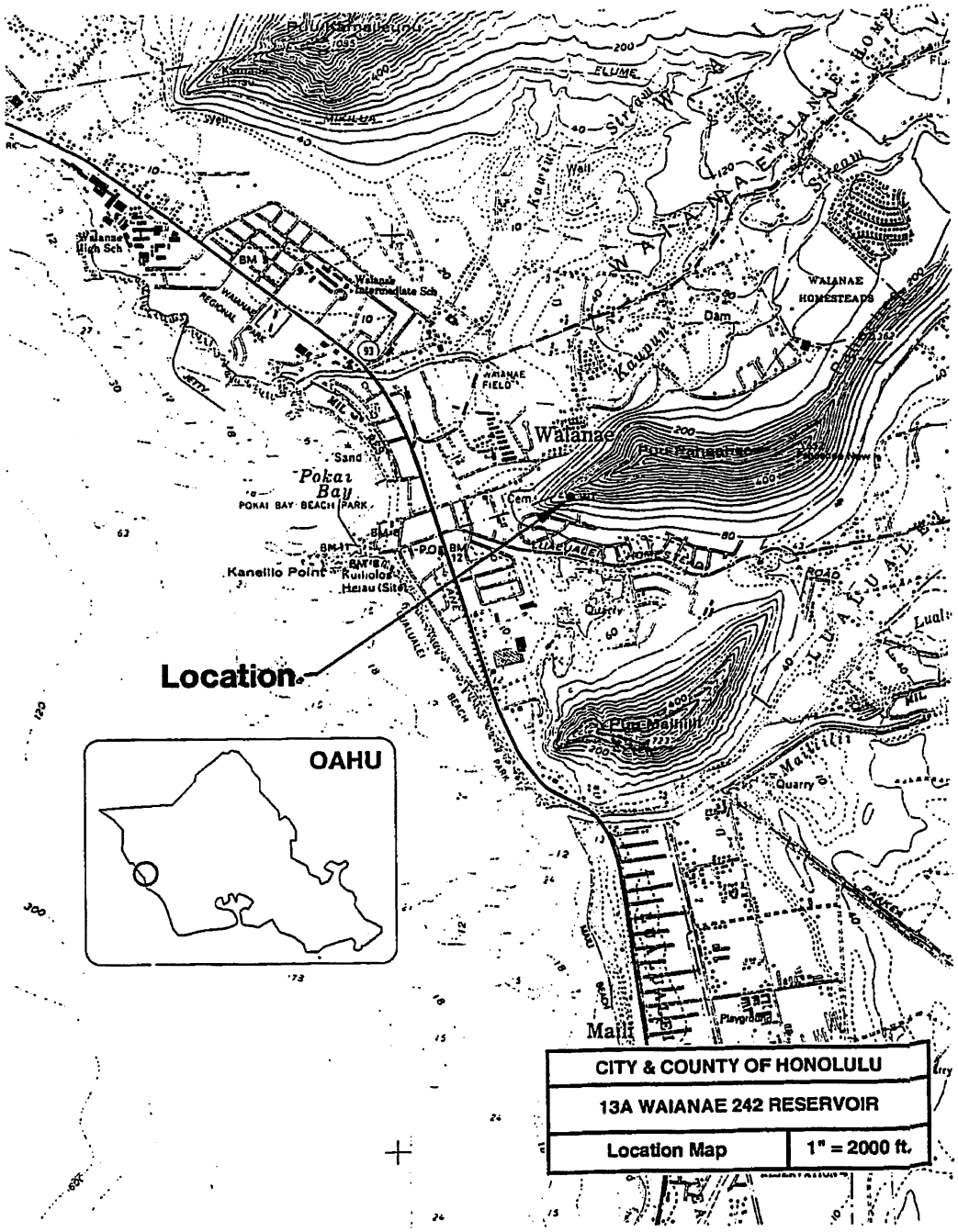
Access and Traffic
Access is from Kawili Street and a Board of Water Supply access driveway. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Land Use Approvals Required

Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone
The project site lies within the Limited (L) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to limit uses where natural conditions suggest constraints on human activities". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

Prior CDUA Approvals
No record of previous approvals.


Location
OAHU
Walanae
Pokai Bay
POKAI BAY BEACH PARK
Kaneilio Point
Walanae High Sch
Walanae Intermediate Sch
WAIANAE HOMESTEADS
Dam
Quarry
Playground
Mailiili
CITY & COUNTY OF HONOLULU
13A WAIANAE 242 RESERVOIR
Location Map
1" = 2000 ft.

Keaau Beach Park Communications Facility (13C)
Development Profile

TMK:	8-3-001: 001
AREA OF SITE: Area of Use:	37.9 acres 80.0 sq.ft.
LANDOWNER:	City and County of Honolulu
NEAREST TOWN/LANDMARK: Distance from Site:	Makaha subdivision 200 feet
EXISTING USE:	Beach park Comfort stations
PROPOSED USE:	New communications facility
STATE LAND USE DISTRICT: Subzone: Type of Use Requested:	Conservation Limited (L) Permitted Use
COUNTY DEVELOPMENT PLAN AREA: Land Use Designation: Public Facilities Designation:	Waianae Development Plan Area Parks and Recreation None
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application Special Management Area Use Permit

A. Site Location and Existing Uses

The City and County is proposing to develop a new communications facility within the Keaau Beach Park site on the western (Waianae) coast of Oahu. Connected by a wireline to the Waianae Police Station, this new facility is intended to provide improved radio coverage for the northern part of the Waianae coast.

The proposed site is bordered by Farrington Highway and surrounded by a grassy area, sandy beach and a small residential subdivision. The area across the highway is comprised primarily of brush and scrubland covering the hillside, with a few private residences along the road. The residential subdivision is located about 200 feet south of the proposed site, along Kepuhi Beach.

B. Proposed Action

The City and County is proposing to construct a new 80-sq.ft. equipment building of CMU construction on the southeast corner of the park, abutting the highway and residential area. A 25-ft.-tall pole will be sited behind the building and two vertical antennas will be attached to the pole. Soils testing will be conducted to ensure that the site can accommodate the proposed building and antenna pole. A heavy-duty battery back-up system will be installed in place of an emergency generator.

The construction cost for the proposed improvements is estimated at $575,000.

C. Affected Environment

Topography and Soils

The proposed site is flat with soils consisting of coral or cemented calcareous sand. The new equipment building will occupy only 80 square feet and will require minimum alteration to the site. Although limited grading will be performed to allow construction of the new building, these activities will not result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages less than 20 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined and considered negligible. The proposed equipment building will not increase the flood hazard to adjacent properties.

Flora and Fauna

The natural vegetation in the area is sparse, consisting of kiawe, koa haole, fingergrass and palms. No threatened or endangered flora or fauna exist on the site. The proposed facility will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, there are a number of Hawaiian burials located further north of the proposed site, within Keaau Beach Park. Because of the proximity of these burials and the sandy soil characteristics of the area, there is a possibility that burials could also exist on the proposed site. Given these conditions, the City and County will consult with the State Historic Preservation Division and will have an archaeologist on site during the grading phase of the proposed construction.

Viewplanes

The new facility, which will consist of a small radio equipment building and a single antenna pole, will be sited in a corner of the park near Farrington Highway and existing development. The site is located away from the shoreline and away from the undeveloped portion of the park, which extends up the coast toward Makua. The building will be much smaller than neighboring residences and park trees. The pole will be no taller than utility poles located along Farrington Highway.

Recreational

The proposed facility will occupy only 80 square feet and will be placed on the southeast corner of the park, adjacent to the nearby residential subdivision. The facility will be located about 600 feet from the shoreline and will not interfere with camping or other recreational activities conducted at the park.

Access and Traffic

Access to the site is from Farrington Highway. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

The proposed facility will be located on the southeast corner of the park about 600 feet from the shoreline and will not affect access to the shoreline, any publicly owned or used beach, or recreation area.

D. Summary of Impacts and Mitigative Measures

Viewplanes
The building and any perimeter fencing will be designed and/or painted to make them as unobtrusive as possible in the context of the surrounding park and residential landscape.

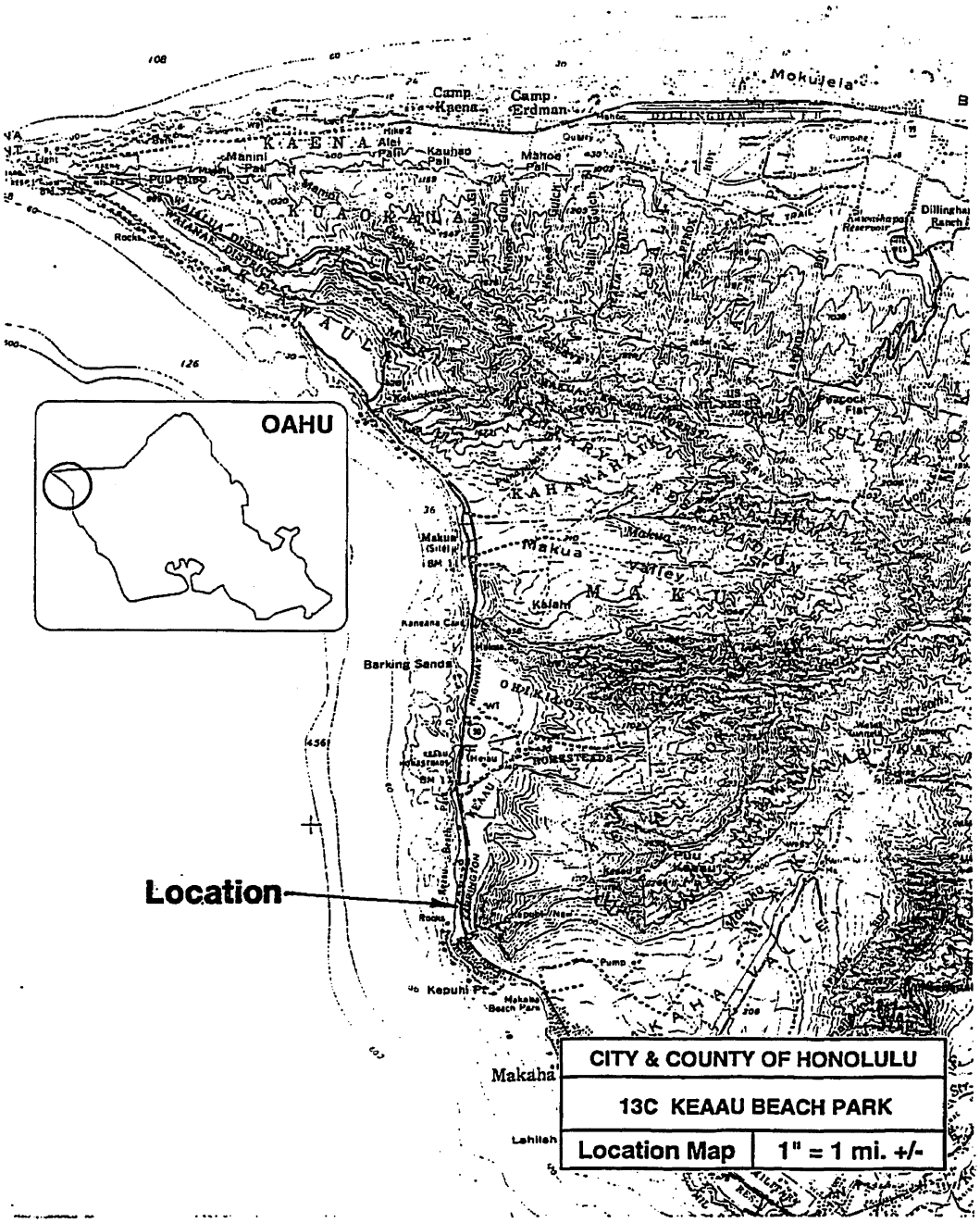
E. Land Use Approvals Required

Conservation District Use Application
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

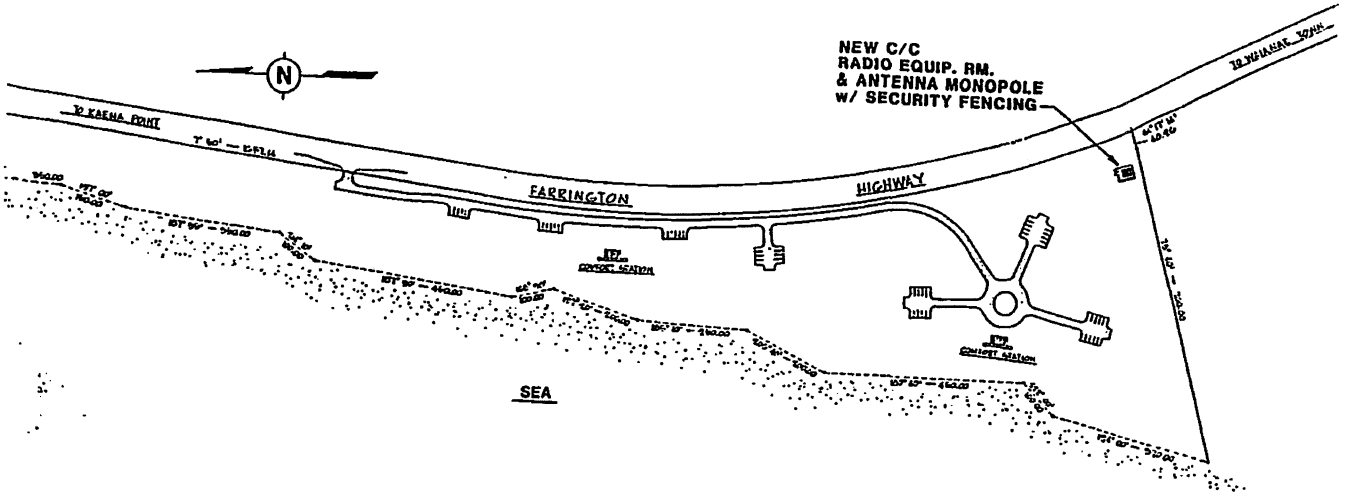
Conservation District Subzone
The project site lies within the Resource (R) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

Prior CDUA Approvals
None. The city is proposing a new facility.

Special Management Area Use Permit
The site is within the Special Management Area, approximately 600 feet from the shoreline. A Special Management Area Use Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization prior to submittal of the CDUA.

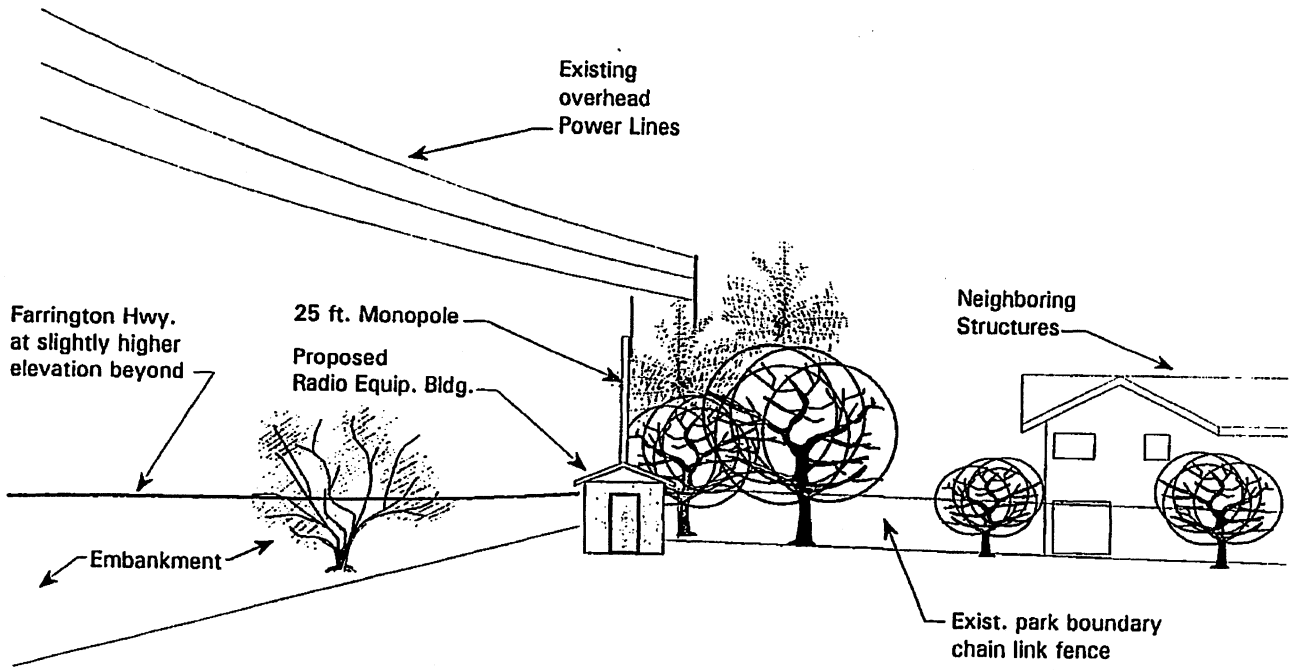

OAHU
Location
Mokuleia
Camp Kaena
Camp Erdman
Kaena
Kauhao Pali
Mahoe Pali
Manini Pali
Kuaokala
Dillingham Ranch
Makua Valley
Makua
Kalahi
Barking Sands
Kepuhi Pt.
Makaha
Lahilah
CITY & COUNTY OF HONOLULU
13C KEAAU BEACH PARK
Location Map
1" = 1 mi. +/-

HONOLULU POLICE DEPARTMENT 91 COMMUNICATIONS FACILITIES UPGRADE



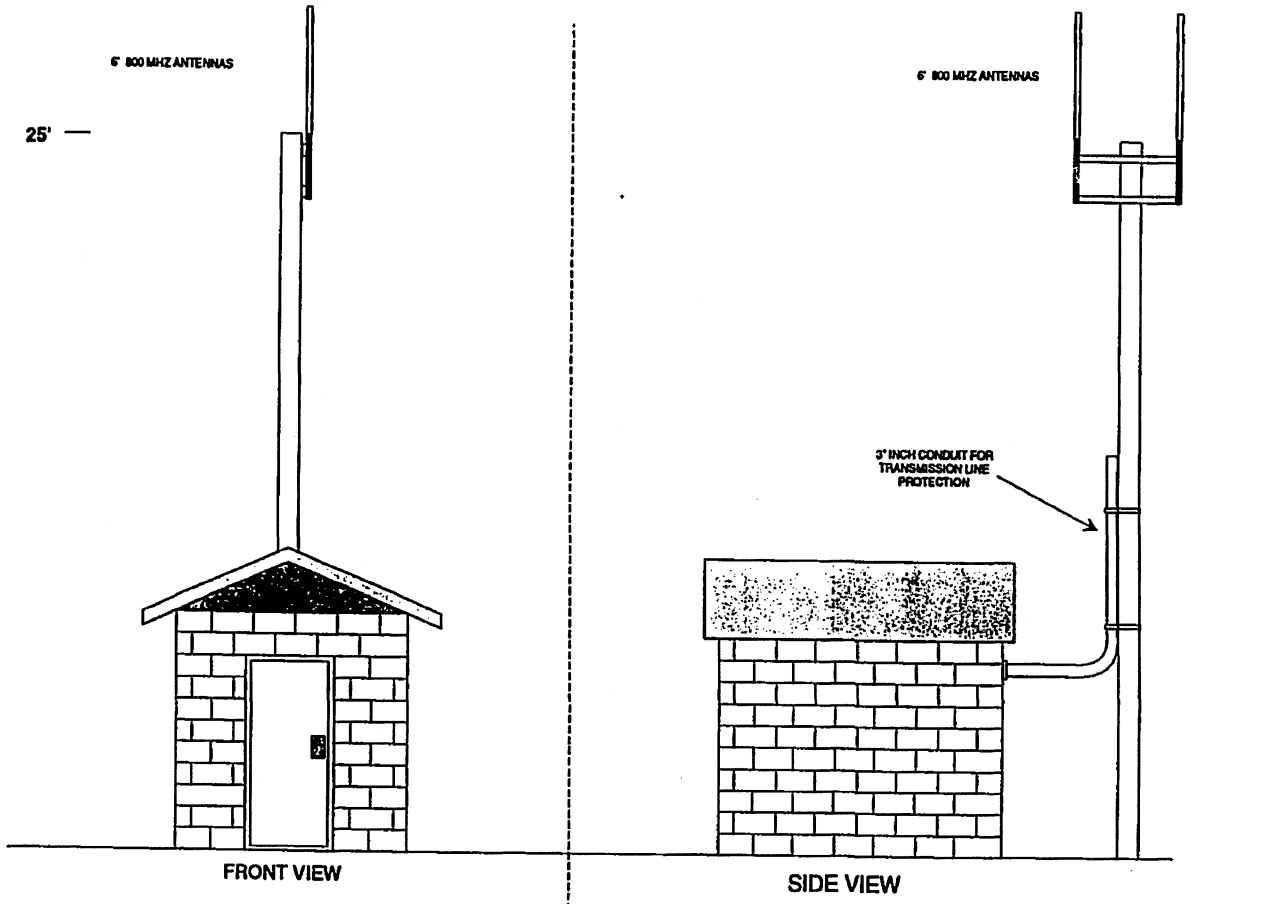
CITY & COUNTY OF HONOLULU	
13C KEAAU BEACH PARK	
Site Plan	1"=300'-0"

HONOLULU POLICE DEPARTMENT 92 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU	
13C KEAAU BEACH PARK Looking toward the South	
Site Profile	+/- 1/16" = 1'-0"

HONOLULU POLICE DEPARTMENT 93 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU		
KEEAU BEACH PARK PROPOSED 6' x 10' BUILDING AND 25' POLE		
DWG # 1	REV #1	06/06/92

Aliamanu 385 Reservoir Communications Facility (14)
Development Profile

TMK:	1-1-063: 010
AREA OF SITE:	54,493 sq.ft.
Area of Use:	less than 2,100 sq.ft.
LANDOWNER:	City and County
NEAREST TOWN/LANDMARK:	Aliamanu neighborhood
Distance from Site:	0.2 miles
EXISTING USE:	Water reservoir
PROPOSED USE:	New communications facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	General (G)
Type of Use Requested:	Permitted Use
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Preservation
Public Facilities Designation:	
ZONING:	P-1 Restricted Preservation
SPECIAL MANAGEMENT AREA:	Not located within SMA
LAND USE APPROVALS REQUIRED:	Conservation District Use Application

A. Site Location and Existing Uses

The City and County is proposing to develop a new communications facility within the Aliamanu 385 Reservoir site at the 385-ft. elevation on the ridge of Aliamanu Crater. To be used only by the Police Department, this new facility will be a spur link to the Puu Manawahua, HPD Telecom Service Section and Sand Island Sewage Treatment Plant sites.

The proposed site is primarily used by the Board of Water Supply for a one million gallon water tank, measuring 23 feet tall and 100 feet in diameter, bounded by a chain-link perimeter fence. Surrounding uses include the Aliamanu Military Housing, Salt Lake Elementary School, Honolulu International Country Club and private residences in Salt Lake. The proposed site is about 0.2 miles from the nearest house in Salt Lake.

B. Proposed Action

The City and County is proposing to construct a new 360-sq.ft. building of CMU construction and concrete slab roof on the northeast corner of the park, behind the water tank. (As an alternative, a prefabricated fiberglass facility may be installed in place of the CMU structure. A final decision will be made at a later time.) A 50-ft.-tall tower will be located west of the building. Three six-ft.-diameter microwave dishes and five vertical antennas will be attached to the tower. The new tower and building will be designed to withstand Category 5-Hurricane Forces and soils testing will be conducted to

ensure that the site can accommodate the proposed building and tower. A new fuel tank will be located on the eastern side of the equipment building.

The construction cost for the proposed improvements is estimated at $575,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The proposed site is located on a relatively flat area, leading to slopes ranging from 35 to 60 percent beyond the park's security fence. According to the U.S. Soil Conservation Service, the area is made up of rock outcrops of mainly basalt and andesite. Centuries of weathering, however, has created a layer of soil deposits supporting dryland vegetation.

To construct the new 50-ft.-tall tower, either one 11-ft. x 11-ft. x six-ft.-deep monolithic footing or three cylindrical footings, measuring four feet in diameter by 12 feet deep, will be dug west of the building. Reinforcing steel will be placed into the holes and then concrete will be pumped to the site and filled into the holes. Tower base plates will be cast into the wet concrete. After the concrete cures, the tower will then be transported to the site by a crane and bolted onto its base plates. Other than the crane, no heavy machinery will be used during construction, and no significant erosion or sedimentation impacts are anticipated. Limited grading will also be performed to allow construction of the new equipment building. This structure will occupy only 360 square feet and will require minimum alteration to the site.

Flood Hazard

Rainfall in the area averages 20 to 30 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards in the area are undetermined. Given the 385-ft. site elevation, flooding is unlikely. In addition, the proposed new facility should not result in any flooding of lower elevation properties.

Flora and Fauna

The natural vegetation in the area include glauca, koa haole, lantana and fingergrass. No threatened or endangered flora or fauna exist on the site. The proposed facility will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

About 100 feet in diameter and 23 feet tall, the Salt Lake Reservoir occupies a visually-prominent site on the ridge which overlooks Salt Lake and divides it from Aliamanu Crater. The reservoir is visible from many parts of Salt Lake but not from Aliamanu.

The proposed radio facility will be sited on the Aliamanu side of the reservoir. Only about 12 feet in height, the radio equipment building will be obscured from view by the reservoir and the tall stand of haole koa brush which surrounds the site. At 50 feet in height, the antenna tower will be visible throughout Salt Lake. It will be most visible from residences at the 100-200-ft. elevation in the southwestern part of Salt Lake, relatively close to the reservoir site.

Access and Traffic

Access to the site is from Likini Street and a paved access road. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

Public Services

The site is not equipped with electrical service. The Hawaiian Electric Company, under contract with the Board of Water Supply, will be installing a new transformer to provide underground service to the reservoir and is prepared to also service the proposed communications facility.

D. Summary of Impacts and Mitigative Measures

Viewplanes

The building will be painted an earth-tone color to match the color of the reservoir. The tower will be painted gray to blend with the sky.

E. Land Use Approvals Required

Conservation District Use Application

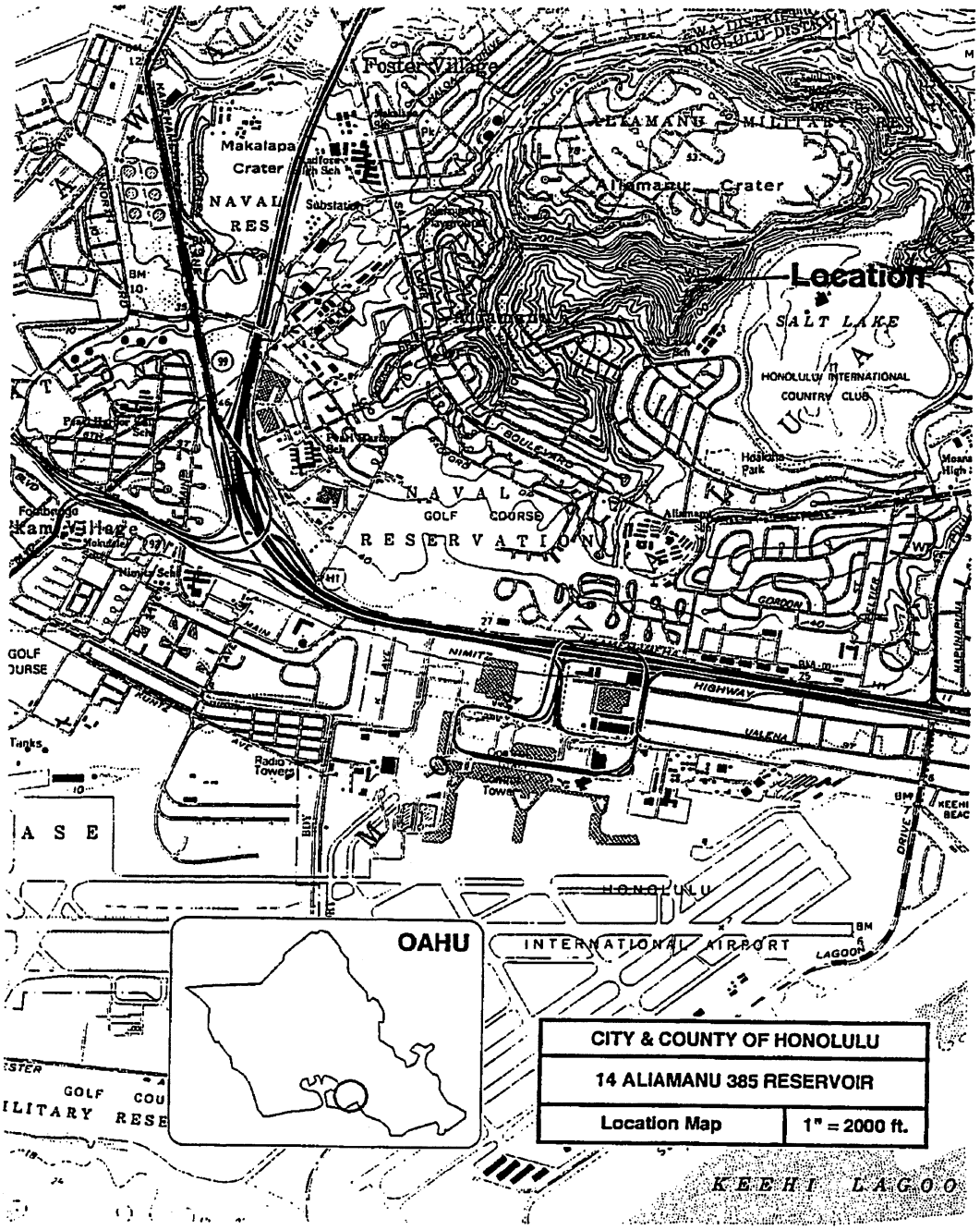
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation Subzone

The project site lies within the General (G) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to designate open space where specific conservation uses may not be defined, but where urban use would be premature". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

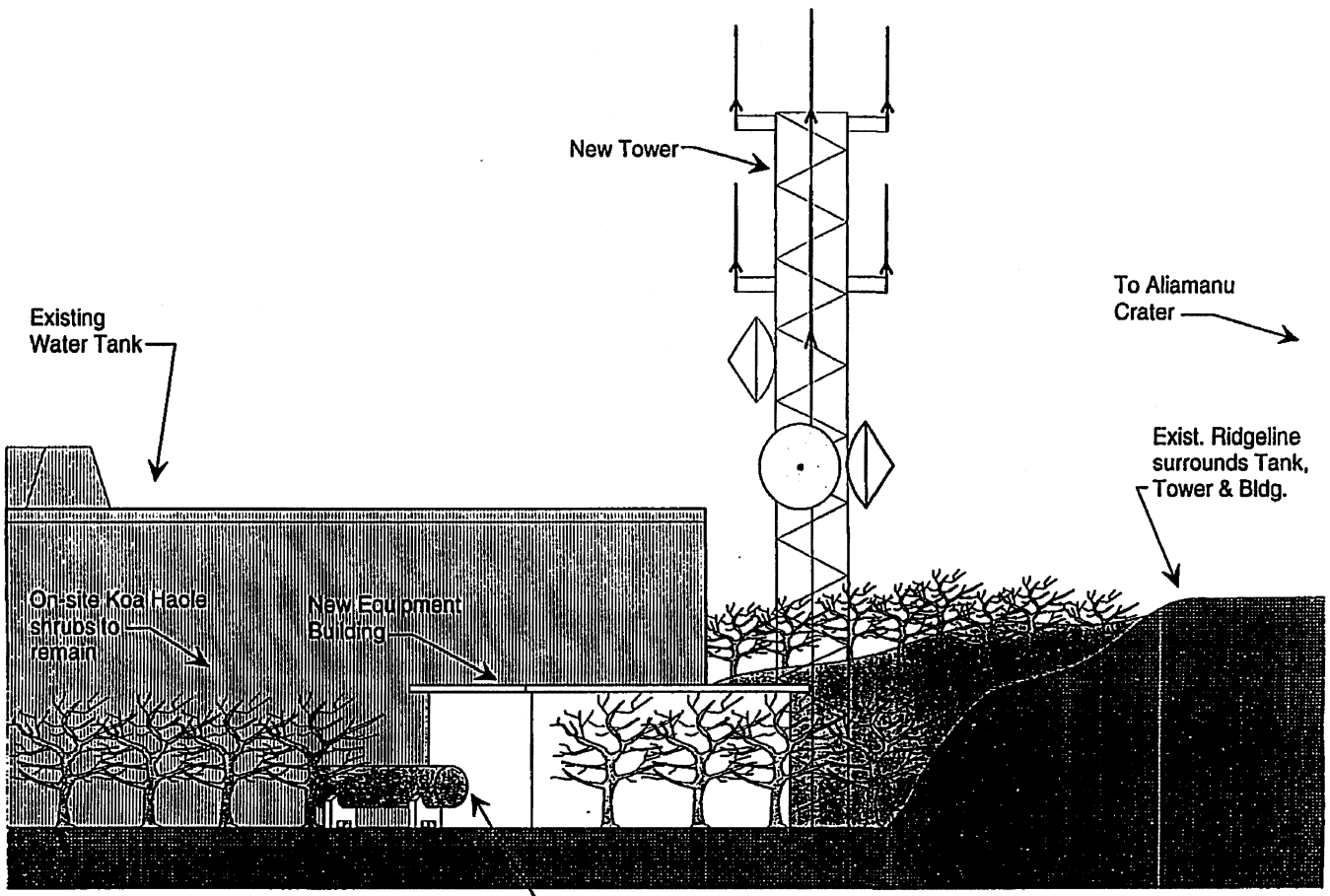
Prior CDUA Approvals

None. The city is proposing a new facility.



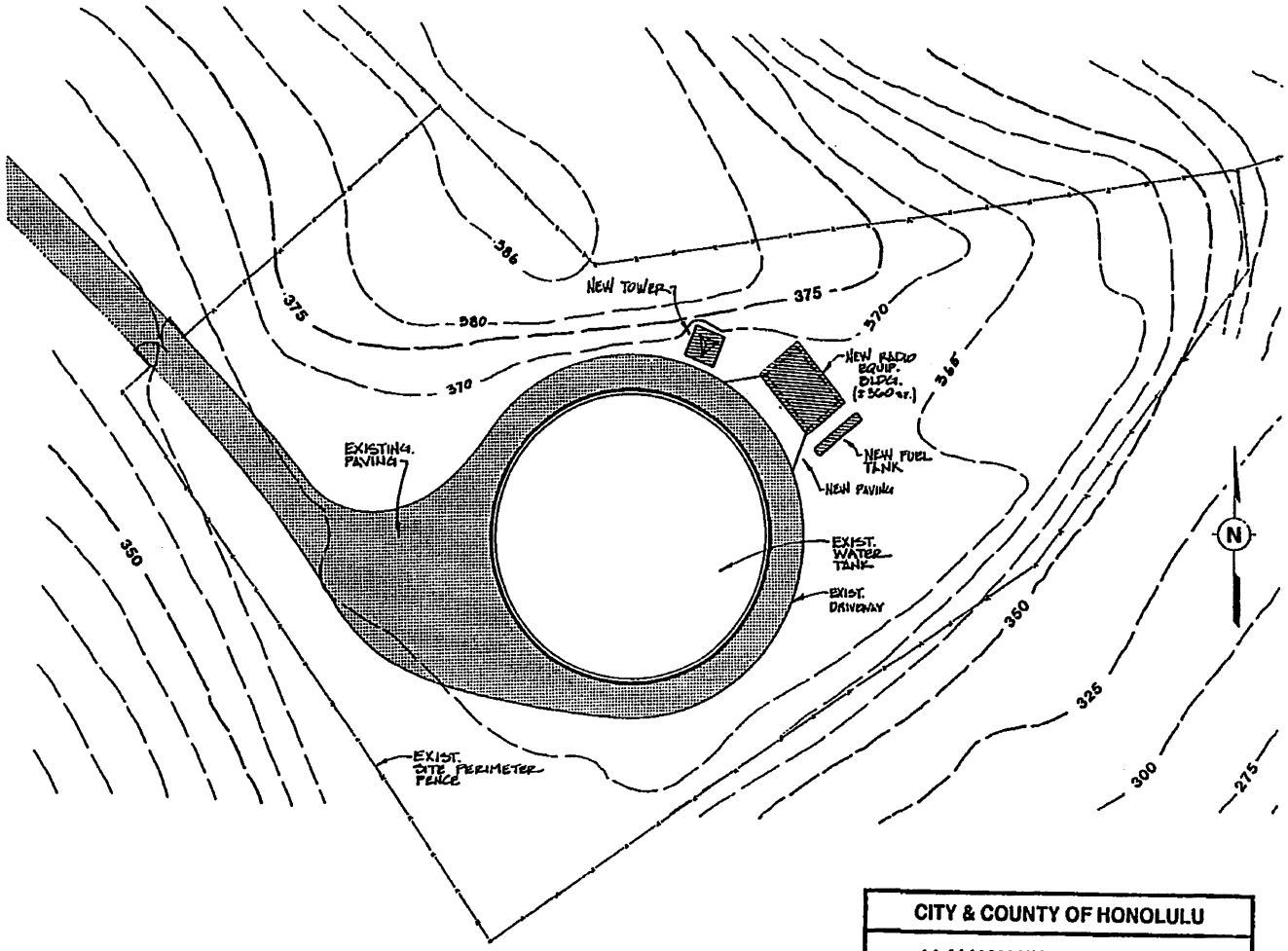
HONOLULU POLICE DEPARTMENT 98 COMMUNICATIONS FACILITIES UPGRADE

HONOLULU POLICE DEPARTMENT 99 COMMUNICATIONS FACILITIES UPGRADE



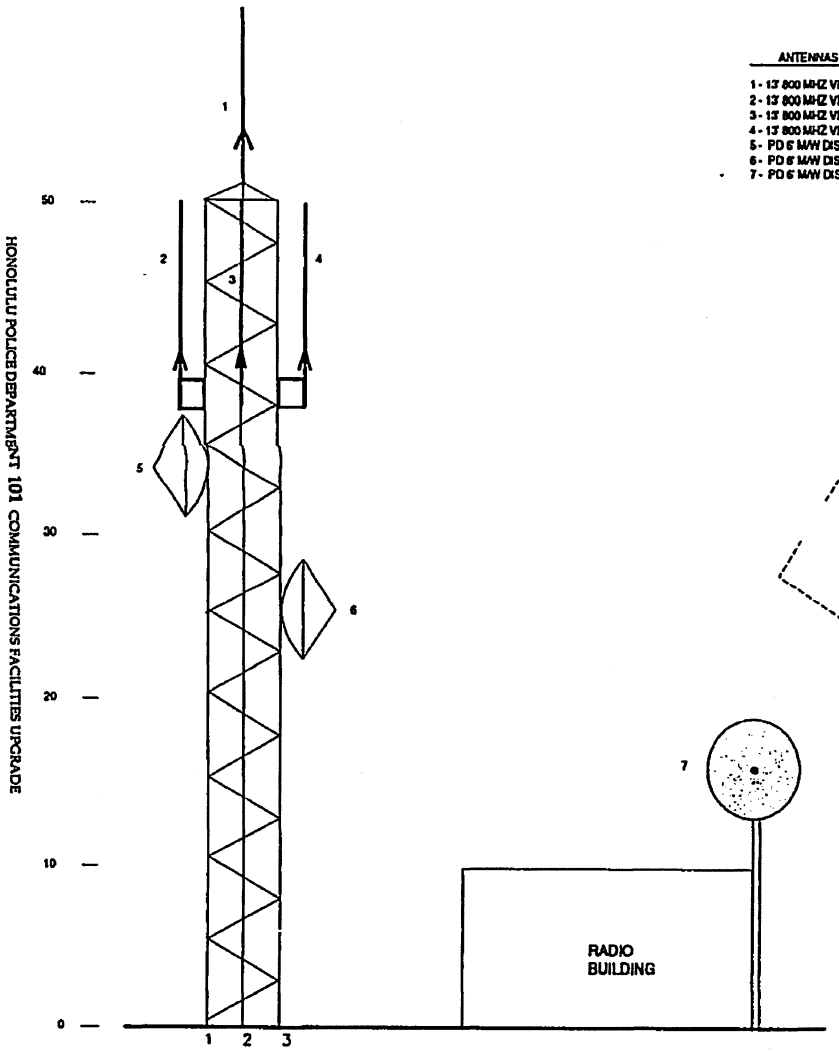
CITY & COUNTY OF HONOLULU	
14 ALIAMANU 385 RESERVOIR Looking toward the west	
Site Profile	1" = 10'-0"

HONOLULU POLICE DEPARTMENT 100 COMMUNICATIONS FACILITIES UPGRADE



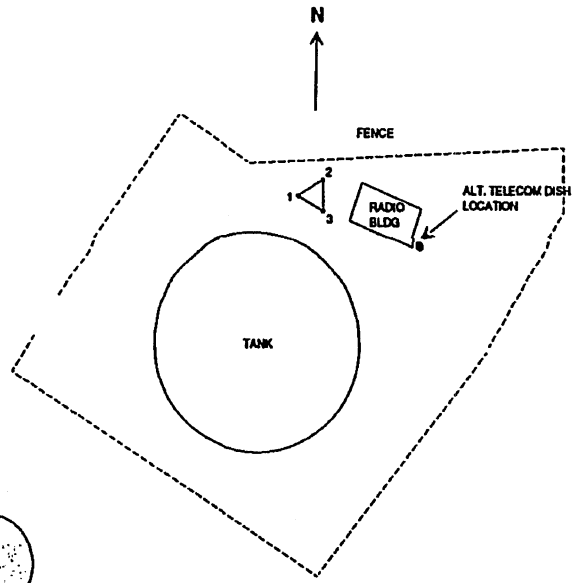
CITY & COUNTY OF HONOLULU	
14 ALIAMANU 385 RESERVOIR	
Site Plan	1" = 60'-0"

HONOLULU POLICE DEPARTMENT 101 COMMUNICATIONS FACILITIES UPGRADE



ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - 13' 800 MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - PD 6' M/W DISH - MANAWAHUA
6 - PD 6' M/W DISH - SAND ISLAND
7 - PD 6' M/W DISH - TELECOMM SVCS



CITY & COUNTY OF HONOLULU		
14 ALIAMANU 385 RESERVOIR NEW 50-FOOT ANTENNA STRUCTURE ALT. M/W DISH LOCATION TO TELECOM SVCS		
DWG #2	REV #1	11/16/92

Section IV. **Proposed Facilities**
Not Within Hawaii Conservation District

Honolulu Municipal Building

Kaaawa Fire Station

Sunset Beach Neighborhood Park

Sand Island Sewage Treatment Plant

IV. PROPOSED FACILITIES NOT WITHIN THE CONSERVATION DISTRICT

This section assesses the environmental impacts of the proposed improvements to the four facilities subject to EIS requirements but not located with the State Conservation District. Each site description is accompanied by site plans and tower plans. The site plans depict the proposed towers and/or equipment rooms relative to existing structures and natural features. Refer to the tower plans for accurate representation of antenna and dish placements and orientations. Note however, that all vertical antennas are drawn at their maximum heights of thirteen feet. The actual antenna lengths, however, will vary from site to site and cannot be determined until the system is installed. Nevertheless, no antenna will exceed thirteen feet in length. The total *number* of antennas are accurately represented on the tower plans.

Honolulu Municipal Building Communications Facility (1)
Development Profile

TMK:	2-1-033: 010
AREA OF SITE:	10.26 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Government building Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA: Land Use Designation: Public Facilities Designation:	Primary Urban Center Public and Quasi Public GB (Government Building)
ZONING:	B-2 Community Business
SPECIAL DISTRICT:	Hawaii Capital Special District

A. Site Location and Existing Uses

The existing communications facility is located on top of the Honolulu Municipal Building. The facility is a backbone link between the Makiki Round Top and Sand Island Sewage Treatment Plant sites. It also links to the Kalihi Police Station. Currently, only the Police Department uses the facility.

The facility consists of a 468-sq.ft. equipment room within the building and a 20-ft.-tall tower located on the building rooftop. Three six-ft.-diameter microwave dishes are attached to the tower. An open mechanical system lies adjacent to the tower and is surrounded by metal guard rails.

The 15-floor Municipal Building is within the Hawaii Capital Special District and is surrounded by landscaped open space. A childcare facility is located adjacent to the Municipal Building above its

underground parking structure. Other nearby government structures include Honolulu Hale and the State Kalanimoku Building. In addition, the recently completed Police Department Office Building is located on the corner of Beretania Street and Alapai Street. A City and County bus terminal is located adjacent to the construction along Alapai Street. A new office building and bus transfer station has been proposed for this area.

B. Proposed Action

Improvements proposed for this facility include attaching four vertical antennas onto the top of tower, sand blasting and repainting the rusted guard rails, and making various interior alterations.

The construction cost for the proposed improvements is estimated at less than $125,000.

C. Affected Environment and Anticipated Impacts

Physical Environment

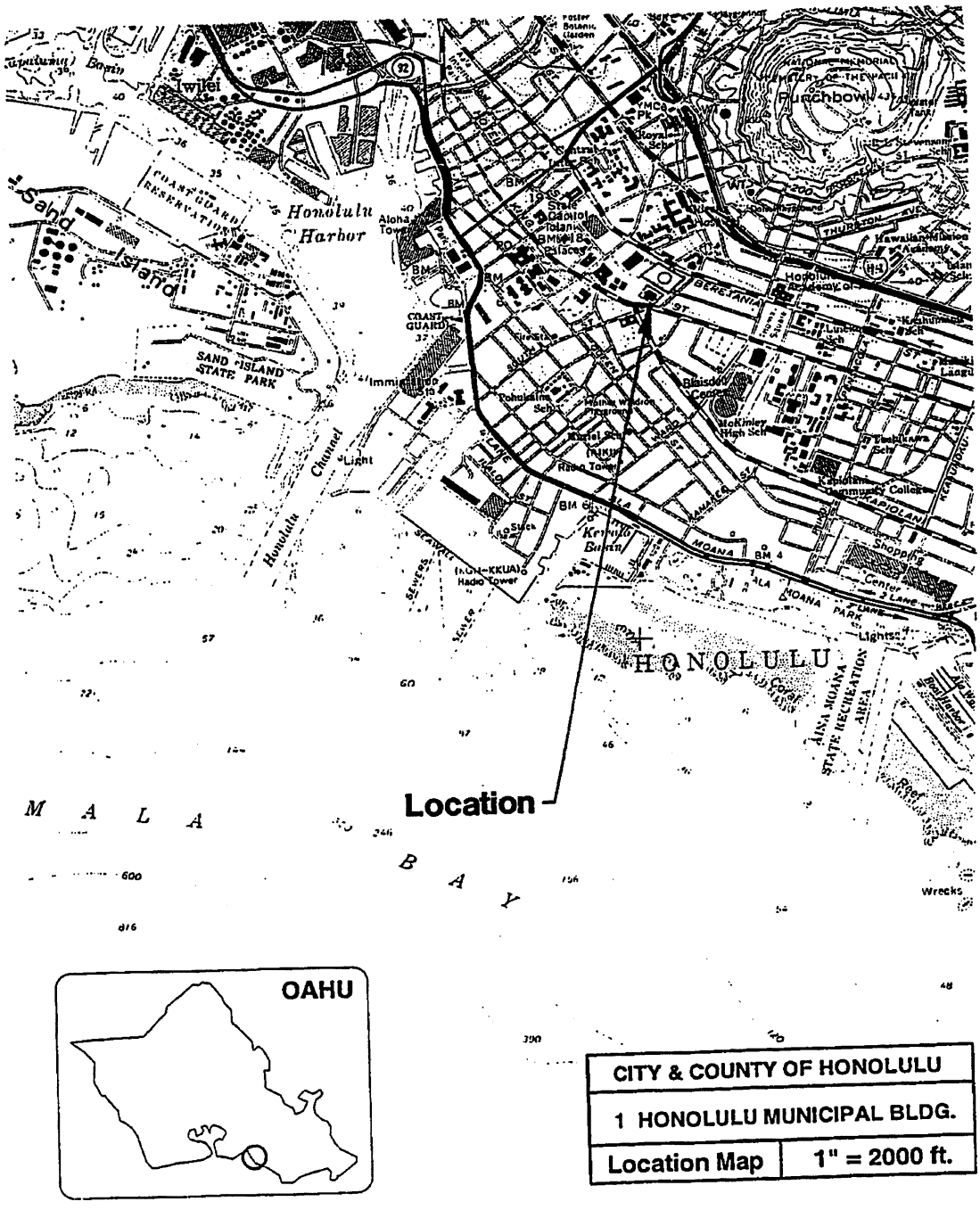
The existing facility is located within a built-up area on top of the 15-floor Municipal Building. The improvements proposed for the facility will not require any ground disturbance, will not result in any negative impacts to the area's physical environment and will not impact existing public views.

Access to the site is from Alapai Street and South Beretania Street. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Land Use Approvals Required

Hawaii Capital Special District Permit Application

The facility is located in the Hawaii Capital Special District within the Municipal Service Building Precinct. The proposed improvements, however, consist of minor repairs and additions that will not adversely change the character or appearance of the structure, and therefore, are exempt from Special District Permit requirements.



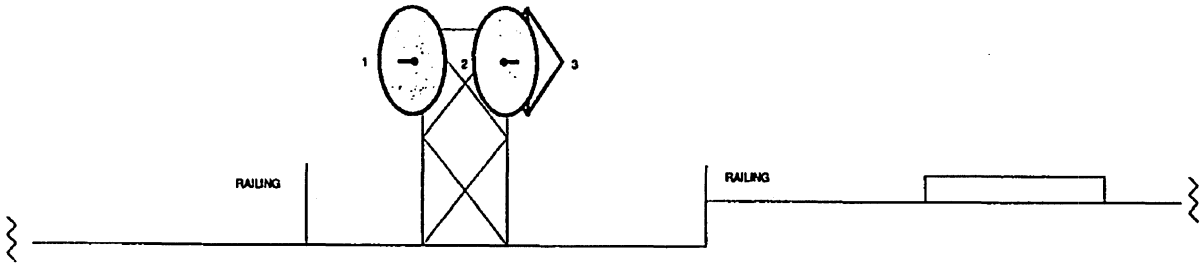
CITY & COUNTY OF HONOLULU	
1 HONOLULU MUNICIPAL BLDG.	
Location Map	1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 105 COMMUNICATIONS FACILITIES UPGRADE

HONOLULU POLICE DEPARTMENT 106 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - PD 6' M/W DISH - ROUND TOP
2 - PD 6' M/W DISH - KALIHI
3 - PD 6' M/W DISH - SAND ISLAND



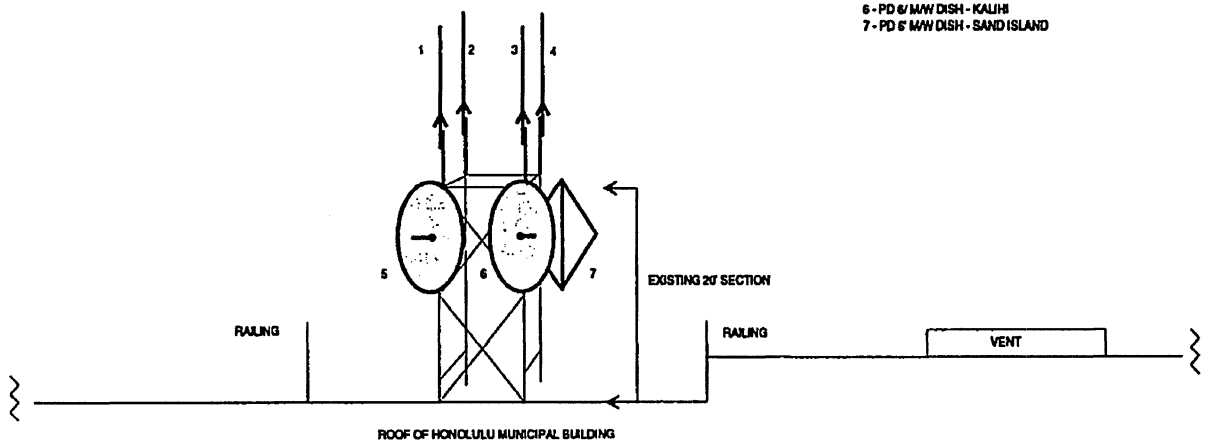
ROOF OF HONOLULU MUNICIPAL BUILDING

CITY & COUNTY OF HONOLULU		
HONOLULU MUNICIPAL BUILDING EXISTING ANTENNA STRUCTURE		
DWG # 1	REV #1	06/06/92

HONOLULU POLICE DEPARTMENT 107 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - 13' 800 MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - PD 6' M/W DISH - ROUND TOP
6 - PD 6' M/W DISH - KAUHI
7 - PD 6' M/W DISH - SAND ISLAND



CITY & COUNTY OF HONOLULU		
HONOLULU MUNICIPAL BUILDING NEW SYSTEM ANTENNA STRUCTURE		
DWG # 1	REV #2	06/30/92

Kaaawa Fire Station Communications Facility (8)
Development Profile

TMK:	5-1-011: 051
AREA OF SITE:	12,524 sq.ft.
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Fire station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA: Land Use Designation: Public Facilities Designation:	Koolauloa Public and Quasi-Public (FS/M) Fire Station/Modify
ZONING:	R-5 Residential
SPECIAL MANAGEMENT AREA:	Located within the Special Management Area
LAND USE APPROVALS REQUIRED:	Special Management Area Use Permit

A. Site Location and Existing Uses

The existing communications facility is located in Kaaawa, Koolauloa, along Kamehameha Highway, directly across Swanzy Beach Park. The facility is a backbone link between the Kahuku Police Station and Aikahi Sewage Treatment Plant sites. In addition to the Police Department, the Fire Department, Board of Water Supply, Department of Transportation Services, and State Emergency Medical Service use the facility.

The facility consists of a 415-sq.ft. equipment building within the fire station complex and a 100-ft.-tall tower located on the northeast corner of the site. Two eight-ft.-diameter microwave dishes, one six-ft.-diameter microwave dish, seven vertical antennas and one yagi antenna are attached to the tower. A fuel tank is located about ten feet east of the building.

In addition to Swanzy Beach Park to the north, the site is bordered by Makua Stream to the west. Other uses in the area include neighborhood businesses and private residences.

B. Proposed Action

Improvements proposed for this facility are limited to installing a chain link security fence, making various interior alterations, and general cleanup and repainting of the building.

The construction cost for the proposed improvements is estimated at $100,000.

C. Affected Environment and Anticipated Impacts

Topography and Soils

The existing facility site is located on a relatively flat area with slopes ranging from two to six percent. According to the U.S. Soil Conservation Service, soils in the area are of the Hanalei series and consists of poorly-drained, stony silty clay. Runoff is slow and erosion hazard is slight.

The improvements proposed for the facility will require minimum alteration to the site and will not result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages 50 to 75 inches per year. According to the Federal Flood Insurance Rate Maps, the site lies outside the 500-year floodplain. The improvements proposed for the facilitiy will not increase the flood hazard to adjacent properties.

Flora and Fauna

The natural vegetation in the area consists of paragrass, sensitiveplant, honohono, Java plum and guava. No threatened or endangered flora or fauna exist on the site. The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

The proposed improvements will not impact any public views.

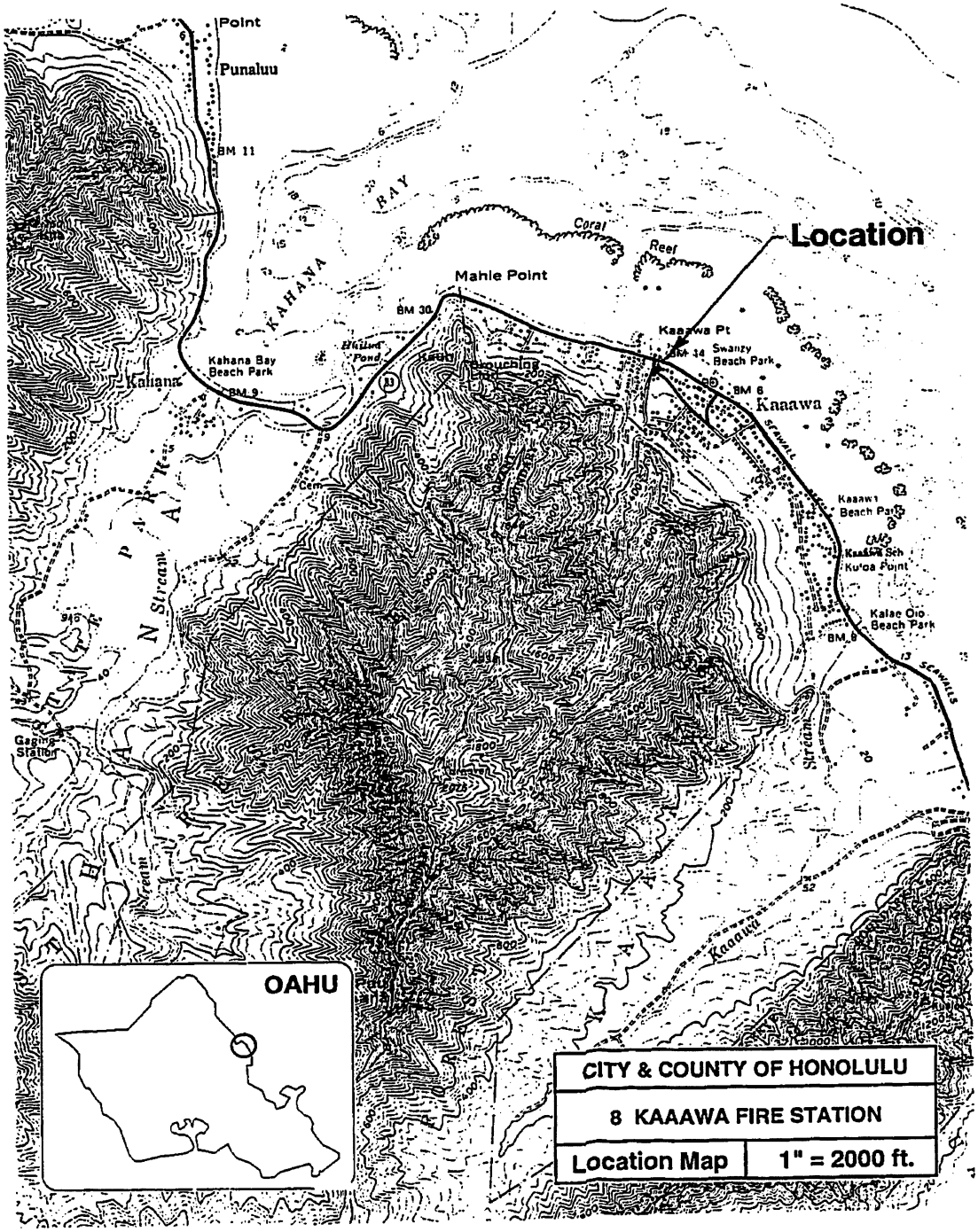
Access and Traffic

Access to the site is from Lihimauna Road and Kamehameha Highway. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

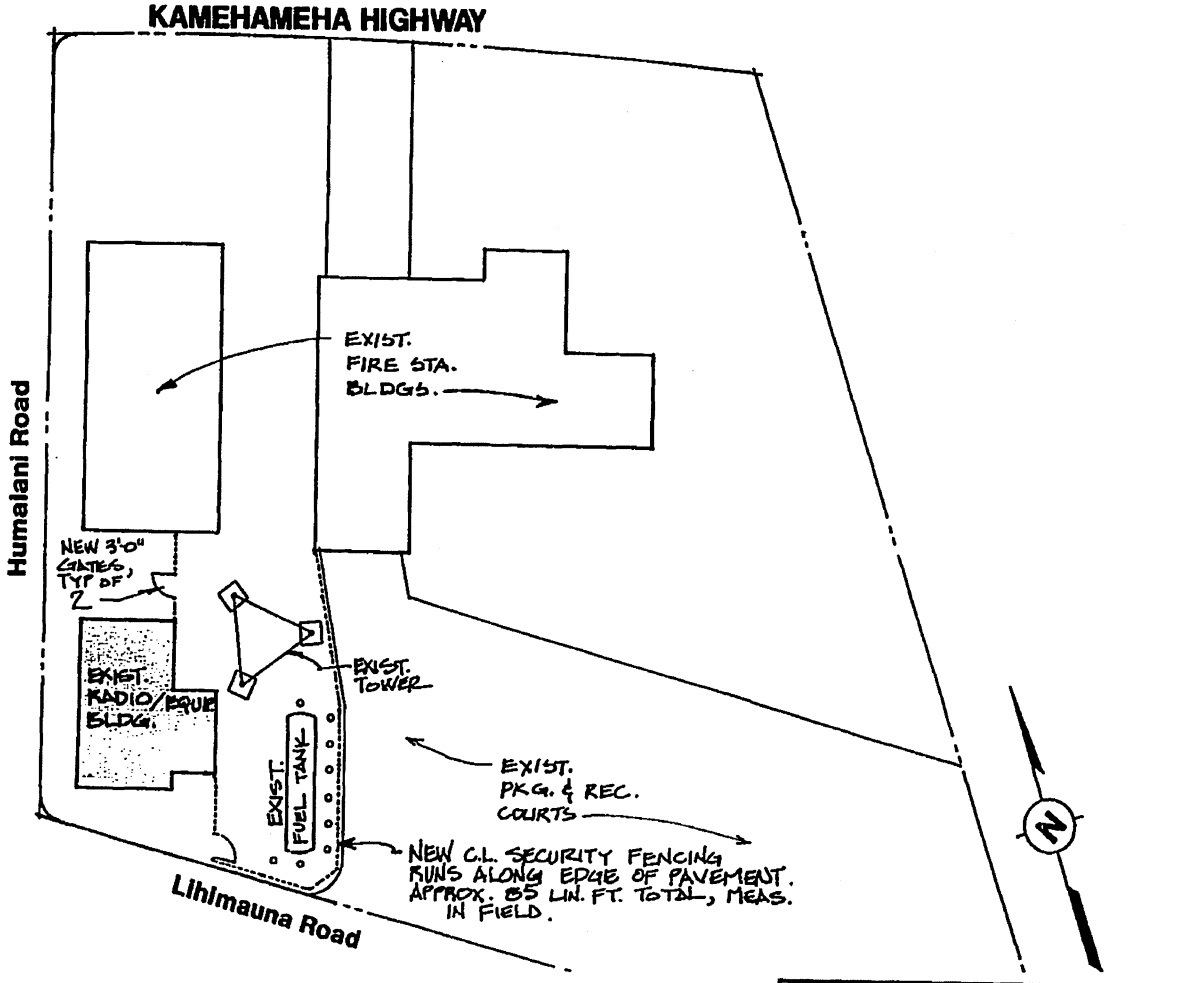
D. Land Use Approvals Required

Special Management Area Use Permit

The site is within the Special Management Area, approximately 400 feet from the shoreline. A Special Management Area Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization.


Location
Point
Punaluu
BM 11
BAY
Coral
Reef
Mahie Point
BM 30
KAHANA
Kahana Bay
Beach Park
BM 9
Kahana
Kaaawa Pt
BM 14
Swanzy
Beach Park
BM 6
Kaaawa
Kaaawa
Beach Park
Kaaawa Sch
Ku'oa Point
Kalae Oio
Beach Park
BM 8
Gasoline
Station
Stream
OAHU
CITY & COUNTY OF HONOLULU
8 KAAAWA FIRE STATION
Location Map
1" = 2000 ft.

HONOLULU POLICE DEPARTMENT 112 COMMUNICATIONS FACILITIES UPGRADE

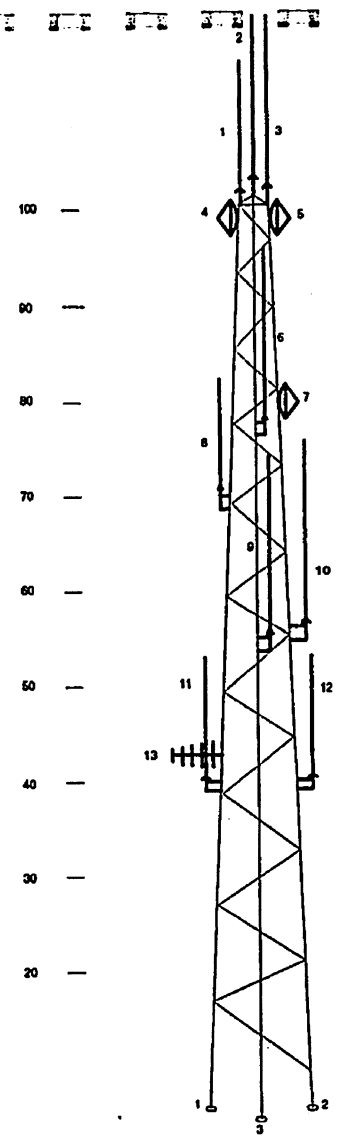


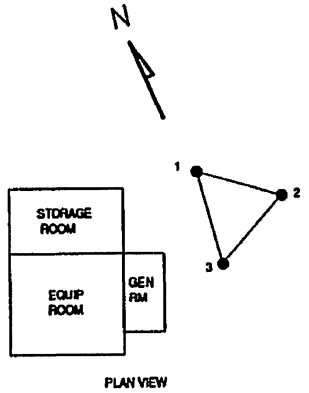
CITY & COUNTY OF HONOLULU	
8 KAAAWA FIRE STATION	
Site Plan	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 113 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - EMS 15' VERTICAL
2 - 20' PD VERTICAL - F8
3 - 20' FD VERTICAL
4 - PD 6' M/W DISH - KAHUKU
5 - PD 8' M/W DISH - AIKAHI "A"
6 - 20' PD VERTICAL - F1
7 - PD 8' M/W DISH - AIKAHI "B"
8 - 15' EMS VERTICAL
9 - 20' PD VERTICAL
10 - 20' FD VERTICAL
11 - 15' BWS VERTICAL
12 - 15' BWS VERTICAL
13 - OTS UHF YAGI





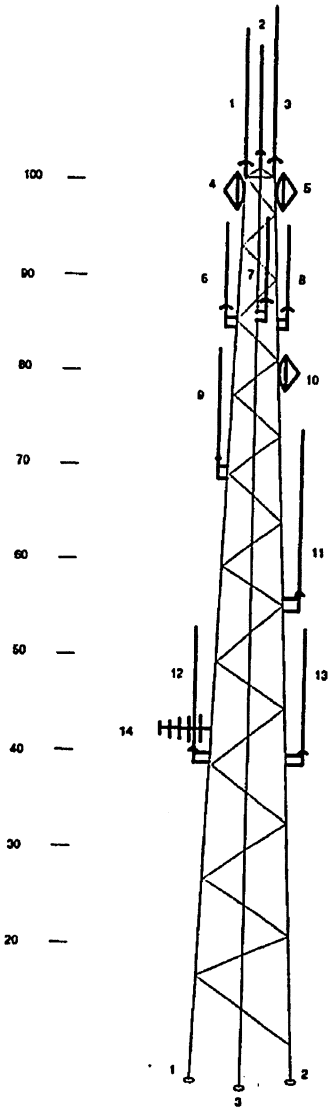
PLAN VIEW

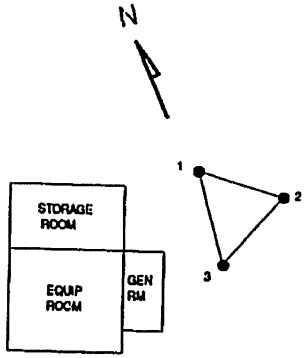
CITY & COUNTY OF HONOLULU		
KAAAWA FIRE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

HONOLULU POLICE DEPARTMENT 114 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - EMS 15' VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - 20' FD VERTICAL
4 - PD 6' M/W DISH - KAHUKU
5 - PD 8' M/W DISH - AIKAHI "A"
6 -13' 800 MHZ VERTICAL
7 -13' 800 MHZ VERTICAL
8 -13' 800 MHZ VERTICAL
9 -15' EMS VERTICAL
10 - PD 6' M/W DISH - AIKAHI "B"
11 - 20' FD VERTICAL
12 -15' BWS VERTICAL
13 - DTS UHF YAGI





PLAN VIEW

CITY & COUNTY OF HONOLULU		
KAAAWA FIRE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

Sunset Beach Neighborhood Park Communications Facility (9A)
Development Profile

TMK:	5-9-005: 070
AREA OF SITE:	261,360 sq.ft.
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Neighborhood park
PROPOSED USE:	New communications facility
STATE LAND USE DISTRICT:	*Urban*
COUNTY DEVELOPMENT PLAN AREA:	North Shore
Land Use Designation:	Park
Public Facilities Designation:	None
ZONING:	P-2 General Preservation
SPECIAL MANAGEMENT AREA:	Located within Special Management Area
LAND USE APPROVALS REQUIRED:	Special Management Area Use Permit

A. Site Location and Existing Uses

The City and County is proposing to develop a new communications facility fronting Kamehameha Highway within the Sunset Beach Neighborhood Park site. Connected by a wireline to the Kahuku Police Station, this new facility is intended to provide improved radio coverage for the north shore area.

The existing park includes a large grassy area, basketball, volleyball and tennis courts, picnic benches and a restroom/storage building. A State of Hawaii Civil Defense siren and antenna are mounted on a 30-ft.-tall wooden pole and located west of the building. Sunset Beach Elementary School is located adjacent to the park. Other surrounding uses include Pupukea-Paumalu Homesteads to the north, and Ehukai Beach Park and private residences across the highway.

B. Proposed Action

The City and County is proposing to the expand the existing comfort station and place the radio equipment within an extended office/storage space. Building improvements include expanding the exterior building shell by about 168-sq.ft. along the southwest wall, and adding a partition within the existing office/storage space. One vertical antenna and one yagi antenna will be mounted on top of the existing 30-ft.-tall pole. The State of Hawaii Civil Defense will be replacing their existing mechanical siren with an electronic unit, which will then be mounted onto the pole.

The construction cost for the proposed improvements is estimated at less than $125,000.

C. Affected Environment

Topography and Soils

The proposed site is flat with soils consisting of Waialua silty clay. Permeability is moderate, runoff is slow and erosion hazard is no more than slight. The new equipment building will occupy only 168 square feet and will require minimum alteration to the site. Although limited grading will be performed to allow construction of the new equipment room, this activity will not result in any significant erosion or sedimentation impacts.

Flood Hazard

Rainfall in the area averages less than 20 inches per year. According to the Federal *Flood Insurance Rate* Maps, flood hazards at the site are undetermined and considered negligible. The proposed building addition will not increase the flood hazard to adjacent properties.

Flora and Fauna

The natural vegetation in the area is sparse, consisting of hibiscus, monkeypod, fingergrass and palms. No threatened or endangered flora or fauna exist on the site. The proposed facility will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

The new antenna will be fixed to the existing Civil Defense monopole. The building extension will be painted to match the existing structure. Given the minor scale of the improvements, they will have no impact on public views.

Recreational

The proposed building expansion will occupy only 168 square feet and will be added to the existing comfort station. The building is located about 900 feet from the shoreline and will not interfere with the recreational activities conducted at the beach or the park.

Access and Traffic

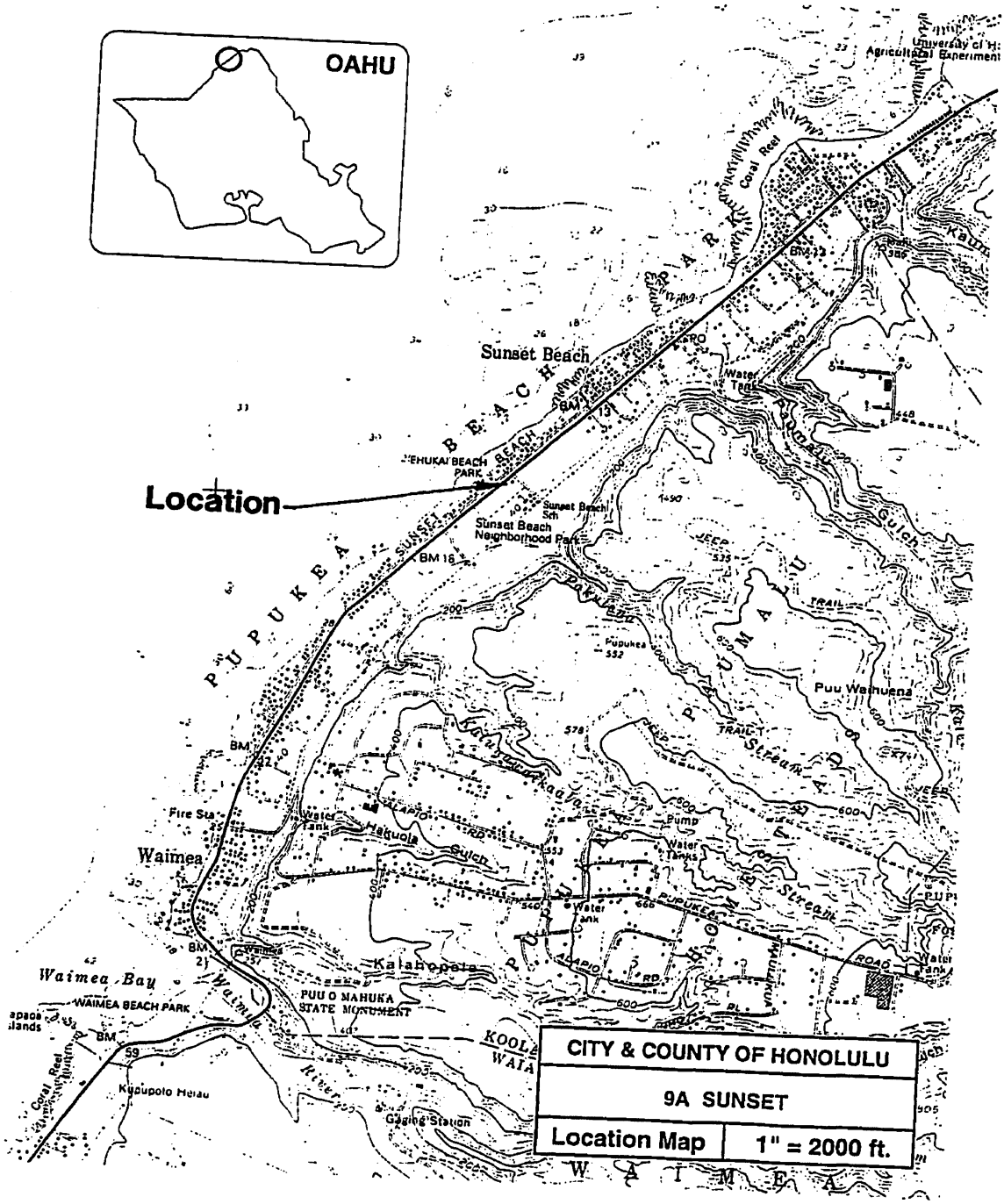
Access to the site is from Kamehameha Highway. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

The proposed building expansion will be added to the existing comfort station within the park about 900 feet from the shoreline, and will not affect access to the shoreline, any publicly owned or used beach, or recreation area.

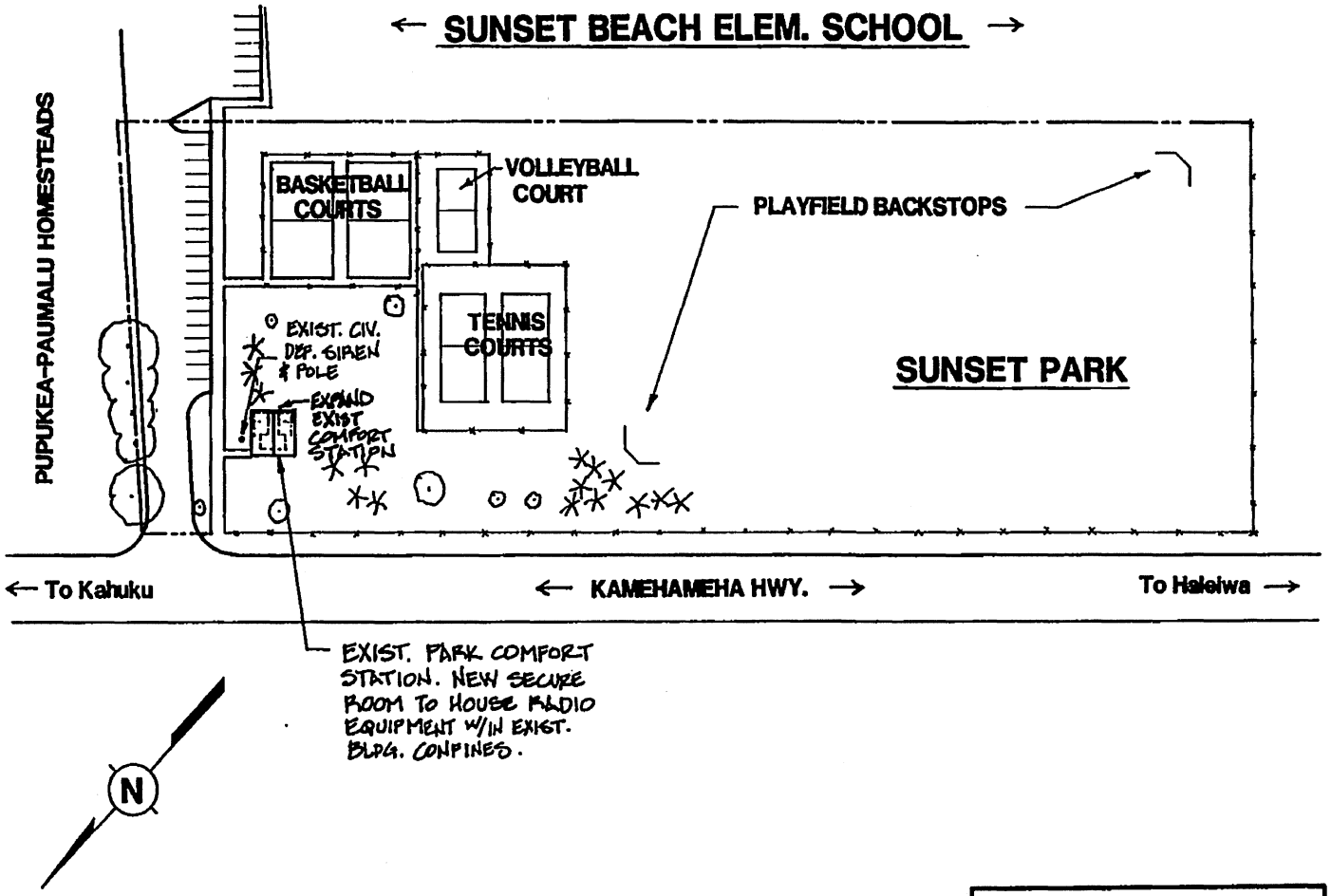
D. Land Use Approvals Required

Special Management Area Use Permit

The site is within the Special Management Area, approximately 900 feet from the shoreline. A Special Management Area Use Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization.

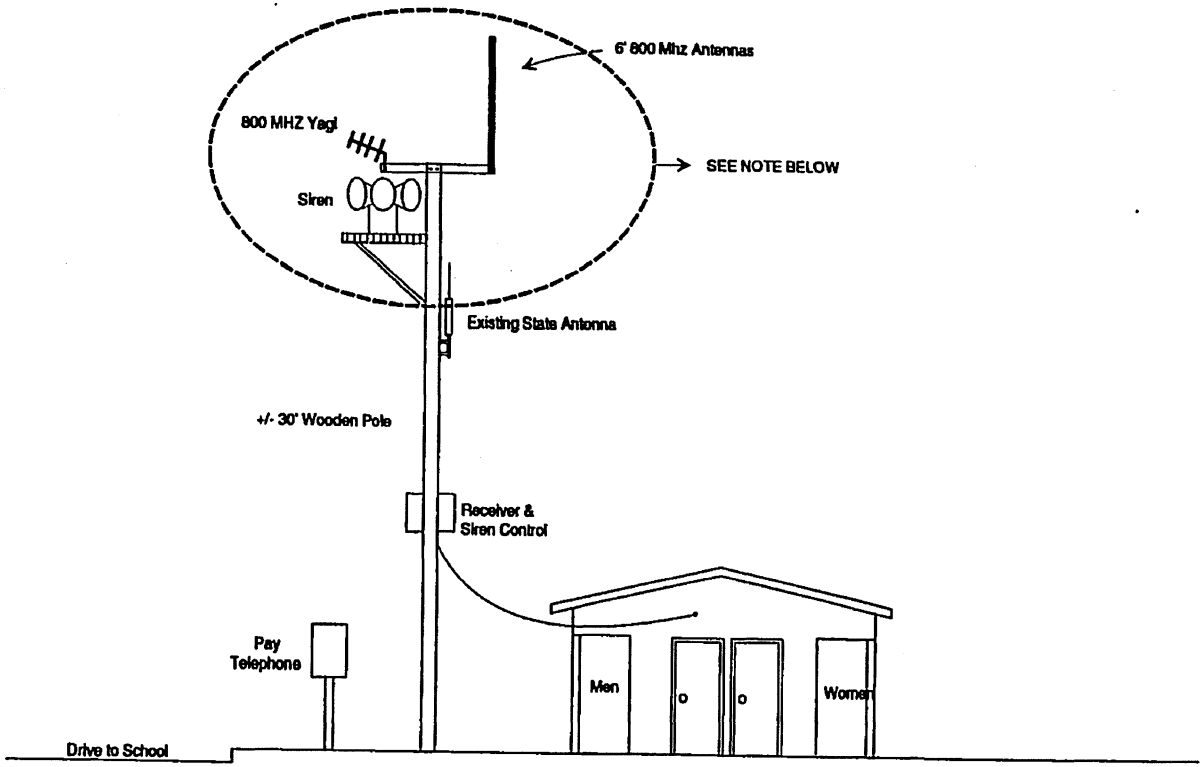


HONOLULU POLICE DEPARTMENT 118 COMMUNICATIONS FACILITIES UPGRADE



HONOLULU POLICE DEPARTMENT 119 COMMUNICATIONS FACILITIES UPGRADE

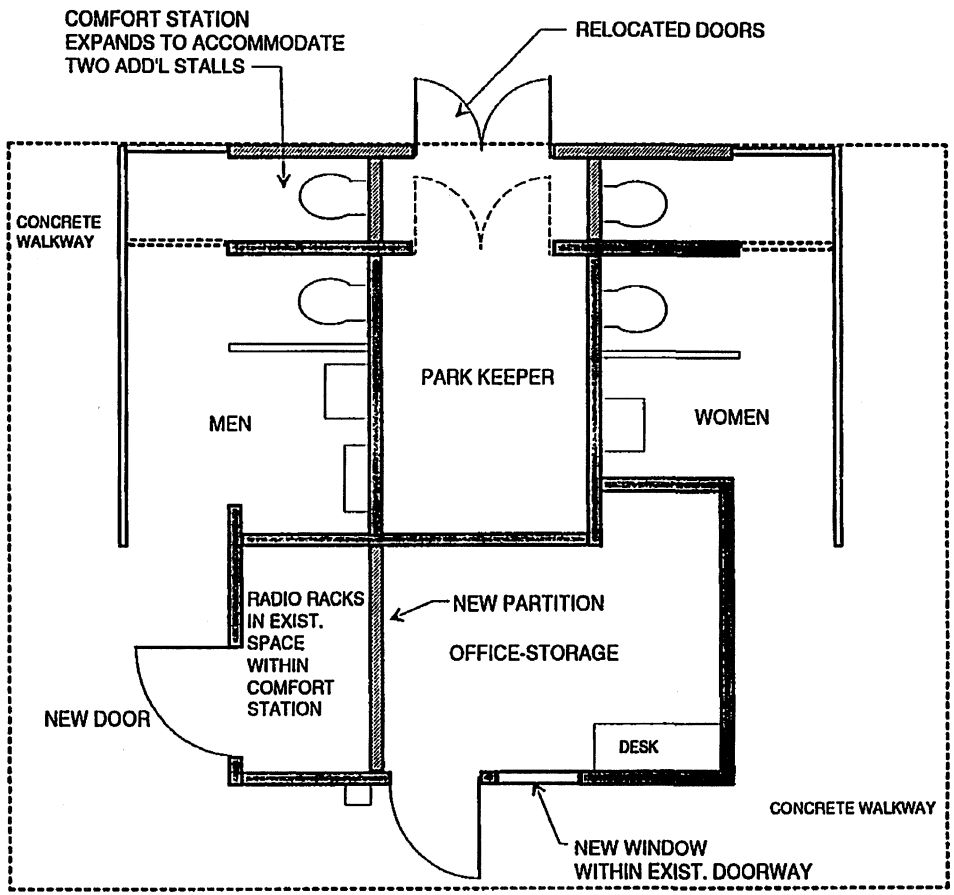
CITY & COUNTY OF HONOLULU	
9A SUNSET	
Site Plan	1"= 100'-0"



NOTE: STATE OF HAWAII CIVIL DEFENSE TO CHANGE OUT THE MECHANICAL SIREN TO AN ELECTRONIC UNIT WHICH WILL BE MOUNTED ATOP THE POLE. A CROSSARM IS TO BE PROVIDED FOR HPD 800 MHZ ANTS

View from Kam Highway
Looking Toward School Grounds

SUNSET		
PROPOSED 800 MHZ RECEIVE SITE TO ENHANCE PORTABLE RADIO COVERAGE		
DWG #2	REV #	06/06/92



SIREN POLE

CITY & COUNTY OF HONOLULU		
SUNSET PARK BLDG EXPANSION FOR HPD RADIO		
DWG #1	REV #	11/19/92

Sand Island Sewage Treatment Plant Communications Facility (15)
Development Profile

TMK:	1-5-041: 005
AREA OF SITE:	50 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Sewage treatment plant Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA: Land Use Designation: Public Facilities Designation:	Primary Urban Center Public and Quasi-Public EG/STP/M (Energy Generation/Sewage Treatment Plant/Modify)
ZONING:	I-3 Waterfront Industrial
SPECIAL MANAGEMENT AREA:	Located within Special Management Area
LAND USE APPROVALS REQUIRED:	Special Management Area Use Permit

A. Site Location and Existing Uses

The existing communications facility is located within the Sand Island Sewage Treatment Plant site along Sand Island Parkway Road. The facility is a backbone link to the Aliamanu 385 Reservoir and Honolulu Municipal Building sites. Currently, only the Police Department uses the facility.

The facility consists of an equipment room on the second floor of a two-story control building and a 12-ft.-tall tower. Two six-ft.-diameter microwave dishes and one vertical antenna are attached to the tower. Another vertical antenna is located about 55 feet from the equipment room.

The southern and western sides of the site are unused and part of the State's Sand Island Recreation Area. The Matson Container Handling Facility and various light industrial activities are located to the north of the plant. Other light industrial businesses are also located east of the site.

B. Proposed Action

Improvements proposed for this facility include extending the existing 12-ft.-tall tower with a 12-ft. tower segment and making minor antenna modifications. Other improvements include making various interior alterations, and general cleanup and repainting of the building.

The cost of construction for the proposed improvements is estimated at less than $125,000.

C. Affected Environment and Anticipated Impacts

Physical Environment

The existing facility is located within a built-up area on top of a two-story control building. No threatened or endangered flora or fauna exist in the area. The improvements proposed for the facility will not require any ground disturbance and will not result in any negative impacts to the area's physical environment.

The existing radio facility is not visible from Sand Island Parkway or from Sand Island State Park, looking mauka. Sited on top of the Control Building, the extended tower will rise to a height about 40 feet from ground level. The tower will, however, remain substantially shorter than the 150-ft.-tall light standards and the 300-ft.-tall cranes which are located in the Sand Island container facilities.

Access to the site is from Sand Island Parkway Road. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Summary of Impacts and Mitigative Measures

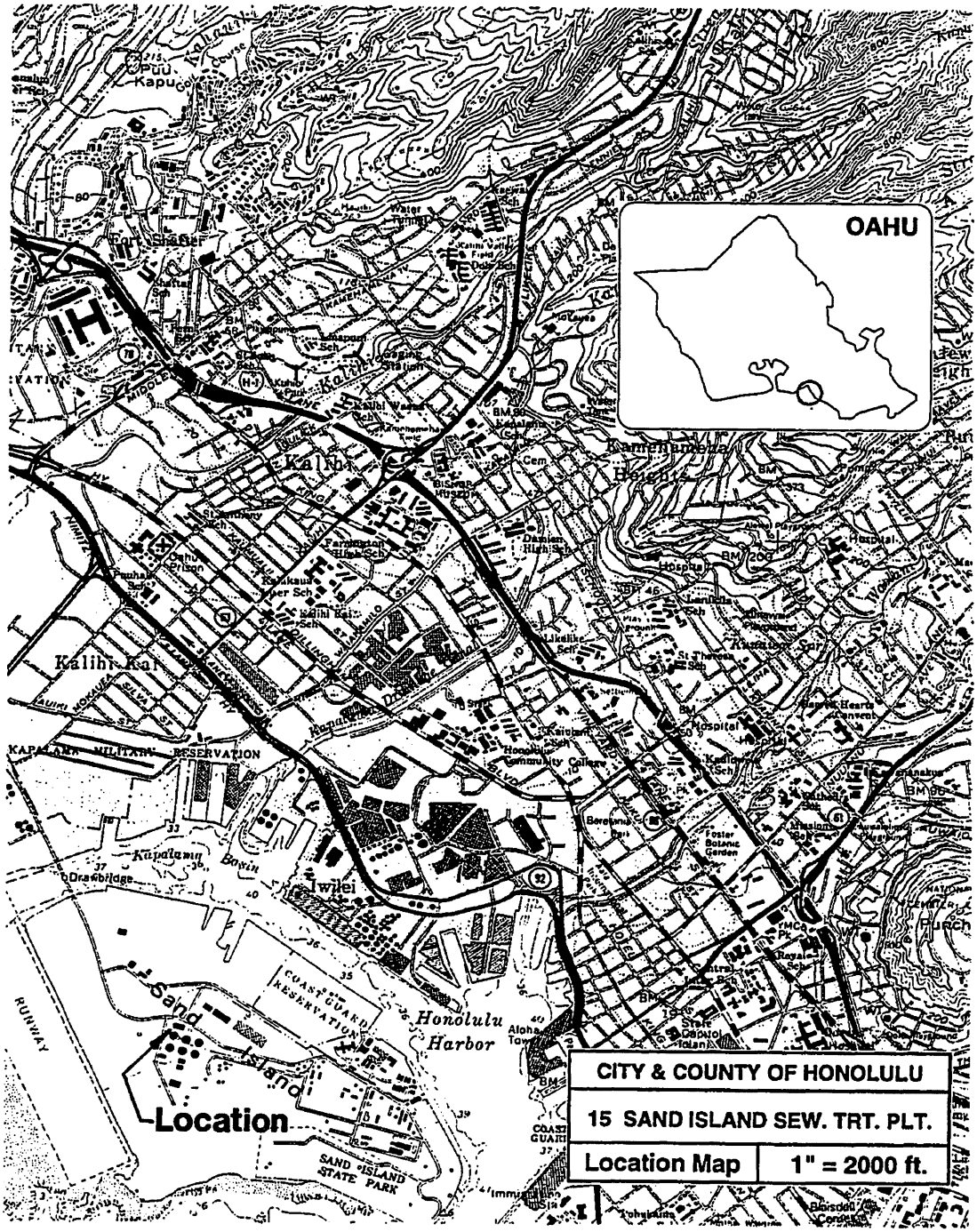
Viewplanes

The tower will be painted gray to blend with the sky.

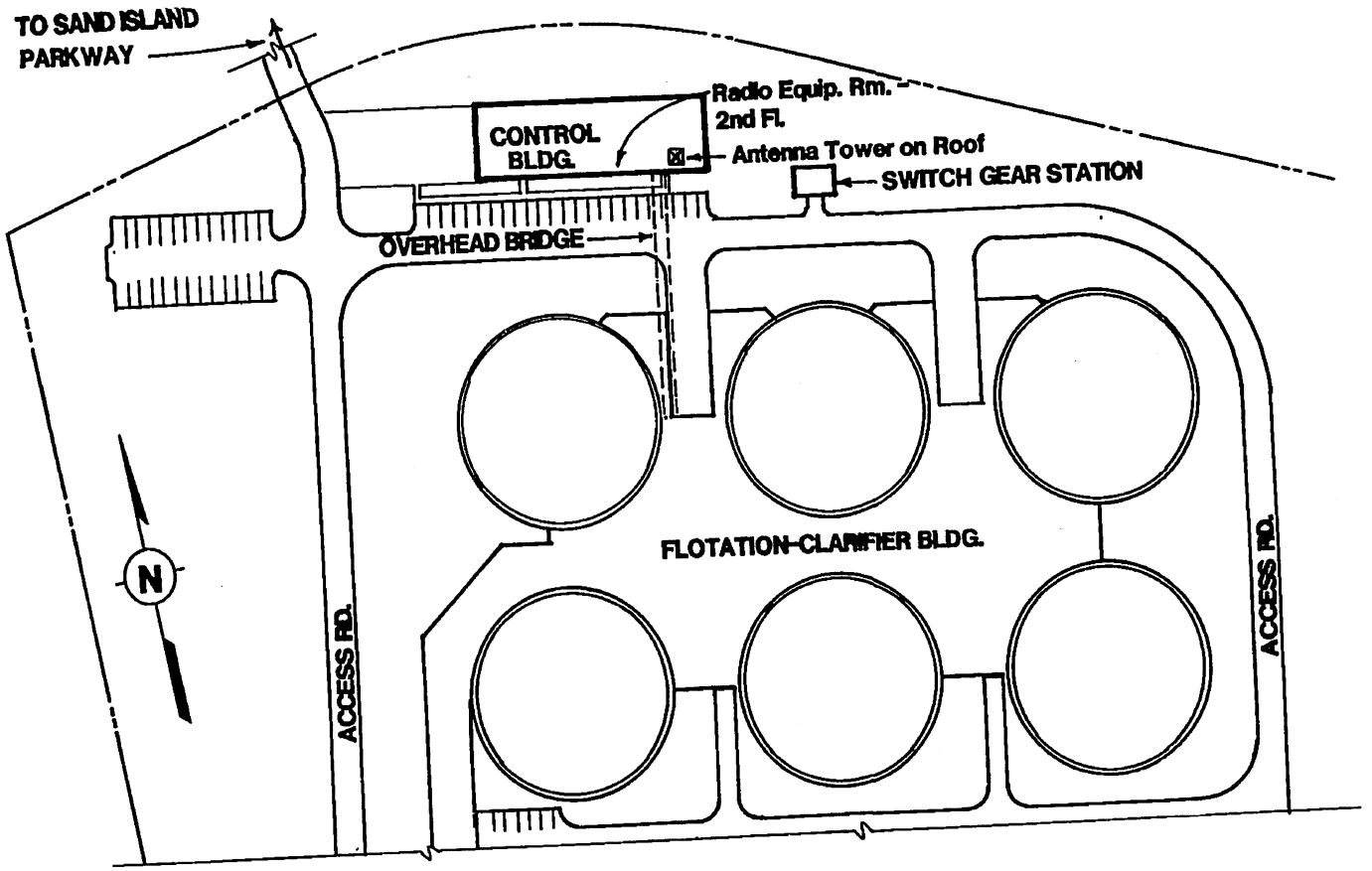
E. Land Use Approvals Required

Special Management Area Use Permit

The site is within the Special Management Area, approximately 0.45 miles from the shoreline. A Special Management Area Permit application will be submitted to the City and County of Honolulu, Department of Land Utilization.



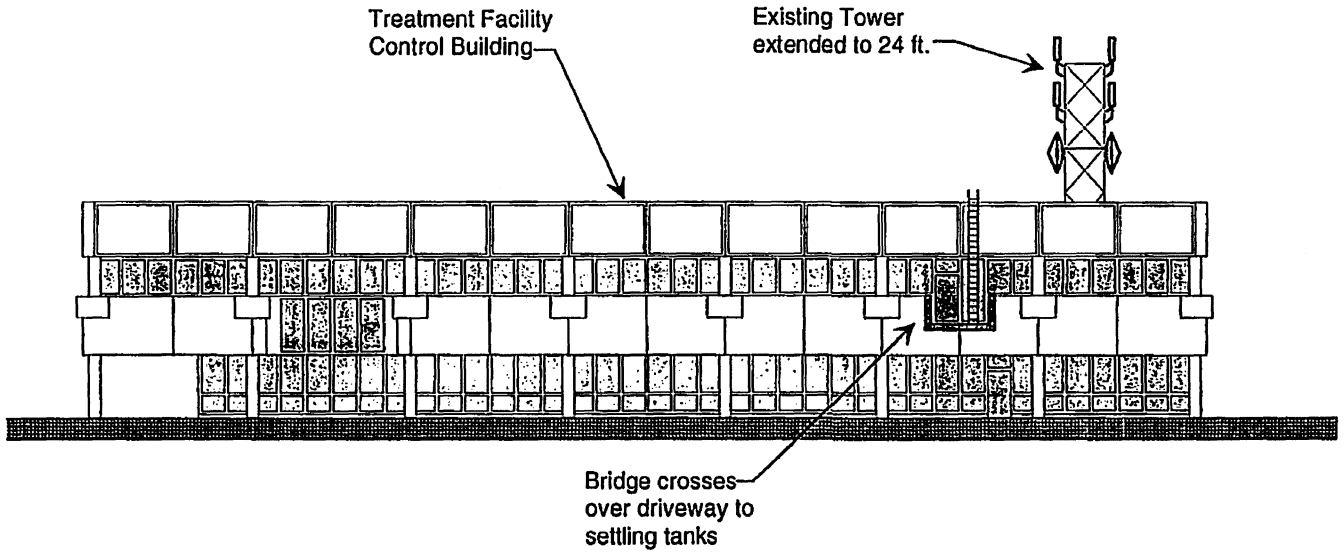
HONOLULU POLICE DEPARTMENT 125 COMMUNICATIONS FACILITIES UPGRADE



HONOLULU POLICE DEPARTMENT 126 COMMUNICATIONS FACILITIES UPGRADE

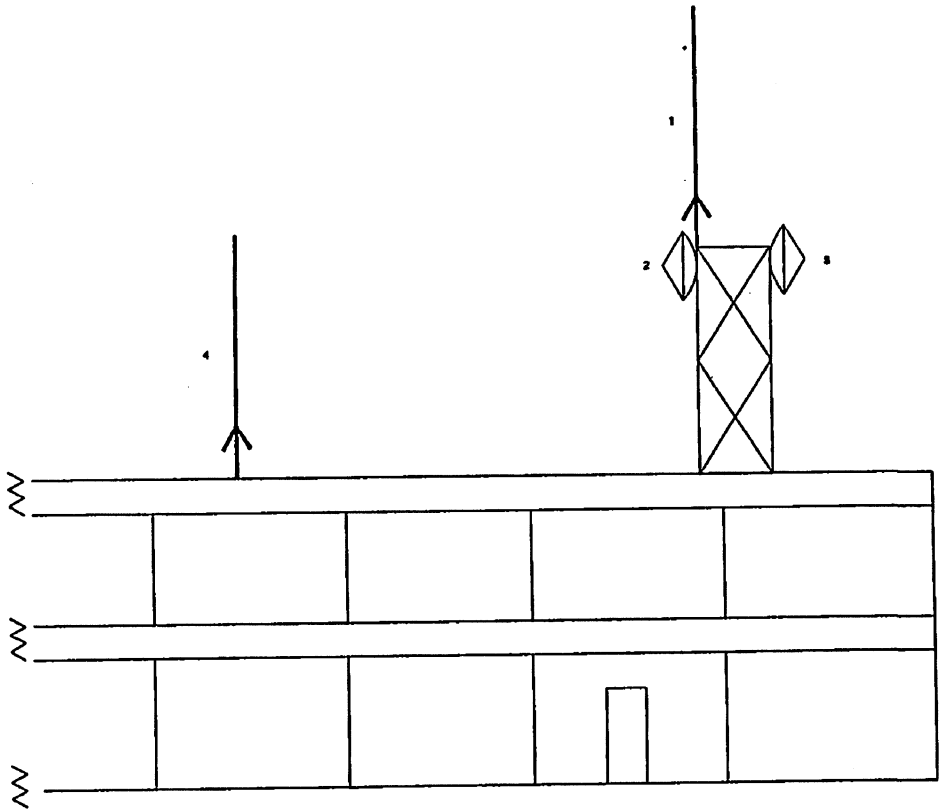
CITY & COUNTY OF HONOLULU	
15 SAND ISL. SEW. TRMT. PL.	
Site Plan	1"=100'-0"

HONOLULU POLICE DEPARTMENT 127 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU	
15 SAND ISLAND SEW. TRT. PLANT Looking toward the north	
Site Profile	1" = 20'-0"

HONOLULU POLICE DEPARTMENT 128 COMMUNICATIONS FACILITIES UPGRADE



ANTENNAS

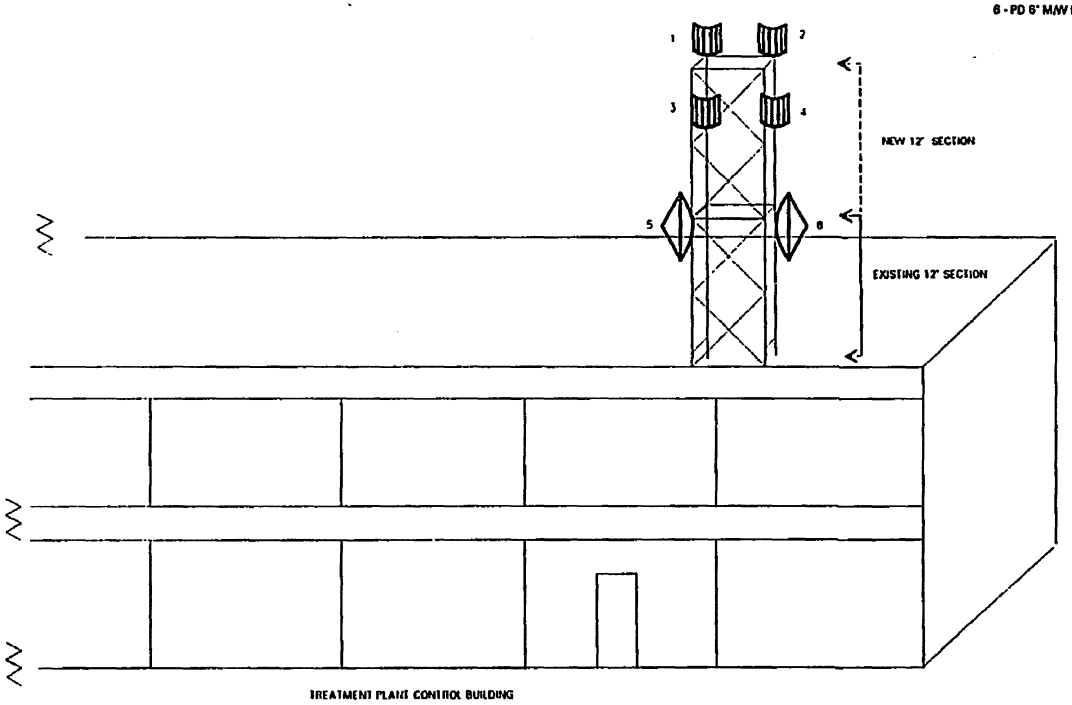
1 - 20' PD VHF VERTICAL
2 - PD 6' MW DISH - MANAWAHUA
3 - PD 6' MW DISH - HMB
4 - 20' PD VHF VERTICAL

CITY & COUNTY OF HONOLULU		
SAND ISLAND SEWAGE TREATMENT PLANT EXISTING ANTENNA STRUCTURE		
DWG # 1	REV #1	06/06/92

HONOLULU POLICE DEPARTMENT 129 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 800 MHZ PARAFLECTOR ANTENNA
2 - 800 MHZ PARAFLECTOR ANTENNA
3 - 800 MHZ PARAFLECTOR ANTENNA
4 - 800 MHZ PANAFLECTOR ANTENNA
5 - PD 6' M/W DISH - SALT LAKE
6 - PD 6' M/W DISH - HMB



CITY & COUNTY OF HONOLULU		
SAND ISLAND SEWAGE TREATMENT PLANT NEW SYSTEM TOWER/ANTENNA		
DWG # 1	REV #3	11/06/92

Section V. Proposed Facilities Exempt From Hawaii EIS Requirements

Kalihi Police Station

Waikiki

Kailua Police Station

Kaneohe Police Station

Aikahi Sewage Treatment Plant

Kahuku Police Station

U.S. Navy-EASTPAC

Wahiawa Police Station

Pearl City Police Station

Waianae Police Station

HPD Telecom Service Section

V. PROPOSED FACILITIES EXEMPT FROM HAWAII ENVIRONMENTAL IMPACT STATEMENT REQUIREMENTS

This section presents those existing communications facilities requiring only minimum improvements. The proposed improvements will not significantly affect the environment and are included in the Building Department's list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules and approved by the Environmental Quality Commission. Proposed minor improvements fall under the following exemption classes:

Exemption Class #1

"Operations, repairs or maintenance of existing structures, facilities, equipment or topographical features involving negligible or no expansion or change of use beyond that previously existing."

Exemption Class #2

"Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height and dimensions as the structure replaced."

Exemption Class #3

"Construction of single, new small facilities or structures of same and installation of new, small, equipment and facilities and the alteration and modification of same including but not limited to...water, sewage, electrical, gas, telephone, and other essential public utility services extensions to serve such structures or facilities..."

Exemption Class #8

"Interior alterations involving such things as partitions, plumbing, and electrical conveyances."

Each site description is accompanied by existing and proposed tower plans, and provide an accurate representation of antenna and dish placements and orientations. Note however, that all vertical antennas are drawn at their maximum heights of thirteen feet. The actual antenna lengths, however, will vary from site to site and cannot be determined until the system is installed. Nevertheless, no antenna will exceed thirteen feet in length. The total *number* of antennas are accurately represented on the tower plans.

Kalihi Police Station Communications Facility (1A)
Development Profile

TMK:	1-3-024: 006
AREA OF SITE:	0.94 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	PS/M (Police Station/Modify)
ZONING:	R-5 Residential

A. Site Location and Existing Uses

The existing communications facility is located within the Kalihi Police Station site along Kamehameha Highway. The facility is a spur link to the Honolulu Municipal Building and Makiki Round Top sites. Currently, only the Police Department uses the facility.

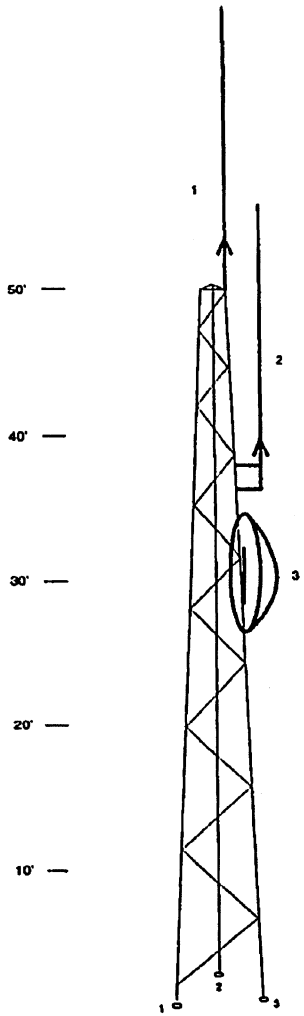
The facility consists of an equipment room within the police station and a 50-ft.-tall tower located southwest of the station. One six-ft.-diameter microwave dish and two vertical antennas are attached to the tower.

Surrounding uses include Kalihi Valley Field, Dole Intermediate School, Kaewai Elementary School and private residences.

B. Exempt Action

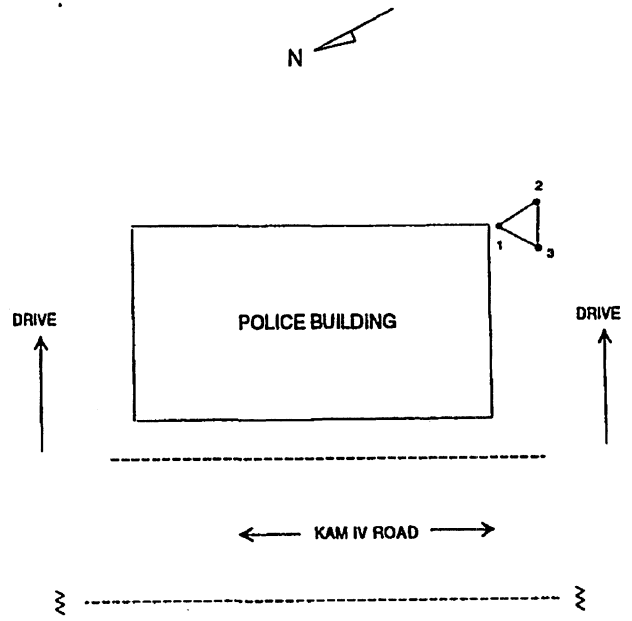
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. The proposed activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 134 COMMUNICATIONS FACILITIES UPGRADE



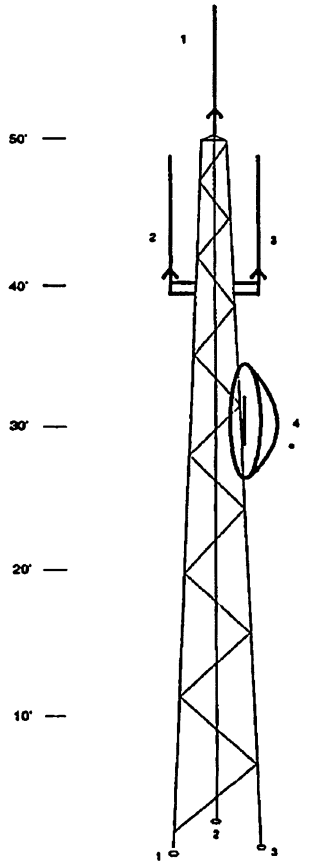
ANTENNAS

1 - 21' PD VERTICAL
2 - 21' PD VERTICAL
3 - PD 6' M/W DISH - HMB



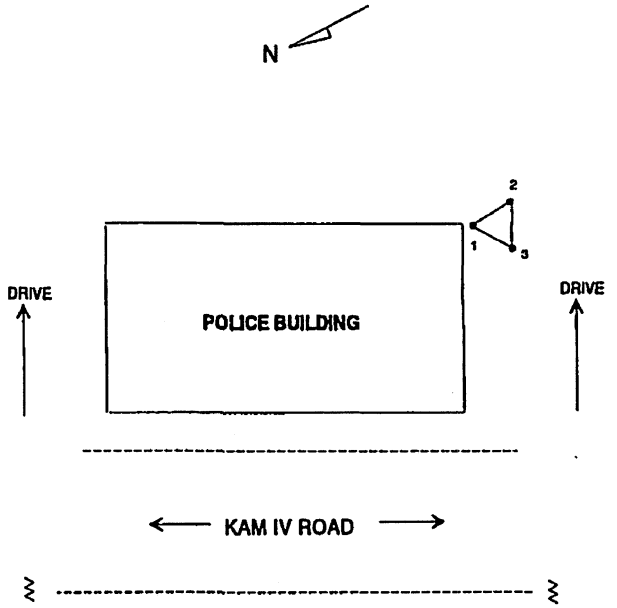
CITY & COUNTY OF HONOLULU		
KALIHI POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #1	06/30/92

HONOLULU POLICE DEPARTMENT 135 COMMUNICATIONS FACILITIES UPGRADE



ANTENNAS

1 - 6' 800 MHZ VERTICAL
2 - 6' 800 MHZ VERTICAL
3 - PD 6' 800 MHZ VERTICAL
4 - PD 6' M/W DISH - HMB



CITY & COUNTY OF HONOLULU		
KALIHI POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	Rev #1	06/30/92

Waikiki Communications Facility (2A)

The City and County is proposing to improve their hand-held radio coverage in Waikiki by altering its three subsites. The existing mobile receive subsite on top of the Outrigger Hobron will be retained and improved. The existing mobile two-way site on top of the Outrigger West will be abandoned and replaced with a two-way site on top of the Outrigger Malia. The existing mobile receive site at the Honolulu Zoo will also be abandoned and replaced with a new receive site on top of the Outrigger Prince Kuhio.

Waikiki Special District Permit Application

All three hotels are within the Waikiki Special District and are surrounded by similar high-rise hotels and apartments. The proposed activities, however, consist of minor improvements to or replacement of existing communications facilities that will not adversely change the character or appearance of the structures, and are therefore, exempt from Special District Permit requirements. Each of the three sites are described below.

Waikiki Communications Facility (2A)

Outrigger Hobron
Development Profile

TMK:	2-6-012: 047
AREA OF SITE:	44,276
LANDOWNER:	Outrigger Hotels Hawaii
EXISTING USE:	Hotel
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	High Density Apartment
Public Facilities Designation:	None
ZONING:	X2 Apartment
SPECIAL DISTRICT:	Waikiki Special District

A. Site Location and Existing Uses

The existing communications facility is located on top of the 43-floor Outrigger Hobron. Used only by the Police Department, this facility is a mobile receive subsite that provides hand-held radio coverage within the Waikiki area. The facility consists of equipment located within the hotel's mechanical penthouse and two free-standing vertical antenna.

B. Exempt Action

Improvements proposed for the facility will consist of replacing the two existing antennas with one free-standing vertical antenna. The proposed improvement will have minimal or no significant effect on the environment and is included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

Waikiki Communications Facility (2A)

Outrigger Malia
Development Profile

TMK:	2-6-019: 021
AREA OF SITE:	23,194 sq.ft.
LANDOWNER:	Outrigger Hotels Hawaii
EXISTING USE:	Hotel
PROPOSED USE:	New communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Commercial
Public Facilities Designation:	None
ZONING:	X5 Resort Commercial
SPECIAL DISTRICT:	Waikiki Special District

A. Site Location and Existing Uses

The City and County is proposing to replace the existing mobile two-way site on top of the Outrigger West with a two-way site on top of the 17-floor Outrigger Malia. Used only by the Police Department, this facility will be a spur link to the Makiki Roundtop site. In addition, the facility will function as a mobile receive subsite providing hand-held radio coverage within the Waikiki area.

B. Exempt Action

The proposed facility will consist of a four-ft.-diameter microwave dish and two vertical antennas on the rooftop of the hotel. The dish will be mounted on either a pole or a tri-pod about two feet higher than the roofline. An existing space on the roof adjacent to some mechanical equipment will be sealed and made into an equipment room. The proposed activities will have no significant effect on the environment and are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

Waikiki Communications Facility (2A)

Outrigger Prince Kuhio
Development Profile

TMK:	2-6-025: 024
AREA OF SITE:	55,555 sq.ft.
LANDOWNER:	Outrigger Hotels Hawaii
EXISTING USE:	Hotel
PROPOSED USE:	*New communications facility*
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Medium Density Apartment
Public Facilities Designation:	None
ZONING:	X2 Apartment
SPECIAL DISTRICT:	Waikiki Special District

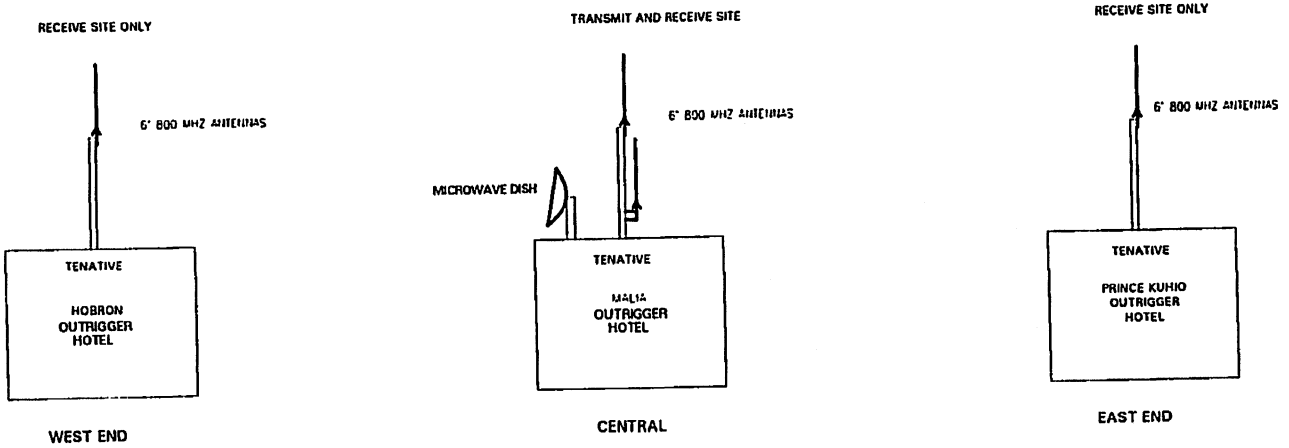
A. Site Location and Existing Uses

The City and County is proposing to replace the existing mobile receive site at the Honolulu Zoo with a new receive site on top of the 37-floor Outrigger Prince Kuhio. Used only by the Police Department, this facility will function as a mobile receive subsite providing hand-held radio coverage within the Waikiki area. Between 10 to 20 antennas are currently mounted on the hotel rooftop.

B. Exempt Action

The proposed facility will consist of one vertical antenna on the rooftop of the hotel and communications equipment housed within the hotel's existing mechanical room. The proposed activities will have no significant effect on the environment and are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 141 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU		
WAIKIKI PROPOSED ANTENNA LOCATIONS		
DWG #1	REV #2	11/06/92

Kailua Police Station Communications Facility (6)
Development Profile

TMK:	4-3-056: 008
AREA OF SITE:	0.84 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Koolaupoko
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	PS/M (Police Station/Modify)
ZONING:	R-5 Residential

A. Site Location and Existing Uses

The existing communications facility is located within the Kailua Police Station site fronting Kuulei Avenue in Kailua Town. The facility is a backbone link between the Waimanalo Ridge and Aikahi Sewage Treatment Plant sites. It also provides a link to Kaneohe Police Station, relayed through the Kapaa 272 Reservoir site. In addition to the Police Department, other local government departments use the facility.

The facility consists of an equipment room within the police station and a 100-ft.-tall tower located northeast of the station. Two six-ft.-diameter microwave dishes, one eight-ft.-diameter microwave dish and two vertical antennas are attached to the tower.

Surrounding uses include Kailua Public Library, Kailua Fire Station, Kailua Field and private residences.

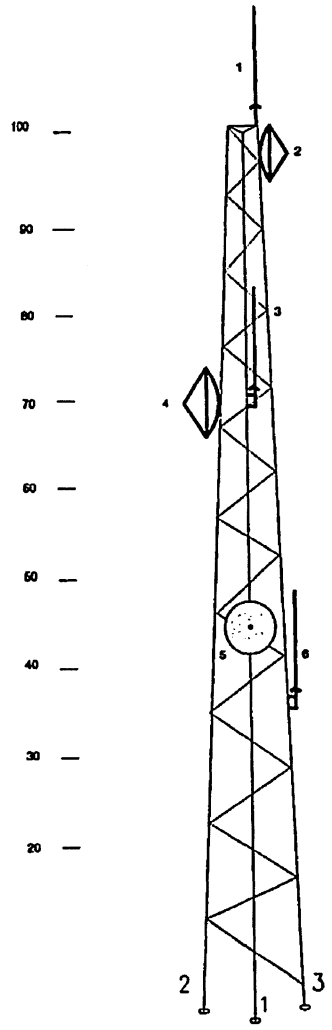
B. Exempt Action

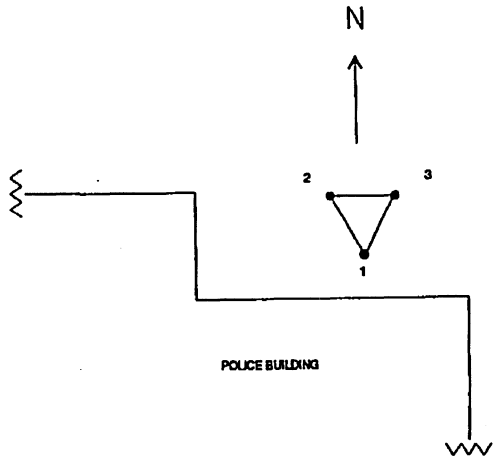
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 144 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 20' PD VHF VERTICAL - F8
2 - PD 6' M/W DISH - AIKAHI
3 - LG - PAGING
4 - PD 8' M/W DISH - KANEOHE
5 - PD 6' MW/ DISH - WAIMANALO
6 - 20' PD VERTICAL - F1



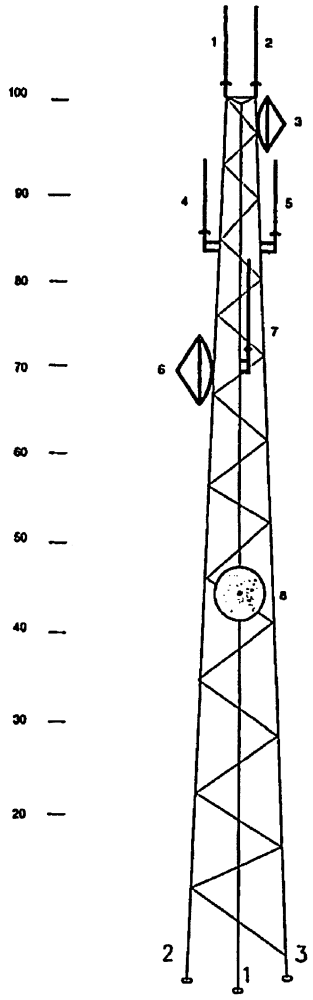


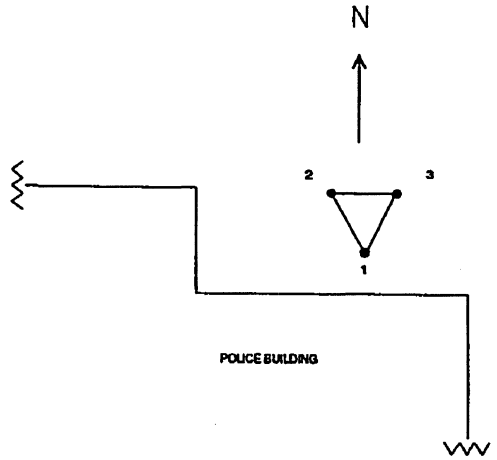
CITY & COUNTY OF HONOLULU		
KAILUA POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

HONOLULU POLICE DEPARTMENT 145 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 13' 800 MHZ VERTICAL
3 - PD 6' M/W DISH - AIKAHI
4 - 13' 800 MHZ VERTICAL
5 - 13' 800 MHZ VERTICAL
6 - PD 6' M/W DISH - KANEOHE
7 - LG - PAGING
8 - PD 6' M/W DISH - WAIMANALO





CITY & COUNTY OF HONOLULU		
KAILUA POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

Kaneohe Police Station Communications Facility (6B)
Development Profile

TMK:	4-5-018: 002
AREA OF SITE:	5.44 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Koolaupoko
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	*PS/M (Police Station/Modify)*
ZONING:	R-7.5 Residential

A. Site Location and Existing Uses

The existing communications facility is located within the Kaneohe Police Station site on the corner of Waikalua Road and Kamehameha Highway at the edge of Kaneohe Town. The facility is a spur link to the Kailua Police Station via the Kapaa 272 Reservoir site. Currently, only the Police Department uses the facility.

The facility consists of an equipment room within the police station and a 90-ft.-tall tower located north of the station. One six-ft.-diameter microwave dish and two stacked dipole antennas are attached to the tower.

Surrounding uses include Kaneohe Civic Center, Kaneohe Public Library, Benjamin Parker Elementary School and private residences.

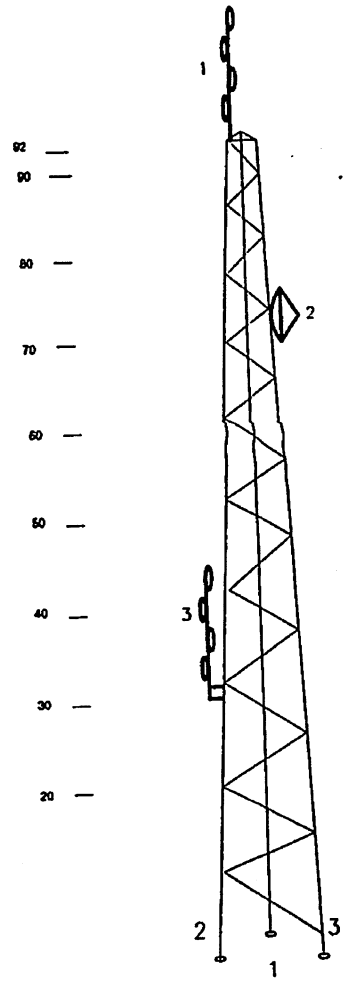
B. Exempt Action

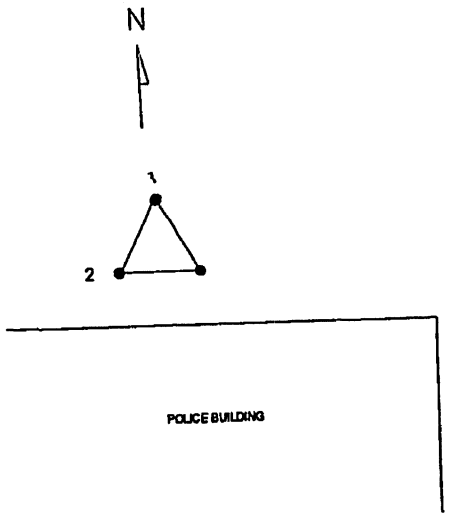
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 148 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 20' PD VHF STACKED DIPOLE - F8
2 - PD 6' M/W DISH - KAPAA
3 - 20' PD VHF STACKED DIPOLE - F1



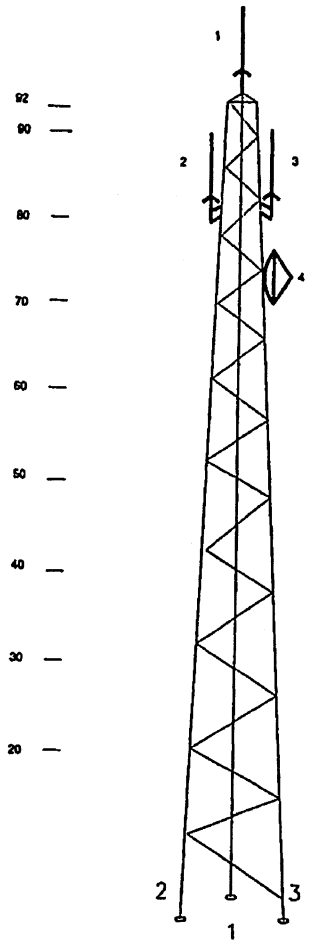


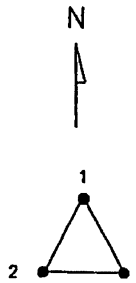
CITY & COUNTY OF HONOLULU		
KANEOHE POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

HONOLULU POLICE DEPARTMENT 149 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 6' 800 MHZ VERTICAL
2 - 6' 800 MHZ VERTICAL
3 - 6' 800 MHZ VERTICAL
4 - PD 6' - M/W DISH - KAAPAA





POLICE BUILDING

CITY & COUNTY OF HONOLULU		
KANEOHE POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

Aikahi Sewage Treatment Plant Communications Facility (7)
Development Profile

TMK:	4-4-011: 081
AREA OF SITE:	25.14 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Sewage treatment plant Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Koolaupoko
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	STP/M (Sewage Treatment Plant/Modify)
ZONING:	R-10 Residential

A. Site Location and Existing Uses

The existing communications facility is located on the grounds of the Aikahi Sewage Treatment Plant on Mokapu Peninsula along Kaneohe Bay Drive. The facility is a backbone link between the Kailua Police Station and Kaaawa sites. In addition to the Police Department, the Fire Department, Water Safety and State Emergency Medical Service use the facility.

The facility consists of a 196-sq.ft. equipment building located northeast of the sewage treatment facility and a 100-ft.-tall tower located north of the building. The building is of CMU construction with a reinforced concrete roof. Three six-ft.-diameter microwave dishes and eight omni antennas are attached to the tower.

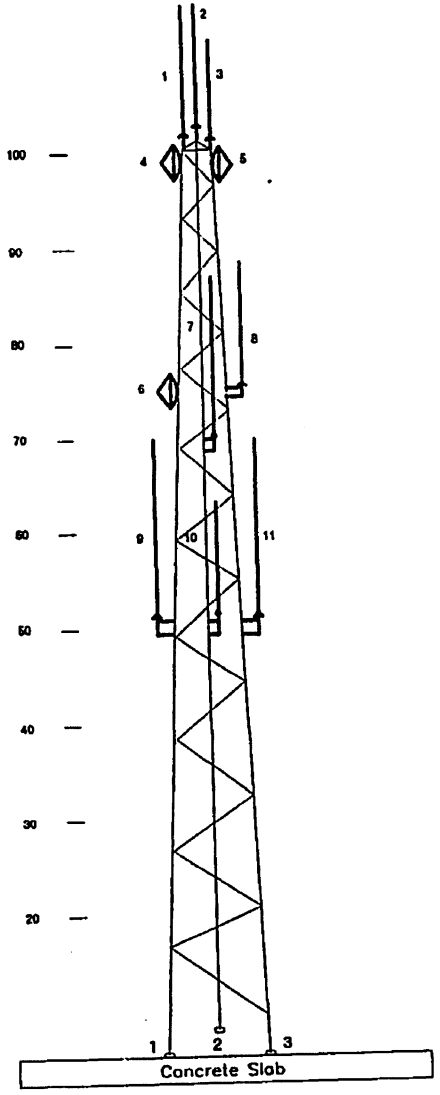
The facility is surrounded by an open, grassy area. Aikahi Elementary School, Aikahi Playground, Kaneohe Marine Corps Air Station and private residences also located in the area.

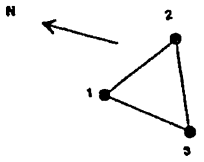
B. Exempt Action

Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 152 COMMUNICATIONS FACILITIES UPGRADE

1 - PD 20' OMNI F8
2 - FD 20' OMNI
3 - EMS 15' OMNI
4 - PD 6' DISH KAAAWA "A"
5 - PD 6' DISH KAILUA
6 - PD 6' DISH KAAAWA "B"
7 - FD 20' OMNI
8 - EMS 15' OMNI
9 - PD 20' OMNI F1
10 - WATER SAFETY 15' OMNI
11 - PD 20' OMNI F9

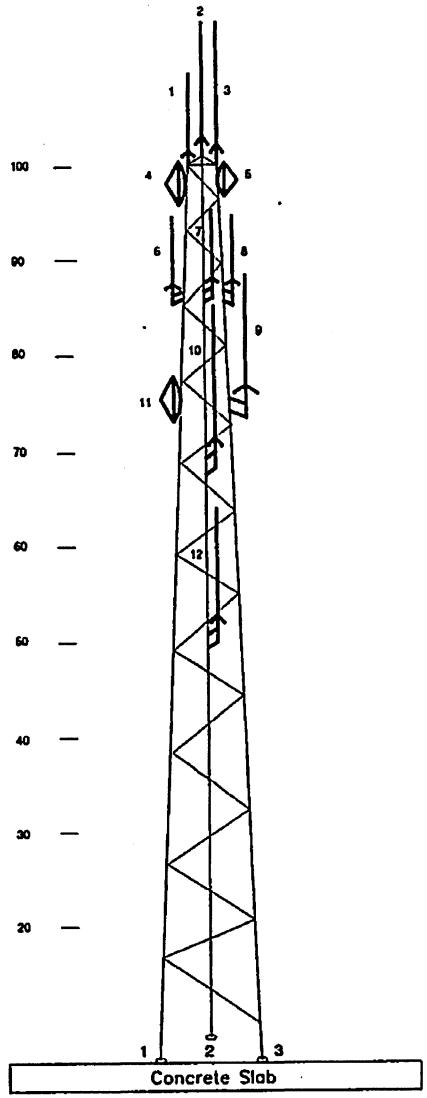


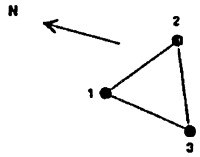


CITY & COUNTY OF HONOLULU		
AIKAHI SEWAGE TREATMENT PLANT EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

HONOLULU POLICE DEPARTMENT 153 COMMUNICATIONS FACILITIES UPGRADE

1 - 13' 800 MHZ VERTICAL
2 - FD 20' VERTICAL
3 - EMS 15' VERTICAL
4 - PD 6' M/W DISH KAAAWA "A"
5 - PD 6' M/W DISH KAILUA
6 - 13' 800 MHZ VERTICAL
7 - 13' 800 MHZ VERTICAL
8 - 13' 800 MHZ VERTICAL
9 - EMS 15' VERTICAL
10 - FD 20' VERTICAL
11 - PD 6' M/W DISH KAAAWA "B"
12 - WATER SAFETY 15' VERTICAL





CITY & COUNTY OF HONOLULU		
AIKAHI SEWAGE TREATMENT PLANT NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

Kahuku Police Station Communications Facility (9)
Development Profile

TMK:	5-6-006: 020
AREA OF SITE:	4.58 acres
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA: Land Use Designation: Public Facilities Designation:	Koolauloa Agricultural PS/FS (Police Station/Fire Station)
ZONING:	AG-1 Restricted Agricultural

A. Site Location and Existing Uses

The existing communications facility is located within the Kahuku Police Station site at the intersection of Kamehameha Highway and Enos Road. The facility is a backbone link between the Kawela and Kaaawa sites. In addition to the Police Department, the Fire Department, other local government and State Emergency Medical Service use the facility.

The facility consists of a 288-sq.ft. equipment building adjacent to the station and a 150-ft.-tall tower located northeast of the building. The equipment building is of CMU construction with a reinforced concrete roof. Two six-ft.-diameter microwave dishes and ten vertical antennas (there are four additional vertical antennas that are not in use) are attached to the tower. A six-ft.-high chain link fence and hedge separate the facility from Kahuku High School.

Surrounding uses include Kahuku High School and Elementary School and Kahuku Fire Station.

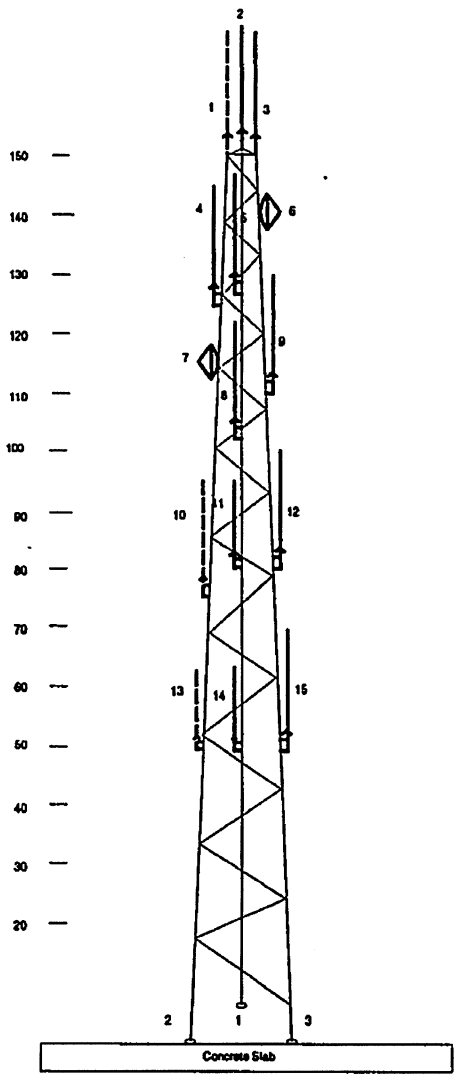
B. Exempt Action

Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 156 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - RESERVED
2 - 15' LG VERTICAL - PAGING
3 - 20' PD VHF VERTICAL - F8
4 - 15' LG VERTICAL
5 - 20' PD VERTICAL
6 - PD 6' M/W DISH - KAAAWA
7 - PD 6' M/W DISH - KAWELA
8 - 20' PD VHF VERTICAL
9 - 20' FD VHF VERTICAL - F1/F2
10 - RESERVED
11 - 15' EMS VERTICAL
12 - 20' PD VHF VERTICAL - F1
13 - RESERVED
14 - 15' EMS UHF VERTICAL
15 - 20 FD VHF VERTICAL - F3/F4

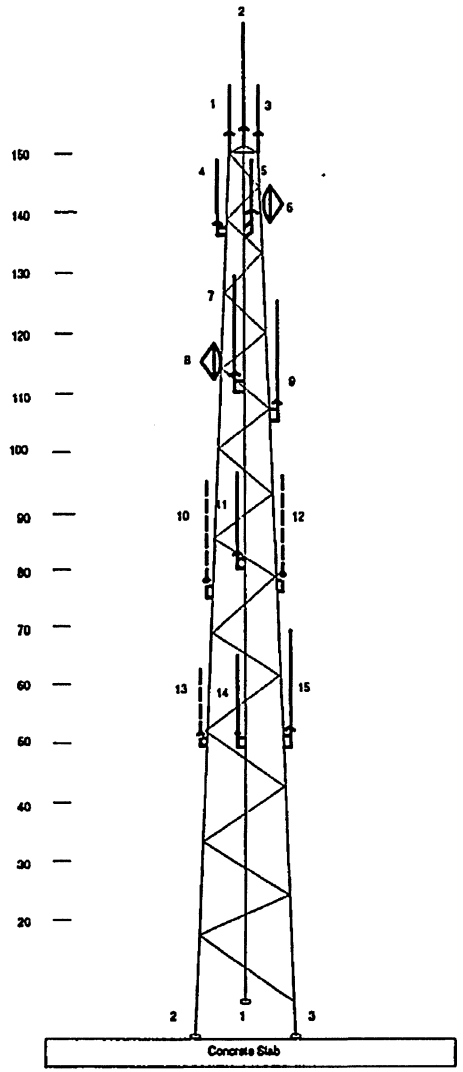


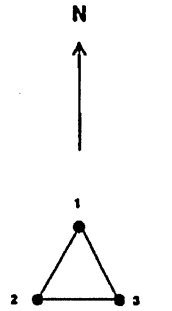
CITY & COUNTY OF HONOLULU		
KAHUKU POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

HONOLULU POLICE DEPARTMENT 157 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 13' 800 MHZ VERTICAL
2 - 15' LQ VERTICAL - PAGING
3 - 13' 800 MHZ VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - 13' 800 MHZ VERTICAL
6 - PD 6' M/W DISH - KAAAWA
7 - 15' LQ VERTICAL
8 - PD 6' M/W DISH - KAWELA
9 - 20' FD VHF VERTICAL - F1/F2
10 - RESERVED
11 - 15' EMS VERTICAL
12 - RESERVED
13 - RESERVED
14 - 15' EMS UHF VERTICAL
15 - 20 FD VHF VERTICAL - F3/F4





CITY & COUNTY OF HONOLULU		
KAHUKU POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/23/92

U.S. Navy-EASTPAC Communications Facility (12)
Development Profile

TMK:	7-1-002: 007
AREA OF SITE:	684.89 acres
LANDOWNER:	U.S. Navy
EXISTING USE:	Military installation Communications facility
EXISTING USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Agricultural
COUNTY DEVELOPMENT PLAN AREA:	Central Oahu
Land Use Designation:	Agricultural and Military
Public Facilities Designation:	None
ZONING:	F-1 Military and Federal Preservation

A. Site Location and Existing Uses

The existing communications facility is located at the 1,169-ft. elevation within the U.S. Navy-EASTPAC installation in Wahiawa, in Central Oahu. Use of the site by the City and County is authorized under U.S. Navy License No. N6274290RP00068.

The facility is a backbone link between the Puu Manawahua and Mokuleia sites. It also serves the Wahiawa Police Station. In addition to the Police Department, the State Emergency Medical Service uses the facility.

The facility consists of a 153-sq.ft. equipment room attached to a larger military building and a 175-ft.-tall tower. Three six-ft.-diameter microwave dishes and six vertical antennas are attached to the tower.

The facility is surrounded by a military complex.

B. Exempt Action

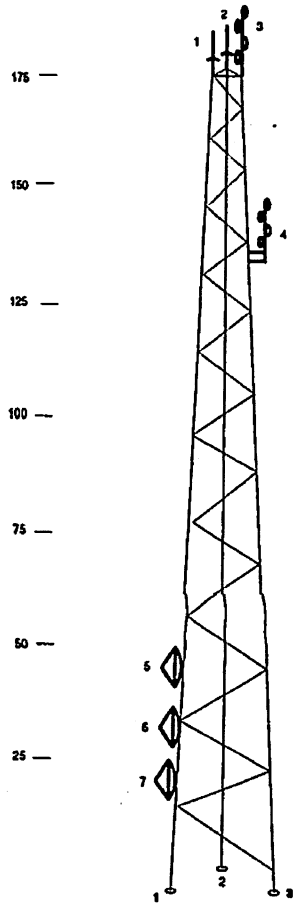
Improvements proposed for the communications facility include constructing a 110-sq.ft. addition to the existing equipment room. The room extension will be of CMU construction with a concrete slab roof. Soils testing will be conducted to ensure that the site can accommodate the proposed building expansion. A pre-fabricated fiberglass facility may be installed on a temporary basis. Other improvements include making minor antenna modifications and various interior alterations, and general cleanup and repainting.

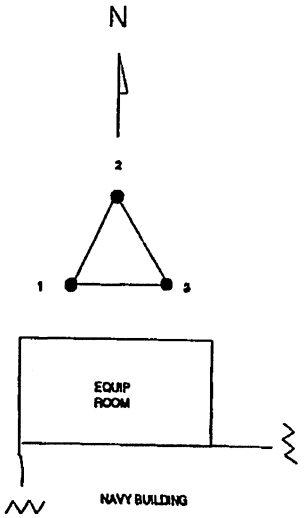
The proposed improvements will have minimal or no significant effect on the environment and are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 160 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 8' EMS UHF VERTICAL
2 - 8' EMS UHF VERTICAL
3 - 18' PD VHF STACKED DIPOLE
4 - 18' PD VHF STACKED DIPOLE
5 - PD 6' M/W DISH - MANAWAHUA
6 - PD 6' M/W DISH - WAHIAWA
7 - PD 6' M/W DISH - MOKULEIA



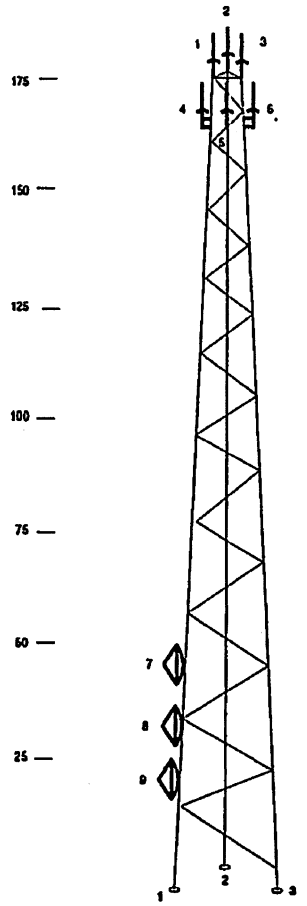


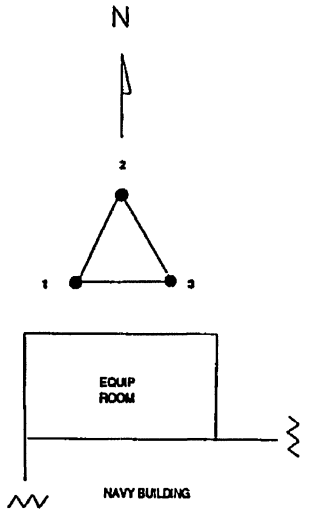
CITY & COUNTY OF HONOLULU		
U. S. NAVY - EASTPAC EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

HONOLULU POLICE DEPARTMENT 161 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 8' EMS UHF VERTICAL
2 - 13' EMS UHF VERTICAL
3 - 8' EMS UHV VERTICAL
4 - 13' 800 MHZ VERTICAL
5 - 13' 800 MHZ VERTICAL
6 - 13' 800 MHZ VERTICAL
7 - PD 6' M/W DISH - MANAWAHUA
8 - PD 6' M/W DISH - WAHIAWA
10 - PD 6' M/W DISH - MOKULEIA





CITY & COUNTY OF HONOLULU		
U. S, NAVY - EASTPAC NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

Wahiawa Police Station Communications Facility (12A)
Development Profile

TMK:	7-4-007: 006
LANDOWNER:	City and County of Honolulu
AREA OF SITE:	4.00 acres
EXISTING USE:	Police station Communications facility
PROPOSED USE:	*Upgrade communications facility*
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Central Oahu
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	None
ZONING:	I-2 Intensive Industrial

A. Site Location and Existing Uses

The existing communications facility is located within the Wahiawa Police Station site along Koa Street. The facility is a spur link to the U.S. Navy-EASTPAC site. In addition to the Police Department, other local government departments use the facility.

The facility consists of an equipment room adjacent to the station and a 60-ft.-tall tower located north of the building. One six-ft.-diameter microwave dish and two stacked dipole antennas are attached to the tower.

The northern portion of the site is bordered by the Wahiawa Reservoir's north fork. Other surrounding uses include industrial, multi-family residential and general agricultural activities.

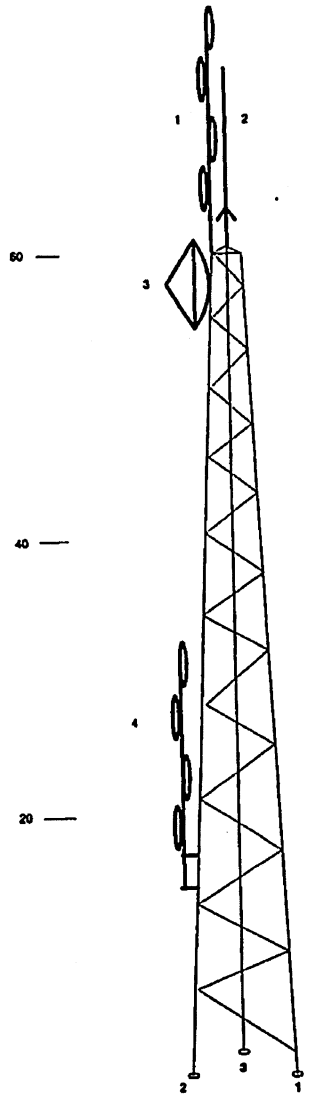
B. Exempt Action

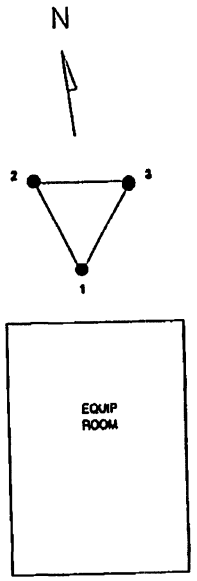
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 164 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 18' PD VHF STACKED DIPOLE
2 - CITY 15' VHF VERTICAL - PAGING
3 - PD 6' M/W DISH - USN COMM
4 - 18' PD VHF STACKED DIPOLE



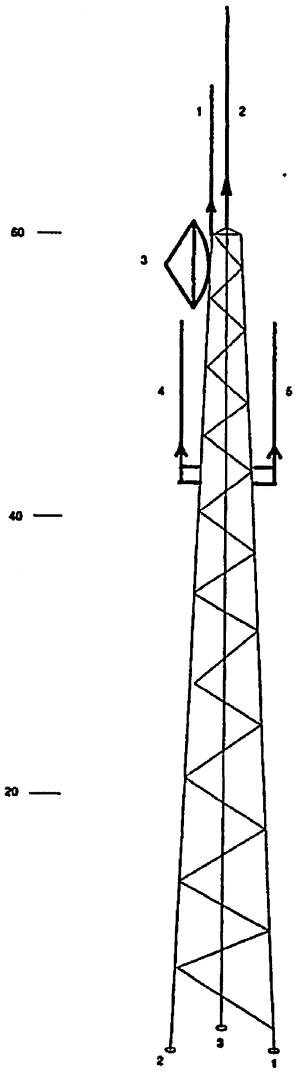


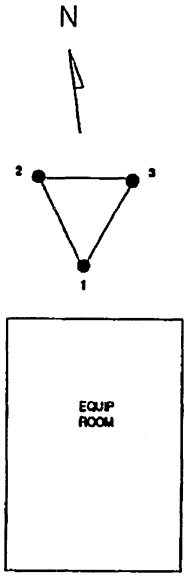
CITY & COUNTY OF HONOLULU		
WAHIAWA POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

HONOLULU POLICE DEPARTMENT 165 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 6' 800 MHZ VERTICAL
2 - CITY 15' VHF VERTICAL - PAGING
3 - PD 6' M/W DISH - USN COMM
4 - 6' 800 MHZ VERTICAL
5 - 6' 800 MHZ VERTICAL





CITY & COUNTY OF HONOLULU		
WAHIAWA POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

Waianae Police Station (13B)
Development Profile

TMK:	8-5-008: 051
AREA OF SITE:	24,811 sq.ft.
LANDOWNER:	City and County of Honolulu
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Waianae
Land Use Designation:	Public and Quasi-Public
Public Facilities Designation:	PS/M (Police Station/Modify)
ZONING:	R-5 Residential

A. Site Location and Existing Uses

The existing communications facility is located within the Waianae Police Station site fronting Farrington Highway in Waianae Town. The facility is a spur link to the passive Waianae 242 Reservoir site. In addition to the Police Department, the Fire Department uses the facility.

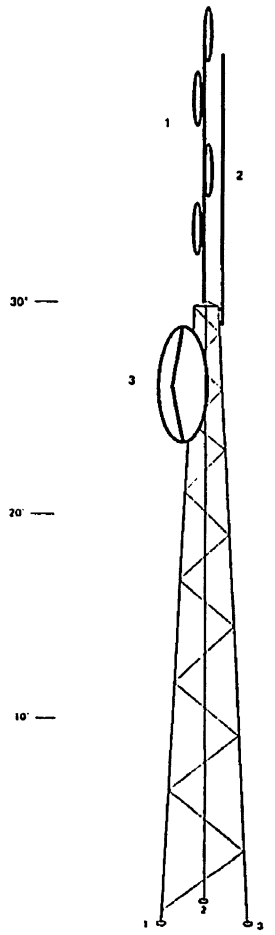
The facility consists of an equipment room within the police station and a 30-ft.-tall tower. One six-ft.-diameter microwave dish, one stacked dipole antenna and one vertical antenna are attached to the tower.

Surrounding uses in the area include community businesses and private residences.

B. Exempt Action

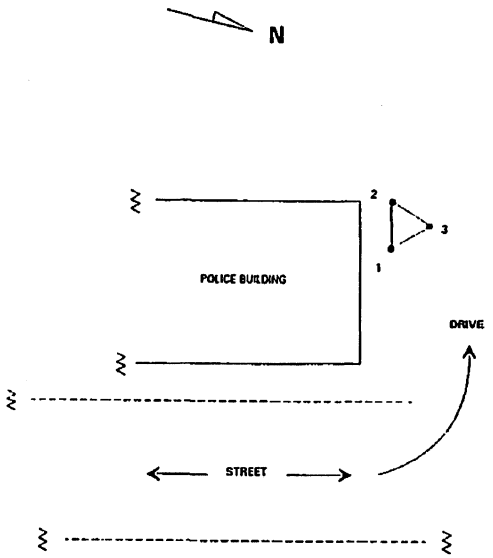
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. The proposed activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

HONOLULU POLICE DEPARTMENT 168 COMMUNICATIONS FACILITIES UPGRADE



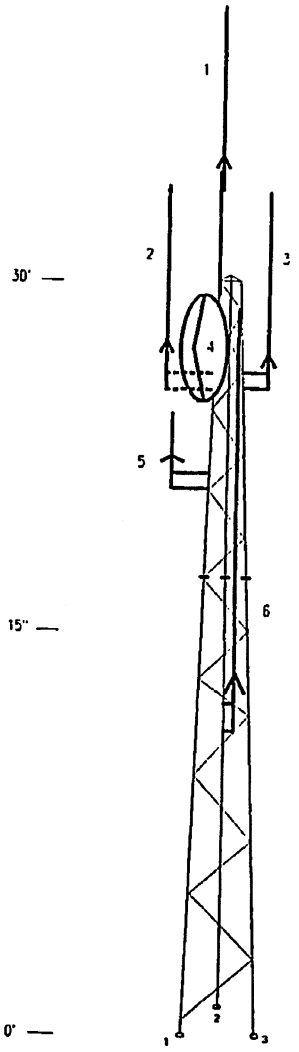
ANTENNAS

1 - 18' FD VHF STACKED DIPOLE
2 - 20' FD VHF VERTICAL
3 - FD 6' M/W DISH - PUU PAHEEHEE PASSIVE



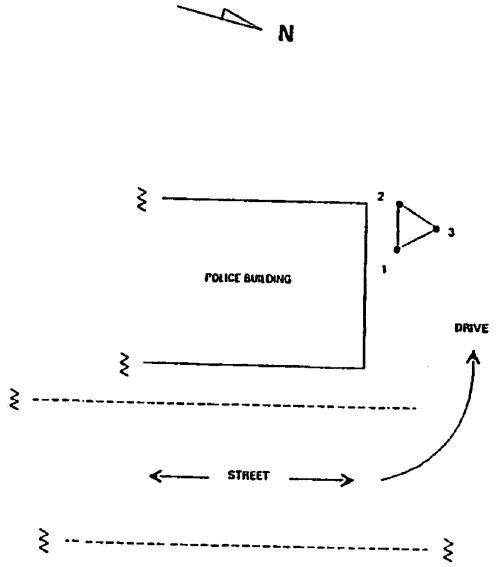
CITY & COUNTY OF HONOLULU		
WAIANAE POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #1	06/06/92

HONOLULU POLICE DEPARTMENT 169 COMMUNICATIONS FACILITIES UPGRADE



ANTENNAS

1 - 10' 800 MHZ VERTICAL
2 - 10' 800 MHZ VERTICAL
3 - 10' 8 MHZ VERTICAL
4 - PD 6' M/W DISH - PUU PAHEEHEE
5 - 3' 800 MHZ VERTICAL
6 - 20' FIRE VHF VERTICAL



CITY & COUNTY OF HONOLULU		
WAIANAE POLICE STATION NEW SYSTEM TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	10/21/92

Pearl City Police Station Communications Facility (13D)
Development Profile

TMK:	9-7-094: 022
LANDOWNER:	City and County of Honolulu
AREA OF SITE:	1.88 acres
EXISTING USE:	Police station Communications facility
PROPOSED USE:	Upgrade communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Public and Quasi Public
Public Facilities Designation:	None
ZONING:	R-5 Residential

A. Site Location and Existing Uses

The existing communications facility is located within the Pearl City Police Station site along Waimano Home Road. The facility is a spur link to the Puu Manawahua site. In addition to the Police Department, other local government departments use the facility.

The facility consists of an equipment room within the police station and a 60-ft.-tall tower located northwest of the station. One six-ft.-diameter microwave dish and two stacked dipole antennas are attached to the tower.

Surrounding uses include the Pearl City Library and private residences.

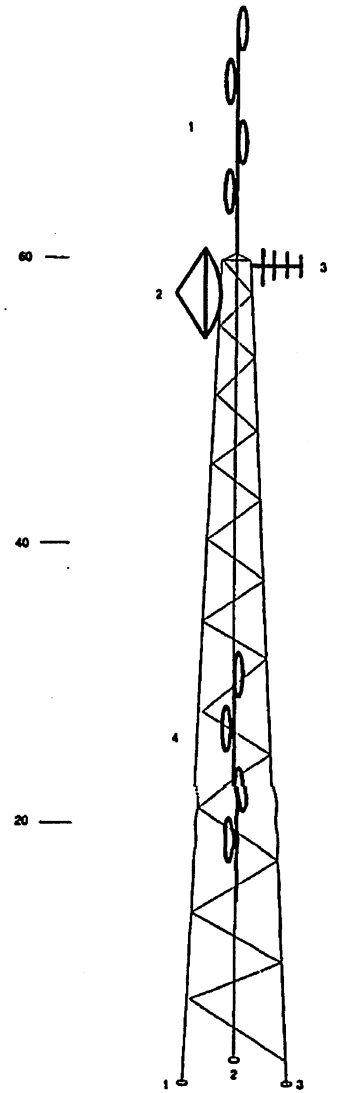
B. Exempt Action

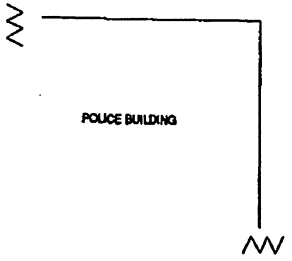
Improvements proposed for the communications facility are limited to minor antenna modifications and interior alterations, which will have minimal or no significant effect on the environment. These activities are included on the Building Department's approved list of actions exempt from the environmental assessment requirements, as authorized under §11-200-8, Hawaii Administrative Rules.

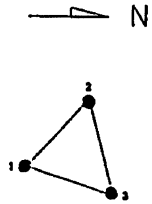
HONOLULU POLICE DEPARTMENT 172 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 18' PD VHF STACKED DIPOLE
2 - PD 6' M/W DISH - MANAWAHUA
3 - CITY VHF YAGI - PAGING
4 - 18' PD VHF STACKED DIPOLE





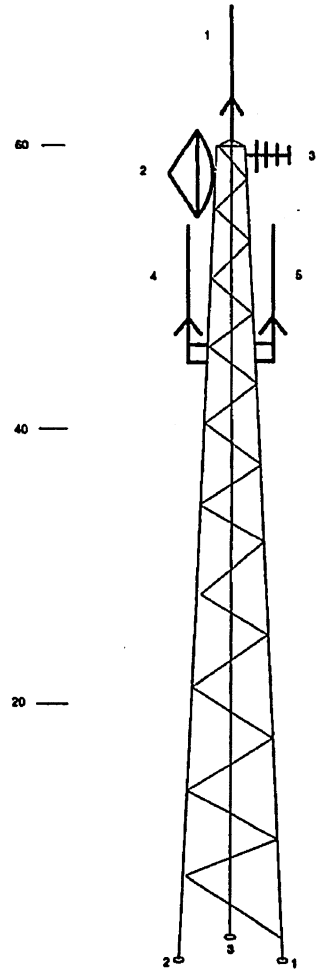


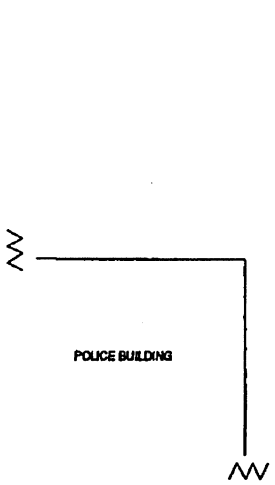
CITY & COUNTY OF HONOLULU		
PEARL CITY POLICE STATION EXISTING TOWER/ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

HONOLULU POLICE DEPARTMENT 173 COMMUNICATIONS FACILITIES UPGRADE

ANTENNAS

1 - 6' 800 MHZ VERTICAL
2 - PD 6' M/W DISH - MANAWAHUA
3 - CITY VHF YAGI - PAGING
4 - 6' 800 MHZ VERTICAL
5 - 6' 800 MHZ VERTICAL





CITY & COUNTY OF HONOLULU		
PEARL CITY POLICE STATION NEW SYSTEM ANTENNA LOCATIONS		
DWG #1	REV #2	06/30/92

HPD Telecom Service Section Communications Facility (14A)
Development Profile

TMK:	1-1-015: 013
AREA OF SITE:	546,210 sq.ft.
LANDOWNER:	Airport Industrial Park Associates, Phase II
EXISTING USE:	Warehouse and offices
PROPOSED USE:	New communications facility
STATE LAND USE DISTRICT:	Urban
COUNTY DEVELOPMENT PLAN AREA:	Primary Urban Center
Land Use Designation:	Industrial
Public Facilities Designation:	None
ZONING:	I-2 Intensive Industrial

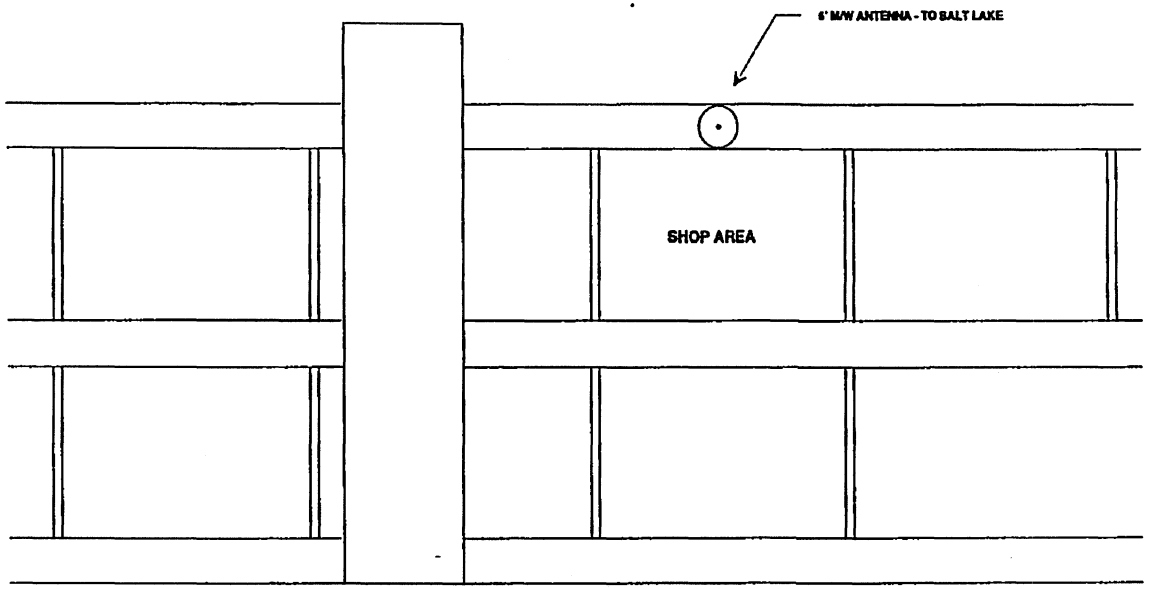
A. Site Location and Existing Uses

The existing Airport Center building is a new, four-story structure of CMU construction housing warehouse and office uses. The City and County is constructing new administrative offices within 27,000 square feet of the building and will use a portion of this space to house communications equipment. In addition, a six-ft.-diameter microwave dish will be mounted on the roof parapet. The facility will be a spur link to the Aliamanu 385 Reservoir site. Use of the office space by the City and County is authorized under a lease with the Airport Industrial Park Associates.

B. Exempt Action

Although part of the HPD Communications System, this new facility was previously approved and funded under a separate project. No additional improvements are proposed.

HONOLULU POLICE DEPARTMENT 176 COMMUNICATIONS FACILITIES UPGRADE



CITY & COUNTY OF HONOLULU		
HPD TELECOMMUNICATIONS SERVICE SECTION REPAIR FACILITY M/W ANTENNA		
DWG #1	REV #	06/06/92

Section VI.	**Determination**
Section VII.	**Findings**
Section VIII.	**Consulted Parties in the Preparation of the Environmental Assessment**

VI. DETERMINATION

The proposed HPD Communications Upgrade System project is not anticipated to cause significant negative impacts to the environment. It has therefore, been determined that a negative declaration will be issued.

VII. FINDINGS AND REASONS SUPPORTING DETERMINATION

The following findings are based on the information provided above:

a. *The proposed project will not involve an irrevocable commitment to loss or destruction to any natural or cultural resources;*

b. *The proposed project will not curtail the range of beneficial uses of the environment;*

c. *The proposed project will not conflict with the State's long-term environmental policies;*

d. *The proposed project will not substantially affect the economic or social welfare of the community or State;*

e. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities;*

f. *The proposed project will not involve a substantial degradation of environmental quality;*

g. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. No endangered species of flora or fauna are known to exist in any of the facility sites;*

h. *The proposed project will not detrimentally affect air or water quality or ambient noise levels; and*

i. *The various elements of the proposed project will not be located in any environmentally sensitive area, such as flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, freshwater or coastal waters.*

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawaii Revised Statutes and §11-200-12, Hawaii Administrative Rules.

VIII. CONSULTED PARTIES IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

The notice of availability of the Draft EA was published in the *OEQC Bulletin* by the Office of Environmental Quality Control on September 8, 1992 and September 23, 1992. In addition, representatives from the Building Department consulted with a number of public agencies and community organizations. The parties that were requested to review and comment on the Draft EA are listed below. Those who responded in writing are identified with an asterisk (*) next to their names, with copies of the correspondence presented in the following pages.

Federal Agencies
U.S. Department of Interior - Fish and Wildlife Service*
U.S. Department of Transportation - Federal Aviation Administration*

State Agencies
Department of Accounting and General Services*
Department of Defense
Department of Hawaiian Home Lands*
Department of Health - Environmental Health Administration*
Department of Land & Natural Resources (10 copies)*
Department of Land & Natural Resources - State Historic Preservation Division
Department of Transportation*
University of Hawaii - Environmental Center
State Main Library (10 copies)
Aiea Library
Hawaii Kai Library
Kailua Library
Kaimuki Regional Library
Kaneohe Regional Library
Waianae Library

City & County of Honolulu Agencies
Board of Water Supply*
Department of General Planning*
Department of Land Utilization*
Department of Parks & Recreation*
Department of Public Works*
Department of Transportation Services*
Fire Department*
Oahu Civil Defense Agency*
Police Department*

Community Organizations
Outdoor Circle*
Aliamanu/Salt Lake/Foster Village Neighborhood Board No. 18
Diamond Head/Kapahulu/Saint Louis Neighborhood Board No. 5*
Hawaii Kai Neighborhood Board No. 1
Kailua Neighborhood Board No. 31
Koolauloa Neighborhood Board No. 28
Waialae/Kahala Neighborhood Board No. 3
Waianae Coast Neighborhood Board No. 24

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Office
P.O. Box 50167
Honolulu, Hawaii 96850

September 14, 1992

Robin Foster
Lacayo Planning, Inc.
737 Bishop Street
Suite 1550
Honolulu, Hawaii 96813

Dear Mr. or Ms. Foster:

This responds to your September 1, 1992 request for our review of the Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade.

We have reviewed the document and have concluded that the proposed upgrades and related work will not have any effect on plant or animal resources within the U. S. Fish and Wildlife Service's jurisdiction.

Thank you for the opportunity to review the document.

Sincerely,

Robert P. Smith
Field Supervisor
Pacific Islands Office

OK

US Department of Transportation
Federal Aviation Administration

Western-Pacific Region
P. O. Box 50109
Honolulu, Hawaii 96850-4983

October 7, 1992

Mr. Robin Foster, AICP
Senior Planner
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr Foster:

Your letter of September 1, 1992, requested review and comment on the Draft Environmental Assessment (EA) for the City and County of Honolulu, Honolulu Police Department Communications Facilities Upgrade

The Federal Aviation Administration (FAA) has requested that the City and County of Honolulu submit the "Notice of Proposed Construction or Alteration" (FAA Form 7460-1) so that an airspace and frequency evaluation may be conducted for both the Koko Head and Maimanalo (Kamehame) Ridge sites. It does not appear that the proposed upgrade at the other 24 sites will impact existing FAA facilities.

We appreciate this opportunity to comment on the subject project. Please contact me at 541-1236, if there are any questions.

Sincerely,

Darice B. M. Young
Realty Contracting Officer, AHNL-56

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU

November 17, 1992

PB 92-1134

Ms. Darice B. N. Young
Realty Contracting Officer, AHNL-56
U. S. Department of Transportation
Western-Pacific Region
Federal Aviation Administration
P. O. Box 50109
Honolulu, Hawaii 96850-4983

Dear Ms. Young:

Subject: Draft Environmental Assessment (EA)
for the Honolulu Police Department
Communications Facilities Upgrade

Thank you for the comments in your October 27, 1992 letter concerning airspace and frequency requirements of the proposed project.

The Building Department and the project's communications consultant have been in contact with your regional office in Los Angeles and have submitted the "Notice of Proposed Construction or Alteration" (FAA Form 7460-1). We will comply with all FAA requirements in the construction of the communication facilities.

If there should be any questions, please contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

HONOLULU POLICE DEPARTMENT 182 COMMUNICATIONS FACILITIES UPGRADE

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

LETTER NO (P)1831.2

SEP 29 1992

Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Attention: Robin Foster

Gentlemen:

Subject: Honolulu Police Department
Communications Facilities Upgrade
Environmental Assessment

Thank you for the opportunity to review the subject document. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

GORDON MATSUOKA
State Public Works Engineer

RY:jk

JOHN WAIHEE
GOVERNOR
STATE OF HAWAII

HOALIKU L. DRAKE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P O BOX 1879
HONOLULU, HAWAII 96805

2

September 18, 1992

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Draft Environmental Assessment (EA)
for the Honolulu Police Department
Communications Facilities Upgrade

The Department of Hawaiian Home Lands (DHHL) is concerned about the potential negative impacts on public health from excessive radio frequency (RF) radiation.

Certain areas on Oahu are already exposed to high magnitudes of radiation on a continuous basis from AM/FM radio, VHF/UHF television, and miltary telecommunications stations. Hawaiian home lands homesteads at Papakolea in Honolulu and others along the Waianae Coast are reported to be in areas of high exposure.

We understand that the proposed project upgrades will transmit line-of-sight and operate only intermittently. However, to assure that the level of radiation is not extended beyond the threshold of reasonable safety in any given area, the environmental assessment should consider the existing cumulative RF radiation conditions in each of the areas to be affected.

Should you have any questions regarding this matter, please contact Ben Henderson of our Planning Office at 586-3838.

Warmest aloha,

Hoaliku L. Drake, Chairman
Hawaiian Homes Commission

HLD:BH:JC

2556L

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

PB 92-1132

November 17, 1992

Mrs. Hoaliku L. Drake, Chairman
Department of Hawaiian Home Lands
Hawaiian Homes Commission
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96850

Dear Mrs. Drake:

Subject: Draft Environmental Assessment (EA)
for the Honolulu Police Department
Communications Facilities Upgrade

Thank you for the comments in your letter dated September 18, 1992, concerning the "potential negative impacts on public health from excessive radio frequency radiation".

As noted in your letter, the Honolulu Police Department communications system does not pose a significant hazard to human health because (1) higher-powered microwave signals travel in a line-of-sight path with a highly directional beam, and the dispersion of energy outside of the relatively narrow beam is minimal; and (2) mobile systems transmitters are relatively low-powered and transmit only intermittently. The calculated levels of maximum power density cited in the Environmental Assessment fall well within American National Systems Institute standards and should have no impact on human health.

While we understand your concerns about commercial broadcast and military telecommunications stations, it is beyond our ability to make an island wide study of RF radiation from all sources. We understand that the State Department of Health has sponsored RF radiation studies of some Oahu neighborhoods and may have additional information relevant to your concerns.

If there should be any questions, please have your staff contact Clifford Horikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OK!

JOHN WAIHEE
GOVERNOR OF HAWAII

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

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

IN REPLY, PLEASE REFER TO:

October 20, 1992

92-332/epo

Mr. Robin Foster, AICP
Senior Planner
LACAYO Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Draft Environmental Assessment (EA) for the Honolulu Police Department Communications Facilities Upgrade

Thank you for allowing us to review and comment on the subject project. We have no comments to offer at this time.

Very truly yours,

OK!

JOHN C. LEWIN, M.D.
Director of Health

JOHN WAIHEE
GOVERNOR OF HAWAII

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

WILLIAM W PATY CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P KEPPELER II
DON L HARAKE

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

REF:OCEA:SKK

OCT 9 1992

FILE NO.: 93-153
DOC. NO.: 1542

Mr. Robin Foster
Senior Planner
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

The draft environmental assessment for the Honolulu Police Department Communications Facilities upgrade has been reviewed by our Departmental Divisions. They offer the following comments on the proposed project.

Division of Aquatic Resources

The improvements planned for existing sites are relatively minor, i.e., no major excavation or grading work is planned for the sites. None of the sites are near the seashore and construction is unlikely to cause any adverse effect to nearshore resources or fauna. Erosion may cause some siltation of nearby streams if rain falls at the construction sites, but should not be a problem given the lack of excavation or grading work planned. Significant adverse effects on surface or nearshore waters should not occur as a result of this project, as long as reasonable mitigation efforts are undertaken.

Division of Land Management

OK!

Certain sites are State lands. DLM would like to see the Department and the City consider antenna farm sites for all users including City and County and State/private users. This would preclude proliferation of our ridges. Please address this in the EA.

Please contact Don Horiuchi of our Office of Conservation and Environmental Affairs at 587-0381 if there are any questions on the matter.

Very truly yours,

for John P. Keppeler

WILLIAM W. PATY

HONOLULU POLICE DEPARTMENT 185 COMMUNICATIONS FACILITIES UPGRADE

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
630 SOUTH KING STREET
HONOLULU HAWAII 96813

FRANK F. FASI
MAYOR

HERBERT M. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

WILLIAM F. REMULAN
DEPUTY

November 17, 1992

PB 92-1133

Mr. William W. Paty, Chairman
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Subject: Draft Environmental Assessment (EA) for the Honolulu Police Department Communications Facilities Upgrade

Thank you for the comments in your October 9, 1992 letter concerning the proposed project.

The proposed island wide 800 MHz trunked system will provide maximum flexibility for multiple users, operational applications and expansion capability. While the Honolulu Police Department has a large number of radios, the island wide trunked system will be capable of supporting a significantly larger number of field units. The initial capacity of the system will be sufficient to accommodate other government users who operate throughout the island. These users would purchase their own mobile, portable, and control radio units, and become "subscribers" on the island wide trunked backbone system. Adding new users will not require additional remote site equipment, such as new repeaters and antennas until the new system reaches a very high threshold of new utilization.

The Building Department currently shares its communication facilities with various State and Federal agencies and plans to maintain these arrangements, as feasible. We have been in contact with the Division of Land Management and the Information and Communication Services Division and will be consulting with them during the project to facilitate expanded joint use of the facilities.

Mr. William W. Paty
Page 2
November 17, 1992

If there should be any questions, please have your staff contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OK!,

JOHN WAIHEE
GOVERNOR

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

REX D. JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PARKS
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO

HWY-PS
2.3772

SEP 18 1992

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street
Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Draft Environmental Assessment (EA) for the Honolulu Police Department Communications Facilities Upgrade

Thank you for your letter of September 1, 1992, requesting our comments on the draft EA.

The proposed project to upgrade the existing public safety telecommunications system will not affect our highway facilities or programs.

Sincerely,

OK!,

Rex D. Johnson
Director of Transportation

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185

BRIAN J. J. CHOY
Director

September 2, 1992

Mr. Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Muraoka:

Subject: Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade Project

Thank you for the opportunity to review the subject document. We have the following comment:

1. Please consult with the City and County of Honolulu, Department of Land Utilization regarding the proposed actions that are located within the Special Management Area.

If you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Brian J. J. Choy
Director

OK!

✓c: Lacayo Planning

HONOLULU POLICE DEPARTMENT 187 COMMUNICATIONS FACILITIES UPGRADE

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

October 14, 1992

WALTER Q. WATSON, JR., Chairman
MAURICE H. YAMASATO, Vice Chairman
SISTER M. DAVILYN AH CHICK, O.S.F.
JOHN W. ANDERSON, JR.
REX D. JOHNSON
MELISSA Y. J. LUM
C. MICHAEL STREET
KAZU HAYASHIDA
Manager and Chief Engineer

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Your Letter of September 1, 1992 Regarding the Draft Environmental Assessment for the Honolulu Police Department Communications Facilities Upgrade, TMK: 1-1-63: 10: 4-2-17: 16: 8-6-01: 48

Thank you for the opportunity to review and comment on the proposed Honolulu Police Department Communications Facilities Upgrade project. We have the following comments regarding project segments affecting existing Board of Water Supply (BWS) facilities:

1. In order to eliminate confusion, designations of facilities should be consistent with BWS descriptions (i.e. Aliamanu 385 Reservoir rather than Salt Lake Reservoir, Kapaa 272 Reservoir rather than Kapaa Reservoir and the Waianae 242 Reservoir at the Puu Paheehee site).

2. The City Building Department shall be responsible for the management of any hazardous materials or waste in connection with the proposed facilities.

3. The City Building Department shall enter into a joint use agreement with the BWS for all communication facilities within BWS property.

4. The construction drawings should be submitted for our review and approval.

If you have any questions, please contact Bert Kuioka at 527-5235.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

OK!

Pure Water . . . man's greatest need – use it wisely

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1135

November 17, 1992

MEMO TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your October 14, 1992 letter concerning the proposed project. The Building Department will comply with all four items specified in the letter.

If there should be any questions, please have your staff contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OK!

HONOLULU POLICE DEPARTMENT 188 COMMUNICATIONS FACILITIES UPGRADE

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

BENJAMIN B. LEE
CHIEF PLANNING OFFICER

ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

ET 09/92-2689

October 5, 1992

Mr. Robin Foster, Senior Planner
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Draft Environmental Assessment (DEA) for the
Honolulu Police Department (HPD)
Communications Facilities Upgrade

We have reviewed the subject DEA for the Honolulu Police Department Communications Facilities Upgrade submitted to us on September 1, 1992 and have the following comments:

- The Final Environmental Assessment should include photo overlays to illustrate visual impacts of proposed improvements at Diamond Head, Koko Head, Aliamanu Crater, and the Waianae Police Station, and describe proposed actions to mitigate any adverse visual impacts.

- In view of recent Hurricane Iniki, the Building Department should consider designing the proposed communications facilities to withstand hurricane forces.

Thank you for the opportunity to comment. Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Sincerely,

BENJAMIN B. LEE
Chief Planning Officer

BBL:js

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1140

November 17, 1992

MEMO TO: BENJAMIN B. LEE, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your October 5, 1992 letter concerning the proposed project.

Our consultant will be preparing photographic exhibits to illustrate visual impacts for those sites subject to a State Conservation District Use Application and/or City and County Special Management Area Use Permit and where there are significant public views and a substantial exterior improvement is proposed. Those sites include:

4. Koko Head	11. Mokuleia
5. Waimanalo Ridge	13. Puu Manawahua
6A. Kapaa Reservoir	13C. Keaau Beach Park
10. Kawela	14. Salt Lake Reservoir

If you wish, we will be happy to provide your department with copies of the photograph exhibits for the Koko Head and Salt Lake sites.

With respect to the Diamond Head site, following consultation with the Diamond Head Neighborhood Board and the Department of Land and Natural Resources, the Building Department has decided to explore alternative sites in the Diamond Head - Kaimuki area. We will be submitting a supplemental EA for the Diamond Head - Kaimuki facility once the site analysis and design studies have been completed. All required land use permit applications and visual analysis will be prepared in conjunction with the final site selection.

Regarding the Waianae facility, the Building Department has decidad not to extend the existing tower. Changes proposed for the facility will consist of minor antenna alterations and interior improvements, and no significant visual or other environmental impacts are anticipated.

The recent Hurricane Iniki has prompted the Building Department to investigate upgrading planned new facilities to withstand Category 5-hurricane conditions. Possible design changes to the towers include increasing the size of steel structural members, increasing the depth of concrete tower footings, and slightly increasing the width of lower tower segments. These modifications will not substantially change the appearances of the towers.

If there should be any questions, please have your staff contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Herbert K. Muraoka

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OK!,

HONOLULU POLICE DEPARTMENT 189 COMMUNICATIONS FACILITIES UPGRADE

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

FRANK F. FASI
MAYOR

DONALD A. CLEGG
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

92-03051(DT)

October 9, 1992

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street
Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Draft Environmental Assessment (DEA) For The
Honolulu Police Department
Communications Facilities Upgrade
Various Tax Map Keys (TMK)

We have reviewed the DEA for the above projects and will require a major Special Management Area Use Permit (SMP) for the following facilities:

1. Diamond Head Communications Facility, TMK: 3-1-42: 14

   Removal of the existing wood pole antennas and installation of two 30-foot-tall tower segments bridged by a horizontal segment, and interior alterations. Cost: $400,000.

2. Koko Head Communications Facility, TMK: 3-9-12: 4

   Replacement of four pole antennas with a new 50-foot-tall tower and attachment of one microwave dish and nine vertical antennas to the new tower and construction of a five-foot-wide perimeter concrete walkway. Cost: $400,000.

3. Kapaa Reservoir Communications Facility, TMK: 4-2-17:16

   Construction of a new 360-square foot concrete masonry unit (CMU) equipment room, replacement of the existing 30-foot tall tower with a new 50-foot tall tower and attachment of four vertical antennas to the new tower, installation of a new emergency generator and fuel tank, and a new 1,250-square-foot paved area. Cost: $575,000.

HONOLULU POLICE DEPARTMENT 190 COMMUNICATIONS FACILITIES UPGRADE

4. Keaau Beach Park Communications Facility, TMK: 8-3-1: 1

Construction of a new CMU 80-square-foot equipment building and installation of a 25-foot-tall pole with two vertical antennas attached to it. Cost: $575,000.

Proposals for the following facilities qualify for a minor SMP:

1. Kaaawa Fire Station Communications Facility, 5-1-11: 51.
2. Sunset Beach Neighborhood Park Communications Facility, TMK: 5-9-5: 70.
3. Sand Island Sewerage Treatment Plan Communications Facility, TMK: 1-5-41: 5.

The facilities listed below are in the Diamond Head, Hawaii Capital, and Waikiki Special Districts, respectively, and require approval from our Design Division:

1. Diamond Head Communications Facility.
2. Honolulu Municipal Building Communications Facility, TMK: 2-1-33: 10.
3. Waikiki Communications Facilities, TMKs: 2-6-12: 47, 2-6-19: 21, and 2-6-25: 24.

Thank you for the opportunity to comment. If you have any questions concerning the SMP, please call Dana Teramoto of our staff at 523-4648. You may call Louis Fulton of our staff at 527-5369 regarding the Special Districts.

Very truly yours,

Donald Clegg

DONALD A. CLEGG
Director of Land Utilization

DAC:ct

dcare03.djt

6k1

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1136

November 17, 1992

MEMO TO: DONALD A. CLEGG, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your October 9, 1992 letter concerning the proposed project. The Building Department will be submitting permit applications for the sites specified in your letter.

If there should be any questions, please have your staff contact Clifford Horikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

DEPARTMENT OF PARKS AND RECREATION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

WALTER W. OZAWA
DIRECTOR

ALVIN C. AU
DEPUTY DIRECTOR

October 8, 1992

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Draft Environmental Assessment (DEA) for the Honolulu Police Department Communications Facilities Upgrade

Thank you for providing us with the opportunity to comment on your DEA for the Honolulu Police Department communications facilities upgrade.

We note that you have already discussed the possibility of siting your facilities at Keeau Beach Park with this department and received our approval for the project.

We have also very recently concluded our discussion with your agent about acceptable designs for the Sunset Beach Neighborhood Park. The site plan included at page 123 of your DEA does not accurately reflect the final design that we agreed upon. That final design calls for the extension of the entire comfort station and the placement of the Radio Equipment Secure Room within the interior of the comfort station.

Your DEA also discussed improvements to the existing Police communications facility at Koko Head. Although we have not yet formally discussed this project with you, we do not anticipate any problems.

We have reviewed your project and found that the proposed communications facilities modifications at our three parks will not have any significant environmental impacts upon our recreational facilities or activities.

We have no other comments to make at this time.

Sincerely,

For WALTER M. OZAWA, Director

WMO:ei

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1138

November 17, 1992

MEMO TO: WALTER OZAWA, DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your October 8, 1992 letter concerning the proposed project. The Final EA will reflect the final design that was agreed upon for the Sunset Beach comfort station.

If there should be any questions, please have your staff contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OKb

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

ENV 92-227

September 16, 1992

Mr. Robin Foster, AICP
Senior Planner
Lacaya Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Draft Environmental Assessment (DEA)
Honolulu Police Department Communications Facilities Upgrade, TMK:Various

We have reviewed the subject DEA and have no objections to the proposed communication facilities upgrade for the Honolulu Police Department.

Very truly yours,

for C. MICHAEL STREET
Director and Chief Engineer

okb

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

TE-3855
PL92.1.328

September 28, 1992

Mr. Robin Foster, AICP
Lacayo Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Honolulu Police Department
Communications Facilities Upgrade
TMK: 2-5-19: 11 (Various)

This is in response to your letter dated September 1, 1992 requesting our comments on the Draft Environmental Assessment for the subject project.

We have no objections or comments to offer at this time.

Should you have any questions, please contact Wayne Nakamoto of my staff at 523-4190.

Sincerely,

JOSEPH M. MAGALDI, JR.
Director

okb

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1455 SOUTH BERETANIA STREET ROOM 305
HONOLULU HAWAII 96814

FRANK F. FASI
MAYOR

LIONEL E. CAMARA
FIRE CHIEF

DONALD S.M. CHONG
DEPUTY FIRE CHIEF

October 5, 1992

Mr. Robin Foster, AICP
Senior Planner
Lacayo Planning Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

SUBJECT: Draft Environmental Assessment (EA) for the Honolulu Police Department Communications Facilities Upgrade

We have reviewed the application for the above subject request and have no objections to the proposal.

Should you have any questions, please contact Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 943-3838.

Sincerely,

Lionel E. Camara

LIONEL E. CAMARA
Fire Chief

AKL:ny

HONOLULU POLICE DEPARTMENT 194 COMMUNICATIONS FACILITIES UPGRADE

OAHU CIVIL DEFENSE AGENCY
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4121

FRANK F. FASI
MAYOR

Malcolm A. Sussel
Administrator

October 26, 1992

Mr. Robin Foster, AICP
Senior Planner
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

We have reviewed the Draft Environmental Assessment (EA) for the Honolulu Police Department Communications Upgrade Project. You and your associates are to be complimented for the hard work which has obviously gone into this effort.

In reviewing the document, we did not come across any reference to "hardening" of the microwave system, as it would need to survive, if/when subjected to hurricane-force winds. Our recent experience with Hurricane Iniki reminds us once again that future projects, as well as existing ones, must consider the forces of nature and the environment.

In addition, we also note that two of the existing sites and one proposed site are located in the tsunami inundation zone; Kaaawa, Keaau Beach Park and Waianae, respectively. The Keaau site would also be affected by hurricane storm surge (flooding). Past experience also shows us that the Waianae site experiences flash flooding on occasion.

We therefore reccommend that the communications facilities upgrade project consider these factors in developing the final environmental assessment proposals.

Thank you for the opportunity to review and comment on the Draft EA. We look forward to future consultations in areas of mutual concern.

Sincerely,

Malcolm A. Sussel

Malcolm A. Sussel
Administrator

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1137

November 17, 1992

MEMO TO: MALCOLM A. SUSSEL, ADMINISTRATOR
OAHU CIVIL DEFENSE AGENCY

VIA: GEORGE L. KEKUNA, EXECUTIVE ASSISTANT

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your October 14, 1992 letter concerning the proposed project.

The recent Hurricane Iniki has prompted the Building Department to investigate upgrading planned new facilities to withstand Category 5-hurricane conditions. Possible design changes to the towers include increasing the size of steel structural members, increasing the depth of concrete tower footings, and slightly increasing the width of lower tower segments. These modifications will not substantially change the appearances of the towers.

If there should be any questions, please have your staff contact Clifford Horikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

HERBERT K. MURAOKA
Director and Building Superintendent

OK!,

cc: Schema Systems, Inc.

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 • AREA CODE (808) 529-3111

FRANK F. FASI
MAYOR

MICHAEL S. NAKAMURA
CHIEF

HAROLD M. KAWASAKI
DEPUTY CHIEF

OUR REFERENCE OK-CA

September 18, 1992

Mr. Robin Foster, AICP
Senior Planner
Lacayo Planning, Inc.
737 Bishop Street, Suite 1150
Honolulu, Hawaii 96813

Dear Mr. Foster:

In response to your letter of September 1, 1992, we have reviewed the Draft Environmental Assessment (EA) for the Honolulu Police Department's Communications Facilities Upgrade.

In reference to the Diamond Head site, you have proposed that we temporarily use the vacant room for our equipment while improvements are being made. We were informed by Ms. Judy Binns of the Hawaii National Guard on September 15, 1992, that this space will not be available. The architectural firm, Leach Mounce, should be advised that space is not available at Diamond Head.

Should you have any questions or require additional information, please call Mr. Osama Kobayashi, Radio Engineer, at 943-3375.

MICHAEL S. NAKAMURA
Chief of Police

By
CHESTER E. HUGHES
Assistant Chief

BUILDING DEPARTMENT

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 92-1139

November 17, 1992

MEMO TO: MICHAEL NAKAMURA, POLICE CHIEF
HONOLULU POLICE DEPARTMENT

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
FOR THE HONOLULU POLICE DEPARTMENT
COMMUNICATIONS FACILITIES UPGRADE

Thank you for the comments in your September 18, 1992 letter concerning the Diamond Head Communications Facility.

Following consultation with the Diamond Head Neighborhood Board and the Department of Land and Natural Resources, the Building Department has decided to explore alternative sites in the Diamond Head - Kaimuki area. We will be submitting a supplemental EA for the replacement facility once the site analysis and design studies have been completed.

If there should be any questions, please have your staff contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Herbert K. Muraoka

HERBERT K. MURAOKA
Director and Building Superintendent OK!

cc: Schema Systems, Inc.

HONOLULU POLICE DEPARTMENT 196 COMMUNICATIONS FACILITIES UPGRADE

THE OUTDOOR CIRCLE
1110 University Ave., #205 • Honolulu, HI 96826
Phone: 808-943-9658 Fax: 808-955-7264

Established 1912
A Non-profit Organization

BRANCHES
OAHU
Kaimuki
East Kauai
North Shore
HAWAII
Kona
Waimea
MAUI
KAUAI
GARDEN CIRCLES
Hawaii Kai
Kaneohe
Leeward
Windward Oahu

October 21, 1992

Robin Foster, AICP
LACAYO Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment (DEA) for the Honolulu Police Department Communications Facilities Upgrade - Diamond Head Crater

Dear Mr. Foster:

It has come to our attention, and, though late, we would like to be on record opposing the proposal by the Honolulu Police Department to install a 30' tall antenna structure on the southeast ridge of Diamond Head Crater.

With the enactment of Act 313/92, the Diamond Head State Monument Plan adopted by the Board of Land and Natural Resources in 1979 became "the official document setting forth the future direction of the Diamond Head State Monument."

Section 5. states:

> Notwithstanding any other law, including county ordinances, to the contrary, no expansion of buildings and other structures and no construction activity shall take place within the boundaries of the Diamond Head State Monument; .....

We believe the proposed antenna structure within the Monument boundaries is directly contrary to Act 313/92. This most important piece of legislation culminates many years of consistent work on the part of the Circle to preserve Diamond Head-our State Monument and National Natural Landmark.

We believe an alternate site should be sought, with plans to phase out the existing facilities.

We appreciate this opportunity to express our views.

Sincerely,

Luci Pfaltzgraff

Luci Pfaltzgraff, Ch.
Diamond Head Committee

Susan Bright Spangler

Susan Bright Spangler
President

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT
RICHARD IMAMOTO
DEPUTY

November 17, 1992

PB 92-1130

Ms. Luci Pfaltzgraff
Ms. Susan Bright Spangler
The Outdoor Circle
1110 University Avenue, #205
Honolulu, Hawaii 96826

Dear Ms. Pfaltzgraff and Ms. Spangler:

Subject: Draft Environmental Assessment (EA)
for the Honolulu Police Department
Communications Facilities Upgrade

Thank you for the comments in your letter dated October 21, 1992, concerning the proposal to upgrade the existing Diamond Head communications site. We received a similar comment from Michelle Matson, Chairperson of Diamond Head/Kapahulu/St. Louis Heights Neighborhood Board #5.

Because your concerns are so similar, I am forwarding to you a copy of our response to Ms. Matson. While this is primarily an issue which must be worked out with the neighborhood boards in the Kaimuki-Diamond Head area, we would welcome any contribution you may have towards identifying the most appropriate site.

If there should be any questions, please contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

Attach.
cc: Schema Systems, Inc. w/ attach.

DIAMOND HEAD/KAPAHULU/ST. LOUIS HEIGHTS NEIGHBORHOOD BOARD 5
c/o NEIGHBORHOOD COMMISSION
CITY HALL, ROOM 400
HONOLULU, HAWAII 96813

2

October 15, 1992

Robin Foster, AICP
LACAYO Planning, Inc.
737 Bishop Street, Suite 1550
Honolulu, Hawaii 96813

Dear Mr. Foster:

Thank you for forwarding the "Draft Environmental Assessment (DEA) for the Honolulu Police Department Communications Facilities Upgrade" to the Diamond Head/Kapahulu/St. Louis Heights Neighborhood Board for review and comment. We have reviewed the structure proposed for Diamond Head Crater and welcome the opportunity to submit the following comments.

According to the DEA dated August, 1992, a metal (presumably steel) antenna support structure comprised of two 30-ft.-tall tower segments bridged by a horizontal segment with an overall width of ten feet is planned to be built on the southeast ridge of Diamond Head Crater. Attached to this support structure will be nine vertical antennas, the uppermost of which will add a maximum of 13 feet for an overall height of 43 feet. The structure is planned to be anchored to two cylindrical footings, approxiamtely four feet in diameter by 12 feet deep, which is planned to be dug into the crater ridge.

Although the "new metal structure will be painted gray to blend with the sky," this structure will be visible from Diamond Head Road, from the shoreline, from the air traffic corridor above the Crater, from the Crater floor, and from various hiking trails and view points within the Crater and along the ridge.

The DEA recognizes Diamond Head as a registered National Natural Landmark and State Monument. Effective July 1, 1992, Section 6E-32, Hawaii Revised Statutes, respecting Diamond Head State Monument, was amended by Act 313 to expand the boundaries of the Monument to include the entire crater and its interior slopes in addition to all state lands along the exterior slopes extending

to Diamond Head Road. The official document directing the future plan of the Monument is the Diamond Head State Monument Plan of 1979. The Plan calls for reforestation of the crater slopes and an expanded trail system. In addition, the Plan calls for phasing out of all facilities not related to park use.

Moreover, Section 5 of Act 313 specifically provides that "no expansion of buildings and other structures and no construction activity shall take place within the boundaries of Diamond Head State Monument" unless consistent with park use according to the Plan.

We recognize that the proposed transmission tower is a facility required for essential public services. However, the proposed structure will considerably impact the view planes of the Monument, both within the Crater and along the ridgeline. Furthermore, the DEA does not address alternate locations for this facility. The City's abandoned reservoir behind the Kaimuki fire station on Koko Head Avenue would appear to be one such alternative location.

We are concerned that the Department of Land and Natural Resources (DLNR), State Historic Preservation Division, "did not have any objections to the proposed improvements." It is very strange that the DLNR - the agency by which the Diamond Head State Monument Plan is to be implemented, the agency that presented testimony for Act 313 at the State Legislature this year, and the agency which is named in Act 313 - has not informed you of the provisions and restrictions in the amended Monument statute. We would like to know who was contacted at the DLNR with respect to this proposal, and request that you provide us with this information.

In conclusion, we urge you to discontinue all plans for construction of the proposed transmission tower at the Diamond Head site, and we request that you consider more prudent and feasible location alternatives for this facility.

Sincerely,

Michelle Spalding Matson

Michelle Spalding Matson, Chairperson
Diamond Head/Kapahulu/St. Louis Heights
Neighborhood Board #5

cc: William W. Paty, Chairperson
Board of Land and Natural Resources

HONOLULU POLICE DEPARTMENT 198 COMMUNICATIONS FACILITIES UPGRADE

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

PB 92-1131

November 17, 1992

Ms. Michelle Spalding Matson, Chairperson
Diamond Head/Kapahulu/St. Louis Heights
Neighborhood Board #5
c/o Waikiki/Kapahulu Library
400 Kapahulu Avenue
Honolulu, Hawaii 96815

Dear Ms. Matson:

Subject: Draft Environmental Assessment (EA)
for the Honolulu Police Department
Communications Facilities Upgrade

Thank you for the comments in your letter dated October 15, 1992, concerning the proposal to upgrade the existing Diamond Head communications site. We support the legislation and plans for the Diamond Head State Monument. At the same time, however, the City bears a fundamental responsibility to provide for public safety and to have an adequate police and emergency communications system.

To have adequate police communications in this region, we need (1) a microwave repeater station to link the Makiki/Roundtop site and the Koko Head site, and (2) transmitting and receiving antennas to provide mobile radio communications in Palolo, Waialae Nui and other East Honolulu valleys. At this point, we are suspending our plans to improve the existing Diamond Head site and have started to investigate alternative sites, including the Puu O Kaimuki Mini Park site suggested in your letter. If an alternative site proves feasible, then we will abandon the Diamond Head site. Determining feasibility entails (1) finding a site which has adequate communications characteristics, (2) a land owner that will accept the facilities, and (3) the most acceptable alternative considering the various concerns of the Kaimuki-Diamond Head community. We hope that Neighborhood Board #5 will assist in this effort.

The Final Environmental Assessment will reflect the decision to suspend plans to upgrade the existing Diamond Head communications facility and the new effort to identify alternative sites in the Diamond Head-Kaimuki area. A separate Environmental Assessment will be prepared for the selected Diamond Head-Kaimuki site.

If there should be any questions, please contact Clifford Morikawa (tel. 527-6350) or Richard Imamoto (tel. 527-6373).

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

cc: Schema Systems, Inc.

OK!,

HONOLULU POLICE DEPARTMENT 199 COMMUNICATIONS FACILITIES UPGRADE

1993-08-08-OA-FEA-Waimanalo Ridge Communications Site

AUG 8 1993

Waimanalo Ridge Communications Facility

Development Profile

TMK: 3-9-009:001

AREA OF SITE: 1,326.5 acres
Area of Use: less than 5,000 sq. ft.

LANDOWNER: Kamehameha Schools/Bernice Pauahi Bishop Estate

NEAREST TOWN/LANDMARK: Kamehame Ridge subdivision
Distance from Site: 0.75 miles

EXISTING USE: Communications facilities

PROPOSED USE: Upgrade electrical service

STATE LAND USE DISTRICT: Conservation
Subzone: Limited (L)
Type of Use Requested: Permitted Use

COUNTY DEVELOPMENT PLAN AREA: East Honolulu
Land Use Designation: Preservation
Public Facilities Designation: None

ZONING: P-1 Restricted Preservation

SPECIAL MANAGEMENT AREA: Not located within Special Management Area

LAND USE APPROVALS REQUIRED: Conservation District Use Application

A. Site Location and Existing Uses

This existing communications facility is located at the 1,307-ft. elevation of Waimanalo Ridge in East Honolulu and occupies the westernmost portion of a decommissioned Nike missile site. The site is leased by the Federal Aviation Administration (FAA) from the Kamehameha Schools/Bernice Pauahi Bishop Estate. Use of the site by the City and County is authorized under FAA License No. DOT-FA76PC-2773.

The facility is a backbone link to the Koko Head and Kailua Police Station sites. In addition to the Police Department, the Department of Transportation Services uses the facility.

The City and County communications building is comprised of an older 335-sq. ft. area housing equipment and generator rooms and a newer 182-sq. ft. equipment room addition. The building is of CMU construction and has a flat reinforced concrete roof.

Also at this site is a Navy Communications Facility using the same power transmission line as the City. Provision for power to communications equipment housed in a similar type building operated by the Navy (about 100 feet down slope) is included in this proposed electrical power upgrade.

Isolation from habitation at the Koolau Ridge summit, the former Nike site also harbors FAA facilities, a joint Tel-Net and Honolulu Cellular Telephone Company facility and a Police Department training facility. A helipad and a hang-glider staging and launch area are also located in the area. The site is about 0.75 miles from the nearest houselot on Kamehame Ridge.

B. **Proposed Action**

Improvements proposed for this facility include installation of new underground power transmission lines to service both the City and County and the Navy buildings, discontinuing the present shared service line from the FAA facility. Construction work includes underground duct along the access road and concrete pad mounted transformer. No construction work on antennas, building, or tower will be included in this project. The proposed new power transmission line to be constructed per Hawaiian Electric Company standards (HECO) and maintained by them will increase the maintenance reliability and electrical capacity of the communication facilities at this site.

C. **Affected Environment and Anticipated Impacts**

Topography and Soils

The existing site is located on a relatively level area near the top of the Koolau Ridge. Slopes in the adjacent areas are very steep, ranging from 20 to 60 percent. According to the U.S. Soil Conservation Service, soils in the project area are of the rock outcrop series. Centuries of weathering, however, has created a layer of soil deposits on large sections of the property, and vegetation has taken hold in many of these areas.

To support the new underground duct, about 1500 feet of utility trench measuring approximately 18 inches wide by 2 feet deep will be excavated along the side of the access road. In addition, a concrete pad approximately 6 feet by 10 feet to support the new transformer will be constructed at the communications building site. No significant erosion or sedimentation impacts are anticipated.

Flood Hazard

Rainfall in the area averages 30 to 40 inches per year. According to the Federal Flood Insurance Rate Maps, flood hazards at the site are undetermined. Given the 1,307-ft. site elevation, flooding is unlikely. In addition, the proposed improvements should not result in any flooding of lower elevation properties.

Flora and Fauna

The site is covered by a variety of grass and shrubs and a mixture of mid-elevation trees. The predominant groundcover species include Mexican creeper, false daisy, Mauna Loa vine, vervain and grass. Guava, Christmas berry tree, koa haole and kiawe comprise the predominant tree species. No threatened or endangered flora or fauna exist in the area.

The proposed improvements will not result in any substantial negative impacts to the plants or animals in the area.

Cultural Resources

According to the Department of Land and Natural Resources, State Historic Preservation Division, the site is not known to have any archaeological or cultural resources.

Viewplanes

City and County and other communication facilities located on Waimanalo Ridge are only faintly visible on the skyline from Kamiloiki Valley, the closest Hawaii Kai neighborhood. The facilities are located about 1.7 miles from Kamiloiki Neighborhood Park. More visible on the ridge top are electric power poles and towers, which are concentrated near the top of Kamehame Ridge.

On the Waimanalo side, the site is shielded from view by very steep cliffs. It is not visible from Kaiona Beach Park, the nearest public park. The site may be faintly visible on the skyline from parts of Kalanianaole Highway in Waimanalo Town, over 1.5 miles away.

Because of the underground installation of the power lines, no electric power poles will be visible on the ridge top, and no significant effect on public views.

Recreational

A hang gliding launch area is located about 1,350 feet east of the communications facility. The proposed improvements will not interfere with the recreational activities conducted there.

Access and Traffic

Access to the site is via a 2.2 mile one-lane paved road that starts at the top of Kamehame Ridge. The road is private and secured by lock and key. Although periodic maintenance and servicing will be required at the facility, such services will have minimal impact on current traffic levels. Existing roads and rights-of-way will be adequate to accommodate any access required to the site.

D. Summary of Impacts and Mitigative Measures

Brush and weeds will be cleared from one side of the access road for trenching. The contractor will be required to replant any turf removed from trenching.

E. Land Use Approval Required

Conservation District Use Application

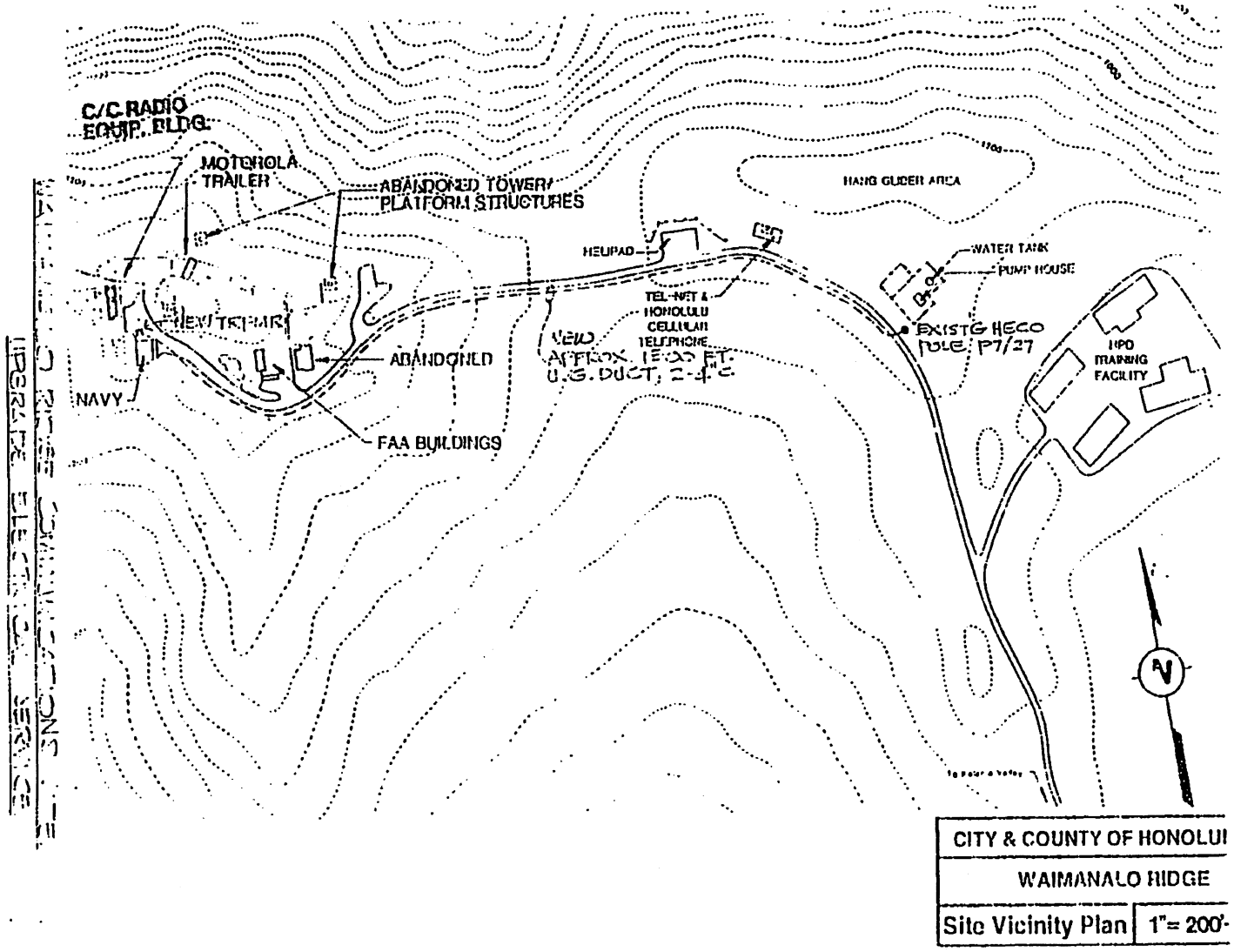
The project is located within the State's Conservation District and a Conservation District Use Application will be submitted to the Hawaii Department of Land and Natural Resources.

Conservation District Subzone

The project site lies within the Limited (L) subzone. The objective of this subzone, as stated in Title 13, Chapter 2, Hawaii Administrative Rules, "is to limit uses where natural conditions suggest constraints on human activities". The proposed use is permitted under §13-2-11(c)(8) and §13-2-12(c)(2).

Prior CDUA Approvals

OA-1019: October 1984 - Install a fuel tank.



DOCUMENT CAPTURED AS RECEIVED

DETERMINATION

The proposed Waimanalo Ridge Communications Site, Electrical Service Upgrade project is not anticipated to cause significant negative impacts to the environment. It has, therefore, been determined that a negative declaration will be issued.

FINDINGS AND REASONS SUPPORTING DETERMINATION

The following findings are based on the information provided above:

a. The proposed project will not involve an irrevocable commitment to loss or destruction to any natural or cultural resources;

b. The proposed project will not curtail the range of beneficial uses of the environment;

c. The proposed project will not conflict with the State's long-term environmental policies;

d. The proposed project will not substantially affect the economic or social welfare of the community or State;

e. The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities;

f. The proposed project will not involve a substantial degradation of environmental quality;

g. The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. No endangered species of flora or fauna are known to exist in any of the facility sites;

h. The proposed project will not detrimentally affect air or water quality or ambient noise levels; and

i. The various elements of the proposed project will not be located in any environmentally sensitive area, such as flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, freshwater or coastal waters.

CONSULTED PARTIES IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

The notice of availability of the Draft EA was published in the OEQC by the Office of Environmental Quality Control on June 8, 1993. In addition, representatives from the Building Department consulted with a number of public agencies. The parties that were requested to review and comment on the Draft EA are listed below. Those who responded in writing are identified with an asterisk (*) next to their names, with copies of the correspondence presented in the following page.

Federal Agencies
U.S. Department of Transportation-Federal Aviation Administration *

State Agencies
Department of Land & Natural Resources

Community Organizations
Hawaii Kai Neighborhood Board No. 1
Land Manager, B. P. Bishop Estate

U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
P. O. Box 50109
Honolulu, Hawaii 96850-4983

July 6, 1993

Mr. Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Muraoka:

Your letter PB 93-573 of June 7, 1993, requested comments on the Draft Environmental Assessment (EA) for the upgrade of the electrical service at the Government shared communication facilities at Maunalua (Waimanalo) Ridge, Oahu, Hawaii, (Tax Map Key: 3-9-009:001).

The Federal Aviation Administration (FAA) has no comments and concurs with this project to install a new underground power transmission line to the existing City and County and the Navy communications buildings.

We appreciate your continued cooperation. Please contact me at 541-1236, if I may be of any assistance.

Sincerely,

Darice B. N. Young
Realty Contracting Officer, AHNL-56