

NEIL ABERCROMBIE
GOVERNOR



Dean H. Seki
Comptroller

Maria E. Zielinski
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES


P.O. BOX 119, HONOLULU, HAWAII 96810-0119

OCT - 7 2013

(P)1227.3

MEMORANDUM

TO: Ms. Genevieve Salmonson, Interim Director
Office of Environmental Quality Control
Department of Health

FROM: Dean H. Seki 
Comptroller

SUBJECT: Draft Environmental Assessment for
Waimano Ridge, Department of Health "AAFES" Building Staff Relocation
DAGS Job No. 12-20-2680

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The Department of Accounting and General Services, State of Hawaii, hereby transmits the Draft Environmental Assessment (DEA) and Anticipated Finding Of No Significant Impact (AFONSI) for Waimano Ridge, Department of Health "AAFES" Building Staff Relocation, situated at TMK 9-7-025:001, in the Waimano Ahupuaa, Ewa District, on the island of Oahu, for publication in the next available edition of the Environmental Notice.

We have enclosed a completed OEQC Publication form, two printed copies of the DEA-AFONSI, and a CD containing these documents in electronic form.

If there are any questions, please call me at 586-0400 or have your staff may call Mr. Lance Maja of the Public Works Division at 586-0483.

Attachments

c: Mr. John Messina – DOH without attachments
Mr. Glenn Kimura – Kimura International without attachments
Mr. Richard Balcom – CDS International without attachments

**AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (JULY 2012 REVISION)**

Project Name: Waimano Ridge, DOH "AAFES" Building Staff Relocation
(DAGS Job No. 12-60-2680)

Island: Oahu

District: Ewa District

TMK: 9-7-025:001

Permits: Building permit, grading permit, NPDES

Proposing/Determination Agency: Department of Accounting & General Services (DAGS), on behalf of the Department of Health (DOH)

*DAGS Public Works Division
Planning Branch
Kalanimoku Building
1151 Punchbowl Street, Room 430
Honolulu, HI 96813
Attn. Mr. Lance Maja
(808) 586-0483*

Consultant: *Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, HI 96814
Attn. Ms. Leslie Kurisaki
(808) 944-8848*

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Status (check one only):

- X_DEA-AFONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.
- FEA-FONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- FEA-EISPN** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqc@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.
- Act 172-12 EISPN** Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqc@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- DEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- FEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list,

along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-23
Determination

The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-27
Determination

The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

___ Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The State of Hawaii Department of Accounting and General Services (DAGS), on behalf of the State of Hawaii Department of Health (DOH), proposes to renovate three existing buildings at Waimano Ridge to be used as office space for approximately 262 DOH employees. Waimano Ridge (aka "Waimano Home") is a 242-acre State-owned property (Tax Map Key: 9-7-025:001) located at the upper end of Waimano Home Road, two miles mauka of Kamehameha Highway in Pearl City, O'ahu.

The proposed project is needed to provide permanent office space for approximately 262 employees from the Environmental Health Administration, who are being displaced from their existing offices in the former Army and Air Force Exchange Service (AAFES) building in Kaka'ako. The AAFES building, located at 919 Ala Moana Blvd., is one of ten properties that was recently transferred from the State to the Office of Hawaiian Affairs as part of a legal agreement to settle past ceded lands claims against the State. Under the terms of the agreement, the DOH must vacate the building by June 2016.

Three buildings at Waimano Ridge will be renovated to provide office space for these displaced employees. The buildings include Hale Ola (the former hospital building), the former Kitchen and Dining building, and Building 4 (known as Uluapuku). New parking lots and infrastructure improvements will also be constructed to accommodate the relocated staff. Upon completion of the renovation, 262 DOH employees from eleven branch and program offices will relocate from the AAFES building to Waimano Ridge.

Currently, there are approximately 314 individuals working at Waimano Ridge, primarily State employees with the DOH, Department of Public Safety, and the Department of Land and Natural Resources. The Department of Public Safety will soon relocate their staff to Iwilei, and after completion of the project, there will be a total of 482 employees at Waimano Ridge, a net increase of 168 persons.

Waimano Ridge DOH “AAFES” Building Staff Relocation

Draft Environmental Assessment

DAGS Job. No. 12-20-2680



State of Hawai‘i
Department of Accounting and General Services

State of Hawai‘i
Department of Health

October 2013

Waimano Ridge

DOH “AAFES” Building Staff Relocation

Draft Environmental Assessment

DAGS Job. No. 12-20-2680



Prepared for:
State of Hawai'i
Department of Accounting and General Services

State of Hawai'i
Department of Health

Prepared by:
Kimura International

October 2013

Table of Contents

<u>Section</u>	<u>Page</u>
EXECUTIVE SUMMARY	
1 PROJECT DESCRIPTION	
1.1 Introduction.....	1-3
1.2 Project Site.....	1-3
1.3 Background and Need for Project.....	1-5
1.3.1 Background.....	1-5
1.3.2 Need for Project.....	1-5
1.4 Project Description.....	1-8
1.5 Possible Environmental Permits and Approvals.....	1-20
2 ALTERNATIVES INCLUDING THE PROPOSED ACTION	
2.1 No Action.....	2-1
2.2 Remain in AAFES Building.....	2-1
2.3 Alternative Relocation Sites (Including Waimano Ridge).....	2-2
2.3.1 Relocate to Another Location or Facility.....	2-2
2.3.2 Decentralize Departments and Relocate to Other Government-Owned Office Space.....	2-3
2.3.3 Relocate to a Vacant School Site.....	2-3
2.3.4 Relocate to Waimano Ridge.....	2-4
2.4 Alternative Site Plans at Waimano Ridge.....	2-4
2.4.1 Waimano Ridge Feasibility Study.....	2-4
2.4.2 Schemes Involving Renovation Only.....	2-5
2.4.3 Schemes Involving New Construction.....	2-8
2.5 Evaluation of Alternatives.....	2-11
3 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION	
3.1 Introduction.....	3-1
3.2 Physical Environment.....	3-1
3.2.1 Location and Surrounding Land Uses.....	3-1
3.2.2 Brief History and Existing Waimano Ridge Uses.....	3-2
3.2.3 Topography and Soils.....	3-6
3.2.4 Climate.....	3-8
3.2.5 Air Quality.....	3-8
3.2.6 Natural Hazards.....	3-10
3.2.7 Noise.....	3-11
3.2.8 Visual.....	3-12

<u>Section</u>	<u>Page</u>
3.3	Biological Environment 3-12
3.3.1	Botanical Resources..... 3-12
3.3.2	Terrestrial Fauna and Avifauna 3-13
3.4	Socio-Economic Environment 3-14
3.4.1	Demographic Characteristics 3-14
3.4.2	Archaeological, Historic, and Cultural Resources 3-15
3.5	Utilities and Infrastructure 3-27
3.5.1	Water System 3-27
3.5.2	Sanitary Sewer 3-28
3.5.3	Electrical, Telephone, Cable 3-29
3.5.4	Drainage 3-29
3.5.5	Solid Waste 3-30
3.5.6	Hazardous Materials 3-30
3.6	Traffic 3-31
3.6.1	Existing Conditions..... 3-32
3.6.2	Impacts and Mitigation 3-32
3.7	Public Services and Facilities 3-36
3.7.1	Police, Fire and Emergency Medical 3-36
3.7.2	Schools and Community Facilities 3-37
4	CONSISTENCY WITH EXISTING PLANS, POLICIES AND CONTROLS
4.1	State of Hawai‘i 4-1
4.1.1	Hawai‘i State Plan..... 4-1
4.1.2	State Land Use Classification 4-1
4.2	City and County of Honolulu..... 4-2
4.2.1	County General Plan 4-2
4.2.2	Primary Urban Center Development Plan 4-6
4.2.3	County Zoning 4-6
4.3	Other Considerations 4-8
4.3.1	Unavoidable Adverse Effects 4-8
4.3.2	Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures..... 4-8
4.3.3	Relationship of Short-Term Uses and Long-Term Productivity..... 4-10
4.3.4	Irretrievable and Irreversible Resource Commitments 4-10
5	ANTICIPATED DETERMINATION, FINDINGS AND REASONS SUPPORTING THE CHAPTER 343 HRS DETERMINATION
5.1	Anticipated Chapter 343 HRS Determination 5-1
5.2	Chapter 343 Hawai‘i Revised Statutes Significance Criteria 5-1

<u>Section</u>	<u>Page</u>
6	REFERENCES
7	PERSONS AND AGENCIES INVOLVED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT
7.1	Agencies and Organizations Consulted 7-1
7.2	Comments Received During Pre-Assessment Consultation 7-3

APPENDICES

- A. Final Feasibility Report, Waimano Ridge Feasibility Study for AAFES Staff Relocation, Department of Accounting and General Services, October 15, 2012
- B. Botanical Resources Assessment, LeGrand Biological Consulting, 2005
- C. Survey of Avian and Terrestrial Mammals, Reginald E. David, Rana Productions, July 2005
- D. Historic Structure Overview, Hale Ola and Adjacent Kitchen and Dining, Former Waimano Training School and Hospital, Virginia D. Murison, AIA, August 20, 2013
- E. Archaeological Reconnaissance of the Waimano Training School and Hospital, William H. Folk II, Cultural Surveys Hawaii, (undated)
- F. A Cultural Impact Analysis for the Waimano Training School and Hospital Staff Relocation Project, Waimano Ahupua‘a, Cultural Surveys Hawaii, July 2013
- G. Traffic Impact Report, Waimano Ridge DOH “AAFES” Building Staff Relocation, Julian Ng, Inc. September 2013

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
Chapter 1	
1 Waimano Ridge Project Location.....	1-4
2 AAFES Building and OHA Kaka‘ako Properties.....	1-6
3 Department of Health Organization Chart.....	1-7
4 Site Plans of Renovated Buildings.....	1-9
5 Hale Ola Floor Plan, Level 1	1-13
6 Hale Ola Floor Plan, Level 2	1-14
7 Hale Ola Floor Plan, Level 3	1-15
8 Hale Ola Floor Plan, Basement.....	1-16
9 Kitchen and Dining Building.....	1-17
10 Uluapuku.....	1-19
Chapter 2	
11 Existing Buildings Considered for Renovation	2-6
12 New Construction: New Building Adjacent to Uluapuku	2-9
13 New Construction: New Building Wing for Hale Ola.....	2-10
Chapter 3	
14 Soils Map	3-7
Chapter 4	
15 State Land Use Map.....	4-3
16 Primary Urban Center Development Plan Land Use.....	4-7
17 Zoning.....	4-9

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1-1 Possible Environmental Permits and Approvals.....	1-20
3-1 Existing Occupied Buildings at Waimano Ridge	3-4
3-2 Existing Vacant Buildings at Waimano Ridge	3-6
3-3 Demographic Information for Pearl City Census Data Place (CDP), 2010.....	3-14
3-4 Impacts to Historic Structures: Hale Ola	3-19
3-5 Impacts to Historic Structures: Kitchen and Dining Building	3-20
3-6 Level of Service (LOS) Analysis for Signalized Intersections.....	3-34
3-7 Level of Service (LOS) Analysis for Unsignalized Intersections.....	3-34
7-1 Summary of Comments Received During Pre-Assessment Consultation	7-3

LIST OF ACRONYMS

AAFES	Army and Air Force Exchange Service
ADA	Americans with Disabilities Act
ALISH	Agricultural Lands of Importance in the State of Hawai‘i
BMP	Best Management Practices
BWS	Board of Water Supply
CDP	Census designated place
DAGS	Department of Accounting and General Services
DCAB	Disability Communication Access Board
dB	decibels
dBA	A-weighted sound level
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land & Natural Resources
DOE	Department of Education
DOH	Department of Health
DOT	Department of Transportation
DP	Development Plan
DPP	Department of Planning and Permitting
DTS	Department of Transportation Services
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
gpd	gallons per day
HAR	Hawai‘i Administrative Rules
HECO	Hawaiian Electric Company
HCDA	Hawai‘i Community Development Authority
HID	high intensity discharge
HPD	Honolulu Police Department
HRS	Hawai‘i Revised Statutes
LCA	Land Commission Award
Leq	Equivalent Sound Level
Ldn	Day-Night Equivalent Sound Level
LOS	Level of Service
LUO	Land Use Ordinance
mgd	million gallons per day
MSL	mean sea level
NAC	Noise Abatement Criteria
NAAQS	National Ambient Air Quality Standards

NPDES	National Pollutant Discharge Elimination System
OHA	Office of Hawaiian Affairs
OR&L	O‘ahu Railway and Land Company
PCCC	Pearl City Cultural Center
PUC	Primary Urban Center
RCRA	Resource Conservation and Recovery Act
ROH	revised ordinances of Honolulu
SHPD	State Historic Preservation Division
SIHP	State Inventory of Historic Places
SLH	Session Laws of Hawai‘i
SMA	Special Management Area
TCLP	toxicity characteristic leaching procedure
TDM	transportation demand management
TMK	tax map key

Project Summary

Item	Description
Project Name	Waimano Ridge, DOH “AAFES” Building Staff Relocation DAGS Job No. 12-20-2680
Proposing Agency	State of Hawai‘i, Department of Account and General Services (DAGS) on behalf of the Department of Health (DOH)
Accepting Agency	State of Hawai‘i, Department of Accounting and General Services (DAGS)
Anticipated Determination	Finding of No Significant Impact
Location	Waimano Ridge, Pearl City, O‘ahu
Tax Map Key	Tax Map Key: 9-7-025:001
Existing Uses	<p>The 242-acre State-owned property at Waimano Ridge was the site of the former Waimano Training School and Hospital (aka Waimano Home). After the Waimano Training School and Hospital closed in 1999, many of the buildings were abandoned and today remain vacant and in disrepair, surrounded by overgrown vegetation. Several of the larger buildings continue to be used by DOH and other state agencies for offices and maintenance space.</p> <p>The project will renovate three existing buildings. The former hospital, known as Hale Ola, is a three-story structure currently used by the Department of Public Safety as classroom and training space. An adjacent Kitchen and Dining building is currently vacant and will also be renovated for office and conference space. The project will renovate Building 4, known as Uluapuku, which is located closer to the secured entry gate. Building 4 is currently used by the DOH as office space and a temporary tuberculosis clinic.</p> <p>Other uses within the 242-acre Waimano Ridge property include the Pearl City Cultural Center, the DOH State Laboratory, the Facility for Troubled Youth, DLNR Baseyard and DOH Hale Complex. The proposed project will not affect these buildings or their activities.</p>
Landowner	State of Hawai‘i, Department of Land and Natural Resources (DLNR)
Need for Project	<p>The project is needed to provide permanent office space for approximately 262 DOH employees who are being displaced from their current offices in the former Army and Air Force Exchange Service (AAFES) building in Kaka‘ako. Ownership of the AAFES Building and land has been transferred to the Office of Hawaiian Affairs (OHA) in accordance with a law signed on April 11, 2012 that transferred 10 land parcels (approximately 25 acres) in Kaka‘ako from the State of Hawai‘i to OHA. Under this agreement DOH must vacate the building by June 2016.</p>

Item	Description
Project Description	<p>Renovate three existing buildings on Waimano Ridge in Pearl City and relocate approximately 262 DOH employees to the site. The three buildings are located within the 242-acre State-owned property (Tax Map Key: 9-7-025:001) which was the site of the former Waimano Training School and Hospital.</p> <p>The project will renovate Hale Ola, the former hospital building, an adjacent Kitchen and Dining building and the Uluapuku building. New parking lots and infrastructure improvements will be constructed to accommodate the relocated staff. Upon completion of the renovations, DOH staff will relocate to Waimano Ridge.</p>
Flood Insurance Rate Map	Zone D, areas in which flood hazards are undetermined
State Land Use	Urban
Zoning	<p>R-5, Residential</p> <p>Existing hospital building is a non-conforming use that exceeds the maximum 25’ height limit of the underlying zone but was legally established and thus is grandfathered in. No increase in building height is proposed.</p>
Special Management Area (SMA)	Project is not within the SMA

1 PROJECT DESCRIPTION

1.1 INTRODUCTION

The State of Hawai‘i Department of Accounting and General Services (DAGS), on behalf of the State of Hawai‘i Department of Health (DOH), proposes to renovate three existing buildings at Waimano Ridge to accommodate relocation of several offices within the DOH’s Environmental Health Administration. Approximately 262 DOH employees are being displaced from their current office at the former Army and Air Force Exchange Service (AAFES) building in Kaka‘ako, near downtown Honolulu. The AAFES building was recently transferred from the State of Hawai‘i to the Office of Hawaiian Affairs (OHA) as part of a legal agreement to settle past ceded lands claims against the State. The agreement transferred approximately 25 acres of land in Kaka‘ako, valued at about \$200 million, from the HCDA to OHA. Although OHA’s long term plans for the building are unknown, the DOH is required to vacate the building by June 2016.

The Waimano Ridge property in Pearl City is considered to be a major, underutilized asset of the Department of Health. A feasibility study conducted for the DOH in 2012 evaluated the condition of ten existing buildings at Waimano Ridge, and developed alternative schemes for accommodating the displaced DOH employees. The alternatives involved construction of new buildings as well as renovation of existing buildings. Cost estimates were prepared. Based on the feasibility study, the DOH has chosen to pursue the renovation of three existing buildings, which will be used as permanent office space.

This Environmental Assessment (EA) evaluates the environmental impact of renovating three buildings and associated site improvements at Waimano Ridge, and relocating 262 DOH employees to the site. This EA has been prepared in accordance with the requirements of Chapter 343, Hawai‘i Revised Statutes (HRS), Act 241, Session Laws of Hawai‘i (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative rules, “Environmental Impact Statement Rules.”

1.2 PROJECT SITE

The project site is located at the top of Waimano Ridge above Pearl City, approximately 15 miles west of downtown Honolulu (Figure 1). The Waimano Ridge property is the site of the former Waimano Training School and Hospital, *aka* Waimano Home. This State-owned parcel is 242-acres in size, and identified by Tax Map Key: 9-7-025:001. The terrain rises from approximately 425 ft above mean sea level to approximately 1,000 feet. Waimano Ridge is flanked by heavily vegetated slopes that form the valley walls of Waimano Valley and Waimalu Valley. The residential neighborhoods of Pacific Palisades to the northwest and Wailuna to the southeast are separated by these valleys. Momilani Elementary and Pearl City High Schools form the makai border of the project site.

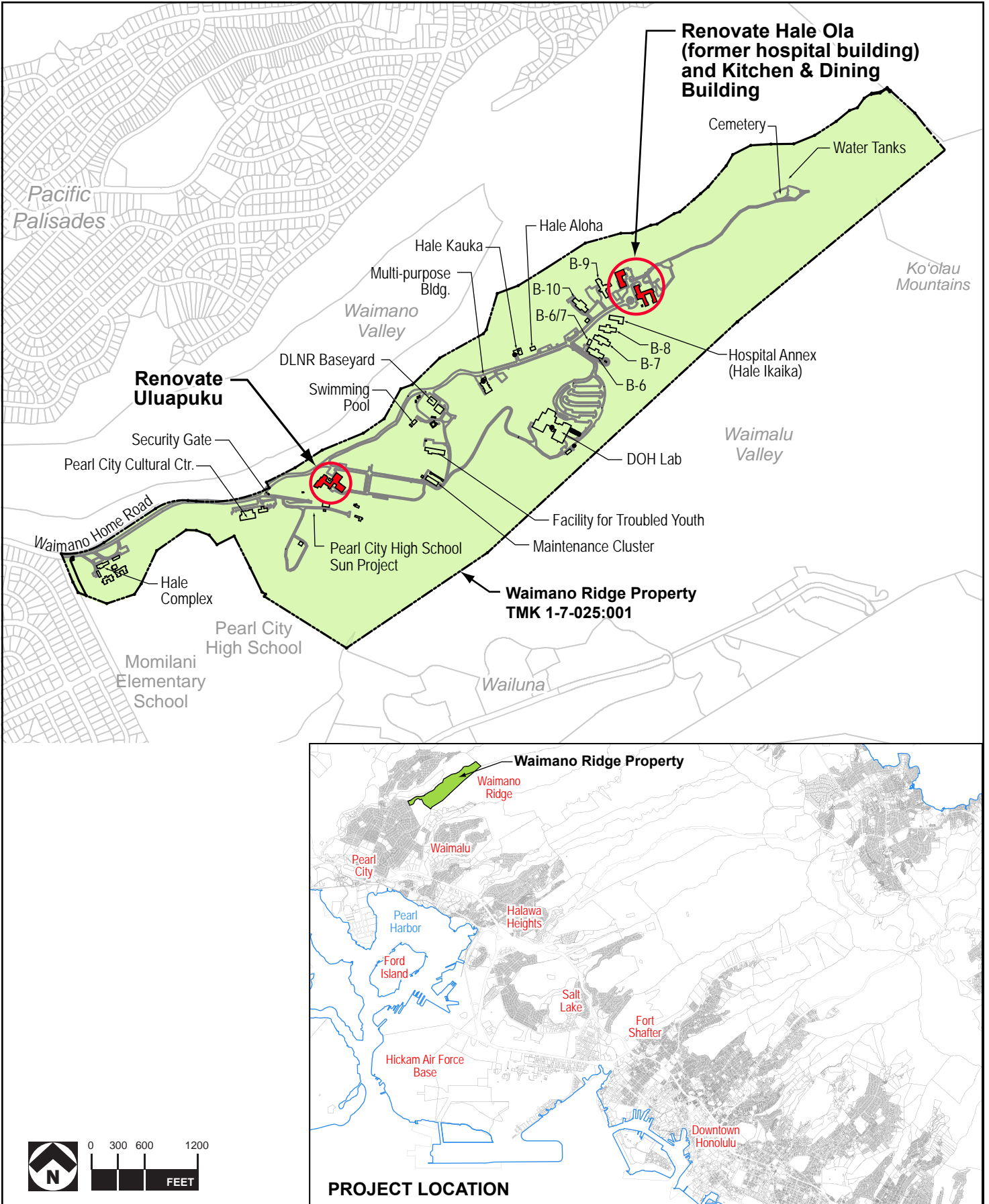


Figure 1
WAIMANO RIDGE PROJECT LOCATION

The Waimano Ridge property has a campus-like environment with an abundance of open space covered with mature trees, weedy shrubs and grasses and maintained lawns. Structures on the property are scattered, and range from new facilities that are occupied and operational to original facilities that date back to the school and hospital, some of which have been renovated and used by various public agencies. Buildings associated with the original school and hospital are in various stages of disrepair and many have been demolished over time for safety reasons. Due to the hilly terrain, only about one third of the 242-acre Waimano Ridge property (about 80 acres) is buildable. The remainder of the parcel has steep slopes greater than 15%.

1.3 BACKGROUND AND NEED FOR PROJECT

1.3.1 Background

In 2012, the State of Hawai‘i reached an historic agreement with the native Hawaiian community to settle past ceded land claims. Senate Bill 2783, which was introduced by Governor Neil Abercrombie’s administration, was advanced by the legislature unanimously and was signed into law in April 2012. The law conveyed about 25 acres of contiguous and adjacent parcels of land in Kaka‘ako to the Office of Hawaiian Affairs (OHA), settling all disputes and claims relating to the public trust lands from 1978 through 2012.

The settlement lands included the former Army and Air Force Exchange Services (AAFES) Building, located at 919 Ala Moana Boulevard (Figure 2). This building is occupied by approximately 262 employees within the DOH’s Environmental Health Administration, and the State’s Department of Public Safety. As part of the State’s settlement with OHA, these offices must vacate the building by June 2016.

In October, 2012, DAGS prepared a study evaluating the feasibility of renovating existing DOH-owned buildings or constructing new buildings at Waimano Ridge to house the displaced program offices and employees (see Appendix A). The multi-phased feasibility study evaluated current working conditions and needs of staff to be relocated, and identified ten buildings at Waimano Ridge that could potentially be used. The study evaluated their physical condition, estimated renovation costs, and prepared a number of office space planning alternatives to determine optimal functional relationships within and between offices. A number of schematic designs were developed using existing buildings, new construction or a combination of both. These alternatives considered are summarized in Chapter 2, Alternatives.



1.3.2 Need for Project

The project is needed in order to support the continued operation of the Environmental Health Administration of the State of Hawai‘i Department of Health (DOH). The overall mission of the DOH is to protect and improve the health and environment for all people in Hawai‘i.

Figure 3 shows the organization chart of the DOH. Eleven branches and offices within the Environmental Health Administration are located in the AAFES building. They include



LEGEND

-  OHA Settlement Properties
-  AAFES Building Parcel

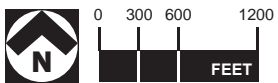


Figure 2
AAFES BUILDING AND OHA KAKAAKO PROPERTIES

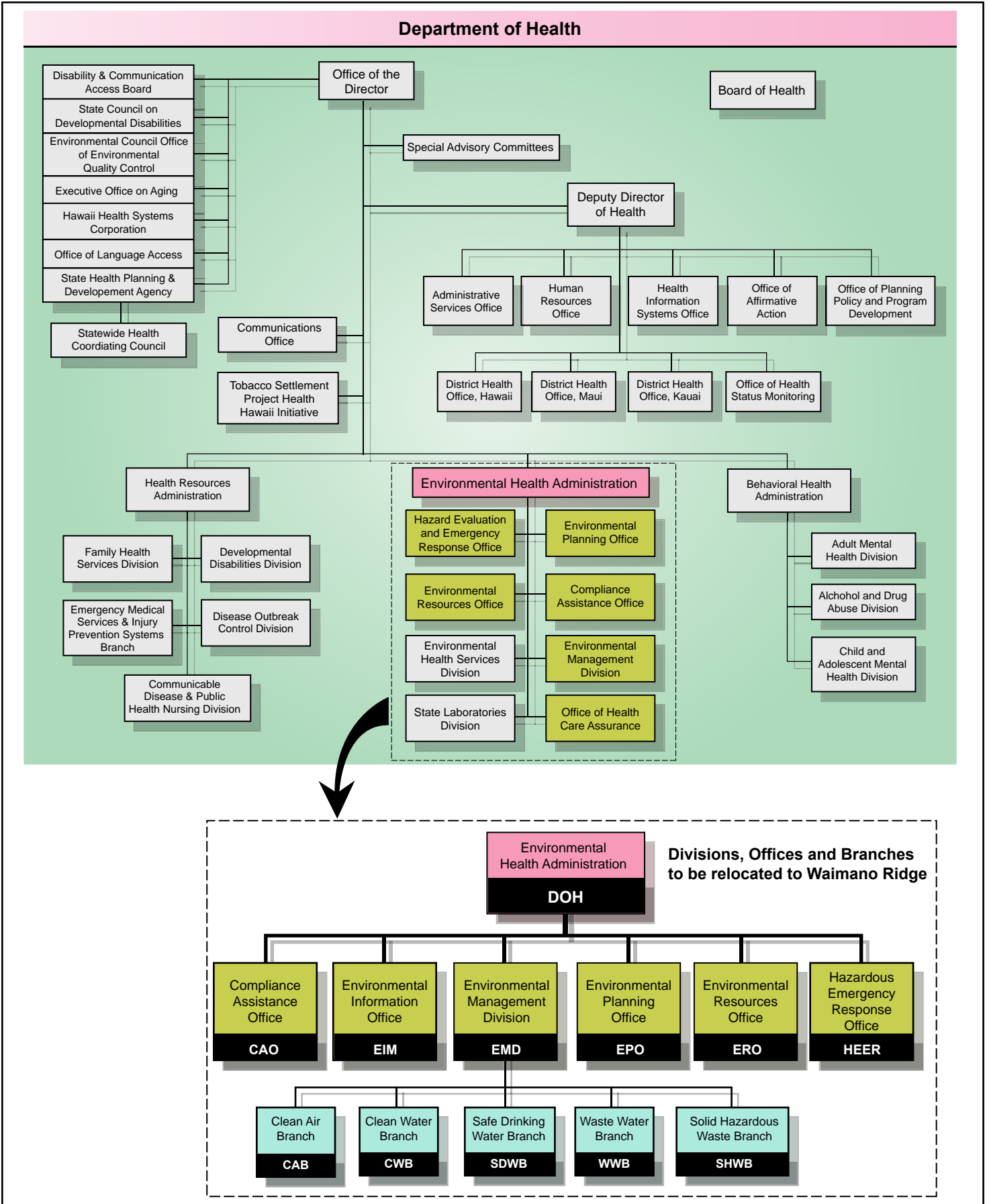


Figure 3
STATE OF HAWAII DEPARTMENT OF HEALTH ORGANIZATION CHART

Statewide programs responsible for protecting and maintaining clean air, clean water, safe drinking water, responding to hazardous materials spills, and managing solid waste and wastewater.

Although the immediate impetus for the relocation of staff to Waimano Ridge is the pending loss of office space, the project also provides an opportunity to reduce the State’s long-term operating expenses. By relocating government offices to a State-owned facility, long-term leasing costs will be reduced. The proposed building renovation will also provide staff with more efficiently designed work spaces, in contrast to their current situation which is less than optimal. For example, the existing DOH offices are spread throughout the AAFES building on three floors, and co-mingled with the offices of the Department of Public Safety. Some of the DOH offices are split across hallways and between floors. There is only one large conference room available for meetings and training sessions and the shortage of space requires the use of off-site storage. The renovated facilities at Waimano Ridge will provide adequate space, allowing more efficient operations.

1.4 PROJECT DESCRIPTION

The project will completely renovate and modernize three existing buildings at Waimano Ridge, creating appropriate office space, meeting and conference rooms and storage areas. The buildings will be renovated to be fully compliant with health, safety, handicap accessibility, and building code requirements. The DOH Environmental Health Administration’s offices and branches will be relocated from the AAFES building to these renovated spaces, providing an efficient and safe work environment.

Structures to be renovated include Hale Ola (the original hospital), an adjacent Kitchen and Dining building and Building 4, the Uluapuku building (Figure 4). The building assessment conducted by CDS International in August 2005 concluded that these buildings were structurally sound and repurposing them for offices was cost effective.

Space allocations for the various divisions, offices and branches were determined by the project architects through a series of meetings with department heads, staff surveys and design alternative presentations. This planning process was used to ensure that the renovated spaces efficiently met the needs of users, and that personnel were collocated to maximize operations and services.

Hale Ola (Former Hospital building)

Hale Ola, the former hospital, is a concrete and masonry building located at the terminus of Waimano Home Road. Designed by architect Hart Wood and completed in 1951, it is 42,460 SF in size, and comprised of three stories and basement. The building has a main entry and lobby with wings that extend in various directions. One section of the building has wings forming a “u” shape with an interior courtyard. This portion of the building is only two stories. Another wing extends out in the westerly direction from the lobby. This portion of the building has three floors. The basement occupies the area underneath the main lobby and the southern wing.

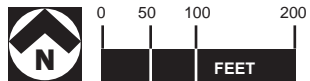
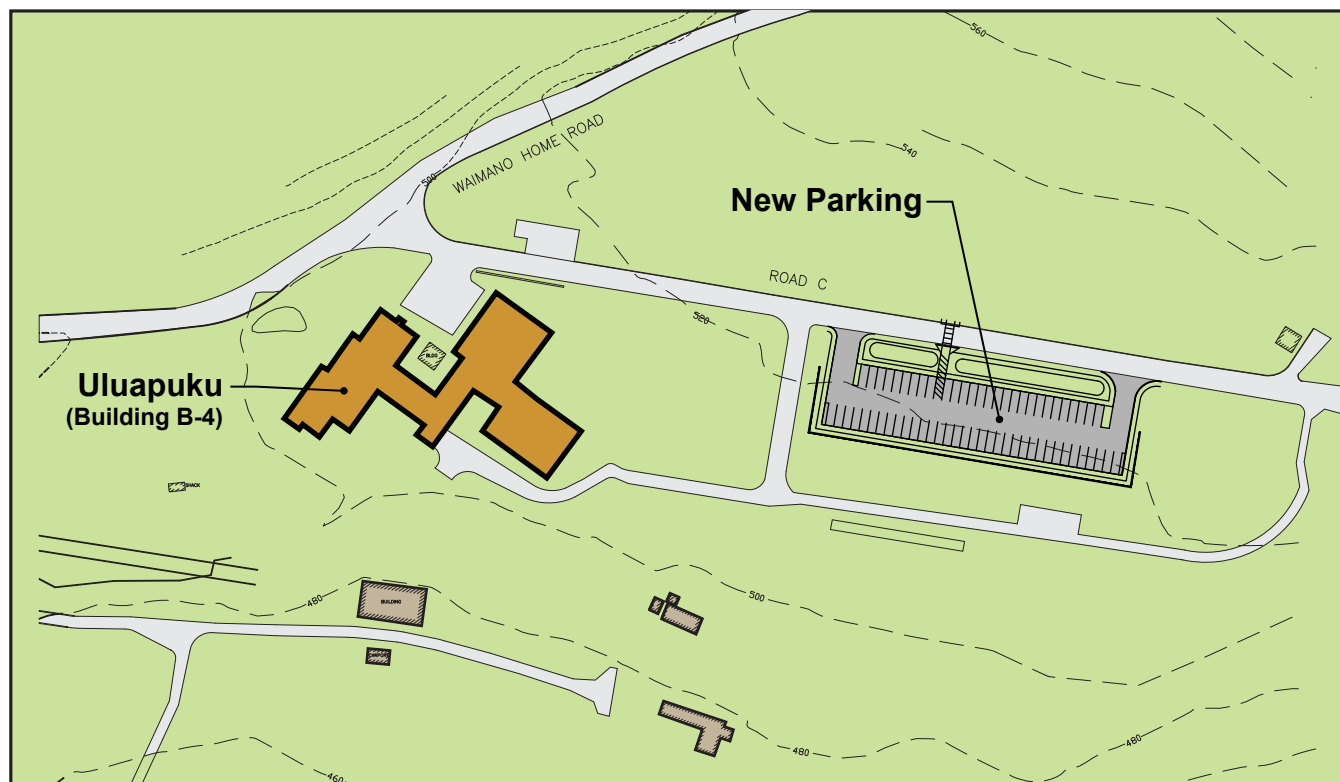
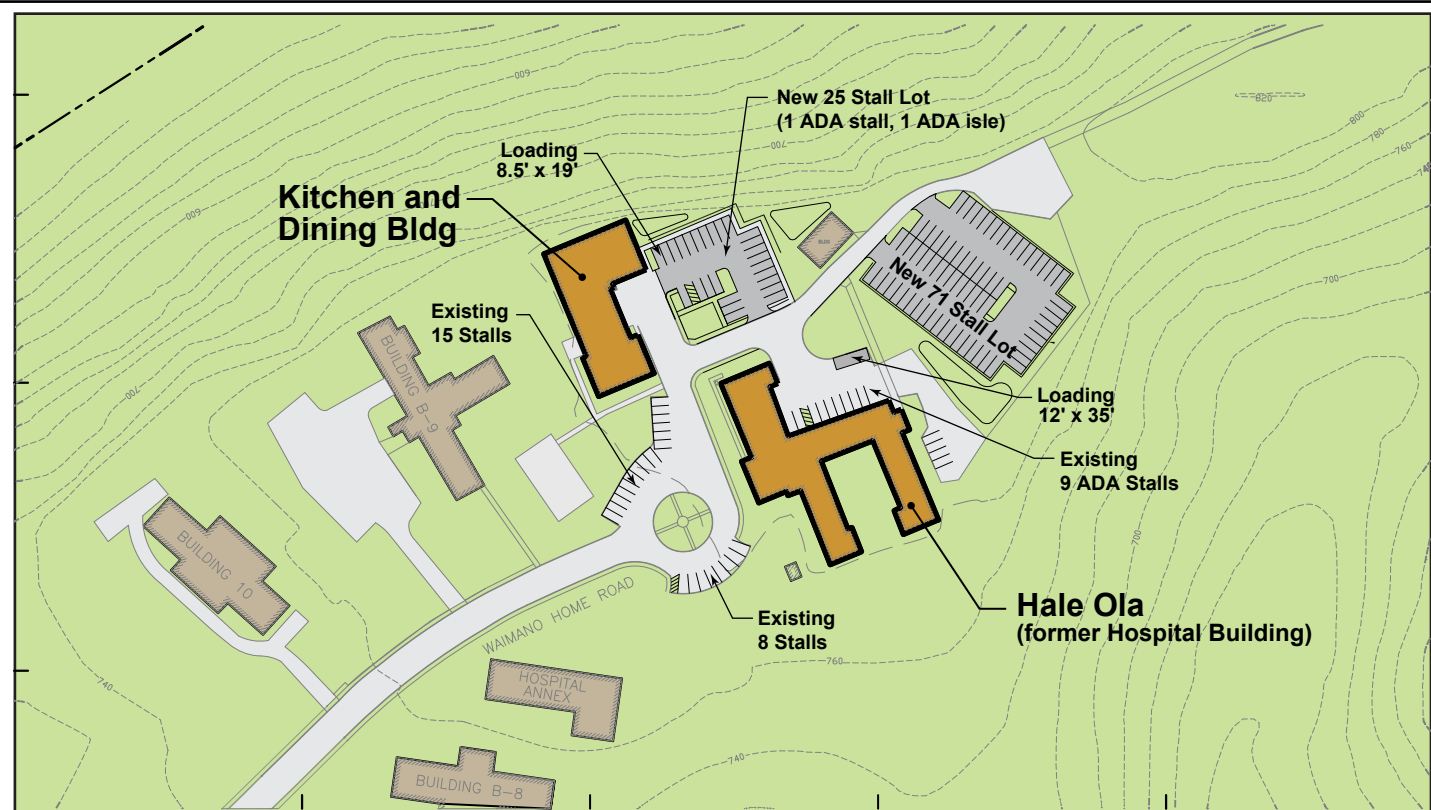


Figure 4
SITE PLANS OF RENOVATED BUILDINGS



Hale Ola, the former hospital building will provide office space for up to 141 persons.



The western wing of the building has three levels.



The two building wings east of the main lobby (right) have only two levels.



A two-story wing, as seen from the rear of the building

The building will be renovated to preserve or restore the original appearance of its exterior designs and public interior spaces. The proposed office areas will be renovated with new interior finishes, energy and central air conditioning, plumbing, lighting, electrical, and communication systems that are appropriate for a modern office building. The building will be renovated for handicap accessibility with ramps leading to the main lobby. The existing elevator will be refurbished to provide vertical access for the handicapped. It can be configured to provide office space for up to 141 persons.

Figures 5 through 8 show conceptual space allocation for each level of the Hale Ola building and the basement. Offices will be located on each of the three building levels. The Hale Ola basement is windowless and will be used primarily for storage for all offices and branches. The space assignments are conceptual, intended to illustrate that the building can accommodate the required number of personnel, and are subject to change.

Former Kitchen and Dining Building

The Kitchen and Dining Building, located across the driveway from Hale Ola, is a single story, concrete and masonry building completed in 1949 and designed by architect Hart Wood. This 9,434 SF building will be renovated with new interior finishes, central air conditioning, and plumbing, lighting, electrical and communications systems that are appropriate for a modern office building. Spaces to be provided include two large conference rooms, storage, and offices for up to 54 persons. Figure 9 illustrates a conceptual space allocation for this building. The intent is to illustrate the proposed office layout, and the assignment of specific personnel or programs is subject to change.



The former kitchen and dining building will provide conference rooms and offices for the DOH Clean Water Branch.



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

- Clean Air Branch
- Clean Water Branch
- Environmental Management Division
- Waste Water Branch
- Tele/Elec
- Restroom

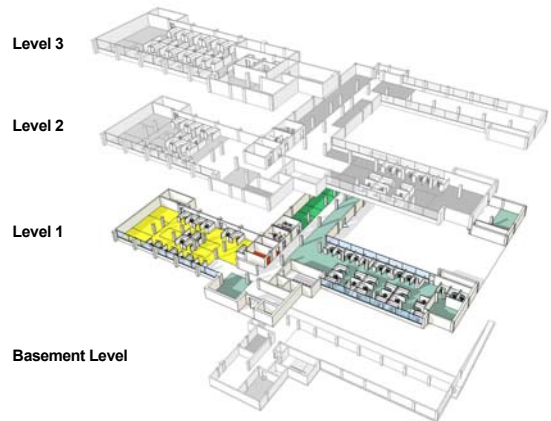
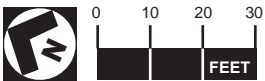
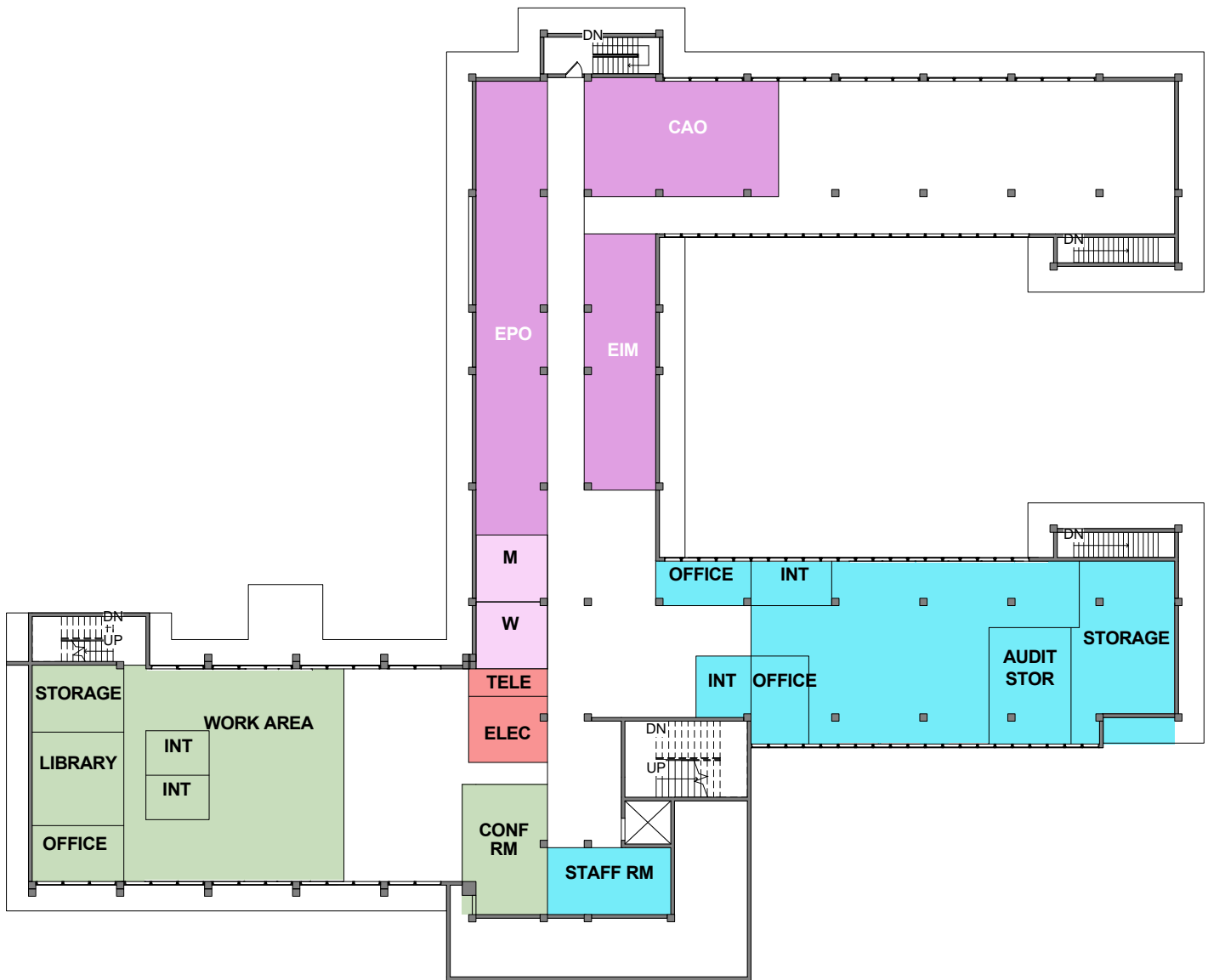


Figure 5
HALE OLA FLOOR PLAN
LEVEL 1



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

- Clean Water Branch
- Environmental Planning Office
- Solid Hazardous Waste Branch
- EPO – Environmental Planning Office
- EIM – Environmental Information Office
- CAO – Compliance Assistance Office
- Tele/Elec
- Restroom

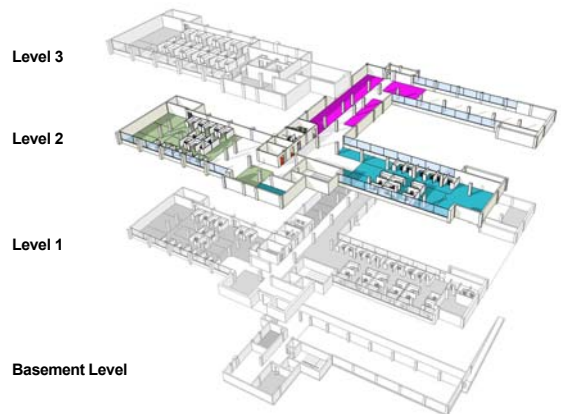
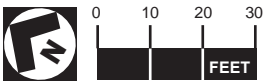
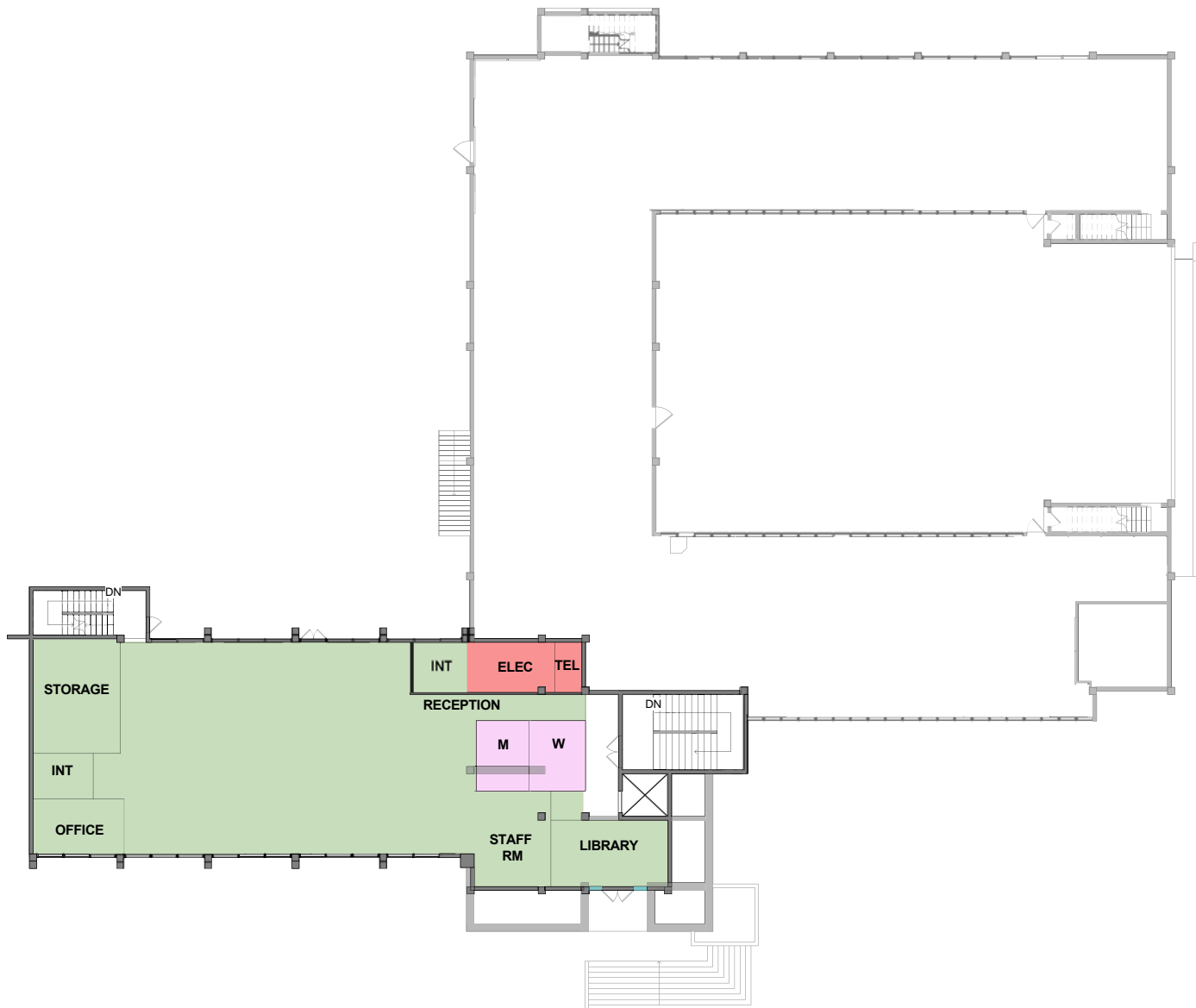





Figure 6
HALE OLA FLOOR PLAN
LEVEL 2



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

-  Solid Hazardous Waste Branch
-  Tele/Elec
-  Restroom

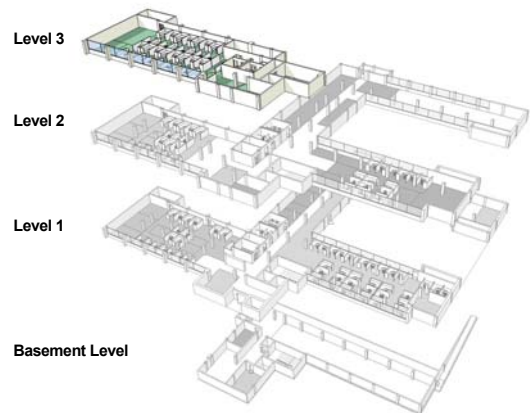
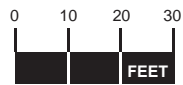
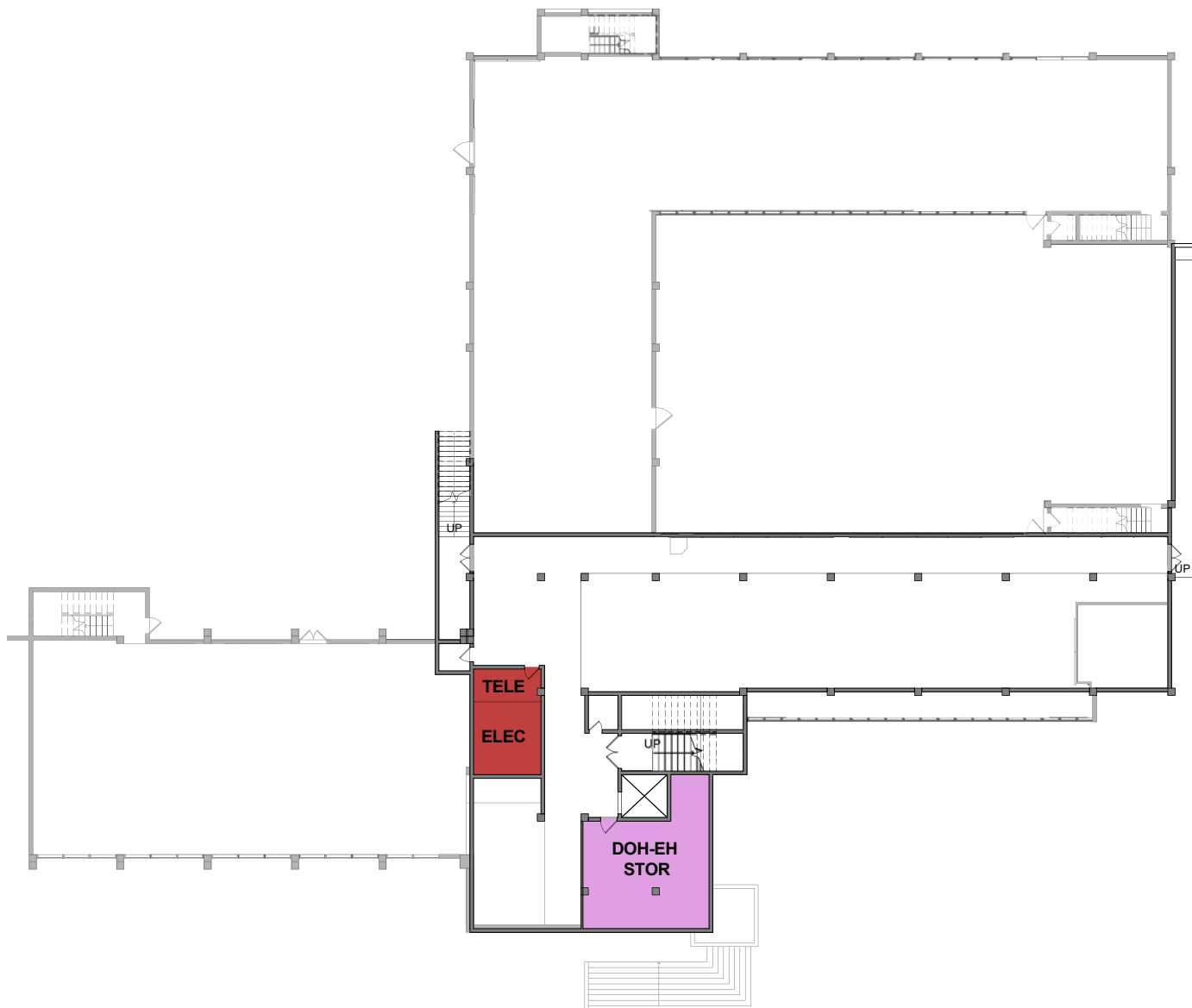




Figure 7
HALE OLA FLOOR PLAN
LEVEL 3



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

-  Department of Health-EH (DOH-EH)
-  Tele/Elec

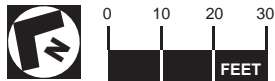
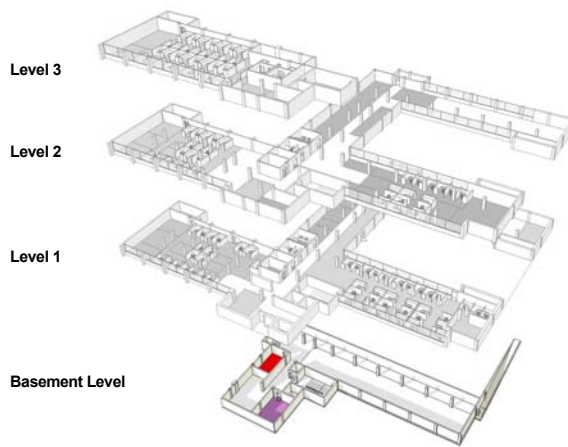
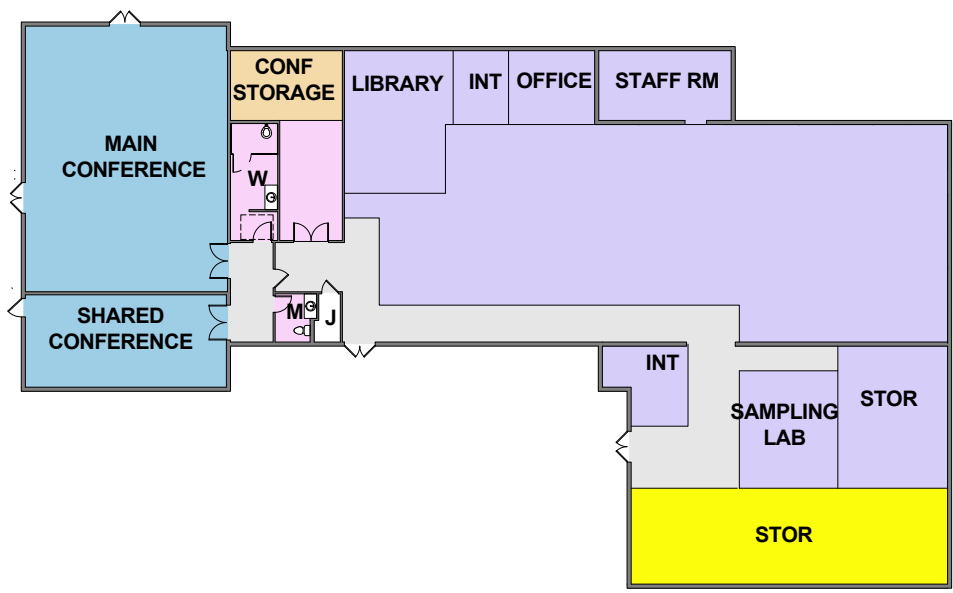







Figure 8
HALE OLA FLOOR PLAN
BASEMENT



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

-  Clean Water Branch
-  Conference
-  Conference/Storage
-  Restroom
-  Storage

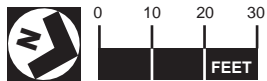
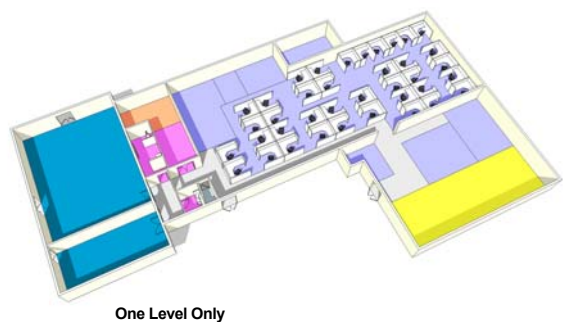


Figure 9
KITCHEN AND DINING
FLOOR PLAN

Parking

Currently, there are 35 parking stalls situated at the terminus and around the Hale Ola building. An additional 97 stalls will be built in lots near the Hale Ola and Kitchen and Dining buildings. The total parking count will be 132 stalls. Handicapped stalls will be designated in appropriate areas with guidance from the Disability Communication Access Board (DCAB). The total number of stalls required according to zoning is 107 stalls for Hale Ola and 24 stalls for the Kitchen and Dining building according to parking ratios of the City’s Land Use Ordinance.

Uluapuku Building (Building 4)

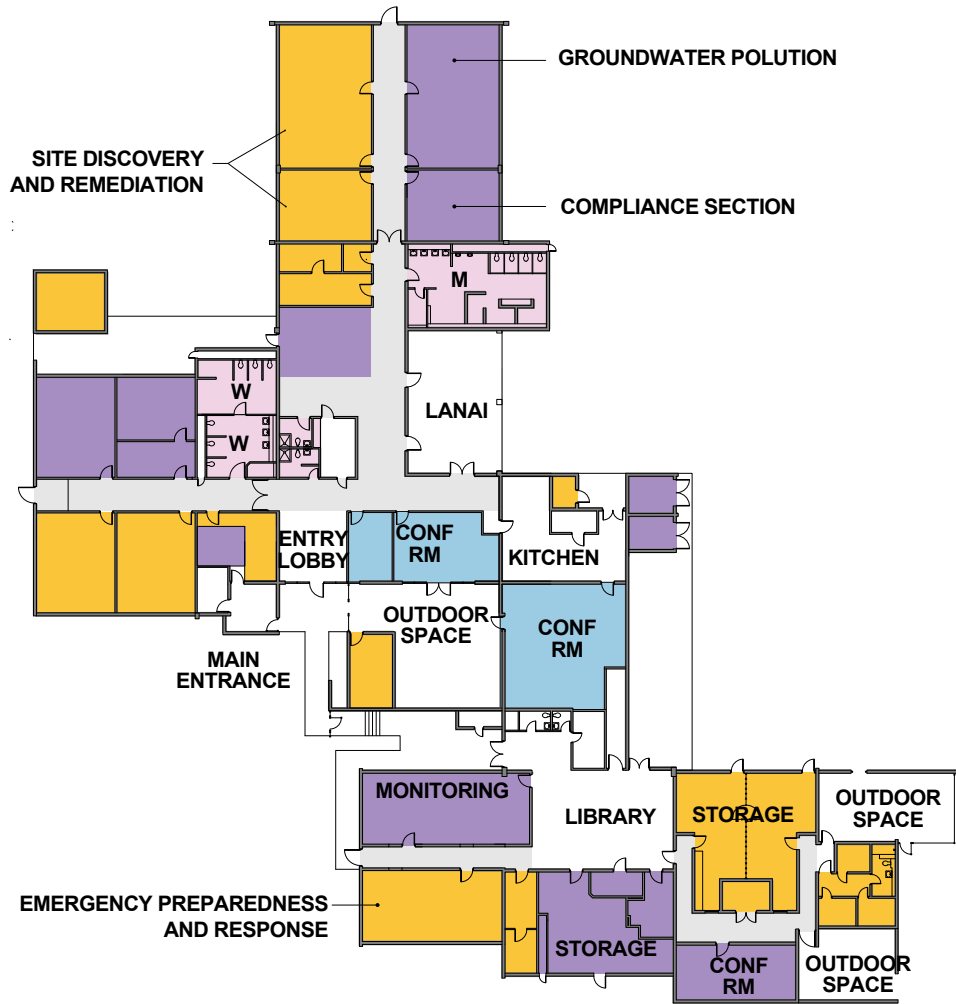
The Uluapuku Building was built in 1964 and designed by architect Thomas T. Nishida. The 20,000 SF building is located about 700 feet from Waimano Ridge entry gate, and is currently in use by DOH. The building will be renovated to accommodate 67 persons. A conceptual space layout for Uluapuku is shown in Figure 10. The assignment of specific personnel or programs is subject to change.



Uluapuku building.

Parking

There are 12 parking stalls situated near the front, main entry, of the building, 11 stalls in a parking lot on the mauka side, and space for approximately 10 to 12 cars at the rear of the building. Additional parking opportunities are available on the internal roads surrounding the building. The total number of stalls required according to the Land Use Ordinance is 50 stalls. A new lot is to be built behind the building.



Space allocation to various users is conceptual and subject to change.

DEPARTMENT LEGEND

- HEER
- SDWB
- Restroom
- Conference

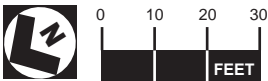


Figure 10
ULUAPUKU
FLOOR PLAN

1.5 POSSIBLE ENVIRONMENTAL PERMITS AND APPROVALS

The following is a summary of environmental approvals and consultations that may be required for the proposed action. Chapter 4 includes a more detailed discussion of the project’s consistency with federal, State and local land use plans, policies and controls.

Table 1-1: Possible Environmental Permits and Approvals

Approval/Consultation	Agency
State of Hawai‘i	
Chapter 343 Hawai‘i Revised Statutes (<i>Environmental Assessment</i>)	Department of Accounting and General Services (<i>accepting agency</i>) Office of Environmental Quality Control
HRS Chapter 6E review (<i>Historic</i>)	Department of Land and Natural Resources, State Historic Preservation Division
National Pollutant Discharge Elimination System (NPDES)	Department of Health, Clean Water Branch
Community noise permit and noise variance	Department of Health
Construction plan approval	Department of Health
Use and Occupancy Agreement	Department of Transportation
Construction plans approval	Disability Communication Access Board
City and County of Honolulu	
Construction, grading, and trenching permits	Department of Planning & Permitting
Construction plan approval	Department of Planning & Permitting Department of Design and Construction Department of Environmental Services

2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This chapter discusses the alternatives that were considered throughout the development of the project. They include 1) No Action, 2) Remain in AAFES Building 3) Alternative Relocation Sites (Including Waimano Ridge), and 4) Alternative Site Plans at Waimano Ridge.

2.1 NO ACTION

The No-Action alternative would not renovate buildings at Waimano Ridge or take any other proactive measures to find a relocation site for Department of Health (DOH) staff. Under this scenario, DOH staff would remain in the AAFES building until ownership is transferred to the Office of Hawaiian Affairs (OHA) and they are forced to relocate. At that time, relocation space would need to be found. This scenario would result in significant disruption to the services and programs of the DOH Environmental Health Division, as offices would abruptly close, with no assurance when or where staff would be relocated. It is uncertain whether staff within the various offices, programs and branches would be able to remain together in a new space. The offices within the Environmental Health Administration would find it difficult to fulfill their mission, risking harm to the environment and to public health and safety. The alternative of No Action was not acceptable and was not considered.

2.2 REMAIN IN AAFES BUILDING

There is a possibility that the DOH Environmental Health Division could be allowed to remain in the AAFES building even after it is turned over to OHA. This alternative would be contingent on the following:

- 1) OHA is willing to allow DOH to remain in the building
- 2) OHA and the State agree on a fair lease rent and terms to remain in the building, and
- 3) the State determines that it is cost-effective to continue to rent office space, despite escalating rents over time

It is uncertain whether OHA would be willing to allow a tenant like DOH to remain in their newly purchased building. The more likely scenario is that OHA would chose to relocate their own offices there, as they currently rent office space from the private sector. Although OHA also recently purchased the Gentry Design Center in Iwilei, the AAFES building is already configured for office space, and would need minimal capital improvements. The cost savings to OHA would allow them to redirect additional funds to their programs and initiatives.

To determine whether it is more cost effective to remain in the AAFES building or relocate to Waimano Ridge, the State would need to consider the likely lease rent for the AAFES building over time, as well as the upfront capital improvement costs needed in order to make the Waimano Ridge buildings suitable for DOH. Long term operational and maintenance costs at each location also need to be considered. Qualitative considerations include the adequacy and

condition of office space at each site, i.e., whether each site provides enough space and the right configuration for efficient operation. Other qualitative considerations include each site’s proximity to its service area, functional relationships with other agencies or departments, customer convenience, and employee morale.

Overall, remaining in the AAFES building may still be a viable option for DOH, contingent on the conditions discussed above. Given that OHA’s decisions are not within DOH’s control, other alternatives were proactively investigated and pursued.

In Governor Neil Abercrombie’s “*Action Plan to Transform Government*,” the renovation of vacant or underutilized State-owned buildings is included as a cost savings measure to reduce commercial leases for government entities. The renovation of the buildings at Waimano Ridge would comply with the Governor’s plan.

2.3 ALTERNATIVE RELOCATION SITES (INCLUDING WAIMANO RIDGE)

2.3.1 Relocate to Another Location or Facility

Rather than relocate the DOH Environmental Health Division to Waimano Ridge, one alternative would be to move to another government-owned facility. According to the Department of Accounting and General Services (DAGS), the agency responsible for providing facilities for the DOH, there is a severe shortage of office space in publicly-owned buildings State-wide. DAGS has one State building in its inventory, the Victoria Kamamalu Building downtown that is currently vacant. The Kamamalu Building has remained vacant for many years because of the need for hazardous materials remediation, which was only recently funded. The space in the building, however, has already been assigned, primarily to the Department of Human Services.

DAGS has a long standing proposal dating back to 1992 to build a State office complex, called the Liliha Civic Center, on State-owned land in Iwilei on the site currently occupied by the historic Oahu and Railway and Land Company (OR&L) building. The OR&L building is currently occupied by DAGS offices. Economic downturns and budgetary deficiencies continue to postpone this project indefinitely.

Relocating DOH offices to Kapolei, the second city, is not an option. Kakuhihewa, the existing Kapolei State Office Building, is fully occupied by other agencies and the State has no other land parcels available for development in Kapolei.

Another option is for the State to purchase and renovate a vacant building or purchase land to construct a new building. DOH explored the options of purchasing a privately-owned building or purchasing privately-owned land to construct a new building. Given the basic economics of land prices and cost per square foot for new construction, these options were abandoned in favor of the proposed project. It was determined that the cost and time needed to purchase and renovate a building, or construct a new building would be far greater than the proposed action. This option is not cost effective compared to utilizing State-owned assets and investing capital costs for renovation improvements.

Another alternative would be to rent office spaces available from the private sector. Several State agencies, including the Hawai'i Community Development Authority (HCDA), Aloha Tower Development Corporation, Office of Hawaiian Affairs, and a number of City agencies rent office space in privately-owned buildings. Although the market for commercial office space is currently experiencing high vacancy rates and is offering appealing ground lease rents, in the long term, rental costs are subject to market forces, and the State has no control over escalating rents and maintenance fees. Given that the DOH needs relocation space for nearly 300 employees, and the need to keep the various offices and branches together, it would be very difficult to secure appropriate space.

In summary, relocation to another location or facility remains a possibility. However, given existing conditions, this alternative appears to be an unlikely option, and a less cost effective than the proposed action.

2.3.2 Decentralize Departments and Relocate to other Government-Owned Office Space

Rather than relocate all offices attached to the Environmental Health Division to Waimano Ridge, another alternative would be to decentralize departments and only relocate selected offices and branches. By decentralizing departments, there would be no need to find a single location to house the entire division. The pool of available office space would potentially expand, making it more likely to find available vacant spaces. According to DOH and DAGS, this option is possible but not desirable. Separating the offices and branches would lead to less efficient operations, as personnel from many of these offices and branches work together and coordinate closely on a daily basis. Moreover, the lack of available government-owned office space would still be a constraint.

2.3.3 Relocate to a Vacant School Site

One option suggested was to relocate the Environmental Health Division to one of the State of Hawai'i Department of Education (DOE)'s vacant school sites. Since 2008, the DOE has been analyzing public school consolidations and closures in light of changing demographics and State budgetary constraints. In 2009, Wailupe Valley Elementary School in Aina Haina was closed. This was followed in 2011 by the closure of Queen Lydia Lili'uokalani Elementary School in Kaimuki. Wailupe Valley Elementary School was built on City and County land. Upon closure of the school, the land and improvements were turned back to City control. The Lili'uokalani Elementary School site is now being used for DOE administrative offices and data center. By using the vacant school, the DOE was able to consolidate some of its scattered administrative offices and reduce the office space rent it was paying to private landlords, which is consistent with the Governor's action plan to reduce commercial rent payments for State facilities.

If additional schools are closed, DOE has the option of keeping the buildings for district and state-level offices, or returning the property to the Department of Land and Natural Resources or County. In the recently completed 2013 session, the Hawai'i State Legislature approved Act 155,

which establishes a pilot program allowing the DOE to lease public school lands to private entities to generate funds for school renovations and improvements.

A former school campus would provide more than enough space to accommodate all the divisions, offices, and branches being displaced from the AAFES building. It would also save the DOE lease rent over the long term. However, the intent of the recent legislative bill appears to be to generate outside revenues for the DOE by offering these sites for private development. Use of the school facilities to house another State agency would provide little financial benefit to the DOE. Other factors such as capital costs for new construction or renovation, the unpredictable amount of time it will take to plan, design and obtain funds, and the recent legislative bill, make this alternative unlikely.

2.3.4 Relocate to Waimano Ridge

The proposed action is to relocate the DOH Environmental Health Division from the AAFES building to State-owned facilities at Waimano Ridge. Waimano Ridge, the site of the former Waimano Training School and Hospital, is located about 15 miles west of downtown Honolulu. The 242-acre site is completely secured, is owned by the State government, and is currently used for a DOH laboratory complex and other State agencies. There are a number of vacant buildings that could be renovated to provide office space, as well as enough developable land where new buildings could be constructed. From the State’s perspective, the advantage of this alternative is a reduction in lease rents over time, and the opportunity to put underutilized government assets to a productive use. Ongoing operating costs could be better anticipated, and the State would not be vulnerable to rising rents over time. Waimano Ridge has sufficient space to accommodate all the offices and branches within the Environmental Health division. Collocation of staff will facilitate communication and increase functional efficiency within and between offices.

Another benefit to the State is that Hale Ola, the historic hospital building, will be restored. In 2009, this building was identified by historic preservation advocates, including the State Historic Preservation Division, as one of the most endangered historic sites in Hawai‘i. The proposed project will renovate this historic building for adaptive reuse, reversing its current state of continued deterioration.

This alternative also has several disadvantages. A major disadvantage is that the Waimano Ridge buildings are not in move-in condition. The buildings are old and many are in poor physical condition, requiring renovation to bring the structures up to code. Interior spaces need to be reconfigured and modified to current office standards. New construction is an option, but also expensive, even without land acquisition costs.

Another disadvantage is the Waimano Ridge location and distance from downtown Honolulu. The project site is at least a 20-minute drive from downtown during off-peak times, but during peak periods, the drive could easily take close to one hour. Public bus service extends only to the Pearl City Cultural Center, outside the secured entry to Waimano Ridge, and nearly a mile from the Hale Ola building. The distance and location is therefore less convenient than the AAFES building for DOH customers and employees who do not live in Leeward O‘ahu.

2.4 ALTERNATIVE SITE PLANS AT WAIMANO RIDGE

2.4.1 Waimano Ridge Feasibility Study

Several alternative site plans and space planning schemes were investigated for Waimano Ridge. In 2012, DAGS conducted a *Waimano Ridge Feasibility Study for AAFES Building Staff Relocation* (October 2012). The feasibility study consisted of four phases, including 1) an existing facilities assessment, 2) an existing facilities assessment report, 3) development of space planning schemes, and 4) development of schematic design schemes. The schematic design schemes were based on the space requirements that were developed during phase 3, and included cost estimates.

The multi-phased study began by identifying and evaluating the physical condition of ten existing buildings that had the potential to be used for office space. The cost of renovating and repairing the structures vs. demolishing and replacing them with new buildings of similar size and type were compared. The findings of the assessment were presented in an assessment report.

The next phase of the feasibility study involved space planning schemes based on programmatic and space requirements for the DOH departments. Design criteria and space requirements were obtained by conducting a series of meetings with department heads, branch chiefs and other administrators. A standardized questionnaire was distributed to managers to gather information on how each department interrelated with others and to create a detailed list of the quantities, types and sizes of furniture, equipment, meeting/break rooms and other types of spaces required by each department or office. All schematic space planning schematics were designed to meet health, safety, handicap accessibility, building code and zoning code requirements.

The last phase of the feasibility study involved development of various design schemes. Some of the design schemes relied entirely on renovation of existing buildings. Other design schemes proposed new buildings on site. Some schemes proposed a combination of new construction and renovation.

Detailed information on the design schemes can be found in the Waimano Ridge Feasibility Study in Appendix A. The following presents a summary of the major options investigated.

2.4.2 Schemes Involving Renovation Only

Figure 11 shows the location of buildings described in the renovation schemes below.

2.4.2.1 *Renovate Multipurpose Building*

This scheme was referred to in the Waimano Ridge Feasibility Study as “Scheme 1A,” and proposed renovation of the existing 6,712 SF Multipurpose Building. This building is configured as a large, multi-purpose auditorium anchored by a stage at one end and kitchen, bathrooms and projection room at the other end. The analysis found that using office module design criteria, the building configuration could only accommodate 30 to 50 personnel. Therefore, use of the



Figure 11
EXISTING BUILDINGS CONSIDERED FOR RENOVATION

Multipurpose Building was quickly dropped from further consideration. No site plan was prepared for this scheme.

2.4.2.1 Renovate Former Dormitories (B-6, B-7, B-8 and B-10) and Uluapuku

Another scheme evaluated the reuse of Buildings B-6, B-7, B-8 and B-10 in combination with the Uluapuku Building. Buildings B-6, B-7, B-8 and B-10 were originally designed as dormitories and are clustered on the east side of Waimano Home Road, about 500 feet below Hale Ola. The buildings have similar floor plans and range in size from 8,969 SF to 9,461 SF. Taken together, they total approximately 33,000 SF. Under this design alternative, these former dormitories could support 145 personnel.

The Uluapuku Building is currently used as office space, and could accommodate approximately 70 personnel. In total, 215 personnel could be accommodated in these five buildings. A new parking lot would be constructed on the western side of Waimano Home Road. Total cost for renovation, excluding Uluapuku was over \$9.1 million. In the final analysis, this alternative failed to meet program requirements because only 215 personnel could be accommodated, short of the office space needed for 262 employees.

2.4.2.2 Renovate Hale Ola and Other Buildings

Hale Ola and B-6/B-7

Scheme 2A in the Waimano Ridge Feasibility Study involved renovation of Hale Ola, the hospital building. Subsequent iterations of Scheme 2A included renovation of Hale Ola in combination with other buildings. For example, “Scheme 2A-1” proposed renovation of Hale Ola and Buildings B-6 and B-7. Although these three buildings could accommodate all projected staff, the physical separation and hilly terrain between Hale Ola and Buildings B-6 and B-7 would most likely promote driving rather than walking between buildings. This would cause unnecessary loss of time and resources, and inefficient operations. Scheme 2A-1 was therefore dismissed from further consideration.

Hale Ola, Kitchen and Dining Building, and Uluapuku

Two other iterations involved renovation of Hale Ola, Uluapuku (instead of Buildings B-6 and B-7), and use of the Kitchen and Dining Building for conference rooms and storage. These two iterations were referred to as “Scheme 2A-2” and “Scheme 2A-3.” Physical improvements required for these schemes were the same, and they differed only in the proposed internal space allocation (i.e., where various programs/personnel would be located). Both involved construction of additional parking at Hale Ola and the Kitchen and Dining Building. Both schemes could accommodate all personnel being displaced from the AAFES building.

A disadvantage of Schemes 2A-2 and 2A-3 is the physical distance between Hale Ola/Kitchen and Dining buildings and Uluapuku. This problem can be minimized administratively, by assigning the Uluapuku space to offices that can operate independently of those in the Hale Ola complex.

Scheme 2A-3 is the DOH's preferred alternative, and is the basis for the proposed action, to renovate Hale Ola, Kitchen and Dining Building, and Uluapuku.

2.4.3 Schemes Involving New Construction

2.4.3.1 New Building Adjacent to Uluapuku

Two schemes for construction of a new office building adjacent to Uluapuku were investigated in the Waimano Ridge Feasibility Study. The schemes are illustrated in Figure 12. Scheme 1B considered constructing a new two-story 33,000 SF building to house 192 personnel. The remainder of the displaced DOH personnel would be housed in Uluapuku, which would also need to be renovated. In this alternative, a new building would be constructed on a large flat area adjacent to Uluapuku. In addition, the plan proposed a 2,200 SF pre-manufactured building for use as storage. A new parking lot would be built on the mauka side of the new building. The Waimano Ridge Feasibility Study estimated that construction of a new office building, new storage building and new parking lot would cost over \$12 million, not including renovation costs for Uluapuku.

Scheme 2B looked at constructing an even larger 55,000 SF building to accommodate all 262 relocated DOH staff. This scheme would not require use of Uluapuku, which could continue to be occupied by other DOH programs. A new two-story building could be built on an open area near Uluapuku. In addition to the main building, a 2,200 SF pre-manufactured storage building was proposed. A new 138 stall parking lot would be built north of the building site, across Road C in the former locations of Thayer Hall, Building B-1, and Building B-2.

The primary advantages of Scheme 2B is that the entire building can be designed to meet needs of its tenants more efficiently than could be achieved in retrofitted buildings. All DOH personnel could be collocated, resulting in efficiencies in office layouts, circulation, shared conference and storage spaces. The disadvantage of this option is the high cost, which was estimated at \$17.5 million.

2.4.3.2 New Building Wing for Hale Ola

Scheme 3 in the Waimano Ridge Feasibility Study involved adding a new wing to Hale Ola, renovating the remainder of Hale Ola, and renovating the Kitchen and Dining Building. This scheme is illustrated in Figure 13. As opposed to Schemes 2A-2 and 2A-3, this scheme would not require use of Uluapuku. Instead, a new 14,800 SF, two-story wing would be added to Hale Ola to accommodate additional personnel. The Kitchen and Dining building would be used for conference rooms.

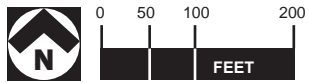
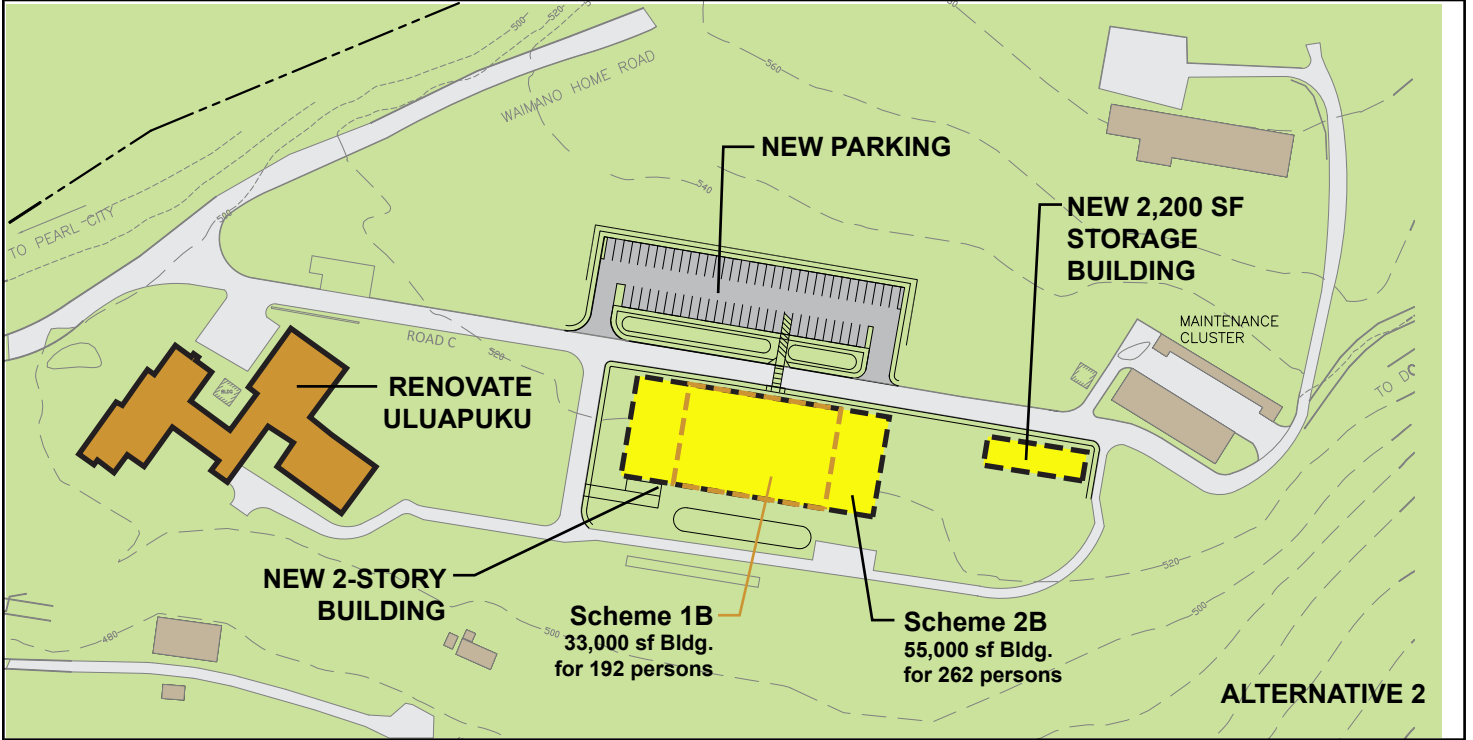
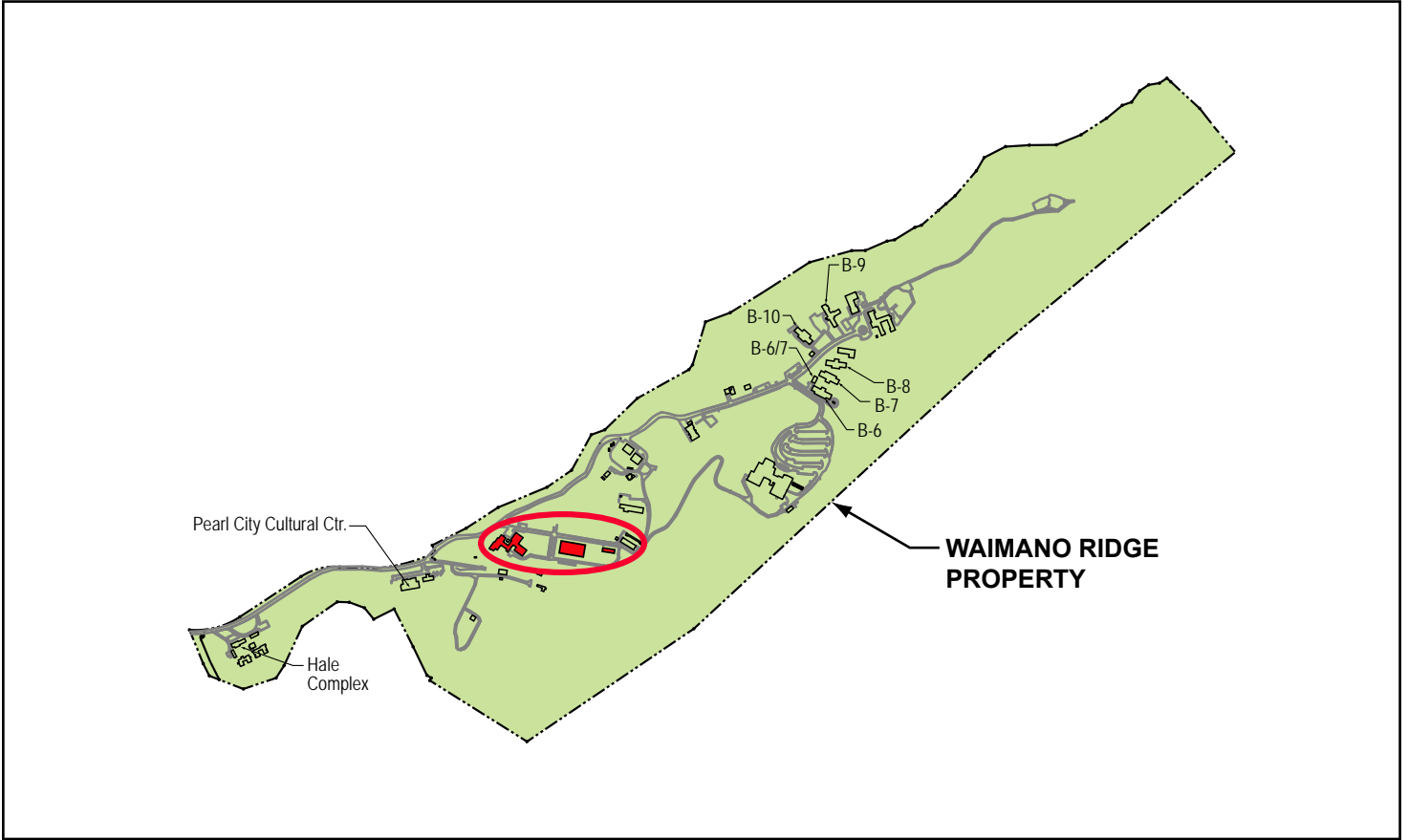


Figure 12
NEW CONSTRUCTION: NEW BUILDING ADJACENT TO ULUAPUKU

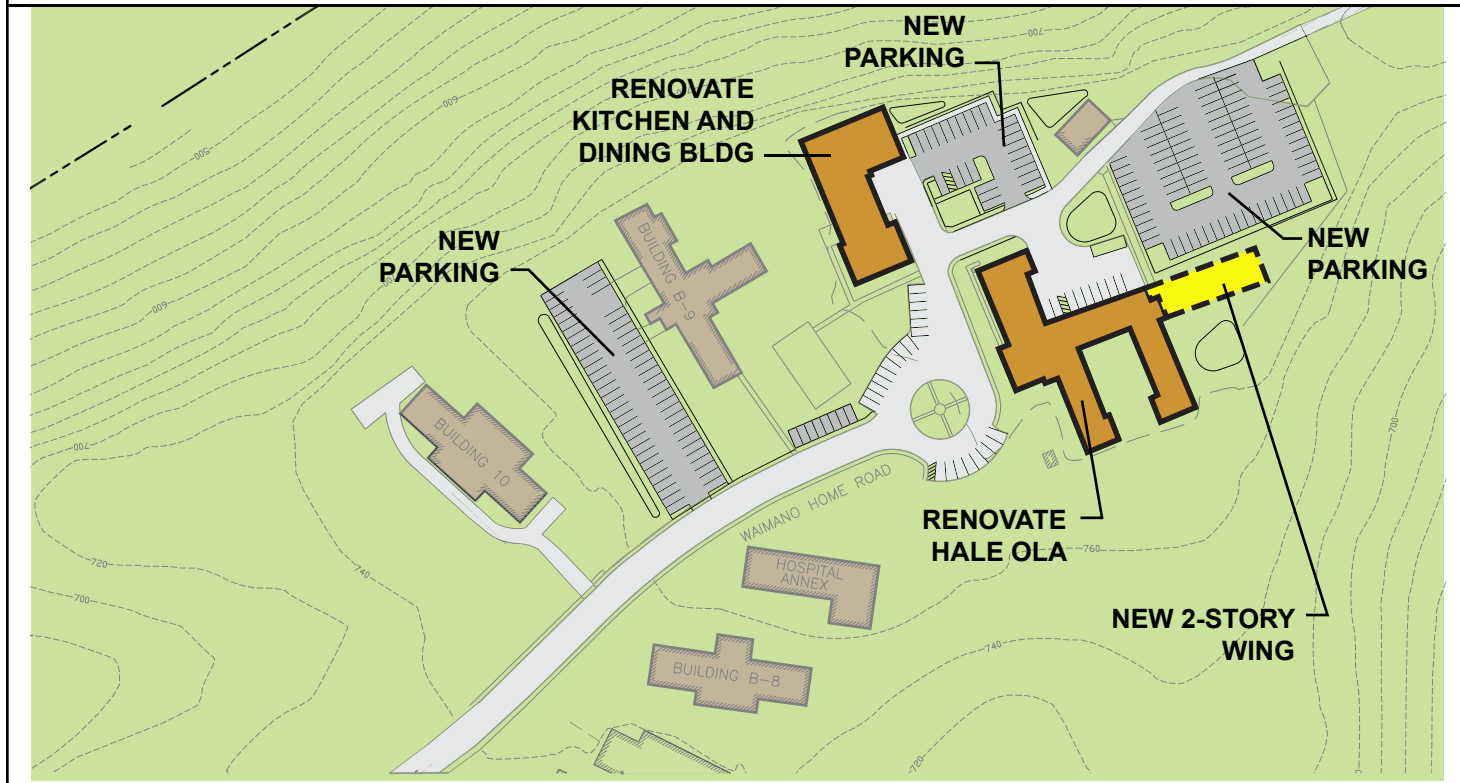
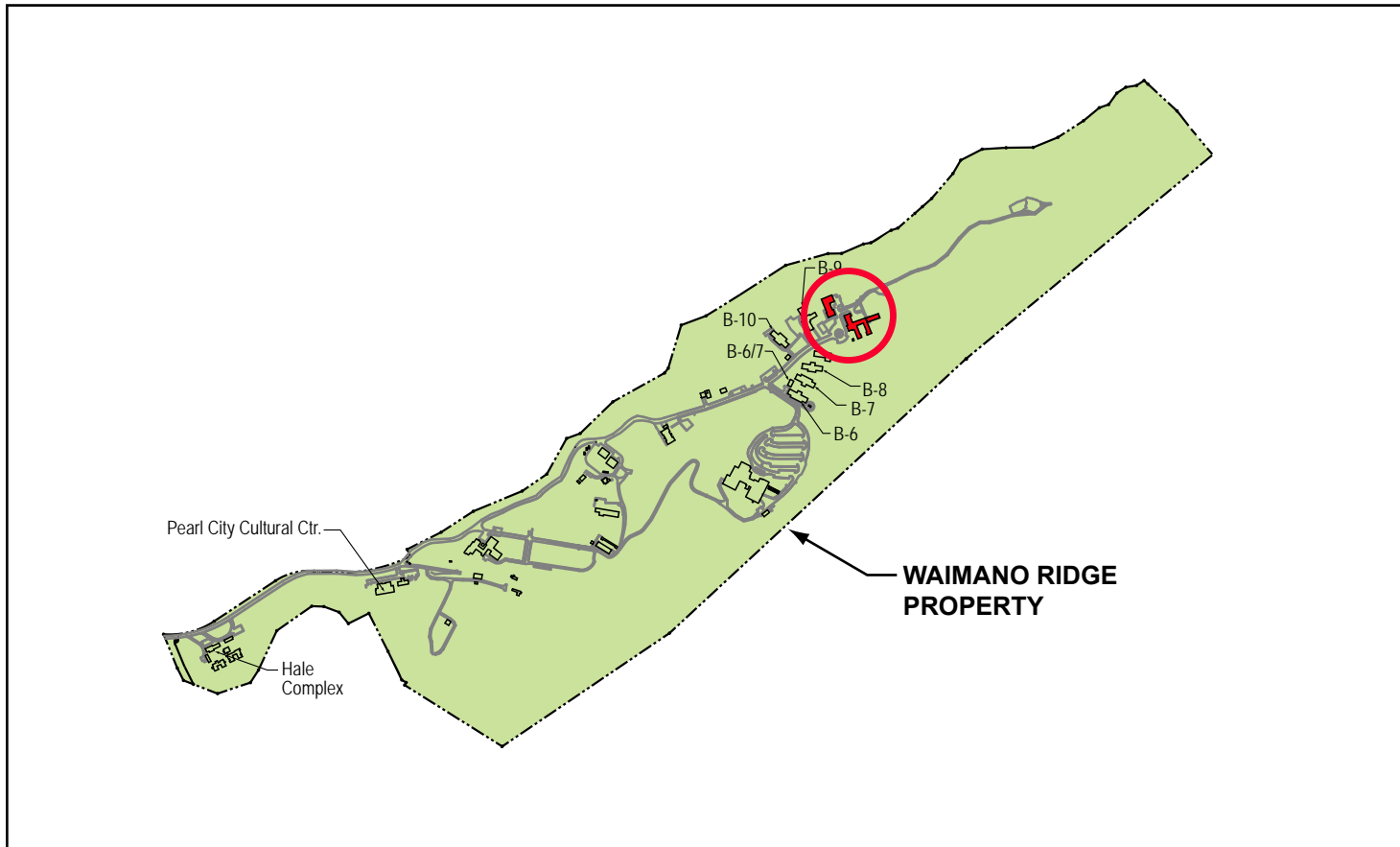


Figure 13
NEW CONSTRUCTION: NEW BUILDING WING FOR HALE OLA

The advantage of building a new wing is that all 262 relocated staff could be consolidated in two structures, Hale Ola and the Kitchen and Dining Building. These two buildings are next to each other, resulting in efficient and centralized operations. A new 74-stall parking lot would need to be built to accommodate the new wing, resulting in a total of 181 parking stalls in parking lots around these two buildings.

The disadvantage of this option is the \$15.9 million estimated cost, which DOH determined to be prohibitive. As a result, this alternative was dismissed.

2.5 EVALUATION OF ALTERNATIVES

This chapter evaluated alternatives that were considered in order to meet the project objectives to provide relocation space for the Environmental Health Administration, and to continue the DOH’s mission to protect and preserve the environmental health and welfare of the State.

No Action is not acceptable, and was dismissed from further consideration. Remaining in the AAFES building is still a possibility, but one that is contingent on factors that are beyond the immediate control of the DOH. As such, this alternative cannot be counted on, and other options for relocation must be pursued.

This chapter discussed a number of alternative relocation sites, including other government-owned office buildings. Unfortunately, there are few vacancies available, and none that could accommodate 262 employees. Although leasing private office space is still a possibility, there is no single site that would be able to accommodate all 262 personnel being displaced. At best, DOH offices would be scattered throughout various locations, which was determined to be less than optimal. The DOH has selected Waimano Ridge as its preferred relocation site because it is a State-owned property with sufficient physical space and existing buildings to accommodate all displaced staff. A disadvantage is that none of the buildings are in “move in” condition, and capital improvements are required. Another disadvantage is the 15-mile distance from downtown Honolulu and the somewhat isolated location, which could inconvenience DOH clients and many employees. As discussed in Chapter 3, public transportation to Waimano Ridge is also poor, and the public bus access ends at the Pearl City Cultural Center, about a mile’s walk from the Hale Ola building. Transportation options such as a local shuttle van should be explored to mitigate this situation.

The Waimano Ridge Feasibility Study, prepared in 2012 by the Department of Accounting and General Services for the DOH, evaluated the physical condition of existing buildings at Waimano Ridge, operational space requirements, and developed several schematic alternatives involving both new construction and renovation. Based on the feasibility study and cost estimates, the DOH has selected a preferred design scheme. The preferred scheme involves renovation of three buildings: Hale Ola, the former hospital building, the former Kitchen and Dining Building, and Uluapuku. These three buildings would be able to accommodate all 262 personnel that will be displaced in a workable and efficient office configuration. The proposed action described in Chapter 1 reflects this preferred alternative.

3 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

3.1 INTRODUCTION

This chapter describes the existing environment, potential project impacts and proposed mitigation. This chapter is organized by resource area, and is generally divided into 1) physical environment, 2) biological environment, 3) socio-economic environment, 4) utilities and infrastructure, 5) traffic, and 6) public services and facilities.

Much of the information describing the existing environment is from previous studies conducted in 2006 as part of an Environmental Assessment (EA) prepared for the Waimano Ridge Master Plan. That EA evaluated the entire 242-acre project area when the Department of Health (DOH) was exploring other uses for the ridge. The 2006 EA was never published.

The 2006 EA included a soils study, flora and fauna reports, an archaeological assessment, and a Phase I environmental site assessment. This information is still valid and is referenced herein. Other technical studies such as a traffic analysis have been updated to reflect current conditions. A historic architecture and cultural impact study have also been added to supplement the previous studies.

The discussion of environmental impacts includes both direct and indirect impacts. Direct impacts are those caused by the action and occur at the same place and time. Indirect effects may occur later in time or farther in distance, but are still reasonably foreseeable. The analysis in this chapter also identifies possible cumulative environmental impacts. Cumulative impacts are defined as the results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

3.2 PHYSICAL ENVIRONMENT

3.2.1 Location and Surrounding Land Uses

The project improvements are proposed within a State-owned property located on Waimano Ridge, situated above Pearl City approximately 15 miles west of downtown Honolulu. Waimano Ridge is the site of the former Waimano Training School and Hospital, aka Waimano Home, which formerly operated as an institution for adults and children with developmental disabilities. The State-owned parcel is 242-acres in size and identified by Tax Map Key: 9-7-025:001. Waimano Ridge is flanked by heavily vegetated slopes that form the valley walls of Waimano Valley and Waimalu Valley. These valleys separate the Waimano Ridge site from the residential neighborhoods of Pacific Palisades to the northwest and Wailuna to the southeast.

Waimano Ridge is bordered on the south (makai) side by the Pearl City Cultural Center, Pearl City High School, and Momilani Elementary School. The residential subdivisions of Momilani, Waiau and Manana within Pearl City are located on the makai approach to Waimano. Waimano Home Road provides the only access to Waimano Ridge from Kamehameha Highway or

Moanalua Road off the H-1 Freeway. The publicly accessible portion of Waimano Home Road extends approximately two miles from Kamehameha Highway, past Momilani Elementary School, Pearl City High School, and terminates just past the Pearl City Cultural Center, at a secured gate. Land uses along the Waimano Home Road corridor are primarily single family residential subdivisions, public schools and parks, and a mix of old and new commercial uses. The area inside the secured gate is limited to authorized DOH employees and visitors. Once inside the property, Waimano Home Road extends almost another mile and terminates at Hale Ola, the former hospital building.

3.2.2 Brief History and Existing Waimano Ridge Uses

Brief History

Between 1919 and 1999, Waimano Ridge was the site of the Waimano Training School and Hospital (aka Waimano Home), a facility for the care and treatment of severely physically and mentally handicapped individuals. Waimano Home was first established in 1919 as a result of appropriations from the Territory of Hawai‘i. The facility was sited on 612 acres of Territorial Land on a plateau about three miles mauka of the rural community called Pearl City. In 1922, Waimano Home officially opened with dormitories, a central kitchen, laundry, boiler house, superintendent’s residence, roads and infrastructure. Additional dormitories and support facilities were added in 1936 for male patients while the original structures were dedicated to female patients. During World War II, the O‘ahu Civil Defense constructed a number of evacuation buildings on site. At the end of the war, ownership of the evacuation buildings were transferred to Waimano Home; one of these buildings was converted to a 90-bed hospital while others provided additional dormitories.

In 1951, a 100-bed hospital (Hale Ola) and an adjacent kitchen and dining room were completed. As originally intended, and encouraged with the advent of war, Waimano Home operated as a “farm colony” where truck crops, piggeries, and dairy cows supplemented daily food requirements while providing training programs for patients. Historical accounts indicate that the institution serviced as many as 670 patients in 1949 with a staff of about 136.

In 1995, the Hawai‘i State Legislature passed Act 189, which mandated private, community-based programs for persons with developmental disabilities or mental retardation. Consequently, Waimano Home was closed in 1999 and many of the buildings associated with the Home were either used by other government agencies or non-profit organizations on short term leases. Many of the smaller buildings were simply vacated and were recently demolished. Of the original 50 structures, only 39 remain. Although the original Waimano Home property encompassed 612 acres, over the years, large areas were developed into residential subdivisions, schools and other public facilities. Today, the remaining Waimano Ridge property is 242 acres.

Even before Waimano Home officially closed, other public buildings were constructed within the Waimano Ridge property. These include the DOH Laboratory, built in 1995, Department of Land and Natural Resources (DLNR) Baseyard consisting of modular buildings built in the 1990s, and the Pearl City Cultural Center, a performing arts complex built in 1992.

In 2007, a Master Plan for the entire Waimano Ridge was prepared for the DOH by the Department of Accounting and General Services (DAGS). The objective of the Master Plan was to better utilize the land, and the plan identified other potential uses that would be compatible with existing activities and the surrounding neighborhood. The intent was to create subdivided parcels for other government agencies to control, develop and maintain. The community was actively engaged throughout the planning process and the Pearl City Neighborhood Board recommended approval of the plan in January 2006. A critical component of the master plan was a new University of Hawai'i Regional Bio-Safety Lab. The University's decision to move their Lab to another site and the declining economic situation prompted the DOH to abort implementation of the master plan.

In 2012, spurred by the pending turnover of AAFES building in Kaka'ako to OHA, the State began investigating the possibility of relocating DOH staff to Waimano Ridge. The Waimano Ridge Feasibility Study was prepared for DOH by DAGS to evaluate the condition of various structures and determine the feasibility of renovation and/or new construction. Several development schemes were evaluated, including one that involved renovating Hale Ola, the Kitchen and Dining Building and Uluapuku. The DOH has decided to pursue this scheme in order to proactively address the pending loss of the AAFES building office space in 2016. Architectural and civil engineering plans have been developed for the proposed building renovation and site improvements, and this EA has been prepared to support the project.

Existing Facilities at Waimano Ridge

Waimano Ridge has a number of facilities in addition to those directly associated with the former Waimano Home. Within the past three years, a number of old and dilapidated structures were condemned and demolished because they were unsafe and considered fire hazards. Figure 1 illustrate existing buildings and facilities on Waimano Ridge. A comprehensive list of structures is provided below. In addition to these, there are other utility structures and an unused swimming pool in disrepair. Table 3-1 below identifies existing buildings, size and number of current occupants, as well as the proposed number of occupants with the subject project.

Occupied Structures

DOH Hale Complex. The complex is a cluster of six structures totaling approximately 41,400 square feet. It was constructed between 1971 and 1973 and currently houses the DOH Developmental Disabilities Division (DDD) and Adult Mental Health Division (AMHD) offices. This facility is outside the security gate. Parking lots provide parking for staff.

Pearl City Cultural Center (PCCC). PCCC is a 500-seat performing arts center constructed in 1992 and managed by the Department of Education and Pearl City High School. The facility is built on DOH managed land. There are approximately 31 parking stalls at the center. During concerts and events, attendees and participants park at the adjoining school parking lot or on the shoulders of Waimano Home road. This facility is outside the security gate.

Table 3-1: Existing Occupied Buildings at Waimano Ridge

BUILDING	GROSS FLOOR AREA (SF)	Existing POPULATION (persons)	Proposed Change	Future POPULATION (persons)
Hale Complex	44,100	68	None	68
Security Booth	110	1	None	1
Sun Project	5,000	0	None	0
Uluapuku	20,000	68	Current occupants vacate. Renovate bldg and relocate former AAFES bldg tenants.	67
Maintenance Cluster	12,980	3	None	3
Facility for Troubled Youth	9,100	53 <i>(24 hr work cycle)</i>	None	53
DLNR Baseyard	8,150	12	None	12
DOH Laboratory	150,000	83	None	83
Hospital Annex	6,460	5	Current occupants vacate	0
Multipurpose Building	6,712	0 <i>(periodic use only)</i>	None	0
Hale Ola	42,460	21	Current occupants vacate. Renovate bldg and relocate former AAFES bldg tenants.	141
TOTALS	369,513	314		428

Source: Department of Health, 2013

Security Booth. A one person security booth is located at the perimeter security fence that controls access to other facilities on the ridge. This security booth is manned during normal business hours.

DOE Pearl City High School Garden (Sun House Project). The Sun House Project is Pearl City High School’s special education program which offers students an alternative learning experience by participating in gardening and hands-on training outside the classroom. It is located just outside the main security gate on the eastern side of Waimano Home Road and encompasses approximately two acres.

DLNR Engineering Division Baseyard (Maintenance Cluster). The DLNR Engineering Division Baseyard consists of approximately 40,000 SF of baseyard that are used to store and maintain government vehicles. The old maintenance cluster is a 12,980 square foot cluster of four structures used for equipment, vehicle storage and maintenance shops.

Facility for Troubled Youth (aka Juvenile Sex Offender Facility). This facility is located on the eastern side of the ridge and off the main Waimano Road. The facility is housed in a 9,128 SF building that was originally constructed in 1961 and completely renovated in 2000. It accommodates 10 patients, 11 staff and visitors. Because the facility requires around the clock support, 53 total staff is attached to this facility.

DLNR Conservation Enforcement Baseyard. The Conservation Enforcement Base Yard consists of pre-fabricated buildings which provide office space and parking and equipment storage. There are a total of 12 persons working at this facility.

DOH State Laboratory. The 155,000 SF state laboratory was built in 1995 for clinical and environmental testing such as air samples, recreational water and drinking water samples, food products, and human clinical specimens. It has a staff of 83 personnel and parking for 209 cars.

Uluapuku. Uluapuku is a 20,000 SF facility. The structure was built in 1964 and has undergone a number of repairs and alterations over time. Most recently, the building was used temporarily by Lanakila Health Services for tuberculosis testing while the air conditioning system at the Lanakila facility was being replaced.

Hospital Annex (aka Hale Ikaika). The Hospital Annex is a 6,460 SF building built in 1954. Originally designed as a ward for 22 beds, it is currently used by the Department of Public Safety (PSD) as a training and housing facility for their canine unit. This use will be vacating in December 2013.

Multi-purpose Building. The Multi-Purpose Building is an 8,000 SF, warehouse-style structure built in 1962. The building has a large open gymnasium-type room with a stage at one end, several storage rooms and/or offices at either end of the building, and a second-story loft, previously used as a projection room. Separated from the main building was a second, smaller building housing two restrooms and a locked storage closet. The Multi-Purpose Building is used periodically for training by the DOH Indoor and Radiological Health Branch.

Vacant/Unoccupied Structures

Hale Aloha. Hale Aloha is a 1,230 SF facility built in 1977 and is unoccupied.

Hale Kauka (Doctor's Residence). This 2,424 SF plantation style house was built in 1934 and renovated in 1997. Despite its original age, it is in fair condition. Hale Kauka is currently vacant.

Buildings B-6 to B-10. This complex of buildings are former dormitories that have fallen into a state of disrepair and are currently vacant.

Kitchen and Dining Building. The vacant kitchen and dining building is located adjacent to Hale Ola, and will be renovated to accommodate the former AAFES building personnel.

Table 3-2: Existing Vacant Buildings at Waimano Ridge

BUILDING	GROSS FL AREA	Existing POPULATION (persons)	Proposed Change	Future POPULATION (persons)
Hale Kauka	2,420	0	None	0
Hale Aloha	1,230	0	None	0
B-6	9,461	0	None	0
B-6/7	1,500	0	None	0
B-7	9,461	0	None	0
B-8	9,050	0	None	0
B-9	10,095	0	None	0
B-10	9,084	0	None	0
Kitchen/Dining	9,434	0	Renovate and relocate former AAFES bldg. tenants	54
TOTALS	369,513	0		54

Source: Department of Health, 2013

3.2.3 Topography and Soils

Existing Conditions

Geology

The island of O‘ahu is a volcanic doublet formed by the Wai‘anae range to the west and the younger Ko‘olau range on the east. Both are the remnants of great shield volcanoes which have lost most of their original shield outlines, and are now long narrow ridges shaped largely by erosion.

Topography

The Waimano Ridge is a plateau situated on one of the many ridges forming the Ko‘olau Mountain range. The site is characterized by pockets of fairly level terrain (0 to 15 percent slopes) to moderately level terrain (15 to 30 percent slopes) and steep slopes with 30 percent or greater slopes that form gulches and valley walls. Of the total 242 acre project site, only 80 acres have level terrain on which development has occurred. The site elevation ranges from 453 feet above mean sea level (MSL) at the Hale Complex to 765 feet at Lima Ola and 857 feet at the water tank, a total rise in elevation of 400 feet.

Soils

As shown in Figure 14, the soils within the Waimano Ridge site are classified as Helemano silty clay, (HLMG) with 30-90% slopes, Manana silty clay loam (MoB) with 2-6% slopes, Manana silty clay loam (MoC) with 6-12% slopes, Fill Land mixed (FL) and Wahiawa silty clay (WaB) with 3-8% slopes.

The Waimano Ridge property is not considered suitable for agricultural use. The property is not classified on the Land Study Bureau's Detailed Land Classification or on the Department of Agriculture's Agricultural Lands of Importance in the State of Hawai'i (ALISH) map.

Impacts and Mitigation

Renovating existing structures and constructing new parking lots will not have a significant impact on overall geology or topography of the site. Construction activities will include grading for parking lots and driveways, but no or very little grading is required for building renovation work. Some grading activity will be required to provide proper drainage and will slightly alter the existing topography. Grading activity will not be extensive.

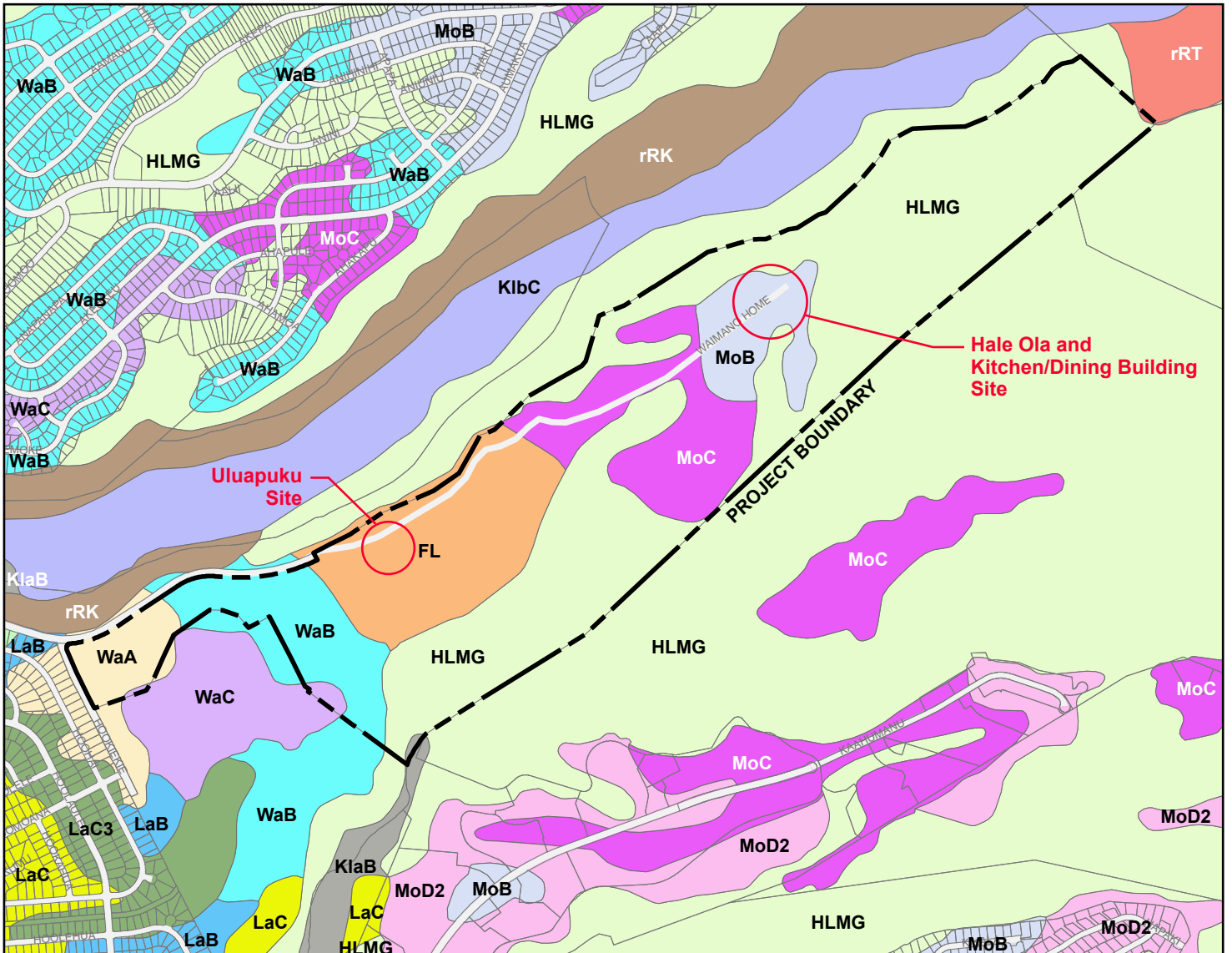
Temporary erosion control during construction will be designed in accordance with State and County standards. Construction activities will employ best management practices to prevent soil loss and erosion. Any impact of construction activities on soils will be mitigated by measures outlined in the following regulations:

- Chapter 14, Articles 13-16 as related to Grading, Soil Erosion and Sediment Control, of the Revised Ordinance of Honolulu, 1990, as amended
- Department of Planning and Permitting, Rules relating to Soil Erosion Standards and Guidelines, (1999)
- USDA Soil Conservation Services Erosion and Sediment Control Guide for Hawai'i, (1968)

A National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water associated with construction will be required for the project. The permit requires a Best Management Practices (BMP) plan, which will require compliance with City ordinances pertaining to grading, grubbing, stockpiling, soil erosion and sedimentation.

The construction contractor will be required to monitor during construction to ensure that the minimum standards are employed at all times and that the erosion, sediment, pollutants and runoff is controlled and does not adversely impact surrounding areas.

The construction best management practices (BMP) and permanent improvements will ensure that the potential for erosion is minimized to the maximum extent practical.



LEGEND

 FL	Fill land, mixed	 MoB	Manana silty clay loam, 2-6% slopes
 HKMG	Helemano silty clay, 30-90% slopes	 MoC	Manana silty clay loam, 6-12% slopes
 KilaB	Kawaihapai stony clay loam, 2-6% slopes	 MoD2	Manana silty clay loam, 12-25% slopes, eroded
 KilaC	Kawaihapai very stony clay loam, 0-15% slopes	 rRK	Rock land
 LaA	Lahaina silty clay, 0-3% slopes	 rRT	Rough mountainous land
 LaB	Lahaina silty clay, 3-7% slopes	 WaA	Wahiawa silty clay, 0-3% slopes
 LaC	Lahaina silty clay, 7-15% slopes	 WaB	Wahiawa silty clay, 3-8% slopes
 LaC3	Lahaina silty clay, 7-15% slopes, severely eroded	 WaC	Wahiawa silty clay, 8-15% slopes

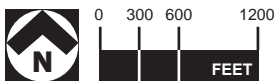


Figure 14
SOILS MAP

3.2.4 Climate

According to the Rainfall Atlas of Hawai'i, (UH Geography), the mean annual rainfall is 54 inches at the Palisades station which is at the 859 ft elevation of Waimano Ridge. Because of its mountainous elevation, variation in rainfall is slight, with no significant variation between winter and summer months. Rainfall varies from lows of about 3.5 inches between May to September and highs of about 6.5 inches during the months of October to April. The average temperature of Pearl City is 73.21 degrees F. Because Waimano Ridge is at a higher elevation, the average temperature may be about 3 degrees cooler, as temperatures drop 3.5 degrees for every 1,000 feet above sea level.

Impacts and Mitigation

The proposed relocation of DOH staff will not impact staff from the standpoint of weather. The project site's cool year-round temperatures should make the working environment comfortable.

3.2.5 Air Quality

Existing Conditions

National Ambient Air Quality Standards (NAAQS) have been established for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur oxides (SO_x), and lead. Air pollutant levels are monitored by the State Department of Health (DOH) at a network of sampling stations statewide. The nearest DOH air quality monitoring station is the Pearl City station. Based on ambient air monitoring data, the U.S. Environmental Protection Agency has classified the island of O'ahu and the entire State of Hawai'i as being in attainment of the federal standards. There are occasional exceedances of the more stringent State standards for carbon monoxide near congested roadway intersections however, since the project site is situated on an isolated ridge area which is not accessible to the public, it is largely unaffected by traffic-related emissions.

Impacts and Mitigation

Construction Period

Renovation of structures will require selective demolition of walls, removal of windows, doors and trim, removal of ceiling material and flooring, and removal of ceramic tiles and fixtures in bathrooms and food preparation areas. These activities will generate temporary dust in the immediate area. Hazardous materials will be properly remediated (see Section 3.5.5 addressing Hazardous Materials). Construction of parking lots and installation of utility lines will require grading and excavation that will generate fugitive dust and airborne emissions.

The construction contractor will employ fugitive dust emission control measures in compliance with provisions of the State DOH Rules and Regulations (Chapter 43, Section 10) and Hawai'i

Administrative Rules (HAR) Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

During excavation, the contractor will sprinkle water, as necessary to control dust. In addition, the following measures will be implemented to minimize dust and air quality impacts:

- Use of dust screens around the construction site;
- Provide an adequate water source at the site prior to start-up of construction activities;
- Pave or revegetate work areas cleared of vegetation as soon as possible to reduce dust;
- Control dust from debris being hauled away from the project site;

Emissions from construction equipment, trucks and commuting construction workers will not significantly impact ambient air quality due to the low level of vehicular activity at this isolated mountain ridge. Overall, air quality impacts during construction will be temporary in duration.

The construction contractor will identify a primary point of contact (POC) to establish communication with the school administration as well as with the surrounding community.

Long-Term Impacts

The project will not have a long-term adverse affect on air quality. Vehicular emissions from anticipated traffic associated with the relocation of DOH personnel will be negligible.

3.2.6 Natural Hazards

Existing Conditions

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) the entire Waimano Ridge area is located in Zone D, which corresponds to unstudied areas where flood hazards are undetermined, but possible. The property is not subject to any flood regulations. According to DOH staff who have managed the Waimano Ridge property since the Waimano Hospital was in operation, there have been no known instances where flooding has occurred.

Impacts and Mitigation

The project will not increase the risk of human health or property damage due to natural hazards such as flooding. Structures will be renovated to meet seismic standards.

3.2.7 Noise

Existing Conditions

The project site is very quiet because of its isolated location and low development density. Vehicular traffic, a common contributor to noise, is limited as access is controlled at the security gate.

Impacts and Mitigation

Short-Term Construction Impacts

Construction will generally take the form of two types of activity: building renovation and outdoor grading and excavation activities. Noise from these activities will be short-term. Noise levels will be a function of the methods employed during each stage of construction. The noisiest period is expected to be during parking lot and driveway site preparation work and trenching for utility lines, where earth moving equipment will operate on-site. These noise impacts are unavoidable and temporary. Any construction activity associated with the Uluapuku Building is not anticipated to create noise impacts to neighboring uses. The closest adjacent facility that could be impacted by noise is the Pearl City Cultural Center (PCCC), a performing arts auditorium located outside the secured area of Waimano Ridge and utilized by the public. Uluapuku is located about 800 feet away and Hale Ola is over 4,000 feet away from PCCC. Construction noise impacts are expected to be minimal, as PCCC is a performing arts auditorium and designed to minimize outdoor noise intrusions. Moreover, most events are held in the evenings, when there will not be ongoing construction.

All construction activities will comply with the State of Hawai‘i Department of Health (DOH) Administrative Rules Chapter 11-46 on Community Noise Control. In residential zoned districts such as the project site, maximum permissible noise levels are 55 dBA in the daytime (7:00 AM to 10:00 PM) and 45 dBA nighttime (10:00 PM to 7:00 AM). In cases where construction noise exceeds, or is expected to exceed the maximum permissible noise levels at the property line, a permit will be obtained from the DOH to operate vehicles, construction equipment, power tools, etc. that emit noise levels in excess of “maximum permissible” levels.

The DOH currently regulates construction noise under a permit system. Under current procedures, noisy construction activities are restricted to 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 is not permitted on Sundays. Construction work will be performed during the day.

Operational Noise

The primary source of additional noise following the completion of the staff relocation will be traffic entering and exiting the site. The traffic impact report prepared for this project estimated that additional hourly traffic will be fewer than 100 vehicles per hour. This represents less than 3 percent of existing traffic volumes.

3.2.8 Visual

Existing Conditions

The visual environment at Waimano Ridge is characterized by a campus-like environment with a heavily vegetated landscape of tall trees, shrubs and lawns interspersed with clusters of old and new structures situated on different sections of the property. The existing development pattern is the result of the property’s former use as a residential hospital, the topographic conditions, and the recent demolition of dilapidated structures associated with the original Home. Views of the adjacent valleys and distant ocean are offered from various vantage points of the property.

Impacts and Mitigation

The proposed project is limited to renovating existing structures and constructing new parking lots. The visual environment will not change except for enhancements to the exterior of these structures. No new buildings will be constructed.

3.3 BIOLOGICAL ENVIRONMENT

3.3.1 Botanical Resources

A botanical resources assessment was conducted in 2005 by Maya LeGrand, LeGrand Biological Surveys, Inc. This study was done as part of the environmental analysis for the Waimano Ridge Master Plan, and is included as Appendix B. The primary objectives of the field studies were to provide a general description of the vegetation on the 242-acre site, inventory the flora, search for threatened and endangered species as well as species of concern, and identify areas for potential environmental problems or concerns and propose appropriate mitigation measures. Biological conditions have not changed significantly since that time, and the findings remain valid.

During the 2005 survey, a literature search and walk-through survey along all boundaries of the site and along 50 meter long transects were conducted. The study noted that two vegetation types occur within the 242-acre Waimano Ridge project area—Lowland Mesic Forest and Ornamental Landscaping.

At the upper, or higher elevation of the study site, the vegetation resembled a Lowland Mesic Forest with a mix of native and alien plant species. The developed areas around buildings and roads was dominated by a mosaic of ornamental landscaping and weedy areas around abandoned buildings.

Of the 177 plant species observed, only 6% were native while alien plant species dominated comprising more than with 89% of all plant species observed. The LeGrand study provided an inventory of all the plants observed in a species list.

None of the plants on the project site is a threatened or endangered species or a species of concern. The study noted that although no endangered or threatened plant species were found

during the survey, care should be taken while clearing the project site to limit the introduction of additional invasive plant species that have the potential to spread into adjacent native forest areas. The study also recommended that if possible, individual trees providing shade or that are significant specimens be worked into the overall Waimano Ridge Master Plan. A magnolia tree near the south corner of Hale Ola was noted as a “large beautiful specimen[s] and should be kept in the overall plan.” The proposed improvements to Hale Ola will not impact this magnolia tree.

3.3.2 Terrestrial Fauna and Avifauna

A survey of avian and terrestrial mammals was conducted by Reginald E. David, Rana Productions, Inc. in July 2005. This study was also done as part of the environmental analysis for the Waimano Ridge Master Plan, and is included as Appendix C.

Five mammalian species; rat (*Rattus sp.*), domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auropunctatus*), cat (*Felis catus*), and pig (*Sus s. scrofa*), were detected within the study site. A single rat was seen near the start of the Waimano trail. All of these introduced mammalian species are deleterious to native species. The endangered Hawaiian hoary bat was not detected during the course of this survey.

A total of 378 individual birds of 15 different species, representing 12 separate families were recorded during the course of station counts. All 15 species detected during the course of this survey are considered to be alien to the Hawaiian Islands.

- Red Junglefowl (*Gallus gallus*)
- Spotted Dove (*Streptopelia chinensis*)
- Zebra Dove (*Geopelia striata*)
- Red-vented Bulbul (*Pycnonotus cafer*)
- Red-whiskered Bulbul (*Pycnonotus jocosus*)
- Japanese Bush-Warbler (*Cettia diphone*)
- White-rumped Shama (*Copsychus malabaricus*)
- Hwamei (*Garrulax canorus*)
- Red-billed Leiothrix (*Leiothrix lutea*)
- Japanese White-eye (*Zosterops japonicas*)
- Common Myna (*Acridotheres tristis*)
- Red-crested Cardinal (*Paroaria coronate*)
- Northern Cardinal (*Cardinalis cardinalis*)
- House Finch (*Carpodacus mexicanus*)
- Common Waxbill (*Estrilda astrild*)

Avian diversity was low, though the densities of several species were quite high. Three species, Japanese White-Eye (*Zosterops japonicus*) and Red-vented Bulbul (*Pycnonotus cafer*) and Common Waxbill (*Estrilda astrild*) accounted for 49% of the total number of birds recorded during station counts. Japanese White-eyes were the commonest bird recorded accounting for 21% of the total number of birds recorded. An average of 38 individual birds were detected per station count.

No avian species currently listed by either the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, as amended, or by the State of Hawai‘i under its endangered species program were detected within the study area (DLNR 1998, Federal Register 1999a, 1999b, 2001, 2002, 2004).

Impacts and Mitigation

It is not expected that the renovation of existing structures currently found on the site or the development of additional parking facilities will have a negative impact on any avian or mammalian species currently listed as endangered, threatened, proposed, or as a candidate for listing under either federal or State of Hawai‘i endangered species statutes.

3.4 SOCIO-ECONOMIC ENVIRONMENT

3.4.1 Demographic Characteristics

Existing Conditions

According to the 2012 U.S. Census, the Pearl City Census Designated Place (CDP) had a total population of 47,698 persons, more than 50 percent of them identified their race as Asian. Average household size in the Pearl City CDP was 3.08 persons, compared to the Honolulu County-wide average of 2.96 persons. Pearl City CDP households had slightly higher median income, \$84,029 compared to the County (\$70,093).

Table 3-3: Demographic Information for Pearl City Census Data Place (CDP), 2010

	Pearl City CDP		Honolulu County	
	Number	Percent	Number	Percent
Population	47,698		953,207	
Race				
White	7,619	16.0	198,732	20.8
Black/African American	1,379	2.9	1,9256	2.0
Amer Indian/Alaskan Native	131	0.3	2,438	0.3
Asian	25,392	53.2	418,410	43.9
Nat Hawn/Other Pac Islander	2,611	5.5	90,878	9.5
Other race	541	1.1	10,457	1.1
Two or more Races	10,025	21.0	213,036	22.3
Total Households				
Avg household size	3.08		2.96	
Median household income	\$84,029		\$70,093	
Households with One or more People Under 18 Years of Age	4,833	33.9%	107,388	35.2%

Source: U.S. Census Bureau, American Fact Finder

The proposed project will not directly or indirectly cause changes to the population or demographics. The office space will be utilized by existing DOH employees, which reside throughout the island, and will not induce population growth within the Pearl City CDP.

The relocation of 262 employees to Pearl City, however, will increase the number of vehicles heading mauka on Waimano Home Road during the morning peak period and heading makai during the afternoon peak. The increased traffic will impact traffic heading to and from Pearl City High School and Momilani Elementary School. These issues are discussed further in Section 3.6, Traffic.

3.4.2 Archaeological, Historic, and Cultural Resources

3.4.2.1 *Historic Architecture*

A Historic Structure Overview was conducted in August 2013 for the Hale Ola building and Kitchen and Dining building by Virginia D. Murison, AIA (see Appendix D). Both of these buildings will be renovated for office space as part of the current project. The purpose of the Historic Structure Overview was to describe and assess the historic significance of these two buildings, determine whether they meet eligibility criteria for listing on the State or National Registers of Historic Places, and assess the effect of the project on the historic properties.

Existing Conditions

Waimano Home was established in 1921 as a residential and training facility for developmentally disabled (at the time referred to as “feebleminded”) adults and children. Two years prior in 1919, the Legislature of the Territory of Hawai‘i set aside 612 acres of Territorial land on a plateau about three miles above Pearl City, and appropriated \$82,000 for this purpose. The original facilities, which were of wood frame construction, included dormitories for both male and female patients, a central kitchen, laundry, boiler house, superintendent’s residence, roads and utilities. In 1936, a second grouping of residences and support facilities was constructed about a half mile below the original Waimano Home.

Hale Ola, Hospital Building

In 1947, the Territorial Legislature authorized funding for the construction of a 100-bed hospital. Additional nearby support facilities authorized included a new Kitchen/Dining facility, laundry and boiler plant. Architect Hart Wood was retained to design these facilities. Hale Ola, the hospital building, was opened in 1951.

According to the Historic Structure Overview, *“the decision to build Hale Ola reflected a shift in thinking about the treatment of persons with developmental disabilities. This facility was designed to incorporate doctors’ examination and surgical rooms. Furthermore, improvements in treatment included the implementation of rehabilitation efforts in lieu of just housing the committed individuals away from society indefinitely. As such this building is representative of innovations in medical treatment in the Territory of Hawai‘i.”*

The original building is a non-symmetrical, two-story concrete building with a partial basement. The building underwent two major alterations and a window replacement project between 1951 and 1988.

Eligibility for Listing on the National Register of Historic Places

According to Murison, Hale Ola is eligible for listing on the National Register of Historic Places under Criteria “A” and “C” and possess the integrity required for eligibility.

Criterion A – Historic Properties “That are associated with events that have made a significant contribution to the broad patterns of our history”

The Hospital building, dedicated as the Lambert Building in 1951, was built to alleviate overcrowding of Waimano Home following World War II and to provide modern facilities reflecting advancing Societal and Governmental attitudes toward the treatment of persons with developmental disabilities.

“When the Department of Institutions took over Waimano Home [1941], there was a slow but increasing development [of] a “more intensive program of training with a view to returning (the residents) to the community.....The idea of Waimano as a mere custodial institution was being replaced by ideas of treatment and rehabilitation.”



Hale Ola is eligible for listing on the National Register of Historic Places under Criteria “A” and “C” and possess the integrity required for eligibility.

As a modern hospital with treatment and surgical facilities, in addition to bright and airy wards of 100 beds, the design of this hospital appears to reflect these advances in medical treatment.

Criterion C – Historic Properties “That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction”.

Hale Ola was designed by architect Hart Wood, a recognized leader in the design of significant architectural landmarks in Hawai‘i . As stated by Hibbard, Mason and Weitz in their eloquent book about the life and work of Hart Wood:

“He pioneered a design language that was unique to Hawai‘i and did so by looking not only at its benign weather but by using local materials in innovative ways and incorporating the cultures of the various peoples of Hawai‘i . The latter alone is sufficient to elevate Wood above his contemporaries.”

This building is one of three significant Commercial buildings designed at the end of his career. Of these three buildings, this is the clearest expression of the International Style of architecture. Key character defining elements of this building have been charted and described in detail in Section C of the Historic structure Overview.

Integrity:

- Integrity of location (presiding over Waimano Ridge), setting (rural in a conservation area), materials, and workmanship are intact. The original concrete roof, Brise-soleil and brick infill walls have been largely untouched by later alterations.
- Design integrity has been compromised by the 1956 addition and a window replacement on the North elevation in the 1980’s. Despite that, the outline, materials, and horizontality of the original building are clearly visible. The 1956 addition is historically significant in that it represents the need for more Ward space just 5 years after the construction of the original hospital.
- Original association with the history of prior residents is no longer valid. The Waimano Home ‘campus’ was closed for treatment and housing of persons with developmental disabilities in the 1990’s.

Kitchen and Dining Facility

The original Kitchen and Dining Facility is a non-symmetrical one-story reinforced concrete building with a flat roof. There are 3 entrances: one for the kitchen staff, one for the residents and a separate one for the Hospital staff. This is actually the second design for this facility. An earlier set of plans showed some design details that echoed the Hospital, especially the entry and windows. This second set of plans is scaled down and very basic in its design elements, apparently a case of value-engineering back in 1948. The roof over the center section, the

cooking area, is raised for air circulation and ventilation. Like Hale Ola, the hospital, the Kitchen/Dining Building displays the simple, unornamented International Style of design.

Eligibility for Listing on the National Register of Historic Places

According to Murison, the Kitchen and Dining Facility, a support structure to the Waimano Home Hospital building, is eligible for listing on the National Register of Historic Places under Criterion “C.”

Criterion C – Historic Properties “That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction”.

The Kitchen/Dining building was designed as a support facility by noted Hawai‘i architect Hart Wood. As a stand-alone structure, it is not currently eligible for listing on the National Register due to the major prior alterations. However, it is eligible as a contributing structure to the Waimano Home Hospital site.

Integrity:

- Like Hale Ola, the integrity of location and setting (at the top of Waimano Ridge in a rural setting, conservation area) are intact.
- Design integrity has been compromised by detracting additions over significant portions of the front and rear elevations.
- The dining wing of the building is intact with respect to design, materials and workmanship. The proposed project will continue to utilize this portion of the building as an open space housing conference and library facilities.
- As with Hale Ola, the original association with the history of Waimano Home is no longer valid. Following the closing of the Hospital, the kitchen continued use as a kitchen for several years to serve the Meals-on-Wheels Program. The facility is no longer used for that purpose.



The Kitchen and Dining building is not eligible for listing on the National Register of Historic Places as a stand alone structure, but is eligible as a contributing structure to the Waimano Home hospital site.

Impacts and Mitigation

Hale Ola, Hospital Building

The adaptive reuse of the hospital building as office space for 141 DOH employees will involve the following improvements, with the anticipated effect below.

Table 3-4: Impacts to Historic Structures: Hale Ola

Proposed Improvement	Impact and Anticipated Effect
Open Office Space	
Remove recent interior alterations that have subdivided the original open ward wings	No adverse effect
Air conditioning	
Construct remote central plant consisting of 2 exterior type packaged AC chiller units. The units will be placed on a concrete slab and surrounded by a tall concrete masonry enclosure with appropriate landscape screening. Central plant will be in approximate location of original Boiler building (demolished) which is historically appropriate. Underground chases, some original, will be utilized to circulate chilled water and other utilities.	No adverse effect
Place air handler units in basement and windowless prior storage and bath spaces	No adverse effect
Distribute ductwork from air handlers to office wings across the flat roof, away from major elevations, close to the non-visible courtyard side of each wing. Ducts will be low, elevated slightly to permit roof maintenance and screened. The only vantage point from which these will be visible is the offices on the back side of the 3rd floor of the original Doctors wing.	Potential adverse effect minimized by placement away from primary elevations and screening
Distribute ductwork on roof to minimize impact of dropped ceilings in interior spaces of the open wings. New dropped ceilings will be held away from the original floor-to-ceiling window openings	No adverse effect

Proposed Improvement	Impact and Anticipated Effect
Energy Efficiency	
Insulate exterior walls and roof to minimize heat transmission.	No adverse effect
Window Repair and Replacement	
Repair Koa windows.	Feasibility of repairing koa windows in kind being investigated. No adverse effect.
Repair vertical stairway window	Feasibility being investigated. No adverse effect.
Replace jalousies (of prior non-original additions) with aluminum framed fixed and operable windows, preserving the vertical modules of the 1956 addition work.	No adverse effect
Modify original Hart Wood wood framed windows. Improvements needed to achieve reasonable thermal values for the air conditioned spaces.	Potential to have an adverse effect on the original materials. Proposed window alteration and/or replacement, and possible mitigation to be discussed with SHPD.
Interior walls	
Interior corridor walls of original Doctors Wing (1st floor) and Nurses Wing (1st & 2nd floors) to be preserved, thus also preserving the historic salt glazed tile wainscot.	No adverse effect
Source: Murison, 2013	

Kitchen and Dining Facility

The adaptive reuse of the Kitchen and Dining building as office space for 51 DOH employees will involve the following improvements, with the anticipated effect below.

Table 3-5: Impacts to Historic Structures: Kitchen and Dining Building

Proposed Improvement	Impact and Anticipated Effect
Open Office Space	
The change of function from kitchen to office will require removal of bulk and cold storage rooms.	Since there have been significant non-historic alterations to this space in the past, we do not believe that this alteration will adversely affect this building. No adverse effect.
Former large open dining rooms converted to conference space and a small library. No alteration of walls and doorways. Existing 10-foot ceiling may need to be lowered slightly to accommodate A/C and lighting.	Head height of the windows (7'-4") will allow the ceiling to be lowered without impacting the windows. No adverse effect.
Air conditioning	
The remote chiller units in the central plant previously described will also serve this building.	No adverse effect.
Air handling units placed within a mezzanine created in the center portion of the building. This portion of the building is roughly 16'-6" to the underside of the roof slab, which previously housed the exhaust hoods.	No adverse effect.

Proposed Improvement	Impact and Anticipated Effect
Ductwork will cross over the roof to serve the major spaces. Although visible from Hale Ola, ductwork will be screened to minimize visual appearance. The prior function of this building required rooftop placement of several ventilators and a hood exhaust fan.	Potential adverse effect minimized by placement away from primary elevations and screening.
Energy Efficiency	
Insulate exterior walls and roof on the interior to minimize heat transmission.	No adverse effect.
Window Repair and Replacement	
Add windows to former storage rooms to provide more daylight in the future open offices.	CMU walls to be altered are not historic. No adverse effect.
Install skylights to increase daylight in the center of the former kitchen, where the cold storage rooms were.	Former exhaust hood has set a precedence for this type of rooftop opening. No adverse effect.
Modify original 2 sets of kitchen windows over the sinks by lowering sill height and installing more sash, repeating the historic sash modules of roughly 15” high by 3’-9” wide	Potential adverse effect minimized by repeating historic window module sizes.
Alter the original Hart Wood aluminum framed windows to achieve reasonable thermal values for the air conditioned spaces.	Action has the potential to have an adverse effect on the original materials. Except for the 2 windows over the sinks discussed above and 3 small bathroom windows, and due to prior non-historic alterations, the only remaining original windows are in the Dining Wing. Window alteration and/or replacement, and possible mitigation, to be discussed with SHPD.
Interior Finishes	
Remove the majority of interior walls that subdivided the kitchen into bulk and cold storage areas. Portions of the “Salt Glazed Tile” wainscot will be salvaged for repair at Hale Ola.	Potential adverse effect minimized by salvaging and reusing as needed.

Source: Murison, 2013

Section 6E Consultation with State Historic Preservation Division

The historic architecture assessment is being submitted to the State Historic Preservation Division for review and comment. Further discussion with SHPD regarding impacts and mitigation is continuing.

3.4.2.2 *Archaeological Resources*

As part of an environmental analysis conducted for the Waimano Ridge Master Plan, an archaeological assessment was conducted in 1990 by Cultural Surveys Hawai‘i (Folk 1990) to evaluate the presence of potential cultural resources within the study area. The survey included background research of previous archaeological work within the area, a historical literature review, and field inspections of the entire 252-acre site. The following discussion of archaeological resources reflects the findings of this 1990 study, which is attached as Appendix E.

Existing Conditions

The project area is within the traditional land division (*ahupua‘a*) of Waimano in the ewa district. The field inspection extended from Pearl City High School at the 425 elevation to Hawaiian Electric Company’s power line easement at elevation 1,000 feet. The ravines and gulches along the edges of the plateau were not included in the survey.

A cemetery, a dressed stone irrigation ditch and a cache of loose, dressed stones were recorded during a reconnaissance. The cemetery is known to contain deceased members of the former hospital. The irrigation ditch and loose stones are clearly historic and believed to be associated with sugar cane cultivation by the Honolulu Plantation Company in the early 20th century. There are no literature or physical records of traditional Hawaiian enterprise in the project area. No Kuleana claims were filed in the project area, which appears to have been government lands since the Mahele of 1848. Portions of the project area may have been under cultivation of sugar or pineapple prior to establishment of the home in 1919. None of the existing structure of the facility are deemed significant for preservation.

The Waimano *ahupua‘a* in the Ewa District is literally translated as “many waters”. The significance of this translation is not apparent, because although two streams are associated with the *ahupua‘a* neither have their entire course within it. Waimano Stream originates at the summit of Ko‘olau and has only two major tributaries whose confluence is above the 400 foot elevation. Mauka of this elevation, the stream valleys are V-shaped, steeply rising to knife edged ridges that are clearly unsuitable to Hawaiian settlement of any magnitude. Old terraces in the stream bottoms may have been used for planting of food crops in the past. However, it is very unlikely the ridges above, at elevations of 1,000 feet or more, were used for collecting natural products of the forest.

Below the 400 foot elevation in the stream bed, Waimano Stream travels a horizontal distance of only 8,000 feet before it passes out of the Waimano *ahupua‘a*, over 2 miles from the shore, crossing Manana *ahupua‘a* towards its confluence with Waiawa Stream. Within the 8,000 foot section the old stream terraces are wider, flatter, and more amenable to traditional Hawaiian agriculture. In this same stretch, the ridge tops, at about the 800 foot elevation, also become flatter and broader. The project site is located on a plateau of the ridge forming the southeast side of Waimano Stream.

There is very little information on early land use as well as on the inhabitants of the Waimano *ahupua‘a*. Although it borders on Pearl Harbor, it is overshadowed in all respects by neighboring *ahupua‘a* in ethnographic records. No archaeological sites are noted in Waimano *ahupua‘a* by McAlister (1933). Sterling and Summers (1978:16) note only three references to Waimano, the most descriptive of which is from Archibald Campbell. Campbell relates that he received from the King, sixty acres of land called “Wymannoo” (Waimano) on Pearl Harbor that is four or five miles from the mouth of the river. Although this information is confusing in that Waimano Stream does not enter Pearl Harbor but joins Waiawa stream well inland, it does suggest the prior existence of agriculture well inland in the valleys.

Sugar cane cultivation in Waimano *ahupua‘a* may have started as early as 1850 or as late as 1900. By the 1940s, virtually all the accessible ridge top plateaus from Rid Hill to Waiawa and Waimano Streams, up to elevations of 1,000 feet or more were under sugar cultivation by the Honolulu Plantation Company (Conde and Best 1973:331). The upper reaches of some of these ridge plateaus were also planted in pineapple.

The 1924 Territory Survey Map (R.M. 2715) shows the Waimano Home buildings. It also shows an approximate upper limit of sugar cane that appears to be at the lower boundary of the study area, but an undated map of the Honolulu Plantation Company in Conde and Best (1973:331) indicate that Honolulu Plantation’s field #34 may have been situated in the study area.

The project area was used by the sugar plantation to bring water to their fields. A dam at 636 foot elevation in the Waimano Stream bed (mauka of the study area) collects water for the ditch that runs along the southeast side of the valley, tunneling through one ridge spur, and tops the study area plateau at about the 600 foot elevation contour, mauka of the existing swimming pool. The swimming pool site was previously a plantation reservoir from which a formal ditch, constructed of hand dressed, basalt stones cemented with mortar, conveyed water downstream upon the northwest side of the plateau and presently appears to terminate within the Pearl City High School grounds.

Impacts and Mitigation

The proposal to renovate three existing buildings and to relocate DOH staff to Waimano Ridge will directly impact three areas: the building and nearby grounds of Uluapuku, Hale Ola (hospital building), and the Kitchen and Dining Building. Construction activity will be limited to interior improvements, and constructing additional paved parking lots in areas immediately adjacent to the buildings and on land previously occupied by other structures. Infrastructure improvements will require trenching in nearby areas. All of the areas where excavation will occur were previously used as part of the Waimano Home complex. The construction of the parking lots and infrastructure improvements will not adversely impact any historic resources on the property. No traditional Hawaiian archaeological sites were located in the study area. It is very probable that this area was part of the *wao kele* or *wao kanaka*, the inland and upland forest regions where people “may live or occasionally frequent” (Pukui and Elbert 1985), and used for its resources of flora and fauna. If isolated occupation sites did exist, all surface traces have been obliterated by sugar cultivation and/or construction of the Waimano Home in 1919. A previous reconnaissance of the DOH Laboratory site did not locate any Hawaiian archaeological sites (Jensen, 1989).

Only two items of historic interest were noted during the previous reconnaissance study, a dressed-stone irrigation ditch and a cemetery on the ridge above the school buildings. The ditch is in good condition and attractive, and the stones of the ditch are recommended for preservation under National Register Criteria C (excellent example of site type). The study notes that similar stones were used on the grounds along the parking lot entrance northwest of Waimano Home Road at 765 foot elevation. The current renovation plans will not impact stones found in the parking lot entrance.

The cemetery is where many former residents of Waimano Home were buried, and is recommended to remain undisturbed. The National Register Criterion code E (site has cultural significance, burials present) is assigned to this site. The ridgeline in this area is generally less than 200 feet wide and seems best suited to be left as is.

Preservation of the cemetery, irrigation ditch and dressed stones is recommended. No further archaeological investigation or monitoring during construction is recommended upon the plateaus in the project area. If subsurface features or sites are found during excavation, work will stop and the SHPD will be consulted immediately.

Section 6E Consultation with State Historic Preservation Division

The findings and recommendations of the 1990 Folk archaeological assessment, and the updated cultural impact analysis (described below) will be reviewed by the State Historic Preservation Division as part of this Environmental Assessment. No adverse impacts on archaeological or cultural resources are anticipated.

3.4.2.3 Cultural Impact

A cultural impact analysis for the current project was prepared in July 2013 by Cultural Surveys Hawai'i, and is included as Appendix F. The analysis is a review of previous research on the site and in the general vicinity in order to evaluate the cultural impact, if any, of the planned work.

Because the project sites within the Waimano Ridge property are fenced off from public access, no interviews were conducted. A field inspection was conducted to photograph and assess the condition of the grounds and locate the features identified in a previous archaeological field report.

The report noted that in the pre-contact period, it is likely that the Waimano Ridge was an occasionally used upland forest area. No pre-Contact cultural resources have been previously identified and no oral histories refer specifically to this area. The landscape of the project area was transformed in the late 19th and early 20th centuries, first as part of the Honolulu Sugar Company and then for the construction of the Waimano Home buildings; all of which would have removed any extant pre-Contact cultural remains.

Existing Conditions

Two archaeological studies were previously conducted within the current project area. Jensen (1989) conducted an approximately 20-acre archaeological inventory survey of a portion of the Waimano Home Department of Health Facility. No subsurface evaluations were undertaken. “No evidence of traditional Hawaiian cultural sites” was found and no additional archaeological investigation was recommended.

Historic features were documented and recommended for preservation in the 1990 Cultural Surveys Hawai‘i (Folk 1990) archaeological study of the same area. As noted previously, the features included a stone lined irrigation ditch, dating to the plantation era; and the cemetery associated with the Waimano Home. Although these sites were determined to be historically significant, no SIHP numbers were assigned. Recommendations included preservation, or at minimum incorporation of the irrigation ditch stones into landscaping; preservation of the graveyard; and no further archaeological investigation or construction monitoring (Folk 1990:i).

The 2013 CSH study includes a discussion of cultural resources and practices in the project area and the broader Waimano Ahupua‘a. No traditional cultural properties have been found within the project area, and there are no literary records of traditional Hawaiian enterprise within the project area. A popular modern trail, the Waimano Ridge Trail, begins near the guard shack and wraps around the facility fence on the north before climbing to the ridge of the Ko‘olau range. The trail is outside the facility fence and not near any of the project buildings. Although there are many traditional *mo‘olelo* or stories about Pearl City and Waimano Ahupua‘a, none of these stories relate specifically to the uplands near the project area.

Impacts and Mitigation

Both the cemetery and the stone lined irrigation ditch are within the greater Waimano Ridge project area, but they will not be affected by the currently proposed improvements, which are limited to three buildings.

The cemetery is 425 m (1394 ft) *mauka* of the nearest project building, and beyond a locked gate. While the cemetery may be a contributing element to a historic property, this actively maintained cemetery with clearly marked graves is not a “burial site” per HAR 13-13-280-2.

Both the plantation-era irrigation ditch and the alignment of re-used stone are in close proximity to the three buildings that will be renovated. The north end of the alignment is 55m (180 ft) southwest of the south corner of the old kitchen and dining building, beyond B-9. If possible no ground disturbing activity should take place within a 5 m buffer of the edge of the alignment.

An extant portion of the irrigation ditch runs parallel to Waimano Home Road, between the road and the Uluapuku building; it is approximately 7 m (22 ft) from the Uluapuku building at the nearest point. An access road crosses the irrigation ditch via a small bridge just north of the Uluapuku building. The access road is clearly well maintained, the Uluapuku Building and its adjacent parking lot are currently in use and the use of them does not seem to have negatively

impacted ditch preservation. Since this feature was previously recommended for preservation (Folk 1990), no ground disturbing activity should take place within a 5 m (16 ft) buffer of the edge of the ditch.

No pre-contact Hawaiian burials have been documented within the project area, nor are they likely to be present given the ridge top topography and tendency of pre-contact Hawaiians to bury their dead in the sand or in caves (CSH 2013:27).

The cultural impact of the currently proposed project will be minimal. The area is not open to the public (fenced and guarded) and the publicly accessible trail runs outside the fenced area and away from the facility. No pre-Contact cultural resources are known, nor are they likely to be present given the history of the landscape. The historic resources in the project area are either far from the construction areas, or protected by the above recommendations.

3.4.2.4 Other Considerations

In 2009, the Honolulu Magazine, the Historic Hawai‘i Foundation (HHF) and the State Historic Preservation Division (SHPD) listed the Waimano Ridge as one of its “Most Endangered Historic Sites in Hawai‘i for 2009.” Waimano Ridge was one of eight properties and sites selected for listing that year. The group states that the annual list is assembled in an effort to preserve Hawai‘i’s unique heritage, and with the goal to “raise awareness of the sites’ vulnerability and inspire community dialogue.”

According to an accompanying article in Honolulu Magazine, Waimano Ridge was home to the former Waimano Training School and Hospital, which was originally known as the Waimano Home for the Feebleminded, and was closed in 1999. It explains that the Waimano Ridge site currently hosts a number of state organizations and programs, including the Department of Public Safety, DOH laboratory facility, and juvenile sex offender program.

In explaining why Waimano Ridge was selected as one of the most endangered historic sites for 2009, the article states :

Following the hospital’s closure, its support buildings, the oldest of which were built in the mid-1930s, and the newest of which, Hale Aloha, was built in 1977, languished into disrepair until the Department of Health decided to transform Waimano Ridge into a modern medical community.

Bringing the site up to code, however, has required significant updating. A survey of Waimano Ridge’s facilities, which were built of wood, concrete or concrete block, showed that roughly half of the buildings were suitable for long-term continued usage, while 12 buildings built between 1936 and 1954 have been earmarked for demolition. “Their time has come,” says [then Department of Health Director Chiyome] Fukino. “A number of the very old buildings, the roofs are caving in, the sides are caving in. Almost all of them are wooden structures or corrugated metal structures that are beyond repair. Those will be demolished.”

At the time this issue was going to press, the Department of Health was sending out RFPs for the demolition of the 12 buildings. The Historic Hawai‘i Foundation (HHF) is holding out hope that the buildings can be preserved. “Although the plantation vernacular cottages are the victims of deferred maintenance and present significant repair challenges,” says HHF executive director Kiersten Faulkner, “the later concrete buildings are still sound and could be rehabilitated. The history of all of Hawai‘i’s citizens should have a place in our collective recollections, including the memory of people with developmental disabilities who were housed here.”

3.5 UTILITIES AND INFRASTRUCTURE

3.5.1 Water System

Existing Conditions

The existing water system is owned by the DOH. The DOH has an agreement in place with the City and County of Honolulu Board of Water Supply (BWS) where maintenance of the system is provided by BWS.

Domestic water is provided by two on-site deep wells located at approximately 495 ft elevation. The wells have a total combined permitted capacity of 0.136 million gallons per day (mgd) by the Department of Land and Natural Resources. Water is pumped from the wells to an intermediary underground, concrete, 0.10 million gallon storage tank at the 602 ft elevation. Booster pumps then pump water to two above ground storage tanks totaling 0.69 million gallons at the 892 ft elevation near the top of the ridge. The water is then gravity fed from the 892 ft elevation through distribution lines of various sizes to the facilities.

The water pumps and the majority of the distribution lines were replaced in 2012. All existing buildings that were proposed to be repurposed were retrofitted with new 2” domestic laterals with associated water meters and backflow preventers. The water meters were installed to allow the DOH to easily monitor water consumption at each building. New 6” fire protection water laterals with associated detector check valves were also installed. Water supply to vacant buildings was shut off.

Fire protection consists of on-site fire hydrants and standpipes. New fire hydrants were installed in 2012 along the roadways leading up to Hale Ola at roughly 250 foot intervals.

According to “The Preliminary Evaluation of the Waimano Training School and Hospital Water System” study by the Honolulu Board of Water Supply (BWS) dated September 2000, the majority of facilities on site, with the exception of the Department of Health Laboratory and the Pearl City Cultural Center, are not in compliance with current Honolulu Board of Water Supply and Honolulu Fire Department fire protection requirements.

Impacts and Mitigation

The water laterals to the buildings that will be renovated were replaced in 2012. They will be re-evaluated for adequacy during the design phase of the project. If required, the laterals will be upgraded to provide sufficient pressure and capacity for domestic water and fire protection.

3.5.2 Sanitary Sewer

Existing Conditions

The existing on-site sewer system includes 8" and 12" gravity lines that begin at Hale Ola and run along the alignment of Waimano Home Road. Other sewer lines branch off this main trunk system to service other existing facilities. The 12" line from Waimano Ridge is connected to the 8" sewer main at the south end of the property. The maximum sewage flow allowable by the existing lines is approximately 1.14 mgd. Wastewater is conveyed to the Hono'uli'uli Wastewater Treatment Plant for treatment and disposal.

Up until July 2012, a sewer moratorium was imposed by the City and County of Honolulu Department of Environmental Services for any new sewer connection in the Pearl City area because the Pearl City wastewater pump station had reached its capacity of 28.4 mgd. A major new sewer pipe from the Waipahu pump station was projected for completion in 2018. As an interim solution, the City and County will install new valves to separate the Pearl City pump station from flows that originate in Mililani and Waipahu. Mililani and Waipahu sewage will be directed through a pipe from the Waipahu pump station. Installation of the new valves is scheduled to start in January 2014 and be completed in August 2014.

Impacts and Mitigation

According to the City and County of Honolulu Department of Environmental Services, the current sewer moratorium will not affect the planned renovations at Waimano Ridge if certain conditions are met. For example, if the new occupancy will have equal or less sewage discharge than the previous occupancy. Under the proposed action, Hale Ola will have approximately 141 employees, the Kitchen/Dining building approximately 54 employees, and Uluapuku approximately 67 employees. Wastewater generated from these three buildings will amount to approximately 23,000 gpd, which is less than the amount generated when these buildings were operating as a hospital and training facility. The previous occupancy operated 24 hours a day, seven days a week. The new occupancy will be limited to normal business hours. Accordingly, the Department of Environmental Services will continue to allow wastewater from Hale Ola, Uluapuku and the Kitchen/Dining building to discharge directly into the municipal sewer system based on a one-for-one replacement since the original population has been reduced from the time of the original sewer connection.

The buildings' plumbing systems will be evaluated during the design phase. If required, any upgrades or remedial action will be designed and constructed in accordance with the City and

County of Honolulu's Department of Design and Construction Wastewater Division standards and applicable building codes and standards.

3.5.3 Electrical, Telephone, Cable

Existing Conditions

Electrical service to Waimano Ridge is provided by Hawaiian Electric Company, Inc. (HECO), through overhead power lines that are routed along Waimano Home Road and then distributed through a series of overhead power lines to other existing facilities. Pole or pad mounted transformers distribute power to individual facilities. Hawaiian Telcom provides telephone service through overhead distribution lines routed along Waimano Home Road which are then distributed to individual facilities with overhead lines. Electrical and telephone distribution lines from Waimano Home Road are often routed through undeveloped areas to provide the most direct access to facilities do not follow access roads. Fiber optic cable TV service to the DOH State Laboratory is provided by Oceanic Time Warner Cable (Oceanic).

Impacts and Mitigation

During project design, project plans will be submitted to HECO, Hawaiian Telcom and Oceanic Time Warner for review and comment and to insure adequate service to mitigate any impacts to utility facilities or service.

3.5.4 Drainage

Existing Conditions

The Waimano Ridge site ranges in elevation from 442 feet to about 900 feet above mean sea level. The existing drainage system consists of swales, stone ditches, and piped culverts running down the mountain ridge. A series of unnamed gulches run through the Waimano Ridge site. Individual facilities are serviced by catch basins, drain inlets and surface drainage swales. Storm water runoff from the facilities is diverted into Waimano Gulch, Waimalu Gulch, or other unnamed gulches surrounding the site. The current drainage system has managed to handle the storm water runoff.

Impacts and Mitigation

No storm water management enhancements are planned for the buildings to be renovated as work will not extend beyond the footprint of the existing buildings. However, storm water management enhancements will be implemented if necessary at the new parking lots at Hale Ola the Kitchen/Dining building, and Uluapuku.

Storm water management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using Low Impact Development (LID) techniques such as extending sheet flow distance and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and

other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

During construction, appropriate measures will be implemented to prevent drainage related impacts. Best management practices will be implemented with repaving and re-vegetating areas as soon as practicable. Additionally, a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge associated with construction will be obtained. The contractor will be required to comply with all conditions associated with this permit.

3.5.5 Solid Waste

Existing Conditions

The Department of Public Safety, current occupants of Hale Ola, has contracted with a private solid waste disposal service. Similarly, the DOH contracts with private disposal companies for their existing facilities at Waimano Ridge.

Impacts and Mitigation

Upon completion of the project, the contracts with private disposal companies will be expanded to include the new offices in Hale Ola, Uluapuku and the Kitchen/Dining building.

3.5.6 Hazardous Materials

Existing Conditions

A hazardous materials report was prepared by Enpro Environmental in 2005 as part of the environmental evaluation for the Waimano Ridge Master Plan. The report contains two surveys that were conducted to determine the potential presence and location of hazardous materials. In an earlier limited asbestos survey conducted in 1993, asbestos containing material was found in roofing felt and patching compound on some but not all of the roof segments of Hale Ola. At that time, the material was nonfriable and rated priority IV, i.e., they are not expected to create a serious or immediate exposure potential.

Hale Ola

The Hale Ola building is a three-story structure constructed of drywall, brick, poured concrete, and CMU walls, linoleum tile flooring, acoustic drop ceiling panels, and some areas of wood paneled or tiled walls. Paint applications were predominantly beige and white interior paints with dark brown trim. Representative samples of these applications were collected for lead analysis. Other applications sampled included cabinet paints, a tangerine colored wall on the first floor, and green interior paint in the basement.

Kitchen/Dining Building

The Kitchen / Dining building is a single story building constructed of drywall and CMU walls, vinyl tile flooring, and acoustic drop ceiling panels. Suspect materials sampled for lead included interior and exterior paint.

Uluapuku (Building 4)

Uluapuku, Building 4 is a 20,000 square foot structure constructed of CMU and poured concrete walls, linoleum tile flooring and acoustic drop ceiling panels. Suspect materials sampled for lead included different applications of interior and exterior paint, ranging from off-white with brown trim to multiple colors of interior doors.

Impacts and Mitigation

Demolition and renovation of these three buildings has the potential to disturb lead and asbestos containing materials. The 2006 hazardous materials report recommended hiring a licensed (C-19) lead abatement contractor to remove all peeling, flaking, and/or chipping lead-containing paints from the project site prior to demolition. For disposal purposes, paint containing lead at a concentration of less than 5 mg/L, as determined by a Toxicity Characteristic Leaching Procedure (TCLP) analysis, may be disposed of as construction debris. Before disposal, these buildings must be resampled and tested using TCLP analysis to determine the proper method of disposal. All fluorescent light ballasts must be removed from the project site prior to demolition. The demolition contractor shall segregate the light ballasts based on visual markings. Those that are labeled as "non-PCB" or "PCB free" may be disposed of as construction debris. Light ballasts that are not labeled shall be collected and recycled or disposed of as regulated hazardous waste.

Fluorescent and high intensity discharge (HID) lamps are covered under the Universal Waste Rule of the Resource Conservation and Recovery Act (RCRA). Whenever possible, the United States Environmental Protection Agency (EPA) recommends recycling fluorescent lamps to prevent them from entering the landfill. All additional miscellaneous hazardous materials, chemicals, and solvents must be removed from the project site prior to demolition. These materials may be recycled where applicable.

3.6 TRAFFIC

A Traffic Impact Report for the project was prepared by Julian Ng, Inc. in September 2013 (Appendix G). The traffic report was prepared to identify the potential traffic impact of the relocation of 262 DOH employees to Waimano Ridge.

The study analyzed six intersections--two unsignalized intersections near the site, and four signalized intersections on Waimano Home Road from Kamehameha Highway to Komo Mai Drive. Traffic counts were taken at these intersections on several weekdays in the spring of 2013 to establish existing conditions. Future baseline conditions (i.e., without the proposed project)

were estimated. Anticipated traffic volumes generated by the proposed project were estimated using trip generation factors from a widely-used reference, distributed onto the roadway system, and added to the baseline to determine project impacts.

3.6.1 Existing Conditions

Existing Roadways

The project site is located at the mauka end of Waimano Home Road above Pearl City. Waimano Home Road is a four-lane city road with two lanes heading mauka and two lanes heading makai below Komo Mai Drive. Above Komo Mai Drive, Waimano Home Road becomes a two-lane city road with one lane heading mauka and one lane heading makai.

The 242-acre State-owned Waimano ridge property actually begins near the intersection of Waimano Road and Ho‘okiekie Street. Ho‘okiekie Street is a two-lane minor collector that forms a “T”-intersection with Waimano Home Road, and provides access to the Pearl City High School and Momilani Elementary School. Mauka of Ho‘okiekie Street, Waimano Home Road abuts the subject parcel and provides public access to the Pearl City Cultural Center and Pearl City High School. A driveway from the high school campus connects to this portion of Waimano Home Road. Beyond the Pearl City Cultural Center, there is a guardhouse and gate, which controls access to the Waimano Home property. Past the guardhouse, the existing road is paved. An asphalt curb runs in sections along both sides of the road. A six-foot high chain link fence runs parallel to the road on the west.

Existing Peak Traffic Volumes

Existing peak hour traffic volumes and intersection levels of service (LOS) are shown in the TIR in Appendix G. The “Level of Service” concept describes traffic operating conditions. Six Levels of Service, ranging from “A” representing free flow and very little delay to “F” describing congested over-capacity conditions and very long delays. For peak hour conditions, LOS D or better are generally considered acceptable. However, especially at signalized intersections with long cycle lengths, delays in the LOS E or LOS F range are not unusual for turning movements that have relatively low volumes.

Existing peak hour volumes and intersection levels of service at the high school driveway are not in the acceptable range (see Table 3-6). However, these findings are not unusual for stopped traffic with high volumes of left turns at unsignalized intersections.

3.6.2 Project Impacts and Mitigation

Future Traffic Conditions

The TIR first estimated future traffic volumes and level of service without the project, in order to establish a baseline to evaluate the project traffic impacts. Other than the proposed project, there were no other specific development project identified that would change traffic volumes at any of the study intersections. However, the study applied a 2% growth factor over current conditions

to account for general future development in the area. The result was used as a baseline for future conditions with no development of the proposed project.

The “future with project” was then estimated by adding the projected traffic volumes to the future baseline (without project) condition. Trip rates from the widely-used *Trip Generation Manual* published by the Institute of Transportation Engineers were applied to the anticipated 262 employees to calculate the peak hour traffic impacts which were then assigned to the study area intersections. The TIR notes that the project impacts are less than 100 vehicles per hour and 3% of existing traffic volumes (indicators of significant traffic impact beyond the study area). This indicates that project traffic is not expected to have a significant impact on major roadway segments beyond the study area (i.e., roads to the east and west of Waimano Home Road).

The TIR in Appendix G shows the projected traffic counts at the study intersections for the various turning movements, and level of service (LOS) was calculated.

Table 3-6 below shows LOS at the major signalized intersections on Waimano Home Road under current, future baseline, and future with project conditions. These intersections occur between Kamehameha Highway and Komo Mai Drive. In general, although overall traffic volumes at these intersections will increase, LOS will remain unchanged, even with the project.

Table 3-7 shows LOS at two major unsignalized intersections near the project site--at the Pearl City High School driveway near the Pearl City Cultural Center, and at Ho‘okiekie Street, the primary access to the high school and Momilani Elementary School. The analysis shows that the increased traffic entering the project site will reduce the opportunities available for the high volume of left turns from the Pearl City High School driveway onto Waimano Home Road. At this driveway, the delay for drivers turning left onto Waimano Home Road will increase from 36.1 seconds to 69.7 seconds, changing the future level of service from “E” to “F” with demand exceeding capacity by 2%.

Higher traffic volumes on Waimano Home Road due to the project also affect vehicles on Ho‘okiekie Street waiting to turn left onto Waimano Home Road. Although the LOS does not change (i.e., it remains at “F”), the average delay for the stopped traffic on the westbound approach will increase from 55.5 seconds to 98.2 seconds.

Table 3-6: Level of Service (LOS) Analysis for Signalized Intersections

	Current (per 2013 field counts)	Future Baseline (without project)	Future with Project
Waimano Home			
Road and:			
<i>Komo Mai Drive</i>			
AM	D	D	D
PM	C	C	C
<i>Noelani Street</i>			
AM	C	C	C
PM	C	C	C
<i>Kuala Street/ Moanalua Road</i>			
AM	D	D	D
PM	D	D	D
<i>Kamehameha Hwy</i>			
AM	E	E	E
PM	E	E	E

Source: Julian Ng Inc., 2013

Criteria for Signalized Intersections	
	Average Delay (seconds per vehicle)
LOS A: Little or no delay	≤ 10
LOS B: Short traffic delays	≥10 and ≤20
LOS C: Average traffic delays	≥20 and ≤35
LOS D: Long traffic delays	≥35 and ≤55
LOS E: Very long traffic delays	≥55 and ≤80
LOS F: Very long traffic delays	> 80

Table 3-7: Level of Service (LOS) Analysis for Unsignalized Intersections

	Current (per 2013 field counts)	Future Baseline (without project)	Future with Project
Waimano Home			
Road and:			
<i>Pearl City High School (westbound driveway)</i>			
AM	E	E	F
AS (after school)	B	B	B
PM	A	A	B
<i>Ho'okiekie Street (westbound approach)</i>			
AM	F	F	F
AS(after school)	B	B	B
PM	B	B	B

Source: Julian Ng Inc., 2013

Criteria for Unsignalized Intersections	
	Average Delay (seconds per vehicle)
LOS A: Little or no delay	≤ 10
LOS B: Short traffic delays	≥10 and ≤15
LOS C: Average traffic delays	≥15 and ≤25
LOS D: Long traffic delays	≥25 and ≤35
LOS E: Very long traffic delays	≥35 and ≤55
LOS F: Very long traffic delays	> 55

Traffic Mitigation

While the analyses found that levels of service are not changed with the addition of project traffic, the poor conditions (Level of Service F) for left turns from Ho'okie Street to Waimano Home Road in the AM Peak Hour (identified as 7:00 AM to 8:00 AM) will be worsened, as average delays for the affected drivers will increase. In review of the traffic count data, the assumptions regarding the added traffic due to the project, and the results of the analyses, one mitigation measure that was identified to reduce the average delays is the successful discouragement of new traffic during the peak 15-minute period (7:30 AM to 7:45 AM).

This mitigation measure will have similar effects at the high school driveway, where conditions during the AM peak period could result in drivers on Waimano Home Road yielding to the much heavier driveway traffic. The intersection formed by the driveway and Waimano Home Road would operate much like an all-way stop, in which case the average delays were found to be similar to those encountered by exiting drivers if under normal stop operation.

Traffic Demand Management (TDM) strategies, therefore, could reduce and minimize the traffic impact of the new facilities. TDM strategies are intended to encourage employees to find alternatives to single occupancy vehicles, including the use of transit, carpooling, vanpooling, walking, and bicycling. TDM also includes work management options such as telecommuting, compressed work weeks, and flex time. For example, one option is to institute an earlier (before 7:00 AM) or later (after 8:00 AM) start time for employees, to minimize conflicts with the existing school-related traffic on Waimano Home Road.

While some of these alternatives may not be applicable due to the remote location, carpooling and vanpooling are good candidates for successful implementation (for the same reason). The employer (DOH) could assist in matching employees who may be interested in utilizing these options.

Other Transportation Impacts

Parking demand generated by the proposed project will be provided on-site. If the parking is not adequate, there are other areas within the site that could be used for parking. All new employees who will be driving to work should be provided with parking passes to mitigate parking alongside Waimano Home Road outside of the security gate.

Public bus service provided by the City's TheBus system is available in the area. Route 73 (Pearl City Uplands) travels on Waimano Home Road with a bus terminus located near the security gate. The distance between that bus stop and Uluapuku is nearly a half-mile, and the distance to the Hale Ola building is approximately 0.8 mile. These walking distances are likely to be a deterrent to potential bus commuters. Morning and afternoon shuttle service or some type of ride sharing arrangement from the main gate should be investigated if there is significant transit demand. Extension of bus service into the secured Waimano Ridge property is also a possibility, but may raise security concerns. Public bus service on Route 73 during the day is one bus every 40 minutes. Other routes can be accessed via transfers. The relative infrequency of bus service is also likely to be a deterrent to bus commuting.

Construction period impacts on local traffic will occur. During renovation work and related construction of the proposed facilities, vehicles and construction equipment will travel to and from the site. Materials will be transported to the site using Waimano Home Road. Because Waimano Home Road is steep in some areas, trucks hauling supplies may cause some short term queuing in the mauka direction.

Impacts to parking and traffic during construction can be minimized by avoiding travel during the AM Peak Hour, when traffic volumes along Waimano Home Road are the highest and conditions the worst. Planned access for construction workers may include onsite parking or car pooling to the site from an off-site location (such as a contractor’s baseyard). Traffic due to construction activities will include increased truck traffic for delivery of construction materials and removal of debris, movement of construction equipment, and employee traffic. Managing the movement of construction material will help minimize traffic impacts due to construction. Traffic impacts during construction will be short-term and would occur primarily during non-peak traffic hours. The project contractor will apply for and obtain needed street use permits from the appropriate agencies.

3.7 PUBLIC SERVICES AND FACILITIES

3.7.1 Police, Fire and Emergency Services

Existing Conditions

Police, fire and emergency services are provided through the City and County of Honolulu. The project is within Honolulu Police Department’s Pearl City District 3. District 3 covers the area from Red Hill to Village Park and Waipahu and is divided into three sectors. Waimano Ridge falls within Sector 2. The Pearl City Police Station is located at 1100 Waimano Home Road near the intersection of Kamehameha Highway.

Pearl City Fire Station Number 20 is located at the intersection of Waimano Home Road and First Street, makai of the H-1 Freeway. This location is about 2 miles from the Waimano Ridge site. The City and County of Honolulu Department of Emergency Services provides emergency medical services on O‘ahu, including Waimano Ridge, which has 24-hour service coverage.

Impacts and Mitigation

The project will not have a long-term impact on the need for fire, police or emergency services, or on facilities or operations. During construction, there may be temporary traffic congestion in the project vicinity

An early consultation letter from the Honolulu Police Department dated April 30, 2013 states that this project should have no significant impact on the facilities or operations of the Honolulu Police Department.

An early consultation letter from the Honolulu Fire Department dated May 13, 2013 addressed the need for fire access roads and adequate water supply for fire fighting. During the design process, civil drawings will be submitted to the Honolulu Fire Department of review and approval.

3.7.2 Schools and Community Facilities

Existing Conditions

Pearl City High School and Momilani Elementary School are located near the makai boundary of the Waimano Ridge property, outside the fenced area. The Pearl City Cultural Center, is a 500-seat performing arts center managed by the Department of Education and is actually located within the Waimano Ridge property, but outside the secured/fenced area. The facility is built on DOH managed land.

Impacts and Mitigation

Construction activities associated with the renovation of the Waimano Ridge facilities will not cause noise or air quality impacts on the Pearl City Cultural Center or schools because of the distances from the project improvements. Construction activity will entail truck traffic associated with demolition and conveying building materials, and this traffic will cause some delays especially traveling in the mauka direction. However, this is temporary and will cease after construction is completed. This potential impact can be mitigated by scheduling transport of materials and equipment during off-peak hours.

A long-term impact to the nearby schools will be the additional vehicular traffic, especially during the morning peak as DOH employees and school traffic will occur at the same time. As discussed in Section 3.6 (Traffic), one mitigation is for the DOH to discourage its employees from arriving between 7:30 and 7:45 AM, the peak for school related traffic. Other mitigations include Traffic Demand Management (TDM) strategies, such as encouraging DOH employees to find alternative transportation such as transit, car and vanpooling, and use of telecommuting or flex time.

4 CONSISTENCY WITH EXISTING PLANS, POLICIES AND CONTROLS

4.1 STATE OF HAWAII

4.1.1 Hawaii State Plan

The 1996 Hawaii State Plan (Chapter 226, HRS) is the umbrella document in the statewide planning system. It serves as a written guide for the future long-range development of the state by describing a desired future for the residents of Hawaii and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

The project, to relocate DOH staff to Waimano Ridge, is consistent with the following State plan objectives and policies:

Facility systems-in general

(b)(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(b)(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

Discussion:

Relocating DOH staff to existing underutilized facilities would be prudent use of limited capital improvement funds. Adaptive re-use of existing facilities demonstrate flexibility in design and development of existing government owned assets.

Objectives and Policies for socio-cultural advancement -- health

(a)(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities

(b)(5) Provide programs, services and activities that ensure environmentally healthful and sanitary conditions.

(b)(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.

Discussion:

Relocating DOH staff to existing underutilized facilities would enable the department to achieve its overall mission of maintaining sanitary and environmentally healthful conditions, administer their programs to ensure environmentally healthful and sanitary conditions, and prevent environmental pollution through their education, monitoring and enforcement programs.

Objectives and Policies for socio-cultural advancement -- government

(b)(1) Provide for necessary public goods and services not assumed by the private sector

Discussion:

Protecting the State's public health and environment is a government service that is not provided by the private sector.

4.1.2 State Land Use Classification

The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS and Chapter 15-15, Hawai'i Administrative rules, is empowered to classify all lands in the State into one of four land use districts: urban, rural, agricultural and conservation. The entire Waimano Ridge property is divided into two districts: Urban and Conservation (Figure 15). The areas within the Urban District are the flatter, more developable areas of the site, and include Waimano Home Road and all existing buildings, including the project areas. Areas of the property that are in the Conservation District are steeply sloping or are located mauka of Waimano Home Road. These areas do not contain any existing buildings.

4.2 CITY AND COUNTY OF HONOLULU

4.2.1 County General Plan

General Plan Objectives and Policies

The project is in conformance with the following policies and guidelines of the City and County of Honolulu's *1992 General Plan Objectives and Policies, as Amended October 3, 2002 by Resolution 02-205, CDI*. The 1992 General Plan, as amended, is currently being updated. The plan is a statement of the long-rang social, economic, environmental and design objectives for the general welfare and prosperity of the people of O'ahu. The Plan is also a statement of broad policies that facilitate the attainment of the Plan objectives. The General Plan addresses eleven subject areas, which include population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and government operations and fiscal management.

Chapter VII, Physical Development and Urban Design

Objective A: To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy 1: Plan for the construction of new public facilities and utilities in the various parts of the island according to the following order of priority: first, in the primary urban center, second, in the secondary urban center at Kapolei; and third, in the urban-fringe and rural areas.

Policy 5: Provide for compact development and intensive use of urban lands where compatible with the physical and social character of existing uses.

Policy 6: Encourage the clustering of developments to reduce the cost of providing utilities and other services.

Policy 7: Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities.

Policy 9: Exclude from residential areas, uses, which are major sources of noise and air pollution.

Discussion:

Relocating DOH staff to Waimano Ridge entails renovation of existing public facilities within the primary urban center. Waimano Ridge is an existing State-owned property under the control of the Department of Health. The property was at one time fully utilized as a public institution, a use that was established in 1919 by the Territorial Government. Active use of the property predates development of the surrounding residential areas, which in subsequent years have encroached further mauka, closer to the subject property. There is existing utility service that is adequate to support the proposed uses.

Relocating government offices to Waimano Ridge is not a new industry or commercial use. Rather, it resumes a public use on a government-owned site, providing public services that will benefit the entire State. The proposed offices will not generate noise and air pollution in their day to day operations. There may be a slight increase in noise and air pollution in the immediate area due to vehicular traffic. There will be an increase in vehicle traffic to and from the site during the morning and afternoon peak hours due to commuting employees, and during the day due to employee and customer trips. An increase in employee and customer traffic would occur no matter where the DOH employees were relocated.

Objective C: To develop a secondary urban center in Ewa with its nucleus in the Kapolei area.

Policy 2: Encourage the development of a major residential, commercial and employment center within the secondary urban center of Kapolei.

Discussion:

There are approximately 262 DOH employees in the AAFES building who will be displaced. There are no government offices available in Kapolei to relocate this number of employees. The existing State office building in Kapolei is fully occupied by other branches of State government, and the State did not exercise any options for additional real estate in Kapolei.

Chapter VIII, Public Safety

Objective B: To protect the people of O‘ahu and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions

Policy 9: Design safe and secure public buildings.

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

Discussion:

The mission of the Department of Health is to protect and improve the health and environment for all people in Hawai'i. The structures to be renovated will be fully modernized and brought up to code. As the overarching government entity, the state Department of Health assists the City and County in enforcing county level safety regulations and programs.

Chapter IX, Health and Education

Objective A: To protect the health of the people of O'ahu

Policy 1: Encourage the provision of health-care facilities that are accessible to both employment and residential centers.

Policy 3: Coordinate City and County health codes and other regulations with State and Federal health codes to facilitate the enforcement of air-, water-, and noise-pollution controls.

Discussion:

The mission of the Department of Health is to protect and improve the health and environment for all people in Hawai'i. Part of this mission is to provide accessible health care facilities and to coordinate with the City and County to enforce air, water and noise pollution controls. The project directly supports these objectives, by providing office and support space for DOH personnel who carry out this mission. Without the project, State programs protecting public health would be severely disrupted, DOH staff would be scattered in various locations wherever relocation space could be found, and the ability to meet the department's mission would be compromised.

Chapter X, Culture and Recreation

Objective B: To protect O'ahu's cultural, historic, architectural, and archaeological resources.

Policy 2: Identify, and to the extent possible, preserve and restore buildings, sites and areas of social, cultural, historic, architectural, and archaeological significance.

Policy 6: Provide incentives for the restoration, preservation, and maintenance of social, cultural, historic, architectural, and archaeological resources.

Discussion:

Two structures, Hale Ola (the hospital building) and the Kitchen and Dining building, are over 50 years old and their historic significance was evaluated. Hale Ola was determined to be eligible for listing on the National Register of Historic Places and found to possess the integrity required for eligibility. Most of the proposed improvements will have no adverse effect on this historic property. Possible adverse effects due to required modification of the original windows will be discussed further with the SHPD. Appropriate mitigation measures will be developed. The only potential adverse effect associated with renovation of the Kitchen and Dining building is associated with the removal of the original tiles. This will be mitigated by salvaging the tiles for reuse elsewhere.

4.2.2 Primary Urban Center Development Plan (DP)

The City and County of Honolulu’s Development Plan (DP) program provides a relatively detailed framework for implementing General Plan objectives and policies for the growth and development of O‘ahu at a regional level.

The project site is located in the Primary Urban Center (PUC) Development Plan, adopted in June 2004, encompasses the southern shore of O‘ahu from Waialae-Kahala to Pearl City and mauka to the westerly slopes of the Ko‘olau mountain range. The PUC Development Plan Land Use Map, shown in Figure 16, designates the Waimano Ridge parcel blue, a designation for civic centers and major institutional campuses including public and private secondary schools, colleges, hospitals and other large institutions. The proposed use is consistent with this designation.

The PUC DP Section 3.4.1.3, *Technology, Businesses, Office Facilities*, notes that between 1975 and 1995, Honolulu added new office buildings totaling over four million square feet of rentable space. With the economic slowdown between 1990 and 2000, there was a surplus of office space through the 1990s. The projected increases in office employment for the next 20-25 years, projected a demand for only an additional 1.2 million square feet of floor area. The PUC DP noted that the existing supply of vacant and underutilized land zoned for business use – principally in Kaka‘ako, Downtown, and other parts of central Honolulu – will be more than sufficient to meet future needs.

Although Kaka‘ako, Downtown and other parts of central Honolulu have a surplus of privately owned office space and underutilized privately owned land zone for business, the availability of State-owned office buildings and state owned land is virtually nonexistent. According to DAGS, all state-owned offices under their purview are fully occupied. Additionally, there are no vacant lands under the management of DAGS that could be developed as offices for DOH staff relocation.

The PUC DP Section 4.8 *Civic and Public Safety Facilities*, mentions a long-term DAGS proposal to develop a site in Liliha as a one-stop regional service center. This facility would consolidate various State agencies that offer social services and business assistance, collect fees and taxes, and issue licenses and registrations. Although it has been on the books for decades, the State has been unable to obtain funding for this multi-million dollar project. Given the current economic conditions, there is little chance that this project would be developed in time to provide replacement office space for the AAFES tenants.

4.2.3 County Zoning

The City and County of Honolulu’s Land Use Ordinance (LUO) (Section 21, ROH) is its zoning ordinance, which regulates land use in a manner that will encourage orderly development in accordance with adopted land use policies.

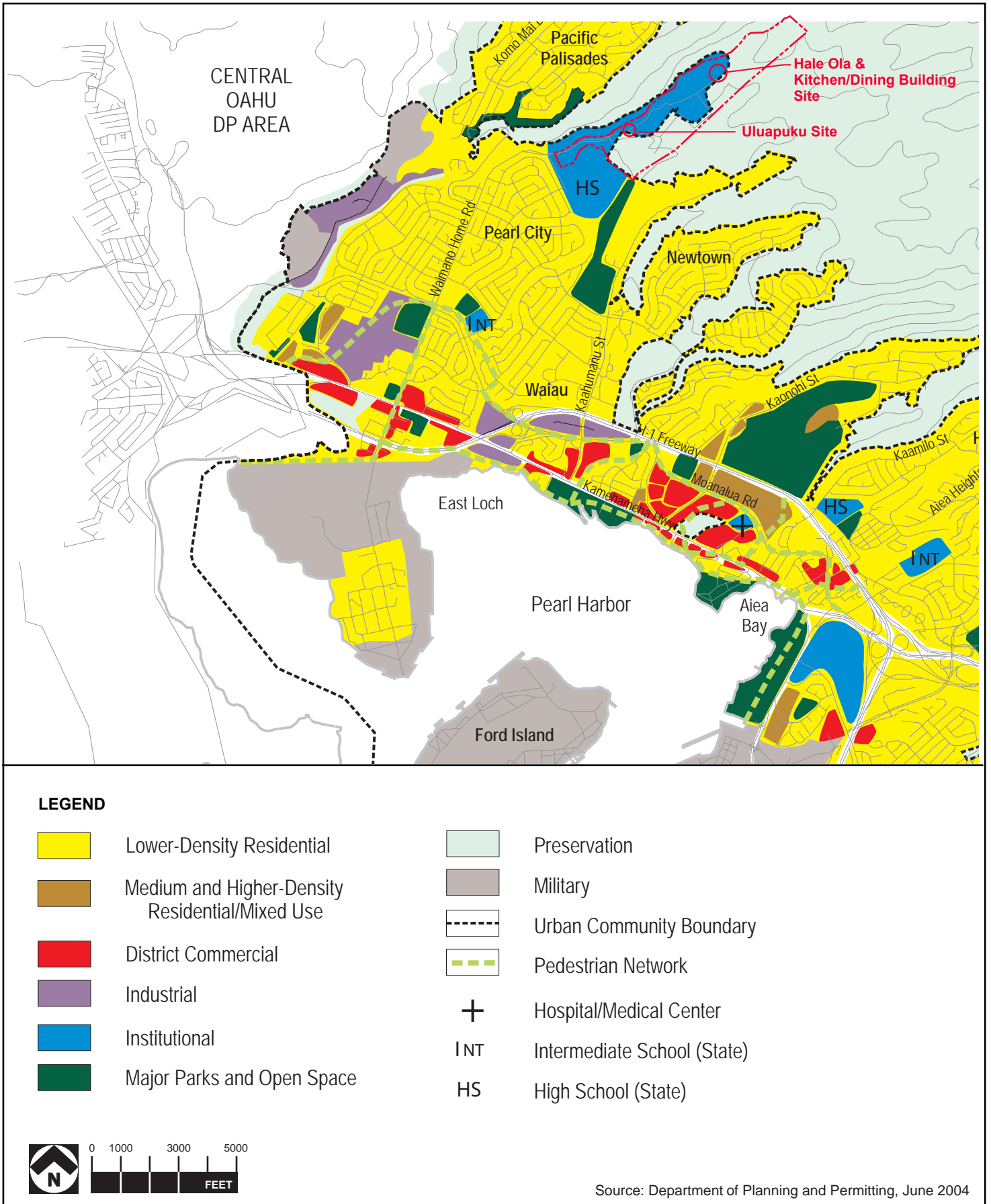


Figure 16
PRIMARY URBAN CENTER DEVELOPMENT PLAN LAND USE

As shown in Figure 17, the areas occupied by the buildings to be renovated fall within the R-5 residential zone. The R-5 residential zone is intended for residential dwellings with a minimum lot size of 5,000 square feet with building heights of 25 feet. As a State-run facility, Waimano Home Training School and Hospital falls into the use category of “Public uses and structures”, and as such is a permitted use in all zoning districts.

If the proposed renovations exceed any of the residential district development standards (height, building area, yard/height setbacks, parking, etc.), as a Public Use/Structure the DOH may apply for a Zoning Waiver (LUO Section 21-2.130).

Portions of the Hale Ola Hospital building are greater than 25 feet in height, exceeding the applicable height standards for a R-5 residential district. However, because the structure was legally established (i.e., authorized with a valid building permit), it is “grandfathered” and considered a “non conforming structure.” Nonconforming structures are defined in Article 10 of the LUO, and are governed under LUO Section 21-4.110(b). A nonconforming structure may be repaired, expanded or altered in any manner that does not increase its nonconformity, and provided that work is limited to ordinary repairs. The proposed renovation of Hale Ola will not involve a building expansion, height increase or change in setbacks. As such, no zoning waivers are anticipated.

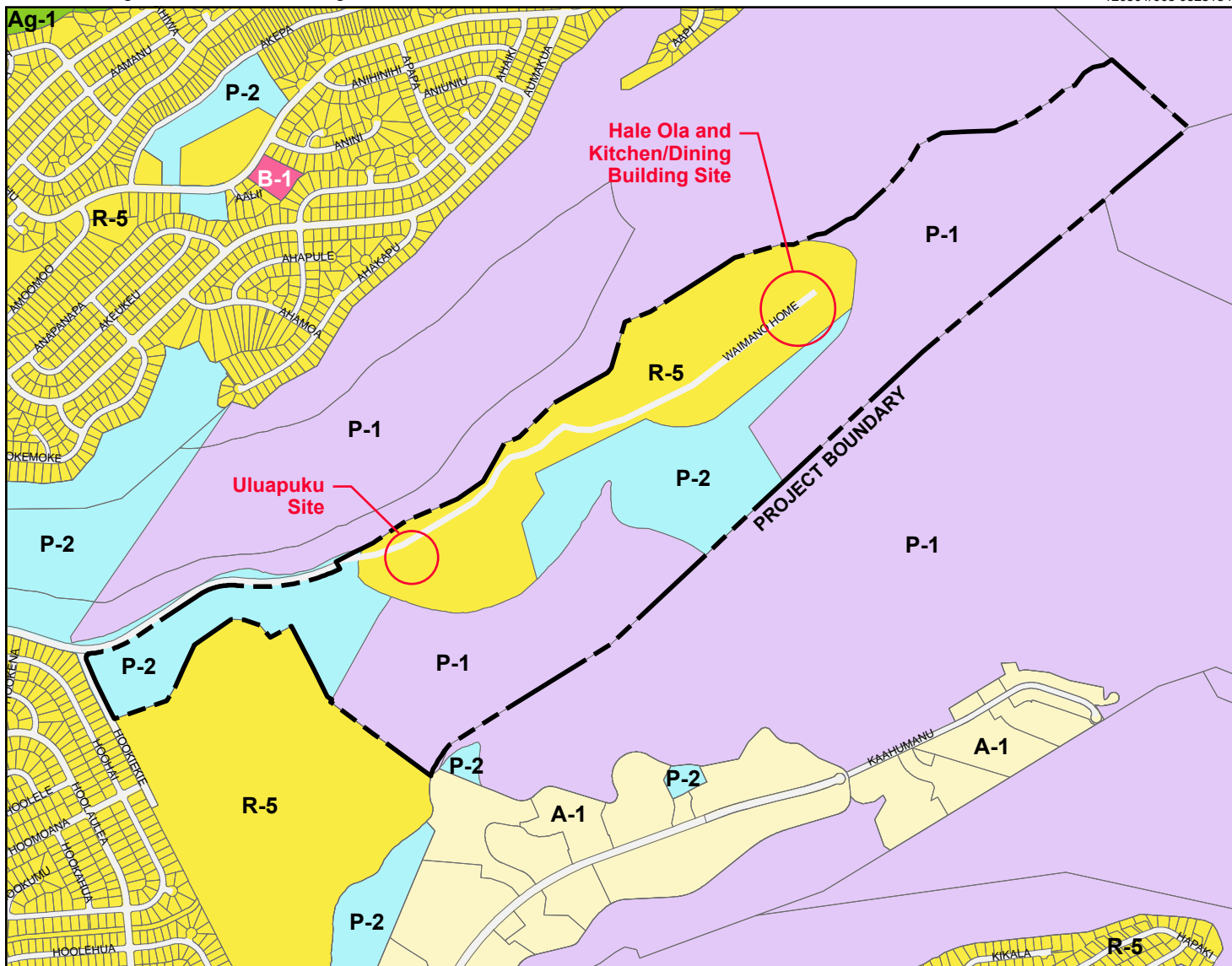
4.3 OTHER CONSIDERATIONS

4.3.1 Unavoidable Adverse Effects






In the short-term, the project will have temporary construction-related impacts such as noise and dust. These impacts will be temporary, and are not expected to impact the nearby Pearl City Cultural Center, Pearl City High School or Momilani Elementary School because of their distance from the construction area. There will be increased traffic using Waimano Home Road both during construction and in the long term with the additional staff. Congestion in neighborhood streets of the surrounding community is not expected because adequate parking will be provided on-site for employees and visitors. All potential environmental impacts discussed in Chapter 3 can either be avoided or mitigated to an extent that they would not be significant.

4.3.2 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures

The proposed renovation work for the three structures will be modernized with state of the art, energy efficient HVAC systems and water saving plumbing fixtures.



LEGEND

-  Ag-1 Restricted
-  B-1 Neighborhood Business
-  P-1 Restricted
-  P-2 General
-  R-5 Residential

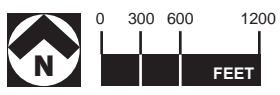


Figure 17
ZONING MAP

4.3.3 Relationship of Short-Term Uses and Long-Term Productivity

The improvements will require a commitment of public construction funds. However, the short-term effects are minor when compared to the long-term benefit of using an underutilized government owned asset and providing staff offices from which to meet their public health mission. Its long-term productivity far outweighs the short-term tradeoffs.

4.3.4 Irretrievable and Irreversible Resource Commitments

Resources that are committed irreversibly or irretrievably are those that cannot be recovered if the project is implemented. The proposed project will involve the commitment of capital, labor, fuels and equipment. General industrial resources will be spent during project renovation and construction and for long-term operation and maintenance of the new offices. The Waimano Ridge property has already been developed and is configured for a large institutional or public use. The project will involve adaptive re-use of existing structures on an underutilized state asset, which is a prudent use of resources.

5 ANTICIPATED DETERMINATION, FINDINGS AND REASONS SUPPORTING THE CHAPTER 343 HRS DETERMINATION

5.1 ANTICIPATED CHAPTER 343 HRS DETERMINATION

Based on the information and analysis in this Environmental Assessment, the State of Hawai'i Department of Accounting and General Services has determined that the project will not result in a significant impact on the environment. As such, it anticipates issuing a Finding of No Significant Impact (FONSI), pursuant to the State of Hawai'i HRS Chapter 343. An Environmental Impact Statement (EIS) is not required.

5.2 CHAPTER 343 HAWAII REVISÉD STATUTES (HRS) SIGNIFICANCE CRITERIA

In determining whether an action may have significant impact on the environment, the applicant or agency must consider all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. The State of Hawai'i Department of Health Rules Section 11-200-12 (Hawai'i Administrative Rules, revised 1996) establish 13 "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur.

An agency will determine an action may have a significant impact on the environment if it meets any of the following criteria:

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

The project will not result in an irrevocable commitment to loss or destruction of any natural or cultural resources. The project site is dominated by introduced plant and animal species. The site does not provide unique habitat and no candidate, proposed, or listed threatened or endangered species will be disturbed. The proposed project is limited to renovating three existing buildings and constructing new parking lots on sites previously occupied by structures associated with the Waimano Home. The hospital building and kitchen and dining building are over 50 years old and subject to historic architectural review. An historic architecture assessment found that Hale Ola is eligible for listing on the National Register of Historic Places. The Kitchen and Dining building is eligible for listing as a support structure to the Hale Ola building. Potential adverse impacts to the historic character associated with interior renovation will be mitigated. Architectural plans are being coordinated with the State Historic Preservation Division (SHPD).

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

The proposed project does not curtail the range of beneficial uses of the environment. The renovated offices will be constructed on State-owned land under the management of the Department of Health. The site has been used by the State since the 1920s for public purposes and proposed DOH offices are compatible with surrounding land uses. Converting the site to other uses could pose a conflict with existing uses, such as the DOH Laboratories. The proposed project is a beneficial use of the environment.

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

The proposed project is consistent with the environmental policies in Chapter 344, HRS, which establishes a state policy to “Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State’s unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic and other requirement of the people of Hawai‘i” [§344-3(1)].

The offices and programs that are being relocated to Waimano Ridge are part of the Department of Health’s Environmental Health division. These offices are directly responsible to maintain clean air, clean water, safe drinking water, and wastewater, solid and hazardous waste management. Their personnel are on the front line controlling pollution and safeguarding the State’s natural environment on a daily basis. The proposed project will allow these programs and personnel to continue to operate without disruption. Using State-owned land and buildings that are currently underutilized is also an efficient and cost effective use of public assets. It consolidates these offices and personnel in an already developed area, and does not contribute to urban sprawl.

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

The renovation of the existing Waimano Ridge structures and relocation of DOH staff will have a long-term positive impact on the economic and social welfare of the community. Without the project, the State’s environmental health and environmental protection mission would be severely disrupted. The project allows this function to continue. Of all the alternatives considered, the proposed project represents the most expedient and cost effective solution for the State government and Hawai‘i taxpayers, because it uses State-owned assets and structures. The project will not have an adverse impact to the surrounding Pearl City community. Construction will have minor, short- and long-term traffic impacts. The relocation of up to 262 employees to the site will increase traffic along Waimano Home Road and around Momilani Elementary School and Pearl City High School, particularly during the morning peak period. Traffic demand management strategies will be explored to mitigate these impacts. The traffic impacts are far outweighed by the project’s overall and long-term benefits.

5. Substantially affects public health;

The DOH offices and branches that will be relocating to Waimano Ridge are responsible for maintaining a healthy environment throughout the State of Hawai‘i. By allowing these offices to continue operation, the project will have a substantial, long-term positive impact on public health.

During renovation of the buildings, there will be temporary construction-period noise and dust impacts that have the potential to have a negative health impact. However, these effects will be minor and short-term, and are insignificant when weighed against the project's overall, long-term positive impacts.

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

The staff relocation will not induce secondary impacts such as population changes or effects on other public facilities. Occupants of the renovated buildings are existing State employees, and no population changes are anticipated.

7. Involves a substantial degradation of environmental quality;

Construction period impacts related to noise and air quality will be temporary and short-term. Mitigation measures will include dust barriers around the construction area, equipment noise attenuation, and use of best management practices to control erosion and runoff. There will not be any long-term degradation of environmental quality associated with operation of these renovated facilities.

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

The proposed project is limited to renovation of three existing buildings that will be staffed by personnel that are responsible for safeguarding the health and welfare of the entire State. It does not have a cumulative effect or commitment for larger action.

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

No rare, threatened or endangered species or its habitat will be impacted by the project. Plant and animals found at the site are introduced species, and there are no significant biological resources.

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

The project will result in short-term construction period increases in fugitive dust and noise which will be confined to the immediate area surrounding structures to be renovated. Other facilities such as the Pearl City Cultural Center and Pearl City High School and Momilani Elementary School are far away from construction sites. There will be no long term impacts to air, water quality or noise.

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

The project site is not within any environmentally sensitive area. The Waimano Ridge property has been used for public purposes since the 1920s. Project improvements will be limited to the

flat, previous developed areas of the property. Steeper areas along the sides of the ridge and undeveloped areas mauka of the hospital building will not be disturbed.

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

The proposed project is not within any scenic vistas or viewplanes identified in county or state plans or studies. Improvements will be limited to existing buildings and will not obstruct to alter public views.

13. Requires substantial energy consumption.

The newly renovated DOH offices will not require substantial energy consumption. Energy resources will be consumed during project construction. Renovated buildings will have energy efficient HVAC systems and upgraded electrical and water systems. Energy consumption would be similar regardless of where the DOH offices are located. Because the Waimano Ridge site is located further from downtown Honolulu than the current office, there may be additional energy consumption associated with commuting employees.

6 REFERENCES

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http://www.historichawaii.org/MostEndangered/2009_HMEP/WaimanoRidge.html

7 PERSONS AND AGENCIES INVOLVED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

7.1 AGENCIES AND ORGANIZATIONS CONSULTED

The following agencies and organizations were contacted during the early consultation for the Draft EA. The comments received during the early consultation are summarized in Section 7.2 and copies of the letters are included at the end of this chapter.

State

Department of Agriculture

Department of Business, Economic Development & Tourism, Office of Planning

Department of Hawaiian Home Lands

Department of Land and Natural Resources

- Land Division
- State Historic Preservation Division

Department of Education

- Planning Section
- Pearl City High School
- Momilani Elementary School

Department of Health

- Environmental Planning Office
- Office of Environmental Quality Control

Office of Hawaiian Affairs

Department of Public Safety

Department of Transportation

University of Hawaii Environmental Center

City and County of Honolulu

Department of Design and Construction

Economic Development Office

Department of Environmental Services

Department of Facility Maintenance

Fire Department

Department of Planning & Permitting

Department of Parks and Recreation

Police Department

Department of Transportation Services

Board of Water Supply

Other Organizations

Pearl City Neighborhood Board
Hawaiian Electric Company
Hawaiian TelCom
Oceanic Time Warner Cable

Elected Officials

City Councilmember Breene Harimoto, Honolulu City Council District 8
Senator David Ige, Senatorial District 16
Senator Clarence Nishihara, Senatorial District 17
Representative Gregg Takayama, Representative District 34
Representative Roy Takumi, Representative District 35

7.2 COMMENTS RECEIVED DURING PRE-ASSESSMENT CONSULTATION

Letters soliciting comments were sent to the agencies and organizations listed above in April 2013, and a total of 14 written responses were received. A summary of the comments is included in the table below, and copies of the letters are included at the end of this chapter.

Table 7-1: Summary of Comments Received During Pre-Assessment Consultation

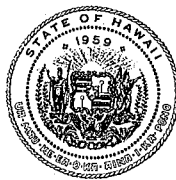
<u>Agency or Individual</u>	<u>Format/Date/Reference</u>	<u>Comments</u>	<u>Action/Response</u>
State of Hawaii			
Department of Hawaiian Home Lands	Letter dated May 13, 2013	No comments to offer at this time.	None required.
Department of Health	Letter dated April 24, 2013	Review Standard Comments on DOH website and apply strategies to protect environment and build sustainable communities.	Will comply, discussed in EA.
Department of Land & Natural Resources, Land Division	Letter dated May 14, 2013	Land Division —subject property encumbered by Governor’s Executive Order No. 1020 for Waimano Home purposes and proposed uses requires amendment subject to Land Board Approval. Engineering Division —project site located in FIRM Zone D, Include water demands and infrastructure required to meet project needs. Projects within State lands requiring water service from BWS need to pay	Discussed in EA.

Agency or Individual	Format/Date/Reference	Comments	Action/Response
		resource development charge in addition to Water Facilities Charges for transmission and daily storage <i>Office of Conservation and Coastal Lands</i> – project is within Urban District	
Department of Transportation	Letter dated May 8, 2013	Project not anticipated to have significant impact on State highway facilities in area, but DEA should discuss cumulative impacts to State highway facilities..	Traffic impact addressed in traffic study and discussed in DEA.
City & County of Honolulu			
Dept. of Design and Construction	Letter dated April 30, 2013	No comments	No action required.
Dept. of Environmental Services	Letter dated May 3, 2013	No comment or objections. Will not need to review future submittals and can be removed from distribution.	No action required. Remove from mailing list.
Department of Facility Maintenance	Letter dated May 3, 2013	No comments.	No action required.
Honolulu Fire Department	Letter dated May 13, 2013	Provide fire access roads and water supply for fire flow as required. Submit civil drawings to HFD for review and approval.	Will comply.
Dept. of Parks & Recreation	Letter dated May 3, 2013	No comment. Project will not impact any DPR program or facility. You may remove us as consulted party.	No action required. Remove from mailing list.
Department of Planning & Permitting	Letter dated May 31, 2013	Discuss consistency with General Plan, compare alternative locations relative to GP policy statements; Primary Urban Center Development Plan, discuss relocation options in Downtown Honolulu or Kapolei; Include traffic impact analysis.	Discussed in EA.
Police Department	Letter dated April 30, 2013	Project should have no significant impact on HPD	Discussed in EA.

Agency or Individual	Format/Date/Reference	Comments	Action/Response
		facilities or operations.	
Dept. of Transportation Services	Letter dated May 6, 2013	Discuss possible traffic and parking impacts on surrounding City roadways including short-term impacts during construction and mitigation measures; apprise Neighborhood Board, residents, businesses of impacts on local streets during construction.	Added information to EA. Will comply.
Board of Water Supply	Letter dated May 2, 2013	Water service should be provided by State's private water system.	Water system discussed in EA.
State Representative Gregg Takayama, State Representative District 34	Letter dated April 22, 2013	Concerned about impact to already congested traffic associated with Pearl City High School and Momilani Elementary. Traffic study should be conducted.	Discussed in EA and traffic study.

Comments Received During Pre-Assessment Consultation

NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAII



JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

DARRELL T. YOUNG
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

May 13, 2013

RECEIVED MAY 15 2013

Kimura International
Attn: Mr. Glenn T. Kimura, President
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: State of Hawaii, Department of Health
Waimano Ridge "AAFES" Building Staff Relocation
DAGS Job. No. 12-20-2680
Environmental Assessment-Pre-Assessment Consultation

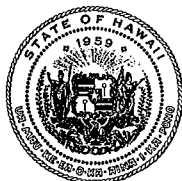
Thank you for the opportunity to comment on the Environmental Assessment-Pre-Assessment Consultation. The Department of Hawaiian Home Lands has no comment to offer at this time.

Should you have any questions, you may reach us at (808) 620-9480.

Aloha,

A handwritten signature in black ink, appearing to read "Darrell C. Yagodich".

Darrell C. Yagodich,
Planning Program Manager



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

In reply, please refer to:
File:

13-001348
EPO13-089

April 24, 2013

RECEIVED MAY 01 2013

Mr. Glenn T. Kimura, President
Kimura International
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

SUBJECT: State of Hawaii, Department of Health
WAIMANO RIDGE "AAFES" BUILDING STAFF RELOCATION
DAGS Job. No. 12-20-2680, Environmental Assessment--Pre-Assessment Consultation

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter dated April 16, 2013. Thank you for allowing us to review and comment on the subject document. EPO recommends that you review the Standard Comments (www.hawaii.gov/health/epo under the land use tab). You are required to adhere to all Standard Comments specifically applicable to this application.

EPO suggests that you examine the many sources available on strategies to support the sustainable design of communities, including the:

- U.S. Environmental Protection Agency's report, "Creating Equitable, Health and Sustainable Communities: Strategies for Advancing Smart Growth, Environmental Justice, and Equitable Development" (Feb. 2013), <http://www.epa.gov/smartgrowth/pdf/equitable-dev/equitable-development-report-508-011713b.pdf>;
- U.S. Environmental Protection Agency's sustainability programs: www.epa.gov/sustainability;
- U.S. Green Building Council's LEED program: www.new.usgbc.org/leed; and
- World Health Organization, www.who.int/hia.

The DOH encourages everyone to apply these sustainability strategies and principles early in the planning and review of projects. We also request that for future projects you consider conducting a Health Impact Assessment (HIA). More information is available at www.cdc.gov/healthyplaces/hia.htm. We request you share all of this information with others to increase community awareness on sustainable, innovative, inspirational, and healthy community design.

We request a written response confirming receipt of this letter and any other letters you receive from DOH in regards to this submission. You may mail your response to: Environmental Planning Office, 919 Ala Moana Blvd., Ste. 312, Honolulu, Hawaii 96814. However, we would prefer an email submission to epo@doh.hawaii.gov. We anticipate that our letter(s) and your response(s) will be included in the final document. If you have any questions, please contact Ms. Laura McIntyre, of our Environmental Planning Office at (808) 586-4337.

Sincerely,

A handwritten signature in black ink, appearing to read "Loretta J. Fuddy".

Loretta J. Fuddy, A.C.S.W., M.P.H.
Director of Health

Promoting Lifelong Health & Wellness

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 14, 2013

Kimura International Inc.
Attention: Mr. Glenn T. Kimura
1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814

via email: lkurisaki@kimurainternational.com

Dear Mr. Kimura,

SUBJECT: State of Hawaii, Department of Health, Waimano Ridge "AAFES" Building Staff Relocation, DAGS Job No. 12-20-2680; Environmental Assessment – Pre-Assessment Consultation

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

At this time, enclosed are comments from (1) Land Division – Oahu District; (2) Engineering Division; and (3) Office of Conservation and Coastal Lands. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 22, 2013

MEMORANDUM

TO: *RL*

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- ~~Land Division~~ ~~Oahu District~~
- Historic Preservation

FROM: *To*

Russell Y. Tsuji, Land Administrator
State of Hawaii, Department of Health, Waimano Ridge "AAFES" Building Staff
Relocation, DAGS Job. No. 12-20-2680; Environmental Assessment – Pre-
Assessment Consultation

LOCATION:

Waimano Ridge, former Waimano Training School and Hospital, Tax Map Key: 9-
7-025:001

APPLICANT:

State Department of Accounting and General Services, on behalf of the State of
Hawaii, Department of Health, by Kimura International, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by May 13, 2013. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Barry Chang*
Print Name: Barry Chang
Date: 4/29/13

c: Central Files

Comments: The subject property is encumbered by Governor's Executive Order No. 1020 for Waimano Home purposes. The proposed uses described herein will require an amendment to the purposes, subject to the Land Board approval.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 22, 2013

MEMORANDUM

RECEIVED
LAND DIVISION
2013 APR 30 PM 3:23
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

TO: FR:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- ~~Engineering Division~~
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Oahu District
- Historic Preservation

TO:
FROM:
SUBJECT:

Russell Y. Tsuji, Land Administrator
State of Hawaii, Department of Health, Waimano Ridge "AAFES" Building Staff
Relocation, DAGS Job. No. 12-20-2680; Environmental Assessment - Pre-
Assessment Consultation

LOCATION: Waimano Ridge, former Waimano Training School and Hospital, Tax Map Key: 9-7-025:001

APPLICANT: State Department of Accounting and General Services, on behalf of the State of Hawaii, Department of Health, by Kimura International, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by May 13, 2013. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

- () We have no objections.
- () We have no comments.
- (/) Comments are attached.

Signed: _____
Print Name: Guo S. Cheng, Chief Engineer
Date: 4/20/13

c: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/ Russell Y. Tsuji

**REF: State of Hawaii, DOH Waimano Ridge Army and Air Force Exchange Services (AAFES)
Building Staff Relocation
Oahu 012**

COMMENTS

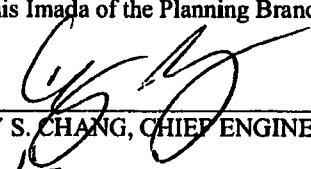
- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone D, an area where flood hazards are undetermined.**
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Shaw-Kim at (808) 768-8296 of the City and County of Honolulu, Department of Planning and Permitting.
 - () Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
 - () Mr. Carolyn Cortez at (808) 270-7813 of the County of Maui, Department of Planning.
 - () Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.
- (X) **The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.**
 - () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
 - () Additional Comments: _____

 - () Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: 4/26/13

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2013 APR 23 A 10:12

STATE OF HAWAII

April 22, 2013

MEMORANDUM

FROM:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- ~~Office of Conservation & Coastal Lands~~
- Land Division - Oahu District
- Historic Preservation

RECEIVED
LAND DIVISION
2013 MAY -3 AM 6:43
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

TO:

SUBJECT:

Russell Y. Tsuji, Land Administrator
State of Hawaii, Department of Health, Waimano Ridge "AAFES" Building Staff
Relocation, DAGS Job. No. 12-20-2680; Environmental Assessment - Pre-
Assessment Consultation

LOCATION:

Waimano Ridge, former Waimano Training School and Hospital, Tax Map Key: 9-
7-025:001

APPLICANT:

State Department of Accounting and General Services, on behalf of the State of
Hawaii, Department of Health, by Kimura International, Inc.

Transmitted for your review and comment on the above-referenced document. We would
appreciate your comments on this document.

Please submit any comments by May 13, 2013. If no response is received by this date, we will
assume your agency has no comments. If you have any questions about this request, please contact
Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

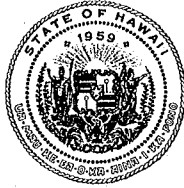
ACCORDING TO LUC
BOUNDARY INTERPRETATION
0A-00-26; THE PROPOSED
PROJECT IS LOCATED IN
URBAN DISTRICT.

c: Central Files

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:
Print Name: ALEX ROY
Date: 5/2/13

NEIL ABERCROMBIE
GOVERNOR



GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

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

IN REPLY REFER TO:

STP 8.1202

May 8, 2013

RECEIVED MAY 11 2013

Mr. Glenn T. Kimura, Ph.D.
President
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Waimano Ridge "AAFES" Building Staff Relocation
Pre-Consultation for Draft Environmental Assessment (DEA)
TMK: 9-7-025:001

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands the State Department of Health (DOH) proposes to renovate three existing buildings on Waimano Ridge in Pearl City and relocate approximately 266 DOH employees to this site. The project access is off Waimano Home Road.

While it's not anticipated that the proposed project will have a significant impact on the State highway facilities in the area, the DEA should discuss and evaluate the project's contribution to the cumulative traffic impacts on State highway facilities.

DOT appreciates the opportunity to provide comments. If there are any questions, including the need to meet with DOT staff, please contact Mr. Garrett Smith of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

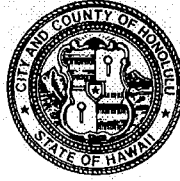
Very truly yours,


GLENN M. OKIMOTO, Ph.D.
Director of Transportation

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR



CHRIS T. TAKASHIGE, P.E., CCM
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

April 30, 2013

RECEIVED MAY 02 2013

Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Attn: Glenn T. Kimura


Dear Mr. Kimura:

Subject: State of Hawaii, Department of Health Waimano Ridge
"AAFES" Building Staff Relocation DAGS Job. No. 12-20-2680 Environmental
Assessment — Pre-Assessment Consultation

The Department of Design and Construction does not have any comments to offer on the preparation of the environmental assessment — pre-assessment.

Thank you for the opportunity to review and comment. Should there be any questions, please contact me at 768-8480.

Sincerely,

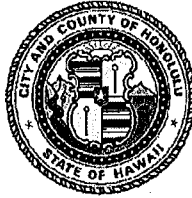

Chris T. Takashige, P.E., CCM
Director

CTT: cf (511061)

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 768-3486 • FAX: (808) 768-3487 • WEBSITE: <http://envhonolulu.org>

KIRK CALDWELL
MAYOR



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

TIMOTHY A. HOUGHTON
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO
PRO 13-032

May 3, 2013

RECEIVED MAY 04 2013

Mr. Glenn T. Kimura
Kimura International
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: State of Hawaii, Department of Health
Waimano Ridge "AAFES" Building Staff Relocation
DAGS Job. No. 12-20-2680
Environmental Assessment – Pre-Assessment Consultation

We have reviewed the subject report as transmitted to us by your letter dated April 16, 2013, and we have no comments or objections at this time.

We do not need to be included in the review of future submittals on this subject, and can be removed from your distribution.

Should you have any questions, please call Liz Lau, Civil Engineer, at 768-3470.

Sincerely,

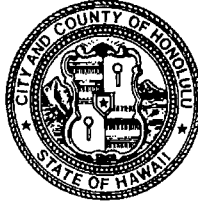
A handwritten signature in black ink, appearing to read "Lori", is written over a circular embossed seal. The signature is fluid and cursive.

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

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR



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

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 13-457

May 3, 2013

RECEIVED MAY 08 2013

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: State of Hawaii, Department of Health
Waimano Ridge "AAFES" Building Staff Relocation
DAGS, Job No. 12-20-2680
Environmental Assessment – Pre-Assessment Consultation

Thank you for the opportunity to review and comment on the subject project.
We have no comments at this time.

If you have any questions, please call Kyle Oyasato of the Division of Road
Maintenance, at 768-3697.

Sincerely,

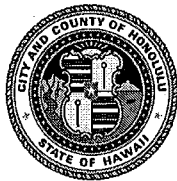
A handwritten signature in black ink, appearing to read "Ross S. Sasamura".

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

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

May 13, 2013

RECEIVED MAY 17 2013

Mr. Glenn Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Environmental Assessment
Preassessment Consultation
State of Hawaii, Department of Health
Waimano Ridge "AAFES" Building Staff Relocation
Tax Map Key: 9-7-025: 001
DAGS Job No. 12-20-2680

In response to your letter of April 16, 2013, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

1. 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 m) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; Uniform Fire Code [UFC]TM, 2006 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 ft (15 m) 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; UFCTM, 2006 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter

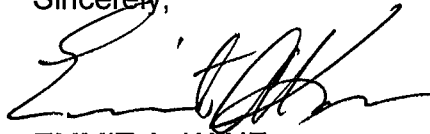
Mr. Glenn Kimura, President
Page 2
May 13, 2013

constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; UFCTM, 2006 Edition, Section 18.3.1, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151 or sbratakos@honolulu.gov.

Sincerely,



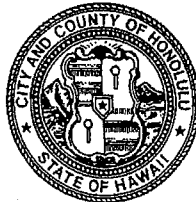
EMMIT A. KANE
Assistant Chief

EAK/SY:bh

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR



TONI P. ROBINSON
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

May 3, 2013

RECEIVED MAY 07 2013

Mr. Glenn Kimura
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814-8999

Dear Mr. Kimura:

Subject: Environmental Assessment-Pre-Assessment Consultation
Waimano Ridge "ASFES" Building Staff Relocation

Thank you for the opportunity to review and comment at the Pre-Assessment Consultation stage of the proposed State of Hawaii, Department of Health sponsored Waimano Ridge "AAFES" Building Staff Relocation project.

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

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

Sincerely,

A handwritten signature in black ink that reads "Toni P. Robinson".

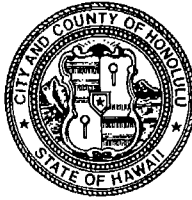
Toni P. Robinson
Director

TPR:jr
(511126)

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honolulu.gov • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR



GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2013/ELOG-776 (sl)

May 31, 2013

RECEIVED JUN 04 2013

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

SUBJECT: Waimano Ridge - AAFES Building Staff Relocation
Environmental Assessment - Pre-Assessment Consultation
State Department of Health
Tax Map Key: 9-7-025: 001

This is in response to your April 16, 2013 request for comments on the subject proposed relocation of 266 employees from the AAFES building in Kakaako to Waimano Ridge in Pearl City. The proposal is located on lands classified as State Land Use Urban District and zoned as R-5 Residential District. Please address the following in the Draft Environmental Assessment (EA):

Oahu General Plan. Discuss how the proposal is consistent with the General Plan. Also, consider including a comparison of the proposed Waimano Ridge site with alternative locations, relative to how well they conform to the following General Plan policy statements:

*VII. Physical Development and Urban Design
Objective A*

Policy 5 - Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.

Policy 6 - Encourage the clustering of developments to reduce the cost of providing utilities and other public services.

Policy 7 - Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities.

Mr. Glenn T. Kimura, President
Kimura International, Inc.
May 31, 2013
Page 2

Objective C

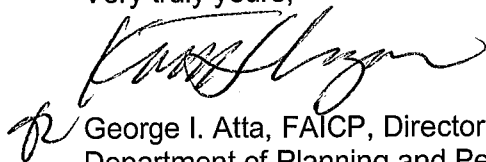
Policy 2 – Encourage the development of a major residential, commercial, and employment center within the secondary urban center at Kapolei.

Primary Urban Center Development Plan (DP). The DP identifies Downtown as the hub of government, encouraging use of existing underutilized office space in central Honolulu. The EA should discuss relocation options in Downtown Honolulu, as well as the City of Kapolei. (Section 3.4.1.3 Technology Businesses, Office Facilities.)

Traffic Impacts. The Draft EA should include a traffic impact analysis report. The report should also compare anticipated traffic impacts and employee commuting behavior at the proposed site with other similar State facilities. The study should discuss transportation demand management (TDM) strategies to minimize the amount of vehicular traffic at the new facility. A formal TDM plan should be prepared and submitted prior to occupancy.

Should you have any questions, please contact Shem Lawlor of our staff at 768-8046.

Very truly yours,

A handwritten signature in black ink, appearing to read "George I. Atta".

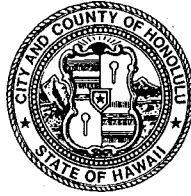
George I. Atta, FAICP, Director
Department of Planning and Permitting

GIA:js

EA-EIS\13Waimano Ridge

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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



KIRK W. CALDWELL
MAYOR

LOUIS M. KEALOHA
CHIEF

DAVE M. KAJIHIRO
MARIE A. McCAULEY
DEPUTY CHIEFS

OUR REFERENCE **EO-WS**

April 30, 2013

RECEIVED MAY 03 2013

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:


This is in response your letter dated April 16, 2013, requesting comments on the Pre-Assessment Consultation, Draft Environmental Assessment, for the Waimano Ridge "AAFES" Building Staff Relocation project located in Pearl City.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please contact Major Clayton Saito of District 3 (Pearl City) at 723-8802 or via e-mail at csaito1@honolulu.gov.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By 
CLAYTON G. KAU
Assistant Chief
Support Services Bureau

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR



MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP4/13-511171R

May 6, 2013

RECEIVED MAY 09 2013

Mr. Glenn T. Kimura
President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

SUBJECT: Pre-Assessment Consultation DEA State of Hawaii Department of Health Waimano Ridge AAFES Building Staff Relocation; DAGS Job No. 12-20-2680


In response to your letter of April 16, 2013, we have the following comments:

- The DEA should discuss possible traffic and parking impacts the project may have on the surrounding City roadways including short-term impacts during construction, and mitigation measures.
- The area Neighborhood Board, residents, businesses, etc., should be kept apprised of the details of the proposed project and its impacts, particularly during construction, the project may have on the adjoining local street area network.

We reserve further comment pending submission of the DEA.

Thank you for the opportunity to review this matter. Should you have any further questions, please contact Michael Murphy of my staff at 768-8359.

Very truly yours,


MICHAEL D. FORMBY
Director

BOARD OF WATER SUPPLY

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



May 2, 2013

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chairman
MAHEALANI CYPHER, Vice Chair
THERESIA C. McMURDO
ADAM C. WONG
KAULANA H. R. PARK

ROSS S. SASAMURA, Ex-Officio
GLENN M. OKIMOTO, Ex-Officio

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

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer *we*

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

RECEIVED MAY 07 2013

Dear Mr. Kimura:

Subject: Your Letter Dated April 16, 2013, Requesting Comments
for the Environmental Assessment-Pre-Assessment
Consultation for the Waimano Ridge Army and Air Force
Exchange Services (AAFES) Building Staff Relocation
Tax Map Key: 9-7-025: 001

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

Water service should be provided by the State's private water system serving this area.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

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



HOUSE OF REPRESENTATIVES

STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

RECEIVED APR 30 2013

April 22, 2013

Mr. Glenn T. Kimura
President, Kimura International, Inc.
1600 Kapiolani Blvd., Suite 1610
Honolulu, HI 96814

Dear Mr. Kimura:

Thank you for your letter of April 16 regarding the draft Environmental Assessment (EA) that Kimura International is conducting for the planned renovation of three existing buildings on Waimano Ridge in Pearl City.

Given that this project will result in an additional 266 DOH personnel working in Pearl City, I am very concerned about the impact that it will have upon the already congested traffic associated with Pearl City High School and Momilani Elementary. Will you be conducting a traffic study as part of the EA and if so, what is the scope of the study? If such a study is not being done, I strongly recommend that it be included as part of the EA.

I would also appreciate information regarding the implementation schedule for this project, especially the planned start date for construction.

Thank you again for the opportunity to provide preliminary comments regarding the forthcoming draft EA.

Sincerely,

Gregg Takayama
State Representative, D. 34

cc: Sen. David Ige
Councilmember Breene Harimoto
Loretta Fuddy, Director, DOH
James K. Pickard, Sr., Chair
Pearl City Neighborhood Board #21

Appendix A

Final Feasibility Report Waimano Ridge Feasibility Study for AAFES Staff Relocation

Department of Accounting and General Services

October 15, 2012

FINAL FEASIBILITY REPORT



WAIMANO RIDGE FEASIBILITY STUDY FOR AAFES BUILDING STAFF RELOCATION

Report Design Team:

Architect:	CDS International
Civil Engineer:	Sam O. Hirota, Inc.
Cost Estimator:	Rider Levett Bucknall

FEASIBILITY STUDY
Waimano Ridge Feasibility Study for AAFES Building Staff Relocation
DAGS Job No.: 12-20-2680

TABLE OF CONTENTS

A.	INTRODUCTION.....	A-1
B.	SITE	B-1
C.	STUDY OF OPTIONS.....	C-1

APPENDICES

- APPENDIX A-1: ARCHITECTURAL – INTERVIEW QUESTIONNAIRE
- APPENDIX A-2: ARCHITECTURAL – FURNITURE COST ANALYSIS
- APPENDIX A-3: ARCHITECTURAL – SPACE NEEDS DETAIL
- APPENDIX A-4: ARCHITECTURAL - EXISTING CONDITIONS PHOTOS

- APPENDIX C-1: CIVIL – WATER MAIN LOOP SKETCH
- APPENDIX C-2: CIVIL – PEARL CITY WASTEWATER PUMP STATION
CONNECTION MORATORIUM
- APPENDIX C-3: CIVIL – SEWER BILLING AGREEMENT
- APPENDIX C-4: CIVIL – EXISTING PROPERTY POPULATION DISTRIBUTION
- APPENDIX C-5: CIVIL TABLES
- APPENDIX C-6: CIVIL REFERENCES

- APPENDIX CE-1: COST ESTIMATING DETAIL

FEASIBILITY STUDY
Waimano Ridge Feasibility Study for AAFES Building Staff Relocation
DAGS Job No.: 12-20-2680

A. INTRODUCTION

- 1. PURPOSE OF REPORT A-2
- 2. DOH STAFF CURRENT CONDITIONS AT AAFES BUILDING A-2

EXHIBIT A-1: DOH ORGANIZATION CHART

- 3. SCOPE OF SERVICES A-2
- 4. EXECUTIVE SUMMARY A-5

EXHIBIT A-2: COST ESTIMATE SUMMARY AND ANALYSIS

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

A. INTRODUCTION

1. PURPOSE OF REPORT

The State of Hawaii Department of Health (DOH) has requested this Feasibility Study to address their staff move from the AAFES building on Ala Moana Boulevard to their property on Waimano Ridge.

This report describes our preliminary assessment for using existing DOH owned buildings at Waimano Ridge or building new. The findings are based on a physical documentation of the current condition of ten (10) buildings on the proposed site, current working conditions and needs of the affected staff, and the results of four meetings between the design team and DOH Division, Branch, and Office heads.

2. DOH STAFF CURRENT CONDITIONS AT AAFES BUILDING

Eleven Branches and Offices of the DOH currently work at 919 Ala Moana Boulevard hereby noted as 'AAFES Building'. See EXHIBIT A-1 for an organizational chart of the affected groups. This building is being transferred by the State of Hawaii to OHA ownership and all parties working in the building have been notified to vacate by 2016.

The different DOH Branches, and Offices are spread throughout the building on the 1st, 2nd, 3rd, and 5th floors. Some groups are split across hallways and between floors. Much of their storage is off site.

Existing cubicle furniture for most offices measures approximately 9'-0" x 10'-0". Most is in average condition. The department has one large conference room on the 5th floor which is used for meetings and training sessions for both individual groups and the whole department.

Every section is low on conference space. Most are short on personal cubicle space to accommodate all their employees. Most need accommodations for meeting with and receiving the public.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

3. SCOPE OF SERVICES

The following is a summary of the Scope of Services as agreed to in the contract between DOH and the CDS Design Team.

NOTE: Some of the plans in this Scope of Services were changed during the project based on knowledge gained through the process of the work or requests by the DOH. Adjustments are noted with an asterisk (*).

A. PHASE 1 - Existing Facilities Assessment Survey

- 1) Locate in the DAGS Plans File Room the existing construction drawings of the Multi-Purpose Building, Hale Ola, Buildings B-6, B-6/7, B-7, B-8, B-9, B-10 and the Kitchen/Dining Building at Waimano Ridge and make arrangement with DAGS to print these drawings for distribution to the design team.

*We were asked to also include the Hospital Annex.

- 2) Conduct walk-through surveys of all above listed buildings and their associated parking areas and utility areas to assess the overall condition of the buildings and site.

B. PHASE 2 - Existing Facilities Assessment Report

- 1) Prepare a report documenting the feasibility of repairing the above stated buildings to include estimated construction cost to either repair and renovate these buildings for office use or to demolish these buildings and replace them with new buildings of similar size and type of construction for office use at the same location.

*This report was merged into this main Feasibility Report as the RENOVATE INDIVIDUAL BUILDINGS Scheme, see Section C.

C. PHASE 3 – Space Planning Schemes

- 1) The architect and DOH representatives will meet to discuss the general programmatic and space requirements for the various departments to be relocated to Waimano Ridge by this project. Based on this initial meeting the architect will develop a standardized questionnaire that will be distributed to the affected office heads. These responses will enable the architect to develop a functional relationship organizational chart of the personnel within each office and a list of the quantities, types and sizes of furniture, equipment, meeting/ break rooms and other types of spaces required by each department. The architect will then conduct a second meeting with the office heads to present the organizational chart and furniture, equipment and spaces required for each office for comments

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

and concurrence. Next, the design team will proceed with preparation of the space planning schemes. Four alternative space planning schemes will be developed to show how the personnel, furniture and equipment of the various DOH Offices can be relocated to accommodate either 150 or 240 DOH staff. A third meeting will be held with DOH to present the initial space planning schemes and obtain comments from DOH on how these schemes should be improved upon or refined before beginning Schematic Design.

*Response to the questionnaires showed the projected population we needed to design for to be 262, not 240.

D. PHASE 4 – Schematic Design Schemes

- 1) Schematic designs prepared by the architect and civil engineer will be based on four space planning alternative schemes approved by DOH in Phase 3 as follows:
 - a. Scheme 1A: Alter and renovate the Multi-Purpose Building to accommodate 150 relocated DOH staff.
 - b. Scheme 1B: Construct a new facility on Waimano Ridge to accommodate 150 relocated DOH staff.
 - c. Scheme 2A: Alter and renovate Hale Ola to accommodate 240 DOH staff.
 - d. Scheme 2B: Construct a new facility on Waimano Ridge to accommodate 240 relocated DOH staff.

The alternative schemes will be based on the following assumptions:

- Restroom facilities that provide the minimum number of plumbing fixtures for either sex and fire sprinkler systems will be provided as required meeting Building Code requirements.
 - Accessibility and usability of building components and fixtures to comply with the Americans with Disabilities Act.
 - Additional off-street parking and truck loading will be provided as required to comply with the Honolulu Zoning Code requirements.
 - Siting of new buildings on Waimano Ridge will be based on limiting site improvement and foundation costs.
- 2) Probable Construction Cost estimates for the four alternative schemes will be prepared which will include the cost for air conditioning, lighting, electrical power, communications, fire alarm, fire sprinkler systems (if required), off-street parking, truck loading and site improvement costs

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

including required upgrade of existing site utility systems that may be required to support the renovated or new facilities.

- 3) At the completion of the Alternative Schematic Design Phase a fourth meeting will be held with DOH and the Design Team to present the Phase 4 Schematic Design Schemes and obtain DOH concurrence before proceeding with preparation of the Feasibility Report.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

4. EXECUTIVE SUMMARY

Based on questionnaires, interviews, and meetings with the affected DOH Office heads and physical survey of their current office space as well as the buildings and property on Waimano ridge, the design team has developed a series of Schemes as options for the relocation of specified DOH staff.

In summary:

Scheme 1A, 2A, and 3 all include costs and feasibility analysis for the renovation of existing buildings to bring them into code compliance for occupancy as well as all alterations required to make the buildings usable for the staff to be relocated.

Scheme 1B and 2B propose new buildings on site.

a. **SCHEME 1A – Renovate and Alter Existing Buildings for 150 Staff**

The original DOH request was to study the placement of 150 staff members in the Multi-Purpose Building. Upon initial inspection of this building, it was decided only approximately 30-50 staff could be accommodated and an alternate Scheme was required.

CDS proposed a scheme to renovate Buildings B-6, B-7, and B-8 to accommodate 145 DOH staff. After consideration of all appropriate group combinations, 145 was the closest we could come to the 150 staff request. These three buildings were originally used as dormitory buildings and are of approximately the same floor plan. The buildings are sited in a row on the south side of Waimano Home Road and total approximately 25,000 SF.

New parking lots and sidewalks are proposed on both sides of Waimano Home Road directly in front of the buildings. This solution uses one existing 9 stall lot and creates 62 new stalls for a total of 71 parking stalls. Updated sewer lines and sewer holding tank are provided directly behind the buildings.

When combined with 70 staff to be relocated to Uluakupu (this building is currently under renovation by a separate design team and not included in the cost of this project) the total staff moved per this Scheme is only 215. It had been originally thought Uluakupu could hold 90 staff. This solution therefore is 25 staff short of relocating the full 240 contracted request and 47 staff short of the updated 262 staff total (based on feedback from managers).

Cost Estimate:

\$6,876,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

b. SCHEME 1B – New building for 150 Staff

To make this scheme comparable to Scheme 1A we propose this scheme to build a new Type II-B 26,500 SF office building to accommodate 145 DOH staff. A 2,200 SF pre-manufactured storage building would be built next to the staff building to save on costs of the more expensive space. The building would be located near Uluakupu on a large flat part of the site to minimize site costs.

Efficiencies are gained over Scheme 1A because the groups are merged into one building allowing for sharing of common spaces as well as the overall building shape is designed specifically for this use eliminating waste.

A new 63 stall parking lot would be provided as there is no existing parking in the area. A new 8" sewer line and storage tank would be installed adjacent to the building.

As in Scheme 1A, this scheme incorporates 70 staff to be relocated to Uluakupu (costs not included) and in total moves 215 staff. This scheme is short on moving the whole group in the same amounts as Scheme 1A.

Cost Estimate:

\$9,301,000

c. SCHEME 2A – Renovate and Alter Existing Buildings for 240/262 Staff

This Scheme proposes renovating Hale Ola to support 262 DOH staff. Hale Ola is a three-story, 31,000 SF building originally designed and used as a hospital.

The scheme developed over the duration of the study and three versions are documented as follows:

1) SCHEME 2A-1

Upon immediate inspection of the program and the size of Hale Ola, the building was found to be about 15,000 SF too small to accommodate all 262 DOH staff.

CDS proposed shifting staff that could not fit into Hale Ola into Buildings B-6 and B-7. This solution placed 168 staff in Hale Ola and 94 between Buildings B-6 and B-7.

In addition to the nearby 35 existing parking stalls, 120 additional new stalls are required for a total of 155 stalls for this scheme. They will be accommodated in two new lots, one behind Hale Ola and the other across Waimano Home Road from B-6 and B-7. New sewer lines and holding tanks will be located near both building areas.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

All staff is accommodated in this solution, but the Office heads all noted multiple difficulties that would come from the Offices being separated by such a distance across the site. The B Buildings are not a comfortable walking distance to Hale Ola, so driving would be necessary to go back and forth.

2) SCHEME 2A-2

John Messina requested we study a scheme which takes the staff we had located in Building B-6 and B-7 and assume they could be accommodated in Uluakupu to limit costs. It was also noted that we could use the Kitchen/Dining Building for conference rooms and storage space.

Combining groups to get near the 70 staff goal, study showed 67 staff could be located in Uluakupu leaving Hale Ola to hold 195 staff.

This scheme accommodates all the staff but usability of the space was severely compromised because of the need for Hale Ola to hold so many people. Multiple Offices were split across two floors and access had to be made through other Office space.

In addition to the same nearby 35 existing parking stalls from Scheme 2A-1, 97 additional new stalls are required for a total of 132 stalls for this scheme. They will be accommodated in two new lots near Hale Ola. New sewer lines and one holding tank will be located near the buildings.

Based on the limits of Scheme 2A-2, CDS proposed one last adjustment to this Scheme.

3) SCHEME 2A-3

In order to free up space in Hale Ola and therefore improve its usability and circulation, CDS proposed moving one Branch out of Hale Ola and into the Kitchen/Dining Building and leaving all other staff as designed in Scheme 2A-2.

The same sewer and parking adjustments from Scheme 2A-2 will be required for this scheme.

All staff is accommodated in this solution but the Department is spread out between 3 different buildings. Uluakupu is even further from Hale Ola than Buildings B-6 and B-7 from Scheme 2A-1 where the difficulties caused by this problem were originally pointed out.

**Cost Estimate for Scheme 2A-3:
\$10,530,000**

d. SCHEME 2B – New Building for 240/262 Staff

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

This Scheme proposes a new two-story 55,000 SF Building in combination with a 2,200 SF pre-manufactured storage building. Required space for all 262 staff (240 originally contracted, but raised to 262 based on manager feedback) is accommodated. The building is to be located on a large flat portion of the site near Uluakupu (Uluakupu is NOT used for this scheme) to minimize site costs.

A new 138 stall parking lot would be provided as there is no existing parking in the area. A new 8" sewer line and storage tank would be installed adjacent to the building.

This Scheme accommodates all 262 staff as well as leaving Uluakupu available for alternate DOH use or leasing to other agencies.

Cost Estimate:
\$17,519,000

e. SCHEME 3 – Renovation and Addition for 240/262 Staff

One last Scheme was proposed by CDS and confirmed as desirable by DOH:

Utilize the Kitchen/Dining Building and Hale Ola as designed in Scheme 2A-3, but shift the 67 staff located in Uluakupu into an addition built onto Hale Ola. The addition would need to be approximately 14,800 SF.

Parking for the addition would be accommodated in 31 existing nearby stalls, 175 new stalls in a small addition to an existing lot next to Building B-9 and the same two new lots from Scheme 2A-3 . The sewer lines and storage capacity would be increased to accommodate the 67 additional staff at this location.

This Scheme accommodates all 262 staff in one location eliminating the noted coordination inefficiencies distance would cause and leaves Uluakupu open for other DOH uses or leasing to other agencies.

Scheme 3 Cost Estimate:
\$15,896,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

COST ESTIMATE SUMMARY

Scheme 1A	Renovate	\$6,896,000	Accommodates 215 staff
Scheme 1B	New	\$9,301,000	Accommodates 215 staff
Scheme 2A-3	Renovate	\$10,530,000	Accommodates 262 staff
Scheme 2B	New	\$17,519,000	Accommodates 262 staff
Scheme 3	Renovate/Addition	\$15,896,000	Accommodates 262 staff

In an effort to assist the DOH in deciphering the feasibility of each of the above solutions and make all the Schemes equal in analysis, we have made the following adjustments.

- Scheme 1A: We have estimated and added the additional costs that would be incurred to include Building B-10 in Scheme 1A. Inclusion of this one additional building would increase the staff accommodated by this Scheme up to the required 262.
- Scheme 1B: We have estimated and added the additional costs incurred to increase the new 25,000 SF building to a 33,000 SF building. This additional square footage would increase the staff accommodated by this Scheme up to the required 262.

REVISED COST ESTIMATE SUMMARY

All Schemes relocate 262 employees. Schemes 2B and 3 also leave Uluakupu available for other uses. Schemes 1A and 1B do not include space for the later requested large group conference rooms. These rooms add approximately 5,000 gross SF. See Exhibit A-2 Cost Estimate Summary and Analysis.

Scheme 1A	Renovate	\$9,145,000
Scheme 1B	New	\$12,277,000
Scheme 2A-3	Renovate	\$10,530,000
Scheme 2B	New	\$17,519,000
Scheme 3	Renovate/Addition	\$15,896,000

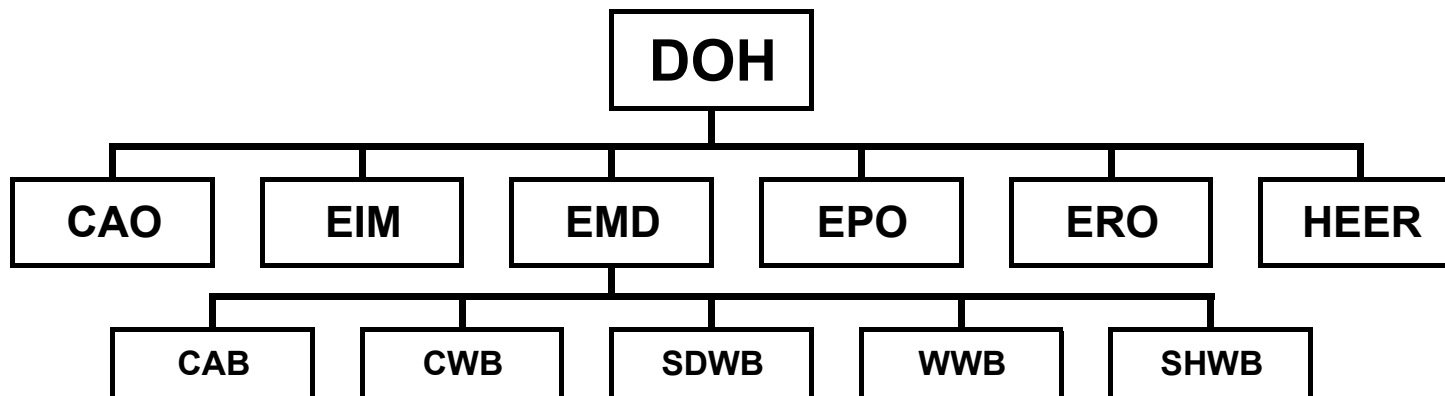
Reservations were voiced by the Office heads in our final meeting on September 6, 2012. The following concerns were noted:

1. Concern location will cause staff loss and negatively affect recruitment in the future based on lack of public transportation.
2. Separation of staff into multiple buildings will cause inter-office work to be less efficient and probably less collaborative over time. Also puts additional costs of maintenance, IT, and security on the individual Offices.
3. Personal Space reductions will limit staff ability complete tasks and negatively affect morale.
4. Concern about the safety of walking and driving on Waimano Home Road without providing sidewalks or upgrading to county standards.

EXHIBIT A-1

ORGANIZATIONAL CHART

STATE OF HAWAII
DEPARTMENT OF HEALTH - ENVIRONMENTAL HEALTH



DOH	DEPARTMENT OF HEALTH 1250 Punchbowl St 3rd Flr, Honolulu, HI 96813	GARY GILL Deputy Director Environmental Health	(808) 586-4424	gary.gill@doh.hawaii.gov
CAO	COMPLIANCE ASSISTANCE OFFICE 919 Ala Moana Blvd Rm 319, Honolulu, HI 96813	GENEVIEVE SALMONSON Environmental Ombudsman	(808) 586-4528	genevieve.salmonson@doh.haw
EIM	ENVIRONMENTAL INFORMATION OFFICE 919 Ala Moana Blvd Rm 312, Honolulu, HI 96813	ANDY MATSUMOTO Environmental Information Manager	(808) 586-4641	andy.matsumoto@doh.hawaii.gc
EPO	ENVIRONMENTAL PLANNING OFFICE 919 Ala Moana Blvd Rm 312, Honolulu, HI 96813	LAURA McINTYRE Manager	(808) 586-4337	laura.mcintyre@doh.hawaii.gov
ERO	ENVIRONMENTAL RESOURCES OFFICE 919 Ala Moana Blvd Rm 219, Honolulu, HI 96813	NANCY BARTTER Public Health Administrative Officer	(808) 586-4579	nancy.bartter@doh.hawaii.gov
HEER	HAZARDOUS EMERGENCY RESPONSE OFFICE 919 Ala Moana Blvd Rm 206, Honolulu, HI 96813	KEITH KAWAOKA Manager	(808) 586-4249	keith.kawaoka@doh.hawaii.gov
EMD	ENVIRONMENTAL MANAGEMENT DIVISION 919 Ala Moana Blvd Rm 300, Honolulu, HI 96813	STUART YAMADA Division Chief	(808) 586-4304	stuart.yamada@doh.hawaii.gov
CAB	CLEAN AIR BRANCH 919 Ala Moana Blvd Rm 203, Honolulu, HI 96813	NOLAN HIRAI Acting Branch Chief	(808) 586-4200	nolan.hirai@doh.hawaii.gov
CWB	CLEAN WATER BRANCH 919 Ala Moana Blvd Rm 301, Honolulu, HI 96813	ALEC WONG Branch Chief	(808) 586-4309	alec.wong@doh.hawaii.gov
SDWB	SAFE DRINKING WATER BRANCH 919 Ala Moana Blvd Rm 308, Honolulu, HI 96813	JOANNA SETO Branch Chief	(808) 586-4579	joanna.seto@doh.hawaii.gov
WWB	WASTE WATER BRANCH 919 Ala Moana Blvd Rm 309, Honolulu, HI 96813	SINA PRUDER/MARSHALL LUM Acting Branch Chiefs	(808) 586-4294	sina.pruder@doh.hawaii.gov marshall.lum@doh.hawaii.gov
SHWB	SOLID HAZARDOUS WASTE BRANCH 919 Ala Moana Blvd Rm 212, Honolulu, HI 96813	STEVEN CHANG Branch Chief	(808) 586-4226	steven.chang@doh.hawaii.gov

EXHIBIT A-2: COST ESTIMATE SUMMARY AND ANALYSIS
WAIMANO RIDGE FEASIBILITY STUDY FOR AAFES BUILDING STAFF RELOCATION
DAGS JOB NO. 12-20-2680

CURRENT PROPOSED SCHEMES

ALTER AND UPGRADE EXISTING BUILDINGS OR CONSTRUCT NEW BUILDINGS FOR DOH STAFF

Scheme 1a	Renovate B-6, B-7 and B-8 to accommodate 145 staff (1)	\$6,876,000
Scheme 1b	Construct new 25,000 SF building to accommodate 145 staff (1)	\$9,301,000
Scheme 2a-3	Renovate Hale Ola and Kitchen/Dining to accommodate 195 staff (2)	\$10,530,000
Scheme 2b	Construct new 55,000 SF building to accommodate 262 staff	\$17,519,000

REPAIR AND RENOVATE EXISTING BUILDINGS

Multi-Purpose Building	\$804,000
Building B-6	\$805,000
Building B-6/7	\$159,000
Building B-7	\$787,000
Building B-8	\$759,000
Building B-10	\$748,000
Building B-9	\$1,117,000
Hospital Annex	\$560,000
Kitchen/Dining Building	\$925,000
Hale Ola	\$2,976,000
SUBTOTAL	\$9,640,000

REVISED SCHEMES TO ACCOMMODATE 262 DOH STAFF

ALTER AND UPGRADE EXISTING BUILDINGS OR CONSTRUCT NEW BUILDINGS FOR DOH STAFF

Scheme 1a	Renovate B-6, B-7 B-8 and B-10 to accommodate 192 staff (3)	\$9,145,080
Scheme 1b	Construct new 33,000 SF building to accommodate 192 staff (3)	\$12,277,320
Scheme 2a-3	Renovate Hale Ola and Kitchen/Dining to accommodate 195 staff	\$10,530,000
Scheme 2b	Construct new 55,000 SF building to accommodate 262 staff	\$17,519,000

NOTES:

- 1) **Building B-4 required to accommodate 117 staff to achieve total of 262 relocated DOH staff.**
- 2) **Buidling B-4 required to accommodate 67 staff to achieve total of 262 relocated DOH staff.**
- 3) **Building B-4 required to accommodate 70 staff to achieve total of 262 relocated DOH staff.**

BASIS OF DESIGN
 WAIMANO RIDGE FEASIBILITY STUDY
 FOR AFFES BUIDLING AND STAFF RELOCATION
 DAGS JOB NO. 12-20-2680

B. SITE

1. DESCRIPTION OF SITE	B-2
a. ARCHITECTURAL	B-2
EXHIBIT A-3: VICINITY AERIAL PHOTO	
EXHIBIT A-4: SITE AERIAL PHOTO	
EXHIBIT A-5: SITE ZONING MAP	
EXHIBIT A-6: ARCHITECTURAL SITE PLAN	
b. CIVIL	
1) SITE CONDITIONS.....	B-4
2) PARKING.....	B-4
3) WATER.....	B-5
4) SEWER.....	B-6
i. EXISTING CONDITIONS.....	B-6
ii. PEARL CITY WASTEWATER PUMP STATION	
CONNECTION MORATORIUM.....	B-8
EXHIBIT C-1: SITE PLAN.....	C-1
EXHIBIT C-2: EXISTING SITE PLAN MAUKA AREA.....	C-2
EXHIBIT C-3: EXISTING WATER SYSTEM OVERVIEW	C-3
EXHIBIT C-4: EXISTING SEWER SYSTEM OVERVIEW	C-4
EXHIBIT C-5: EXISTING UTILITY PLAN MAUKA AREA	C-5
EXHIBIT C-6: EXISTING UTILITY PLAN MAKAI AREA	C-6

BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

B. SITE

1. DESCRIPTION OF SITE

a. ARCHITECTURAL – CDS INTERNATIONAL

The property under consideration in this study is approximately 252 acres located on Waimano Ridge along both sides of Waimano Home Road mauka of Pearl City High School. Owned by the State of Hawaii the site was formerly occupied, from 1921-1999, by the Waimano Training School and Hospital. The facility was used for the care and treatment of persons with developmental disabilities.

See Exhibits A-3 and A-4 for aerial views of the property and vicinity.

Since the DOH vacated the buildings in 1999, most have sat unused and subsequently fallen into disrepair. Some of the buildings are currently occupied by other state agencies and non-profit organizations.

Exhibit A-5 shows the delineation of the three different areas of zoning on the property. The majority of the buildable portion of the site (much of the site is too steep for construction) is zoned R-5. This is primarily a residential zone, but public buildings are allowed. The other two zones, P-1 Restricted Preservation and P-2 General Preservation hold varying levels of developmental restrictions to preserve and manage open land.

See Exhibit A-6 for an architectural Site Plan of the property. The buildings on the property break down into three groups as follows.

- 1) The lower portion of the property holds the following buildings:

PEARL CITY CULTURAL CENTER
HALE COMPLEX

The Pearl City Cultural Center is used jointly by the local community and the Pearl City High School. Although the building is not used by the DOH, it is on DOH land and shares utility service with the rest of the site.

The Hale Complex is a group of six buildings currently used by staff of the DOH. These buildings are in good condition since they have stayed in use.

- 2) Just mauka of these buildings, entry onto the rest of the road is managed by guards stationed in a small guardhouse in the middle of the road. A guard staffs this entry point during business hours.

BASIS OF DESIGN
WAIMANO RIDGE FEASABILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

Beyond the guardhouse is a group of buildings that are currently in use either by DOH or leased to other State of Hawaii agencies. Uluakupu is the only building in this group under consideration by this study and is currently under renovation by a separate contract. The other buildings in this group are also in good shape and occupied.

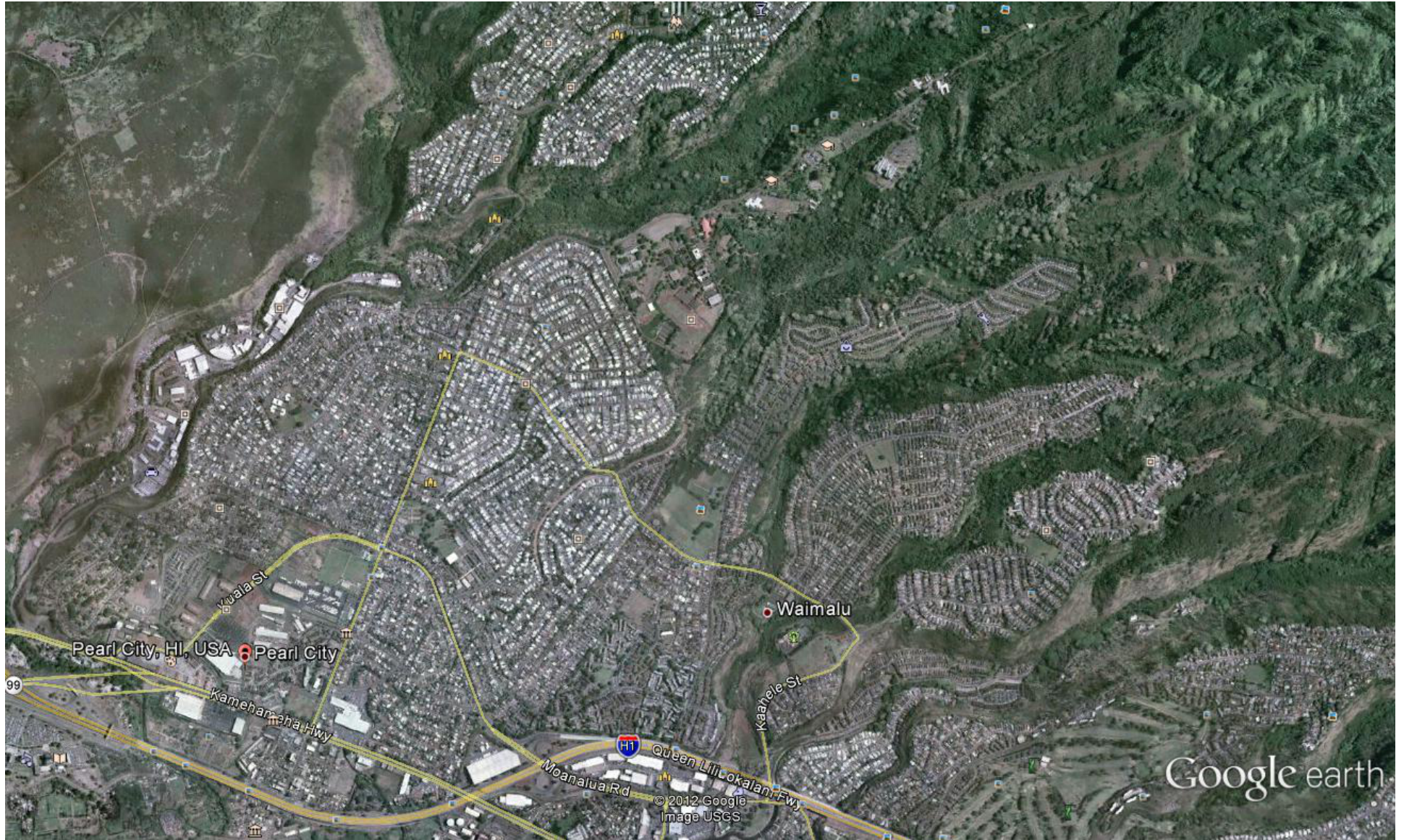
ULUAKUPU
DOH LABORATORY
DOH YOUTH TREATMENT FACILITY
DLNR BASEYARD

- 3) The final group of buildings was originally built for use as a residence and treatment facility for the Hawaii population with developmental disabilities and comprises the majority of the buildings under consideration for DOH staff relocation by this study. All buildings are currently unoccupied but for Hale Ola and the Hospital Annex which are used by the Department of Safety as a training facility.

Originally there were a series of wood structures also used for this function but most of these buildings deteriorated beyond saving and have been demolished. The remaining buildings are all built with concrete and masonry.

BUILDING B-6, B-7
BUILDING 6/7
BUILDING B-8, B-10
BUILDING B-9
MULTI-PURPOSE BUILDNG
KITCHEN AND DINING BUILDING
HALE OLA (Originally the Hospital on site)
HOSPITAL ANNEX (Not considered in this study)

EXHIBIT A-3 VICINITY AERIAL PHOTO



Google earth

miles
km



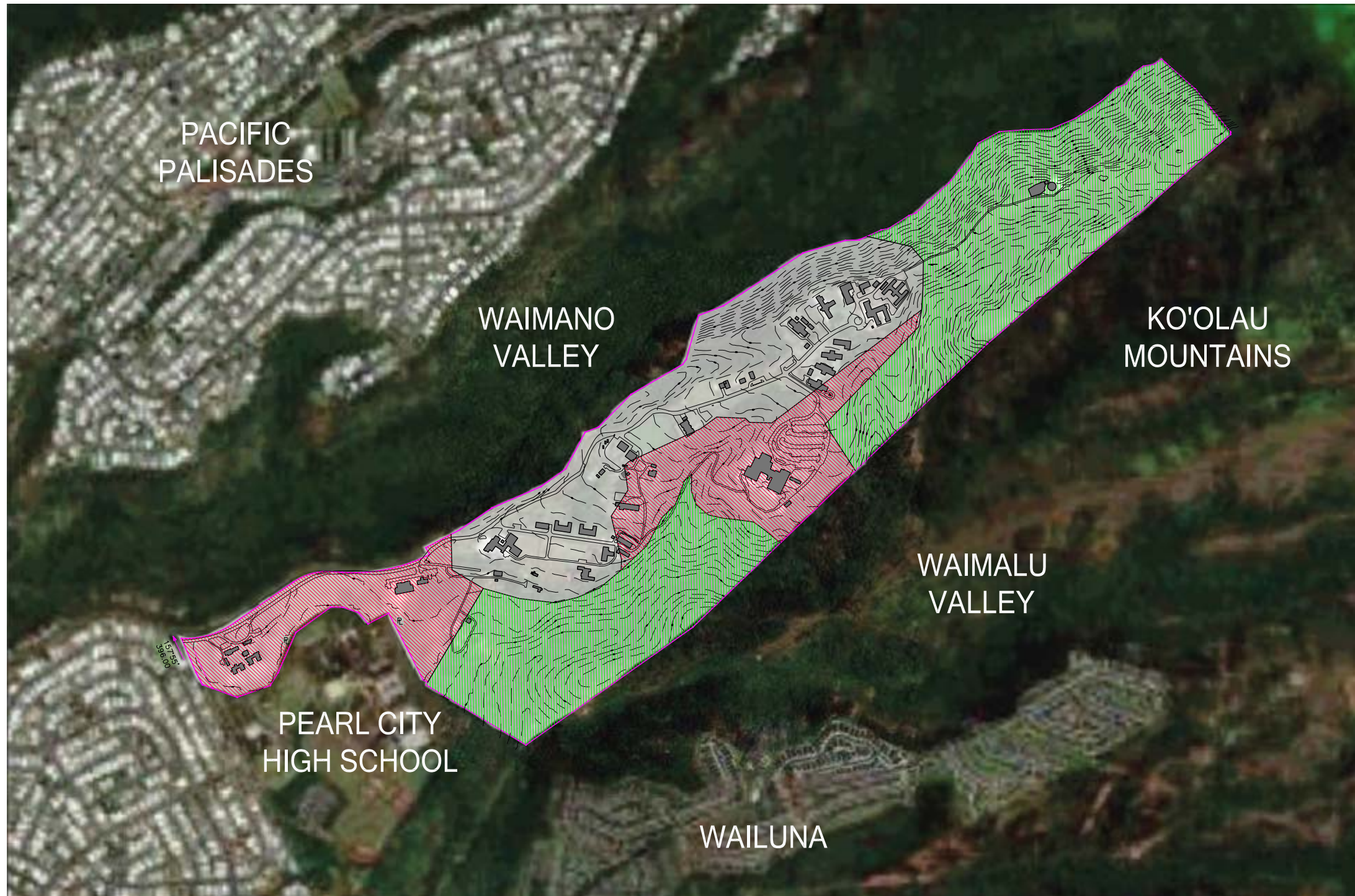
EXHIBIT A-4 SITE AERIAL PHOTO



Google earth



EXHIBIT A-5: SITE ZONING MAP



WAIMANO RIDGE AERIAL PHOTO & ZONING MAP

ZONING/LAND USE LEGEND

- R-5 - RESIDENTIAL ZONE/URBAN
- P-1 - RESTRICTED PRESERVATION ZONE/PRESERVATION
- P-2 - GENERAL PRESERVATION ZONE/URBAN

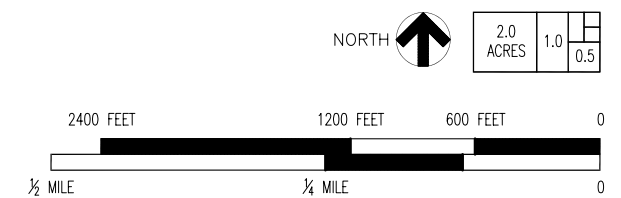
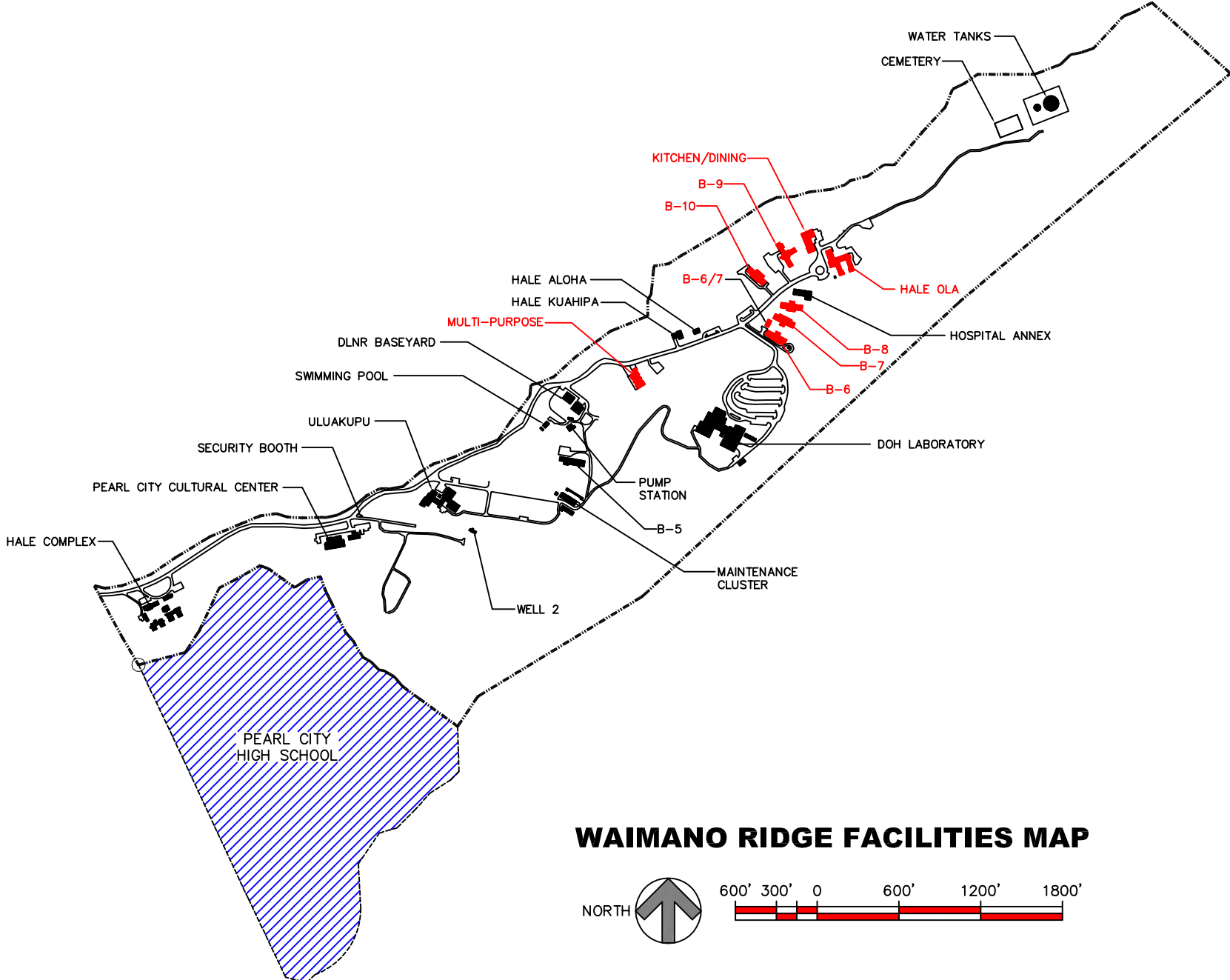
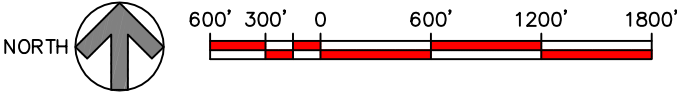


FIGURE 1

EXHIBIT A-6: ARCHITECTURAL SITE PLAN



WAIMANO RIDGE FACILITIES MAP



BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

B. SITE

1. DESCRIPTION OF SITE

b. CIVIL – SAM O. HIROTA, INC

1) SITE CONDITIONS

The Waimano Ridge Feasibility Study for AAFES Building Staff Relocation includes portions of the State of Hawaii Waimano Training School and Hospital (WTSH) located at the end of Waimano Home Road in Pearl City, Island of Oahu, TMK 9-7-25: 001 (242 Ac). Waimano Gulch and Waimano Home Road border the site to the north and west, the Ewa Forest Reserve and Waimalu Gulch to the east, and Pearl High School and Momilani Elementary to the south (See Exhibit C-1).

Waimano Home Road is a four-lane city road with two lanes heading mauka and two lanes heading makai below Komo Mai Drive. Waimano Home Road becomes a two-lane city road with one lane heading mauka and one lane heading makai above Komo Mai Drive. Waimano Home Road is under state jurisdiction after the guard shack at the entrance to the Waimano Training School and Hospital. The existing road is paved. An asphalt curb runs in sections along both sides of the road. A six-foot high chain link fence runs parallel to the road on the west. Beginning south-west of the intersection adjacent to Uluakupu and ending south-west of the Multipurpose Building, the Waimano Home Road is being repaved and selectively widened as part of DAGS job number 12-20-2613, "Waimano Ridge Site Water System Improvements" 4/2012.

Concrete curbs are being provided on the eastern side of the road. Road C will be resurfaced and new asphaltic curbs will be installed to the intersection with Road B (well building access road). Road C, beyond the DAGS job number 12-20-2613 project limits, is paved and lined with concrete curbs.

Proposed scenarios 1B and 2B involve construction of a new building on a lot currently used as an athletic field. The lot is located on Road C, east of Uluakupu (see EXHIBIT C-1). Aerial and preliminary surveys indicate a 20 foot grade change from north to south across the site.

2) Parking

Specific information regarding what parking lot areas are designated to specific buildings is not available, and is not apparent for the majority of the site. Best judgment was used in providing the existing parking condition assessment and assigning parking areas to specific buildings.

BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

We assume that none of the referenced lots have been designated for another future project.

There are a total of 48 existing parking stalls, including 1 ADA stall, at Hale Ola (see Exhibit C-2). This includes parking around the circular island fronting Hale Ola and the two sections of the rear parking lot. Portions of the rear parking lot configuration are not to current C&C standards for standard isle width.

There are currently 12 parking stalls at the Kitchen building (see Exhibit C-2); 8 perpendicular stalls and 4 angled stalls. The 4 angled stalls do not provide standard C&C isle width for perpendicular stall access, and are not aligned for positive traffic flow.

There is an existing 8 stall parking lot north-west of Buildings B-6 and B-7. There is an existing 9 stall parking lot adjacent to the Hale Aloha building (See Exhibit C-2). Based on our site visit, both lots are in need of resurfacing and are not currently being used. We assume that the 9 stall parking lot is not designated to the Hale Aloha building, and that it is available for use in this project.

There is no existing parking at the proposed site for Scenarios 1B and 2B.

Parking at Uluapuku is not addressed in this report.

3) Water

According to the "Preliminary Evaluation of the Waimano Training School & Hospital Water System" by the Honolulu Board of Water Supply (BWS), the existing Waimano Water System (WWS) is supplied by an onsite well. Currently, the State of Hawaii Department of Land and Natural Resources maintains the WWS and allows 0.136 million gallons per day (MGD) maximum draw down.

The on-site well (located south-east of Uluapuku) provides water to two holding tanks totaling 0.69 million gallons (MG) (located at the end of Water Tank Access Road, adjacent to the Cemetery) via a 12-inch water main located within the Waimano Home Road alignment. Both facilities are being retrofitted to be brought into compliance with current BWS standards as part of DAGS job 12-20-2613, "Waimano Ridge Site Water System Improvements" 4/2012. Domestic and fire protection water laterals are also being brought up to current BWS standards in DAGS job number 12-20-2613. The intent of the upgrades is that the utilities will be dedicated to and managed by BWS in the future. See Exhibit C-3 for Water Utility Overview Plan.

BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

The construction documents for DAGS job 12-20-2613 indicate that a new section of 12-inch water main has been installed. Waterline C originates at the pump station and delivers water to Waterline B and the existing 12-inch main, both of which are located within the Waimano Home Road alignment. Waterline B supplies building service laterals along its length. The existing 12-inch water main supplies fire hydrants along the Waterline B length. Waterline B terminates within the Waimano Home Road alignment, adjacent to the Multipurpose Building, and the existing 12-inch main supplies both fire hydrants and building service laterals mauka of the termination point.

All existing buildings which are to be repurposed are being retrofitted with new 2-inch domestic laterals with associated meter and backflow preventer, and new 6-inch fire protection water laterals with associated detector check (DC) meter. The buildings are currently equipped with standpipe sprinkler systems, which we assume are in working order. New fire hydrants are being installed along the main road corridor at roughly 250 ft spacing, consistent with light industry or neighborhood business land usage.

Current conversations with DOH indicate that a 12-inch water main "loop" may be installed as a change order to DAGS job 12-20-2613, "Waimano Ridge Site Water System Improvements" 4/2012. The water main "loop" would connect Waterline C to the existing 12-inch main extending into the DLNR baseyard, and would be aligned in the Building 5 Access Road (see APPENDIX C-1).

4) Sewer

i. Existing Conditions

The existing Waimano Training School and Hospital sewer is maintained by the State of Hawaii. The State's 8-inch sewer main begins at Hale Ola and approximately follows the alignment of Waimano Home Road; the 8-inch main transitions to a 12-inch main near Uluakupu. A restricted flow condition exists where the State's 12-inch sewer main connects to the City's 8-inch sewer main outside of the property line (See EXHIBIT C-4). We have not been informed of any issues to date resulting from this restricted flow condition.

Another branch of the State's 8-inch sewer begins south-east of Building B-8. The 8-inch sewer runs south, then turns to follow the alignment of DOH State Laboratory access road before connecting to the 8-inch sewer main at the intersection of Waimano Home road and the DOH State Laboratory access road. The sizes of the sewer

BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

laterals coming off this main are unknown, and are assumed to be 4-inch or 6-inch in diameter.

Another 8" sewer line begins at the Department of Health State Laboratory. This main is aligned with an existing dirt road and Road C, and connects to the Waimano Home Road sewer adjacent to Uluakupu, at the 8-inch to 12-inch transition. Another 6" sewer main begins at the DLNR Baseyard, which continues between Buildings B-1 and B-2 (demolished) and connects to the Waimano Home Road sewer adjacent to the existing guard shack.

All areas of the Waimano Ridge Property being investigated as part of the current feasibility study are serviced by the 8-inch section of the State's sewer main. The condition of the existing sewer main and laterals is unknown. For the purposes of this study, we are assuming that the main is in operational condition and will remain in place, and that service laterals will be replaced as part of the current project. A sewer main investigation should be conducted to verify the conditions of the mains. This process involves deploying a remote controlled camera through the piping to confirm the existing condition.

Hale Ola is connected to the sewer main with two laterals; one 6-inch and one 8-inch lateral. The Kitchen building is connected to the 8-inch sewer main with a 6-inch lateral. The Kitchen lateral and the 6-inch lateral from Hale Ola merge at a junction box and connect to the main (see EXHIBIT C-5).

The location of sewer laterals from Buildings B-6, B-7, and B-8 are approximated based on available as-built drawings and site observations, however the precise location of each building's sewer lateral is not known due to a lack of record drawings. We are assuming that laterals are connected to an 8-inch sewer main branch east of the buildings (see EXHIBIT C-5).

At the location of the proposed new building in Scenarios 1B and 2B, there is an existing 8-inch sewer main aligned with Road C, adjacent to the proposed site. This main originates at the DOH State Laboratory.

There is an existing sewer main and 3 laterals passing through the Scenario 1B and 2B site (see EXHIBIT C-6). The 3 laterals formerly serviced Buildings B-1 and B-2, and Thayer Hall; Buildings B-1 and B-2 have been demolished, and Thayer Hall is planned to be demolished. We assume that the demolished mains have not been removed. The sewer main also services Building B- 5, which is actively being used as the Youth Treatment Facility.

BASIS OF DESIGN
WAIMANO RIDGE FEASIBILITY STUDY
FOR AFFES BUIDLING AND STAFF RELOCATION
DAGS JOB NO. 12-20-2680

Uluakupa is connected to the 6- inch sewer main with a 4-inch lateral (see Exhibit C-6).

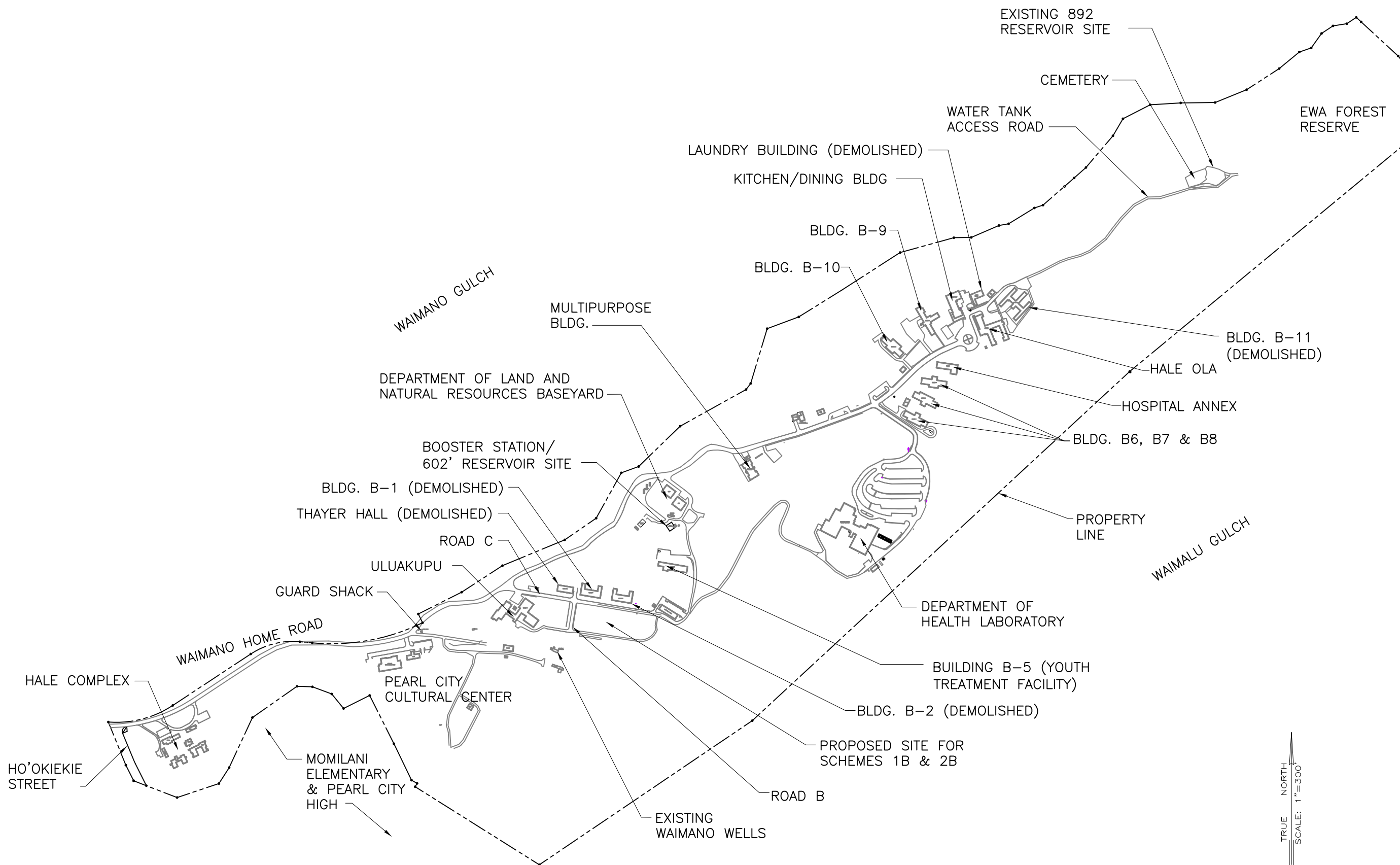
ii. Pearl City Wastewater Pump Station Connection Moratorium

The C&C Department of Environmental Services (DES) enacted a moratorium on new connections to the Pearl City Wastewater Pump Station on April 20, 2012 (see APPENDIX C-2). The pump station is at capacity; no new connections will be approved, however direct replacement that does not result in increased wastewater flows may be approved.

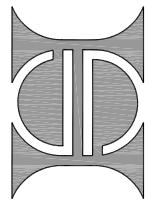
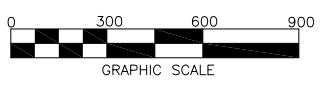
Because of the recent and ongoing changes in use of the Waimano Ridge property it is unclear what quantity of wastewater flows are accounted for under the moratorium. A 2011 sewer billing agreement between DOH and DES recognizes 137 daytime staff and live-ins (see APPENDIX C-3). DOH has indicated that there are currently 335 personnel and live-ins at the Waimano Ridge Property (APPENDIX C-4 for existing population building distribution).

All of the scenarios discussed in this feasibility study increase the number of people occupying the site, and thus increase the wastewater flows. DOH will have to engage DES in negotiations to determine the most appropriate course for gaining approval for the current relocation project under the sewer moratorium. This report recommends installing a sewage holding tank to detain additional sewage flows produced by the personnel relocated under this project. The detained sewage will be discharged to the sewer main during off-peak hours, when it is likely that the Pearl City Wastewater Pump Station has the required capacity. The result would be that this project would result in no net increase in the property's peak sewage discharge rate. This sewage detention concept is adaptable to future expansion of the Waimano Ridge site; future projects would install sewage holding tanks to detain the additional flows associated with that project.

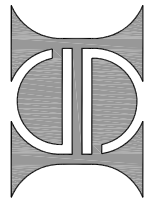
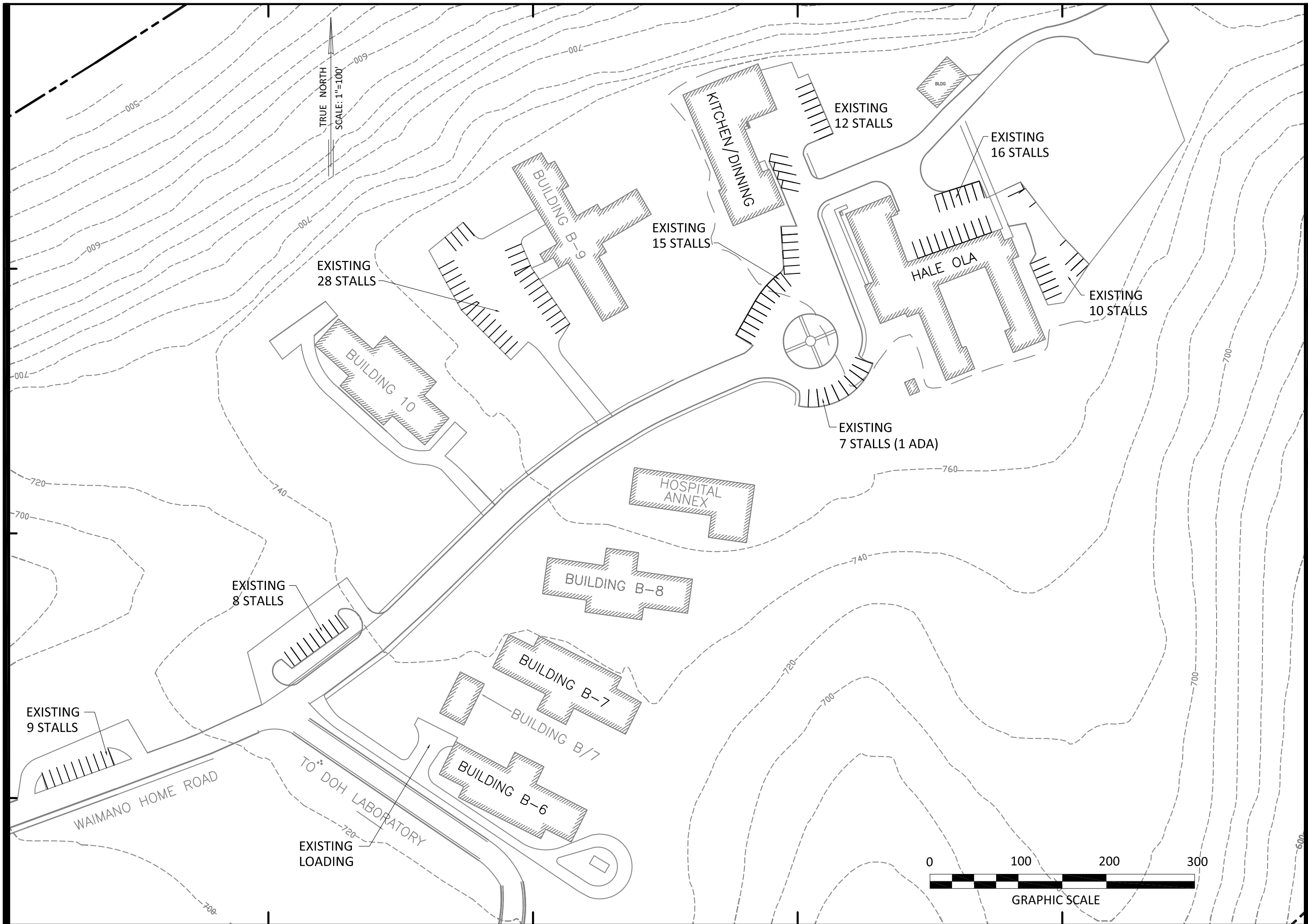
The sewage holding tank would be a concrete, thermoplastic, or fiberglass vault with redundant grinder pumps and an outlet connected to the State's 8-inch sewer main adjacent to the project site. The vault should be sited as close as possible to the source building, in order to reduce lateral length.



TRUE NORTH
SCALE: 1"=300'



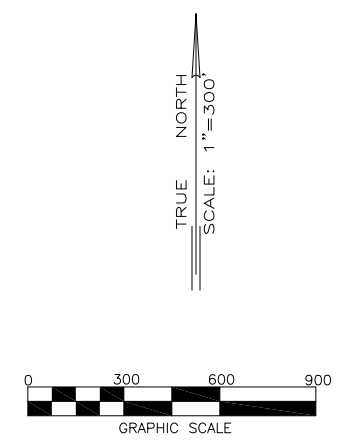
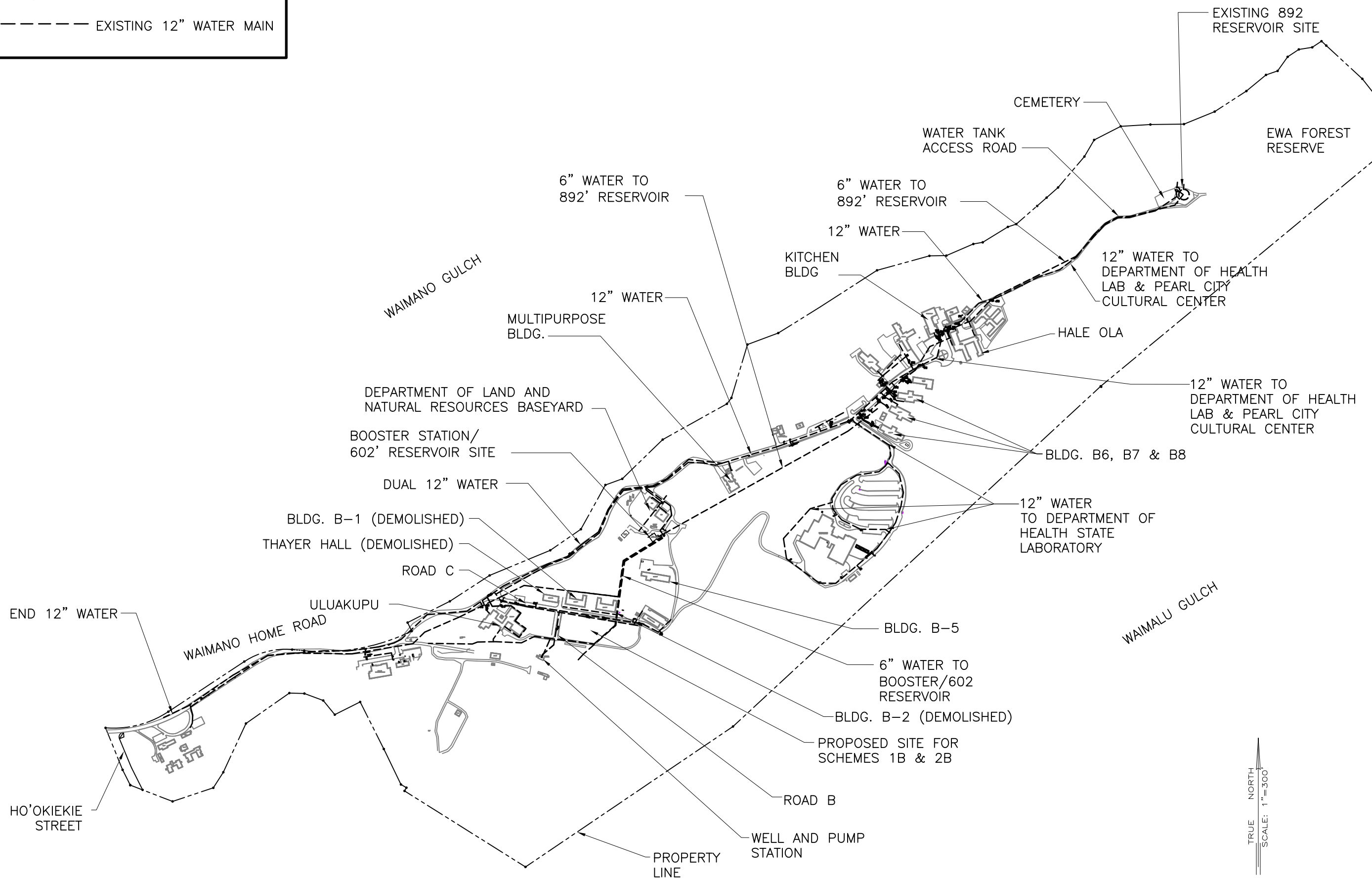
OVERALL SITE PLAN	Date:	10/2/2012
	Sheet No.	EXHIBIT C-1
Contract No.	Reference Dwg. No.	



SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

EXISTING SITE PLAN MAUKA AREA Contract No.	Date: 10/2/2012
	Sheet No. EXHIBIT C-2
Reference Dwg. No.	Contract No.

LEGEND
 - - - - - EXISTING 12" WATER MAIN



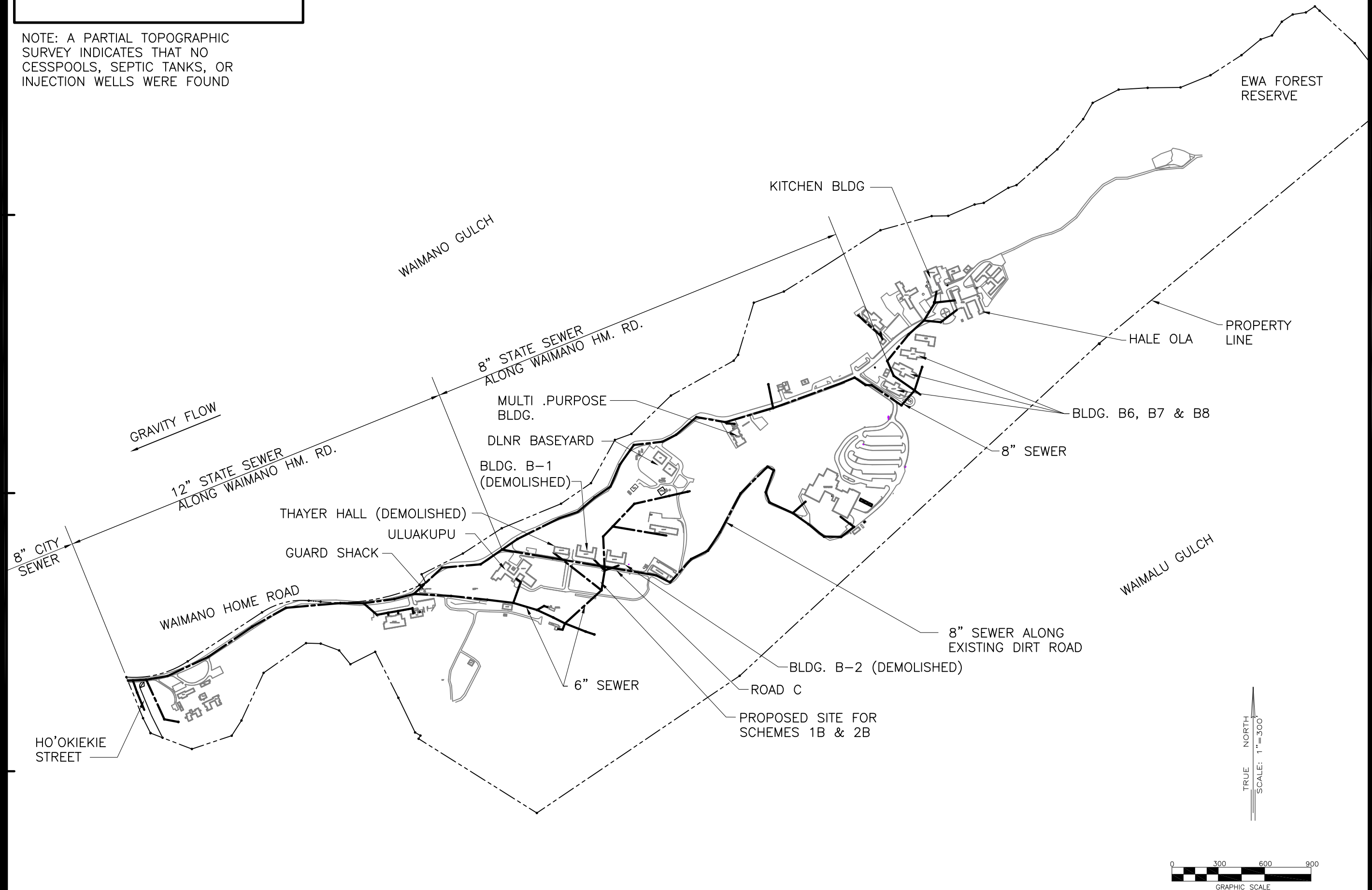
Date: 10/2/2012
 Sheet No. EXHIBIT C-3

EXISTING WATER SYSTEM OVERVIEW
 Reference Dwg. No.
 Contract No.

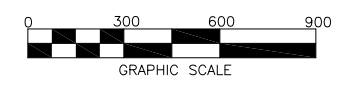
LEGEND

--- EXISTING SEWER

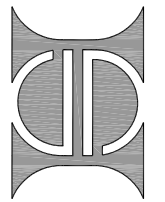
NOTE: A PARTIAL TOPOGRAPHIC SURVEY INDICATES THAT NO CESSPOOLS, SEPTIC TANKS, OR INJECTION WELLS WERE FOUND



TRUE NORTH
SCALE: 1" = 300'



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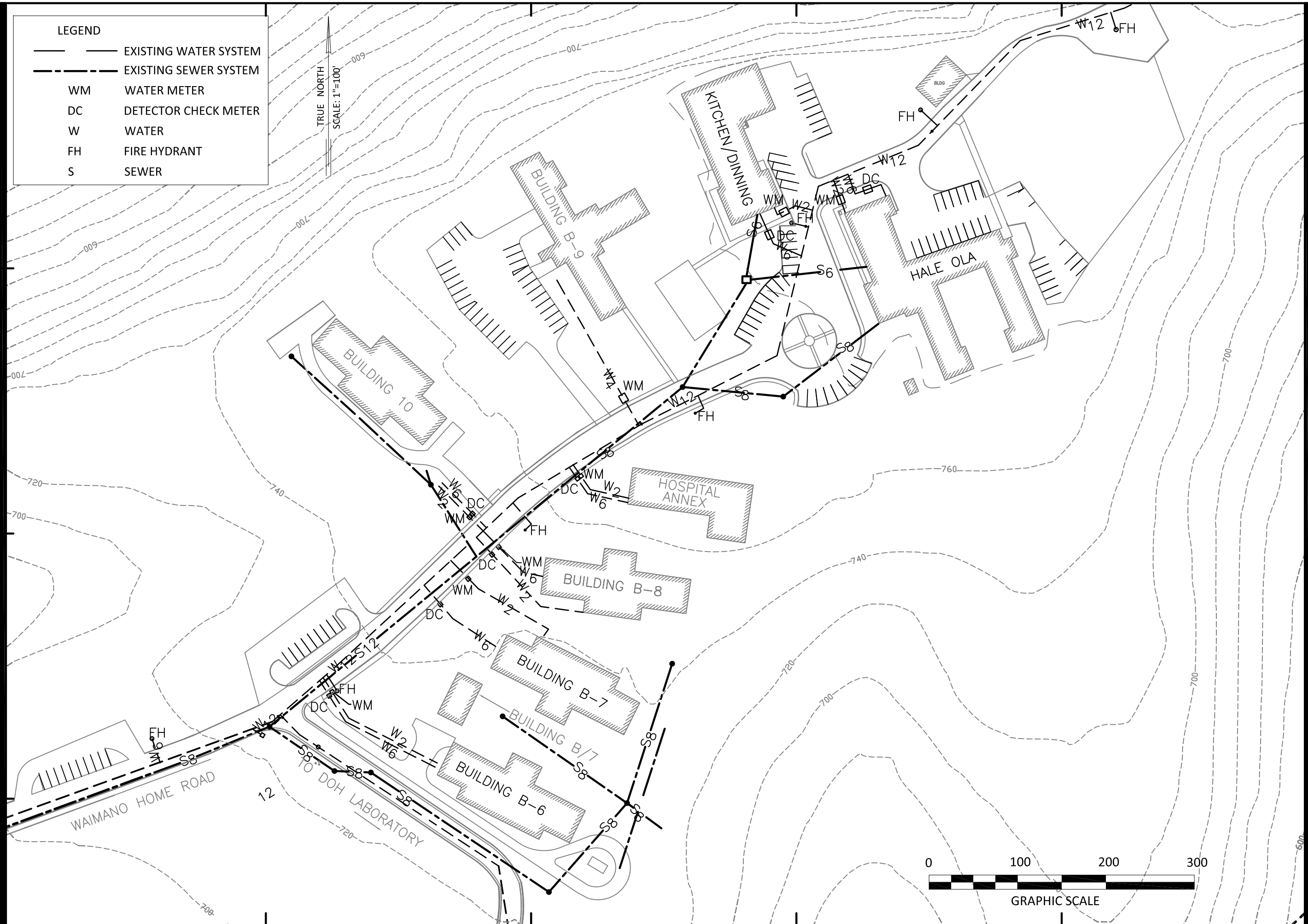


EXISTING SEWER SYSTEM OVERVIEW	Date:	10/2/2012
	Sheet No.	EXHIBIT C-4
Contract No.	Reference Dwg. No.	

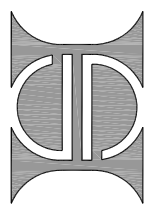
LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

TRUE NORTH
SCALE: 1"=100'



EXISTING UTILITY PLAN MAUKA AREA	Date: 10/2/2012
Contract No.	Sheet No. EXHIBIT C-5
Reference Dwg. No.	EXHIBIT C-5

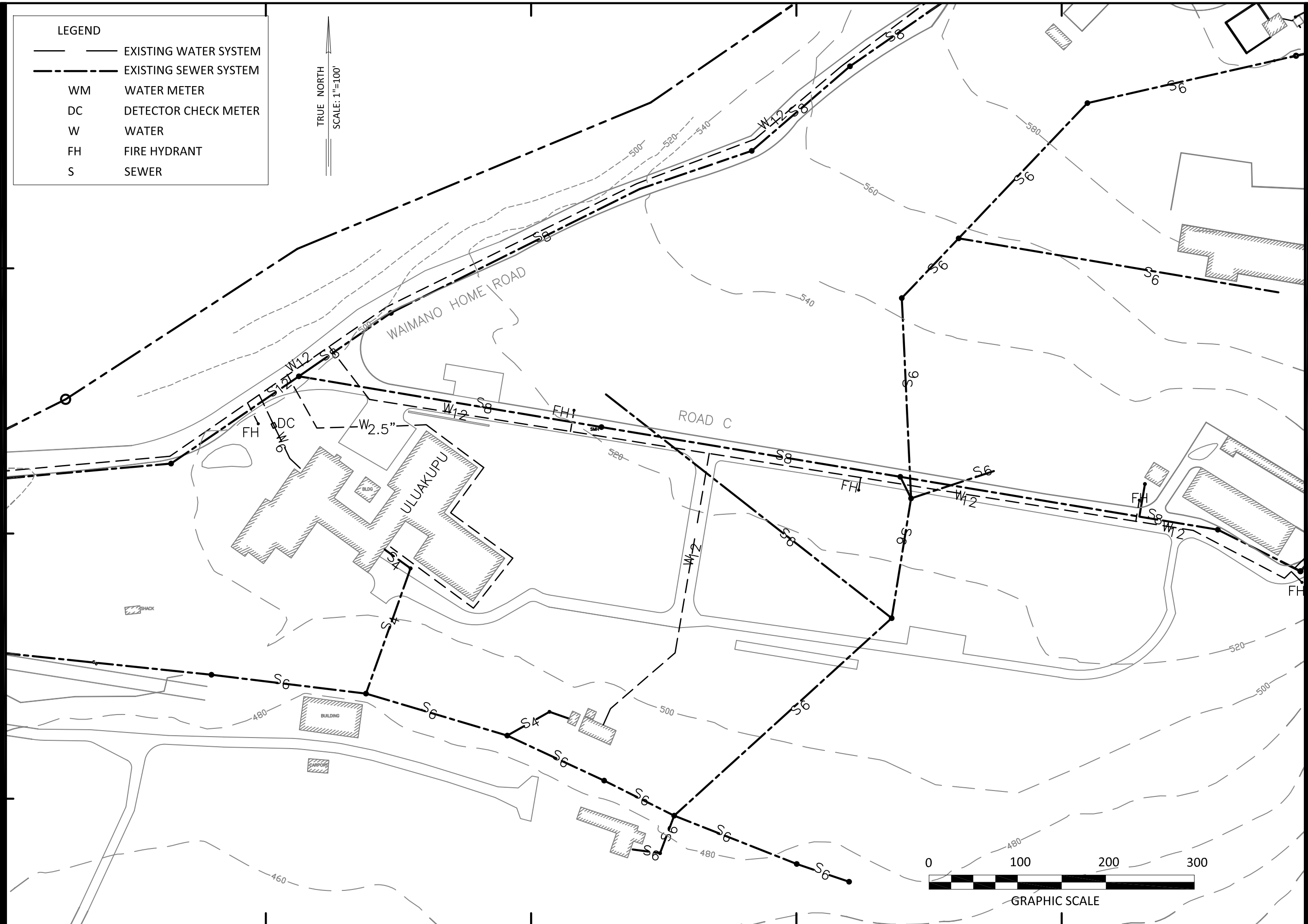


SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

TRUE NORTH
SCALE: 1"=100'

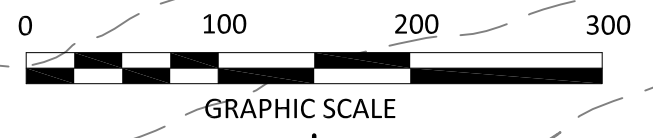


Date: 10/2/2012
Sheet No. EXHIBIT C-6

EXISTING UTILITY PLAN MAKAI AREA

Reference Dwg. No.

Contract No.



C. STUDY OF OPTIONS

INTRODUCTION..... C-4

1. RENOVATE INDIVIDUAL BUILDINGS C-6

 a. ARCHITECTURAL – CDS INTERNATIONAL C-6

 1) STRUCTURAL DAMAGE C-6

 2) FINISH DAMAGE..... C-7

 APPENDIX A-2 – FLOOR PLANS AND PHOTOS

 b. CIVIL – SAM O. HIROTA, INC..... C-9

 c. COST ESTIMATE - RIDER LEVETT BUCKNALL..... C-10

2. SCHEME 1A – RENOVATE AND ALTER FOR 150 STAFF C-11

 a. ARCHITECTURAL – CDS INTERNATIONAL C-11

 EXHIBIT A-7 to A-10: SCHEME 1A DETAIL AND PROPOSED FLOOR PLANS

 b. CIVIL – SAM O. HIROTA, INC..... C-12

 EXHIBIT C-7: SCHEME 1A PROPOSED SITE IMPROVEMENTS

 EXHIBIT C-8: SCHEME 1A PROPOSED UTILITY IMPROVEMENTS

 c. COST ESTIMATE – RIDER LEVETT BUCKNALL C-14

3. SCHEME 1B – NEW BUILDING FOR 150 STAFF C-15

 a. ARCHITECTURAL – CDS INTERNATIONAL C-15

 EXHIBIT A-11: SCHEME 1B DETAIL

 EXHIBIT A-12: SCHEME 1B FLOOR PLAN

 b. CIVIL – SAM O. HIROTA, INC..... C-16

 EXHIBIT C-9: SCHEME 1A PROPOSED SITE IMPROVEMENTS

 EXHIBIT C-10: SCHEME 1A PROPOSED UTILITY IMPROVEMENTS

 c. COST ESTIMATE – RIDER LEVETT BUCKNALL C-18

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

4.	SCHEME 2A - RENOVATE AND ALTER FOR 240/262 STAFF.....	C-19
a.	ARCHITECTURAL – CDS INTERNATIONAL	C-19
	1) SCHEME 2A-1	C-19
	2) SCHEME 2A-2	C-20
	3) SCHEME 2A-3	C-21
b.	CIVIL – SAM O. HIROTA, INC.....	C-22
	1) SCHEME 2A-1	C-22
	2) SCHEME 2A-2	C-25
	3) SCHEME 2A-3	C-27
c.	COST ESTIMATE – RIDER LEVETT BUCKNALL.....	C-31
	EXHIBIT A-13: SCHEME 2A-1 DETAIL	
	EXHIBIT A-14 to A-19: SCHEME 2A-1 FLOOR PLANS	
	EXHIBIT C-11: SCHEME 2A-1 PROPOSED SITE IMPROVEMENTS	
	EXHIBIT C-12: SCHEME 2A-1 PROPOSED UTIL. IMPROVEMENTS	
	EXHIBIT A-20: SCHEME 2A-2 DETAIL	
	EXHIBIT A-21 to A-25: SCHEME 2A-2 FLOOR PLANS	
	EXHIBIT C-13: SCHEME 2A-2 PROPOSED SITE IMPROVEMENTS	
	EXHIBIT C-14: SCHEME 2A-2 PROPOSED UTIL. IMPROVEMENTS	
	EXHIBIT A-26: SCHEME 2A-3 DETAIL	
	EXHIBIT A-27 TO A-31: SCHEME 2A-3 FLOOR PLANS	
	EXHIBIT C-15: SCHEME 2A-3 PROPOSED SITE IMPROVEMENTS	
	EXHIBIT C-16: SCHEME 2A-3 PROPOSED UTIL. IMPROVEMENTS	
5.	SCHEME 2B –NEW BUILDING FOR 240/262 STAFF.....	C-32
a.	ARCHITECTURAL – CDS INTERNATIONAL	C-32
	EXHIBIT A-32: SCHEME 2B DETAIL	
	EXHIBIT A-33 TO A-34: SCHEME 2B FLOOR PLANS	
b.	CIVIL – SAM O. HIROTA, INC.....	C-33
	EXHIBIT C-17: SCHEME 2B PROPOSED SITE IMPROVEMENTS	
	EXHIBIT C-18: SCHEME 2B PROPOSED UTILITY IMPROVEMENTS	
c.	COST ESTIMATE – RIDER LEVETT BUCKNALL.....	C-35

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

6.	SCHEME 3 – RENOVATION AND ADDITION FOR 262 STAFF.....	C-36
a.	ARCHITECTURAL – CDS INTERNATIONAL	C-36
b.	CIVIL – SAM O. HIROTA, INC.....	C-37
	EXHIBIT C-19: SCHEME 3 PROPOSED SITE IMPROVEMENTS	
	EXHIBIT C-20: SCHEME 3 PROPOSED UTIL. IMPROVEMENTS	
c.	COST ESTIMATE – CDS INTERNATIONAL.....	C-40
7.	DOCUMENTATION OF DOH DIVISION, BRANCH, AND OFFICE HEAD RESERVATIONS.....	C-41

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

C. STUDY OF OPTIONS

INTRODUCTION

Based on questionnaires, interviews, and meetings with the affected DOH Division, Branch, and Office heads and physical survey of their current office space as well as the buildings and property on Waimano ridge, the design team has developed a series of Schemes as options for relocation of specified DOH staff.

After careful observation and documentation of the existing condition of the buildings on site, CDS developed and distributed a questionnaire seeking information on how each group works. Each Division, Office and Branch head was asked to fill out the form with support and input from their individual staffs. All were returned in a timely manner with complete responses detailing their varied, specific needs.

CDS followed up with a visit to the AFFES Building to make a general inventory of furniture and discuss what we had learned from the questionnaire responses. All the DOH employees were helpful and shared all information requested of them.

The design team met with the DOH in four separate meetings held between July 6 and August 5, 2012. Architectural design, Civil design, and Cost Estimates for all schemes were presented at each meeting showing progression through the design process as more information and understanding was gained by the design team.

Scheme 1A, 2A, and 3 all include costs and feasibility analysis for the renovation of existing buildings to bring them into code compliance for occupancy as well as all alterations required to make the buildings usable for this specific group.

Scheme 1B and 2B propose new buildings on site.

Scheme 1A, 1B, and 2A-3 all assume some staff relocation to Uluakupu. This building is currently under renovation under a separate contract. Costs associated with building and site development to relocate staff to that building are NOT included in our Cost Estimates.

A note about furniture:

Initial thinking by the DOH was to re-use the existing cubicle walls and furniture in the relocation. Based on space planning analysis of fitting these cubicles into the proposed schemes, CDS developed cost estimates to compare the costs associated with using the DOH existing furniture verses buying new.

Currently most of the groups to be relocated own their own cubicle partitions which when placed together form cubicles measuring approximately 9'-0" x 10'-0" x 5'-0" high. New cubicle furniture would be wired, come with built in desk and storage and measure 6'-0" x 7'-0" x either 4'-0" or 6'-0" high.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

Using the existing furniture would eliminate new equipment cost, but cause a significant increase in building square footage making the project costs as a whole larger. The detailed analysis can be found in APPENDIX A-2.

Based on the cost savings to utilize the new 6'-0" x 7'-0" workstations, they have been used for design of all scheme layouts except Scheme 1A which was developed before this decision was made. No FF&E costs are included in any of the cost estimates.

See APPENDIX A-3 for detailed lists noting space needs by Division, Branch, and Office.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

1. RENOVATE INDIVIDUAL BUILDINGS

a. ARCHITECTURAL – CDS INTERNATIONAL

This scheme is based on the assessment of the physical condition of nine existing buildings at the project site. The design team walked through all buildings noting any structural damage found, general finish damage, and any specific areas of deterioration from water damage.

The cost assessment shows separate renovation costs for each individual building to be in compliance with current code but without consideration for re-configuration for the new use.

A list of the assessed buildings is as follows. Plans and photos of damaged areas can be found in APPENDIX A-4.

BUILDING B-6
BUILDING B-7
BUILDING B-6/7
BUILDING B-8
BUILDING B-9
BUILDING B-10
MULTI-PURPOSE BUILDING
KITCHEN AND DINING BUILDING
HALE OLA

The design team was asked to include a cost per square foot total for the HOSPITAL ANNEX building as well. No site investigation was performed for this building.

1) STRUCTURAL DAMAGE

A physical walk through of each building found limited structural damage in the following locations.

i. Building B-9

The northwest wing of the building appears to have settled enough to crack the entire floor slab away from the rest of the building. Cracks were seen down the walls on both side of the wing, floor to ceiling/inside and out. Roof damage could not be directly assessed but the ceiling finish was more deteriorated in this area than the rest of the building.

ii. Multi-Purpose Building

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

Extensive cracking was noted vertically throughout CMU walls and horizontally in floor slabs. Most CMU cracking was found on the fin walls built to support the outer edge of the lanai roof overhangs. The fin walls on the South side have separated from the main building apparently pulled down by the ramps and handrails attached to them. Floor slabs show cracking throughout the interior as well as throughout all covered lanai areas. Roof damage could not be directly assessed but there was no visible water penetration seen.

iii. Building B-6, 7, 8, and 10

Roof damage could not be directly assessed but there was visible water damage on walls, ceilings and floors somewhat throughout, and specifically in areas as follows.

- A. Dayroom A, B (Bldg B-6, 7, 8, 10 on A side of bldg) – It appears part of these rooms were an addition and the connection between the two zones shows cracking and water penetration in all buildings. The crack continues through the exterior wall at the soffit all the way out to the edge.
- B. Ward B, E (Bldg B-6, 7) - These rooms have similar ceiling damage as is found in the Dayrooms.
- C. Office A, B (Bldg B-6, 8, 10 on A side of bldg) – These rooms have similar ceiling damage as is found in Dayroom.
- D. Bathroom skylight – Not apparent if damage is structural or just finish from skylight leaking but found moderate water damage in B-8 and extensive water damage in B-10.

iv. Building 6/7 – Vertical crack in CMU fin wall, but no additional damage seen within building.

v. Hale Ola – Occasional exterior soffit cracking. Some rebar exposure through plaster.

2) FINISH DAMAGE

Physical walk through of each building found extensive finish damage throughout all buildings except Hale Ola. Hale Ola showed wear and tear, but only occasional damage.

General findings:

- i. Finishes were water damaged at all areas where Structural damage was found.
- ii. Mold was found extensively throughout buildings on all surfaces.
- iii. Ceilings were spotted with water damage. Tiles were missing, broken. Paint peeling off in many locations.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

- iv. Flooring was peeling up, chipped, and scratched beyond repair everywhere.
- v. Windows and doors – framework was moderately deteriorated, hardware was extremely deteriorated.
- vi. Restrooms varied – some tile might be salvageable, others chipped, discolored, missing. Plumbing assumed to not be working. All fixtures were in disrepair, broken, moldy.

Specific Findings:

- i. Building 6/7 – Extensive water damage in Dish Washing room.
- ii. Kitchen Dining Building – Extensive Finish water damage throughout Kitchen.
- iii. Hale Ola
 - Most finishes were found to be in good condition.
 - Occasional water damage found.
 - Moderate damage to brick inlay on second floor lanai.
 - Extensive damage to wood at large three story entry window.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

1. RENOVATE INDIVIDUAL BUILDINGS

b. CIVIL - SAM O. HIROTA, INC

No Civil scope, parking or utility, was included in the analysis or cost estimate for these individual building-only renovation solutions.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

1. RENOVATE INDIVIDUAL BUILDINGS

c. COST ESTIMATE – RIDER LEVETT BUCKNALL

See APPENDIX CE-1 for details of the Cost Estimate.

Renovation Scheme Estimate includes costs for:

- Demolition of structural failure to Building B-9 and spalling repairs at the Multi-Purpose Building
- Removal of the fire sprinkler system
- Removal and replacement of plumbing fixtures and piping
- Complete removal and replacement of all electrical elements
- Removal and replacement of all doors
- Removal and replacement of all windows with aluminum sliding windows
- Reroofing with BUR with R-19 insulation
- Repainting of the exterior and interior of the buildings throughout
- Ceramic tile flooring and wainscot in restrooms
- Removal of all floor tiles that contain asbestos and replacement with vinyl composition tile with rubber base
- Casework and fitment items removal
- Repair and renovation of the elevator in Hale Ola
- Hazardous abatement allowance
- Allowance to reinstate landscaping at the perimeter of the buildings

Renovation Scheme Cost Estimate per building:

Multi Purpose Building	\$ 804,000
Building B-6	\$ 805,000
Building B-6/7	\$ 159,000
Building B-7	\$ 787,000
Building B-8	\$ 759,000
Building B-10	\$ 748,000
Building B-9	\$1,117,000
Hospital Annex	\$ 560,000
Kitchen/Dining Building	\$ 925,000
Hale Ola	\$2,976,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

2. SCHEME 1A – RENOVATE AND ALTER FOR 150 STAFF

c. ARCHITECTURAL – CDS INTERNATIONAL

The original DOH request was for this scheme to study the placement of 150 staff members in the Multi-Purpose Building. Upon initial inspection of this building, it was decided only approximately 30-50 staff could be accommodated and an alternate Scheme was required.

CDS proposed a scheme to renovate Buildings B-6, B-7, and B-8 to accommodate 145 DOH staff. The three buildings were originally used as dormitory buildings. They are all approximately the same floor plan, sited all on the same side of Waimano Home Road right next to each other and total approximately 25,000 SF.

This scheme proposes renovation and alteration of Buildings B-6, B-7, and B-8 to support 145 DOH staff as follows.

Building 6 – HEER
Building 7 – SHWB
Building 8 – CAB

These groups were chosen based on their square footage requirements fitting most closely to these existing buildings and their total staff coming close to 150 per original scope requirements. Different groups could be accommodated for a similar result.

Reception areas, Libraries, Conference Rooms, Staff Rooms, and Storage are provided for each section based on the DAGS standard. The DOH requested the design team use this standard as a recommended allotment of space, but not to see it as a mandate. Consideration for Division, Branch, and Office specific space requests were provided based on DOH approval and discussions and compromises made in meetings. Since each section is in a separate building in this scheme, no sharing of these specific spaces was assumed. All three buildings had a small amount of extra space left over for expansion.

Initially, the DOH had predicted only needing to move 150 staff in this scheme based on the assumption 100 people could be moved into Uluakupu (currently under renovation on the site per separate contract). Upon further inspection, after our 150 staff relocation design studies were complete, the DOH reported to the design team that only 70 staff can be accommodated in Uluakupu. Therefore Schemes 1A and 1B, when combined with the smaller capacity Uluakupu, do not move the entire population in need of relocation.

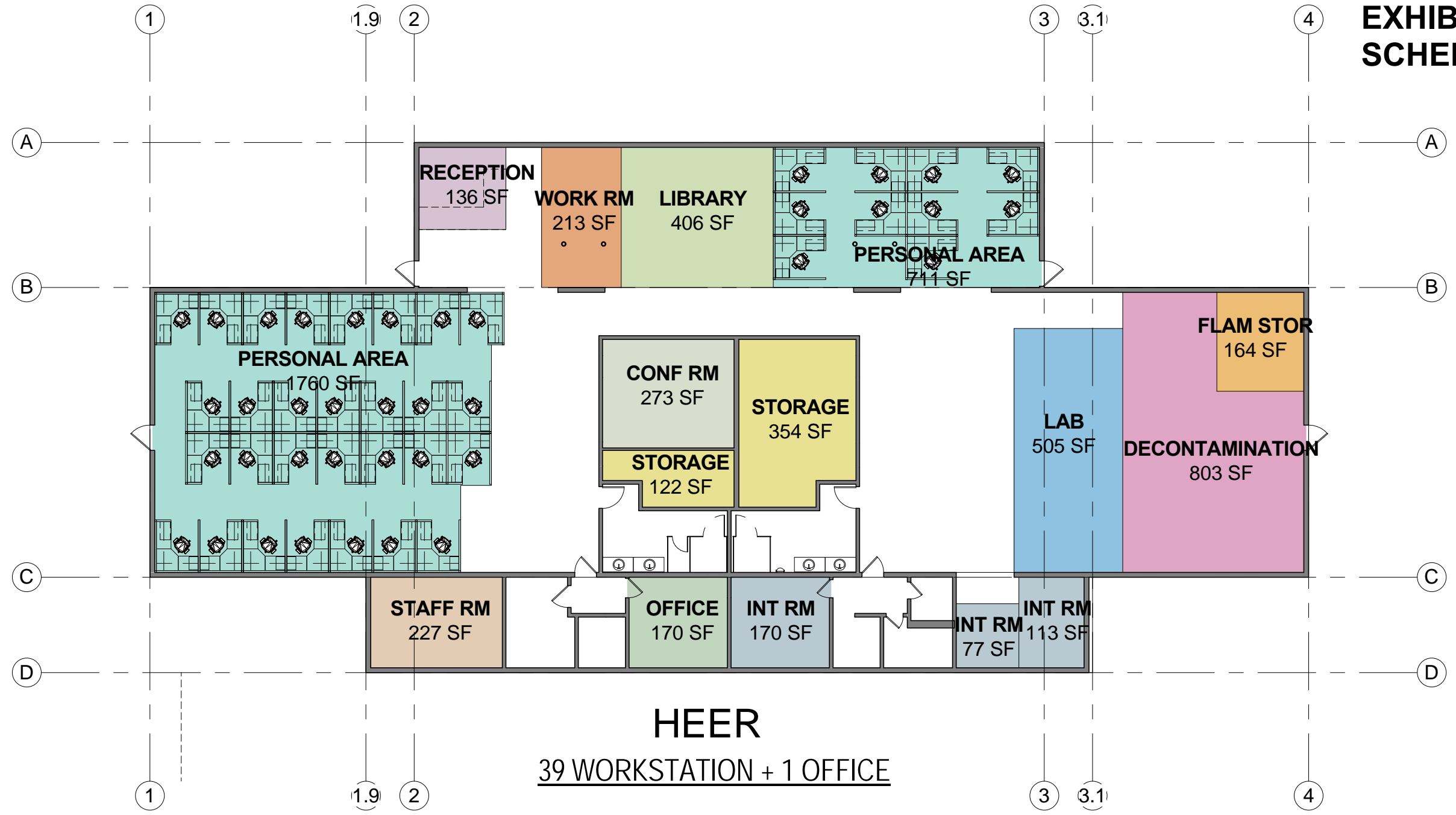
Placing 145 staff into B-6, B-7, and B-8 and 70 staff into Uluakupu, this scheme relocates a total of 215 staff. See EXHIBITS A-7 to A-10 for detail and floor plans of this scheme.

**SCHEME 1A - Space Plan for 150→145 Staff Relocated to Existing Buildings:
(Mainly Buildings 6, 7, & 8)**

- **Inefficiency Factor:** Less Than 10% (per Layout Study)
- Floor Area Allocated:
 - 8,805 SF (Building 6 for HEER - 40 PN)
 - 8,078 SF (Building 7 for SHWB - 54 PN)
 - 8,230 SF (Building 8 for CAB - 51 PN)
- Floor Area Provided: 28,383 SF
- Space Planning Layout using 6'x7' workstations typically.
- CAB Smoke Generator Storage is Included.
- SHWB 1,200 SF Storage is Included.



**EXHIBIT A-8
 SCHEME 1A**



① BUILDING 6 FLOOR PLAN
 1/16" = 1'-0"

Room Legend

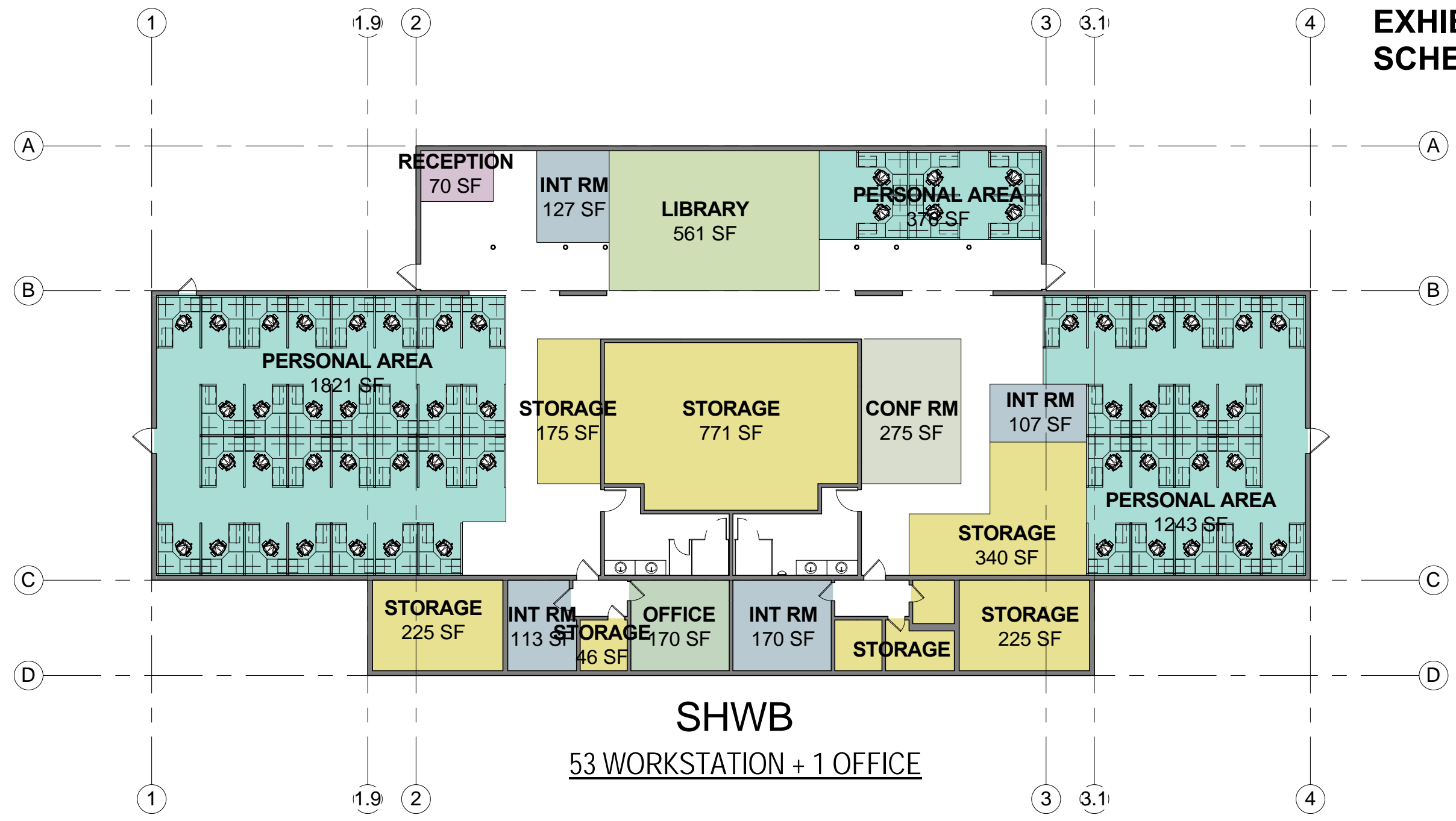
- | | | | |
|-----------------|---------|---------------|----------|
| CONF RM | INT RM | OFFICE | STAFF RM |
| DECONTAMINATION | LAB | PERSONAL AREA | STORAGE |
| FLAM STOR | LIBRARY | RECEPTION | WORK RM |



WAIMANU RIDGE - BUILDING 6	Date: 08/16/12
	Sheet No. A-02
Reference Dwg. No.	
Contract No.	



**EXHIBIT A-9
 SCHEME 1A**

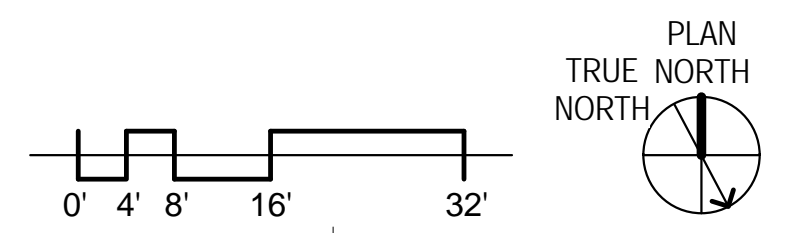


SHWB
53 WORKSTATION + 1 OFFICE

1 BUILDING 7 FLOOR PLAN
 1/16" = 1'-0"

Room Legend

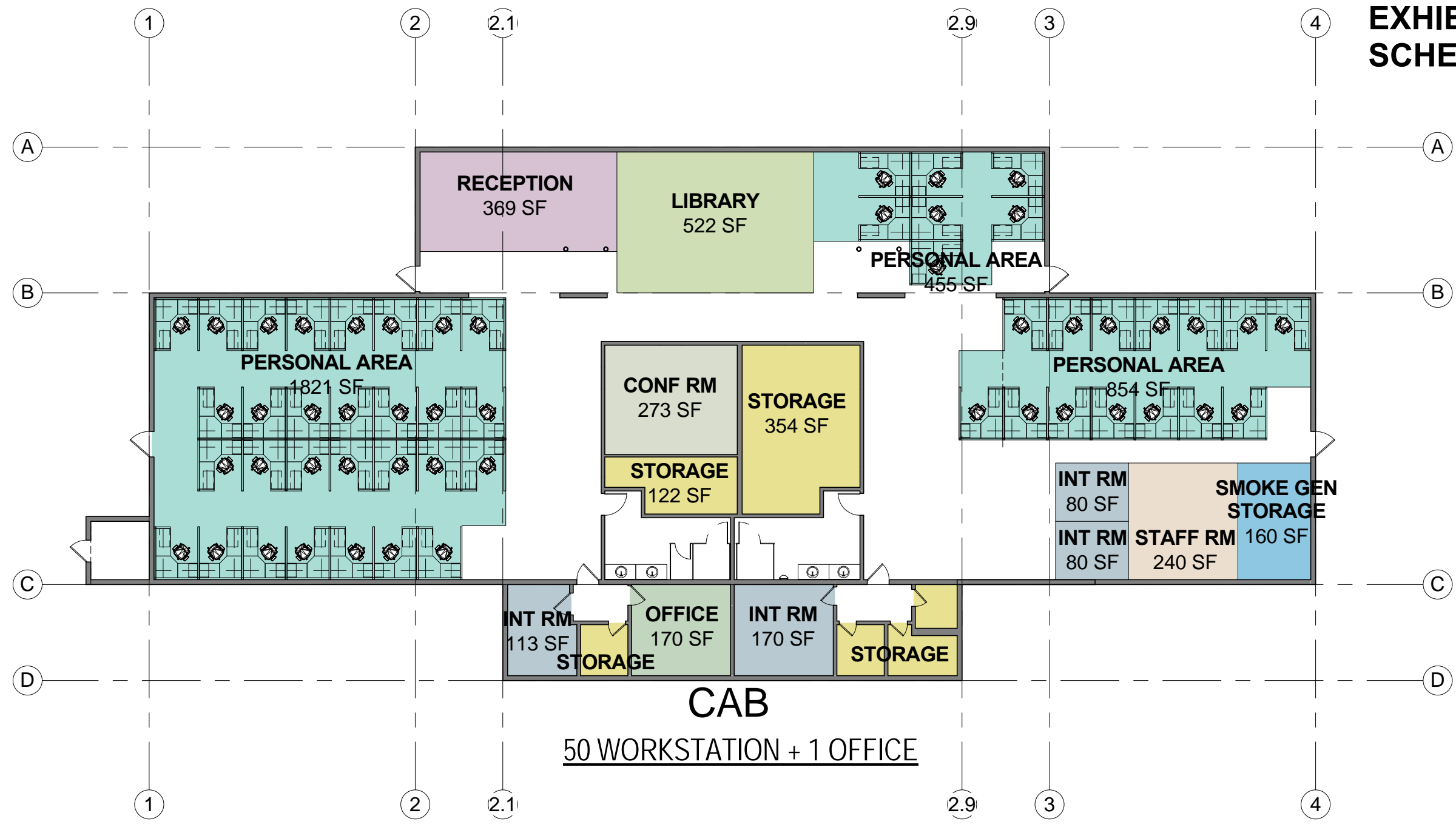
- CONF RM
- INT RM
- LIBRARY
- OFFICE
- PERSONAL AREA
- RECEPTION
- STORAGE



WAIMANU RIDGE - BUILDING 7	Date: 08/16/12 Sheet No. A-02
Contract No.	Reference Dwg. No.



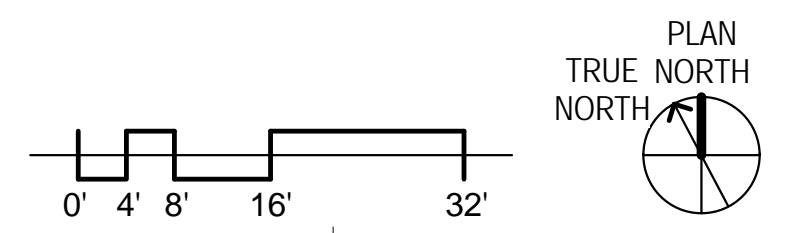
EXHIBIT A-10 SCHEME 1A



1 BUILDING 8 FLOOR PLAN
 1/16" = 1'-0"

Room Legend

- | | | |
|---------|---------------|-------------------|
| CONF RM | OFFICE | SMOKE GEN STORAGE |
| INT RM | PERSONAL AREA | STAFF RM |
| LIBRARY | RECEPTION | STORAGE |



Date: 08/16/12	Sheet No. A-02
Reference Dwg. No.	
WAIMANU RIDGE - BUILDING 8	
Contract No.	

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

2. SCHEME 1A – RENOVATE AND ALTER FOR 150 STAFF

b. CIVIL - SAM O. HIROTA, INC

1) PARKING

Based on gross building area of Buildings B-6, B-7, and B-8, 71 parking stalls are provided in this scheme, including 4 ADA stalls (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. The currently allotted parking includes:

- 2 new ADA parking stalls and 1 ADA isle adjacent to Buildings B- 6 and B-7
- 2 new ADA parking stalls and 1 ADA isle adjacent to Building B- 8
- 9 existing parking stalls located across Waimano Home Road
- 58 new stalls in a new lot located across Waimano Home Road
- * See EXHIBIT C-7 for schematic parking layout plan

The new 58 stall lot is sited at the location of the existing 8 stall lot. The existing lot will be demolished and expanded into the surrounding vegetated areas to accommodate the additional stalls. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new lot will be roughly 290' x 65'. The lot will be surfaced with Asphalt Concrete and striped with stall and isle widths conforming to C&C standards (See APPENDIX C-5, Table C-2 for parking stall and isle dimensions). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New 5-foot minimum width concrete sidewalks and curbs will be provided along Waimano Home Road and at the parking lot borders. Crosswalks and walkways to Buildings B-6, B-7, and B-8 will be provided.

This study assumes that retaining walls will be required at the new ADA parking areas to provide a maximum finished slope of 2-percent. ADA signage and striping will be provided. Lighting will be provided. This study assumes that the existing walkways are ADA compliant. A topographic survey and site design analysis will be required before final recommendations can be made.

Stormwater management enhancements will be needed to manage increased runoff resulting from the new parking lots. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

The existing 9 stall parking lot will be resurfaced, and new striping and signage will be provided to current C&C standards (See APPENDIX C-5, Table C-2). New 5-foot wide concrete sidewalks will be provided to new crosswalks.

The existing loading zone at Building B-6 will be resurfaced, and will satisfy off-street loading requirements for this scheme. The loading zone is connected to Buildings B-7 and B-8 with existing or proposed sidewalks.

No parking upgrades are proposed for Uluakupu.

2) WATER - DOMESTIC AND FIRE PROTECTION

No water utility improvements are required for this scheme.

3) SEWER

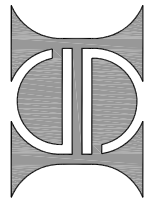
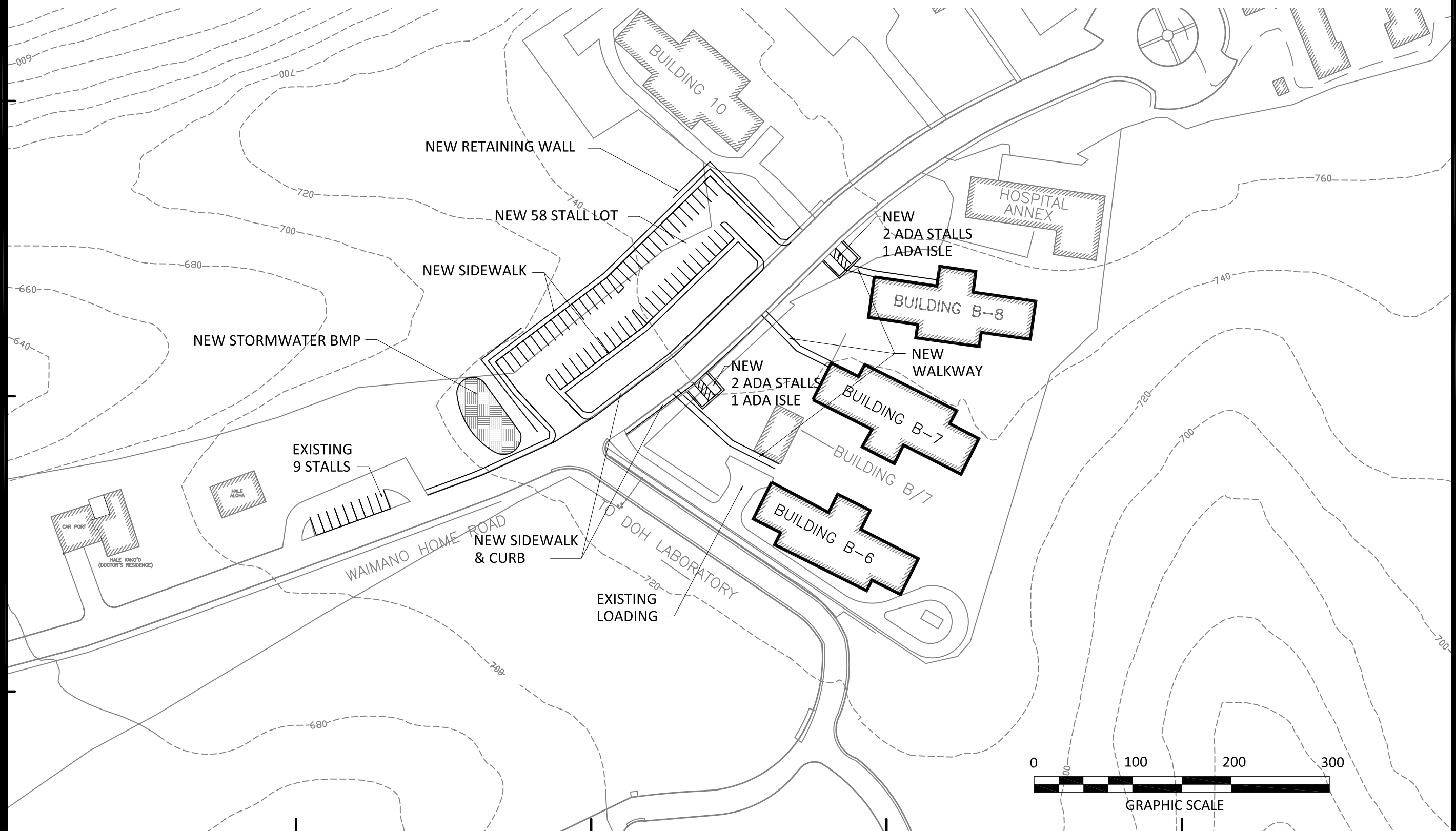
The relocation of 145 DOH employees to Buildings B-6, B-7, and B-8 will lead to the production of roughly 14,000 gallons per day (gpd) of additional wastewater (See APPENDIX C-5, Table C-3a for sewer flow calculations). This report assumes that the project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 16,000 gallon storage tank or vault is recommended. The vault should be sited downstream of all tributary buildings. New 6-inch sewer laterals will be provided, connecting the individual buildings to the vault (see EXHIBIT C-8).

The relocation of 70 DOH employees to Uluakupu will lead to the production of roughly 6,500 gpd of additional wastewater (See APPENDIX C-5, Table C-3a). An 8,000 gallon storage tank or vault is recommended. The vault should be sited downstream of Uluakupu. New 6-inch sewer laterals will be provided, connecting Uluakupu to the vault, and connecting the vault to the 6-inch sewer main (see EXHIBIT C-8).

PARKING SUMMARY

EXISTING -	9 STALLS
NEW -	62 STALLS
TOTAL -	71 STALLS

TRUE NORTH
SCALE: 1"=100'



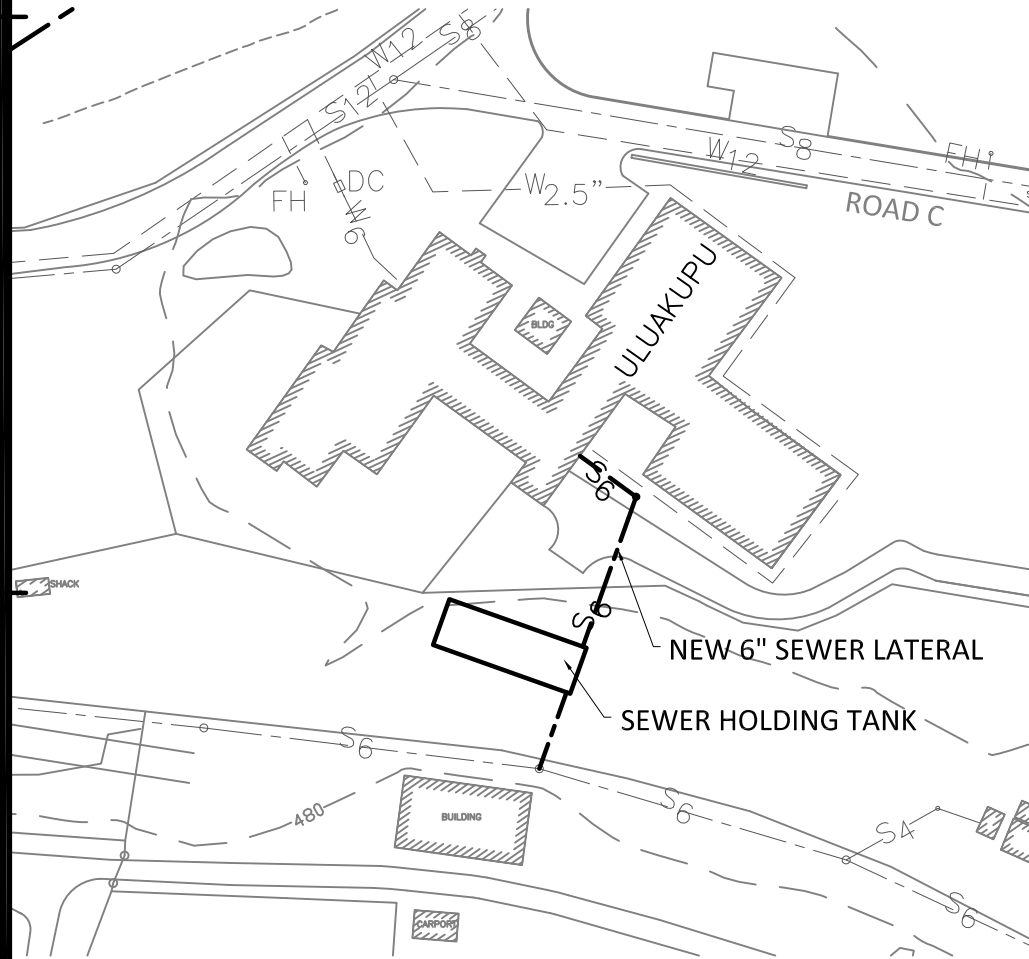
SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

SCHEME 1A PROPOSED SITE IMPROVEMENTS	Date:	10/2/2012
	Sheet No.	EXHIBIT C-7
Contract No.	Reference Dwg. No.	

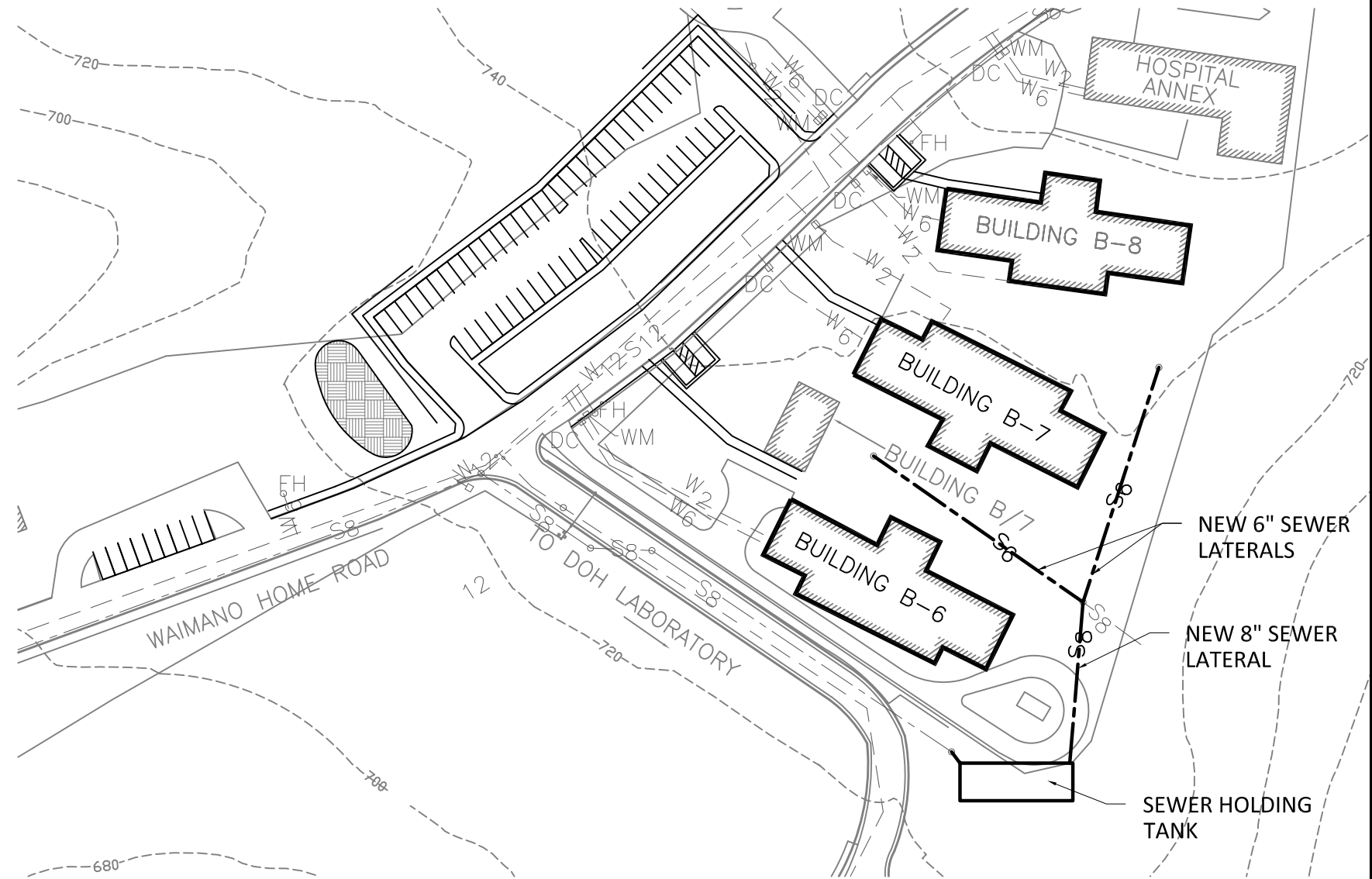
LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- PROPOSED WATER SYSTEM
- - - PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

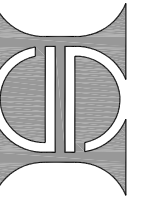
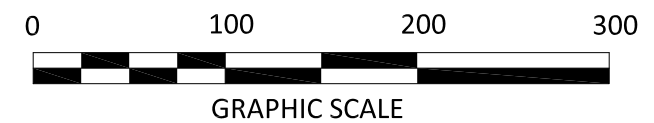
TRUE NORTH
SCALE: 1"=100'



① SCHEME 1A MAKAI PROPOSED UTILITY IMPROVEMENTS



② SCHEME 1A MAUKA PROPOSED UTILITY IMPROVEMENTS



Date: 10/2/2012	Sheet No. EXHIBIT C-8
Reference Dwg. No.	
Contract No.	

SCHEME 1A PROPOSED UTILITY IMPROVEMENTS

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

2. SCHEME 1A – RENOVATE AND ALTER FOR 150 STAFF

c. COST ESTIMATE – RIDER LEVETT BUCKNALL

See APPENDIX CE-1 for details of the Cost Estimate.

Scheme 1A Estimate includes costs for:

- All items noted in RENOVATE INDIVIDUAL BUILDINGS scheme. (Item 1c.)
- Demolition and disposal of all non-structural partitions and associated doors.
- Allowance for new partitions and doors for new layouts developed by CDS.
- Central HVAC system and ventilation to restrooms.
- Furring with insulation and gypsum board to the exterior walls.
- Acoustical tile ceiling and gypsum board ceilings where appropriate.
- Concealed electrical wiring with new lighting throughout.
- Required parking per new County Zoning Code.
- Water and Sewer improvements required to support 150 or 240 DOH staff being relocated to Waimano Ridge.
- Scheme 1A includes for the DOH Staff to be relocated and alterations to buildings B-6, 7 & 8. This Scheme calls for approximately 70 parking stalls located near Buildings B6, B-7 & B-8.

SCHEME 1A COST ESTIMATE:

\$6,876,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

3. SCHEME 1B – NEW BUILDING FOR 150 STAFF

a. ARCHITECTURAL – CDS INTERNATIONAL

This Scheme was developed to relocate 150 people into a new building located somewhere on the Waimano Ridge site. As with Scheme 1A, Uluakupu will house 70 staff in this solution making the total staff relocated per this scheme 215.

To make this scheme comparable to Scheme 1A in number of staff accommodated, this building will support 145 DOH staff as follows.

Building 6 – HEER

Building 7 – SHWB

Building 8 – CAB

All the same design parameters used in Scheme 1A were used in this scheme.

The main benefit of a new building is that it can be specifically designed with an office type layout in mind so it can be the most efficient use of space possible. Based on this idea and the specific needs of this group of staff members, we propose a new single-story 26,500 SF Building will be required to accommodate 150 DOH staff. A 2,200 SF pre-manufactured storage building would be built next to the staff building to save on costs of the more expensive space. The buildings would be located near Uluakupu on a large flat part of the site to minimize site costs.

One additional efficiency gained in this scheme over Scheme 1A is the sharing of some Conference and Storage space based on multiple groups sharing the same building. Also, the location of the new building will be much closer to Uluakupu than any of the renovation schemes allowing for better collaboration and potential sharing of space.

See EXHIBITS A-11 and A-12 for detail and floor plans of this scheme.

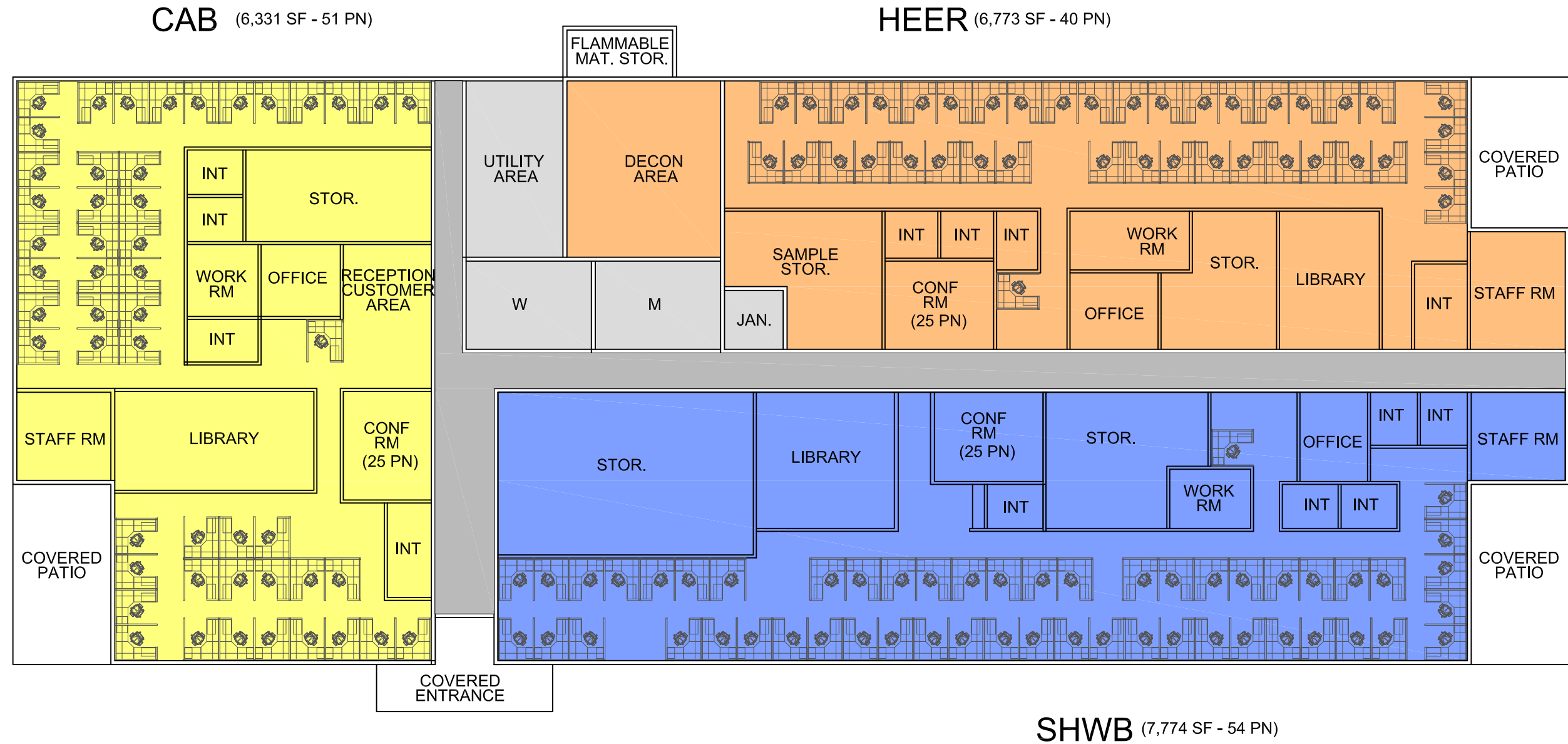
SCHEME 1B - Space Plan for 150 → 145 Staff in New Building:

- SUITE Floor Area: 19,318 SF (for 150 → 145)
- GROSS Floor Area: 25,113 SF

- Building Footprint: 26,500 SF (265' x 100')
(Including 1,530 SF Covered Patio)
- No. of Stories: 1

- SHWB 1,200 SF Additional Storage is Included.

**EXHIBIT A-12
SCHEME 1B**



GROUND FLOOR PLAN

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

GROSS FLOOR AREA: 14,625 SF

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

3. SCHEME 1B - NEW BUILDING FOR 150 STAFF

b. CIVIL – SAM O. HIROTA, INC

1) NEW BUILDING CONSTRUCTION

The construction of a new 25,000 square foot building will require mass grading to prepare the site for construction. Based on our preliminary findings regarding the site slope, a retaining wall will be required to accommodate the building. A new sidewalk with concrete curbs will be provided along the north and west sides of the site.

The change in land use associated with construction of the new building will require stormwater management improvements to be implemented on-site. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and implementing bioswales to reduce runoff rate, and provide water quality treatment by settling suspended solids, trapping oil and other contaminants in the soil, promoting infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

The sewer main, which still currently serves Building B- 5, should be realigned around the footprint of the proposed building or connected to the Road C main. The inactive sewer laterals and sections of the sewer main abandoned as a result of the realignment should be demolished and removed from under the footprint of the proposed building (see EXHIBIT C-10).

2) PARKING

The proposed 25,000 square foot building requires 63 parking stalls based on building area, including 3 ADA stalls and 1 ADA aisle (See APPENDIX C-5, Table C-1 for parking stall count calculations). A new parking lot is proposed north of the building site, across Road C in the former locations of Thayer Hall, Building B- 1, and Building B- 2. The lot has rough dimensions of 315' x 75' and will use the Thayer Hall loading access drive as one entrance (See Exhibit C-9 for schematic parking layout). DOH may elect to provide additional parking for staff and customers; however the site is constrained by topographic features. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis are required before a final recommendation is made.

The lot will be surfaced with Asphalt Concrete, and striped with stall and isle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

lighting and new concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided along Road C and at the parking lot border. A crosswalk to the proposed building will be provided.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance and utilizing bioswales to reduce runoff rate and provide water quality treatment.

A new 12' x 35' loading zone sited south of the new building will be provided to satisfy off-street loading requirements for this scheme. New signage, striping, and lighting will be provided.

3) WATER - DOMESTIC AND FIRE PROTECTION

A new 6-inch fire protection water lateral, with associated DC meter, will serve the building's internal sprinkler system. A new 2-inch domestic water lateral, with associated meter and backflow preventer will serve the building's domestic requirements (see domestic water lateral sizing computations in APPENDIX C-5, Table 5a). The new laterals will be connected to the 12-inch water main on either Road C or Road B (see Exhibit C-10). Existing streetside hydrants will be used for exterior fire protection.

4) SEWER

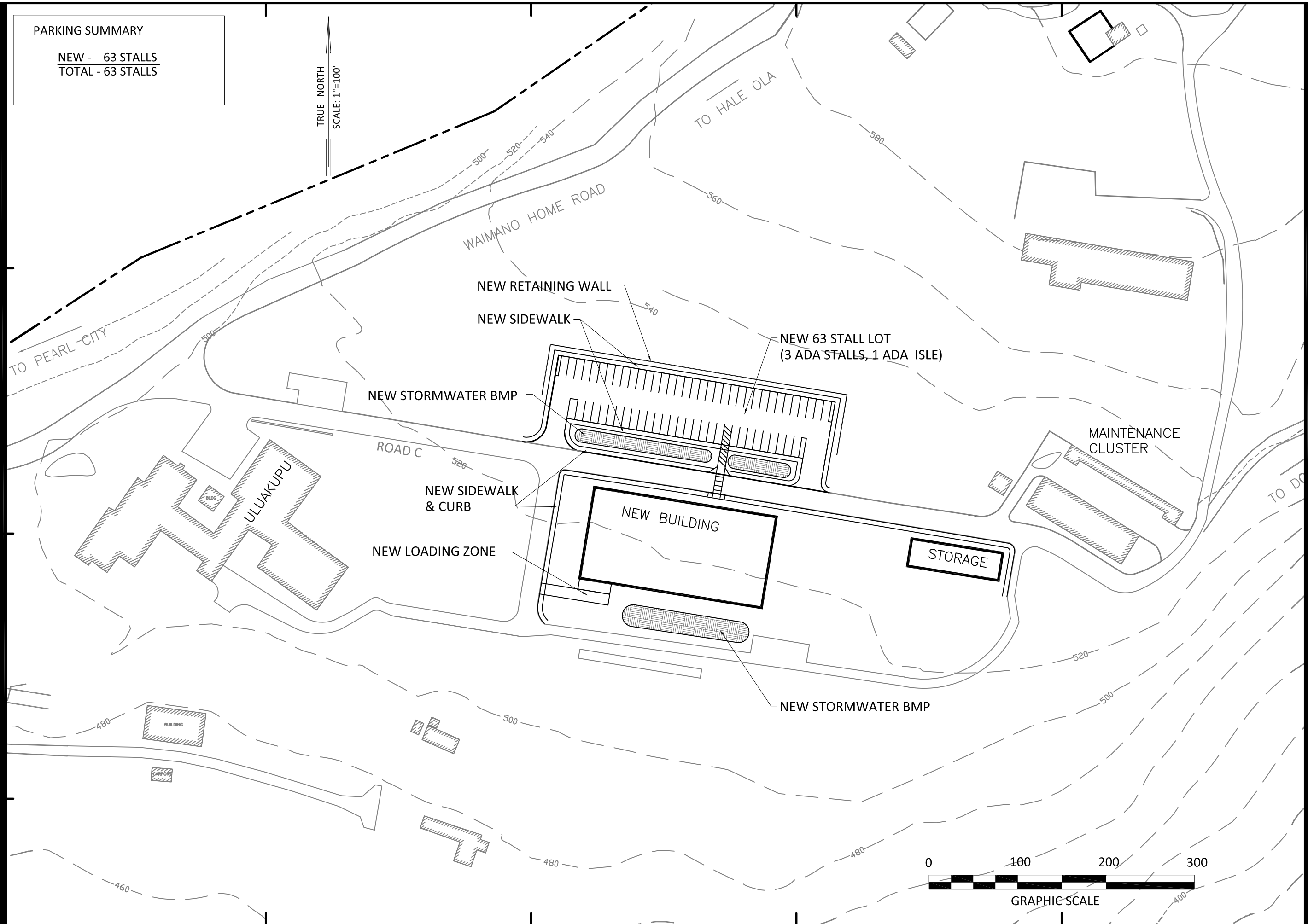
The relocation of 145 DOH employees to the proposed building will lead to the production of roughly 13,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3b for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 15,000 gallon storage tank or vault is recommended. A new 6-inch sewer lateral will be provided, connecting the building to the vault (see sewer lateral sizing computations in APPENDIX C-5, Table 4a). The detention vault will be directly connected to the existing 8-inch sewer main along Road C (see Exhibit C-10).

The relocation of 70 DOH employees to Uluakupu will lead to the production of roughly 6,500 gpd of additional wastewater (See APPENDIX C-5, Table C-3b). An 8,000 gallon storage tank or vault is recommended. The vault should be sited downstream of Uluakupu. New 6-inch sewer laterals will be provided, connecting Uluakupu to the vault, and connecting the vault to the existing 6-inch sewer main (see EXHIBIT C-10).

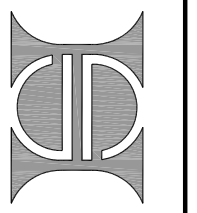
PARKING SUMMARY

NEW - 63 STALLS
TOTAL - 63 STALLS

TRUE NORTH
SCALE: 1"=100'



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ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

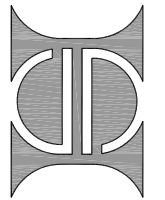
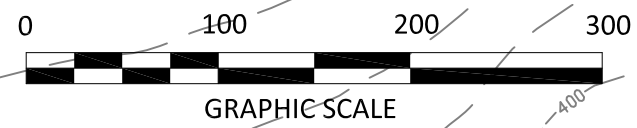
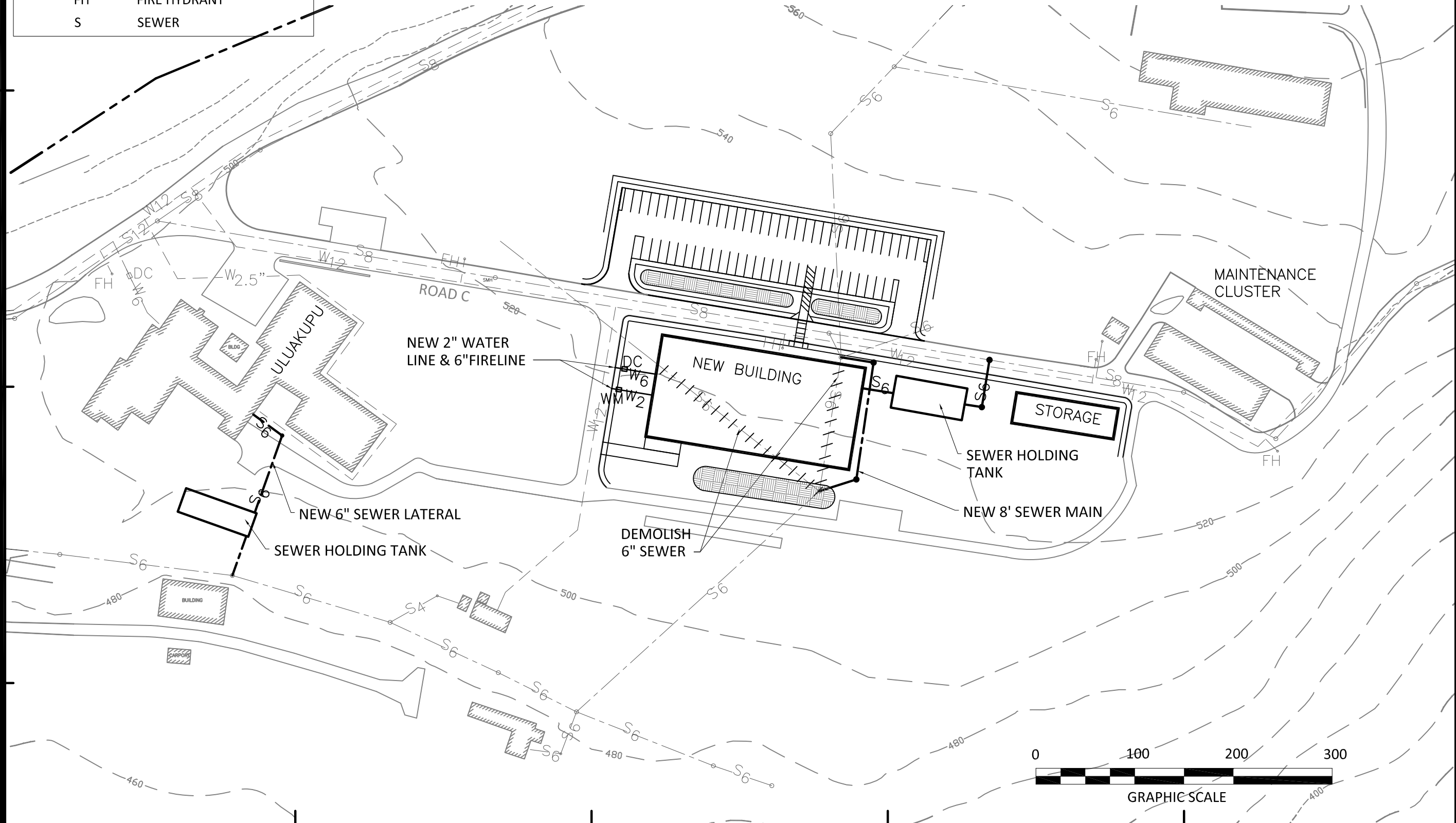


SCHEME 1B PROPOSED SITE IMPROVEMENTS	Date:	10/2/2012
	Sheet No.	EXHIBIT C-9
Contract No.	Reference Dwg. No.	

LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- - - PROPOSED WATER SYSTEM
- - - PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

TRUE NORTH
SCALE: 1"=100'



SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

Date: 10/2/2012	Sheet No. EXHIBIT C-10
Reference Dwg. No.	
Contract No.	

SCHEME 1B PROPOSED UTILITY IMPROVEMENTS

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

3. SCHEME 1B – NEW BUILDING FOR 150 STAFF

c. COST ESTIMATE – RIDER LEVETT BUCKNALL

See APPENDIX CE-1 for details of the Cost Estimate.

Scheme 1B includes costs for the following:

- Construction of a new 25,000 square foot 2-story Type II-B office building that is centrally air conditioned and includes fit out that is appropriate for use by the State
- A 2,200 square foot pre-engineered metal storage building.
- Required parking per new County Zoning Code.
- Water and Sewer improvements required to support DOH staff being relocated to Waimano Ridge.
- Scheme 1B includes for the DOH Staff to be relocated into a new 25,000 square foot office building with approximately 101 parking stalls and a 2,200 square foot metal storage building.

SCHEME 1B COST ESTIMATE:

\$9,301,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

4. SCHEME 2A – RENOVATE AND ALTER FOR 240/262 STAFF

a. ARCHITECTURAL – CDS INTERNATIONAL

This scheme was initially requested by the DOH as a solution to renovate Hale Ola to accommodate relocation of 250 staff. Survey of the Division, Branch, and Office managers brought the required total staff up to 262 based on adding in unfilled positions and future staffing projections.

Hale Ola is a three-story, 31,000 SF building originally designed and used as a hospital.

The scheme developed over the duration of the study and three versions are documented as follows:

1) SCHEME 2A-1

Upon study of the program and the size of Hale Ola, the building was found to be about 15,000 SF too small to accommodate all 262 DOH staff and a new solution was needed.

CDS proposed placing staff in Buildings B-6 and B-7 to make up the shortfall. Buildings B-6 and B-7 equal approximately 16,000 SF together. This solution places 168 staff in Hale Ola and 94 between Buildings B-6 and B-7 for a total of 262 staff relocated.

For the purpose of this study, the buildings were designed to hold the following sections:

- i. Hale Ola – 168 Staff
 - CAO
 - EIM
 - EPO
 - ERO
 - EMD
 - CAB
 - CWB
 - SDWB
 - WWB
- ii. Building B-6 – 40 Staff
 - HEER
- iii. Building B-7 – 54 Staff
 - SHWB

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

All staff is accommodated in this solution, but the Division heads all noted multiple difficulties that would come from the Divisions being separated by such a distance across the site. The B-6, B-7, and B-8 Buildings are not a comfortable walking distance to Hale Ola, so driving would be necessary to go back and forth.

See EXHIBITS A-13 through A-19 for detail and floor plans of this scheme.

2) SCHEME 2A-2

John Messina requested we study a scheme which takes the staff we had located in Building B-6 and B-7 and assume they could be accommodated in Uluakupu (currently under renovation and all costs included under separate contract) to limit costs. It was also noted that we could use the Kitchen/Dining Building for conference rooms and storage space.

For the purpose of this study, the buildings were designed to hold the following sections:

i. Hale Ola – 195 Staff

CAO
EIM
EPO
ERO
EMD
CAB
CWB
SHWB
WWB

ii. Uluakupu – 67 Staff (No costs to renovate this building are included in this report.)

HEER
SDWB

iii. Kitchen Dining Building

This building was designed to hold the large department wide Conference Room, meant to hold 100 staff, as well as one additional smaller shared Conference Room.

In Scheme 2A-1, Buildings B-6 and B-7 were able to hold 94 staff. In this solution, Uluakupu is only able to hold 67. Since this scheme was still required to accommodate the full 262 staff relocation, an extra burden of

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

staff was taken on by Hale Ola. Usability of the Hale Ola Building was severely compromised by this additional load. Multiple groups had to be split across two floors and access had to be made through spaces occupied by completely different groups. We felt this was too much of a compromise and decided to make a third proposal.

See EXHIBITS A-20 through A-25 for detail and floor plans of this scheme.

3) SCHEME 2A-3

In order to free up space in Hale Ola and improve its usability and circulation, CDS proposed moving one Branch out of Hale Ola and into the Kitchen/Dining Building.

All staff is located as in Scheme 2A-2 except as follows:

For the purpose of this study, CWB was moved from Hale Ola into the Kitchen Dining Building.

Moving one group into the Kitchen/Dining Building alleviated the crowding in Hale Ola as planned. All the buildings work with small amounts of area left over for expansion.

The only outstanding negative associated with this solution is that the Department is spread out between 3 different buildings. This problem was mentioned back in Scheme 2A-1 when the groups were spread between Building B-6, 7, and Hale Ola. Now having staff in Uluakupu puts them even further from Hale Ola again requiring a car to move between buildings.

See EXHIBITS A-26 through A-31 for detail and floor plans of this scheme.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

4. SCHEME 2A – RENOVATE AND ALTER PER USE FOR 250 STAFF

b. CIVIL – SAM O. HIROTA, INC

1) SCHEME 2A-1

i. PARKING

Hale Ola

Based on gross building area, 107 parking stalls are provided at Hale Ola (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. The currently allotted parking includes:

- 23 existing stalls south-west of Hale Ola
- 12 existing stalls located in the lot north-east of Hale Ola (including 5 ADA stalls and 1 ADA aisle)
- 72 new stalls in a new lot north-east of Hale Ola
- See EXHIBIT C-11 for schematic parking layout plan

Five ADA parking stalls are provided in the existing lot north-east of Hale Ola. This provides all required ADA stalls at Hale Ola for this scheme. There is direct access to Hale Ola from this lot, however further investigation, including a topographic survey, slope analysis, and verification of landing and rail compliance are required before the location is finalized.

The new 72 stall lot is sited in the former location of Building B-11, which has been demolished. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 190' x 135'. The lot will be surfaced with Asphalt Concrete, and will have stall striping and aisle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided at the parking lot border and to connect the new lot to the existing sidewalk in fronting Hale Ola.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

Existing parking areas will be resurfaced. New striping and signage will be provided to current C&C and ADA standards (see APPENDIX C-5, Table C-2). A new 12' x 35' loading zone will be provided in the existing parking lot north-east of Hale Ola, and will satisfy off-street loading requirements for Hale Ola.

Buildings B-6 & B-7

Based on gross building area of Buildings B-6 and B-7, 48 parking stalls are provided in this scheme, including 2 ADA stalls (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers, however the site is partially constrained by topographic features. The currently allotted parking includes:

- 2 new ADA parking stalls and 1 ADA aisle adjacent to Buildings B-6 and B-7
- 46 new stalls in a new lot located across Waimano Home Road
- * See Exhibit C-11 for schematic parking layout plan

The new 46 stall lot is sited at the location of the existing 8 stall lot. The existing lot will be demolished and expanded into the surrounding vegetated areas to accommodate the additional stalls. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new lot will be roughly 230' x 65'. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C standards (See APPENDIX C-5, Table C-2 for parking stall and aisle dimensions). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New 5-foot minimum width concrete sidewalks and curbs will be provided along Waimano Home Road and at the parking lot borders. A crosswalk and walkways to Buildings B-6 and B-7 will be provided.

This study assumes that retaining walls will be required at the new ADA parking areas to provide a maximum finished slope of 2-percent. ADA signage and striping will be provided. Lighting will be provided. This study assumes that the existing walkways are ADA compliant. A

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

topographic survey and site design analysis will be required before final recommendations can be made.

Stormwater management enhancements will be needed to manage increased runoff resulting from the new parking lots. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

The existing loading zone at Building B-6 will be resurfaced, and will satisfy off-street loading requirements for the Building B-6 & B-7 cluster. The loading zone is connected to Buildings B-7 with sidewalks.

No parking upgrades are proposed for Uluakupu.

ii. WATER - DOMESTIC AND FIRE PROTECTION

One fire hydrant is required in the new 72 stall parking lot (see Exhibit C-12). A six-inch lateral and a detector check (DC) meter are required for hydrant installation. No water utility improvements are required to establish service at the buildings.

iii. SEWER

The relocation of 168 DOH employees to Hale Ola will lead to the production of roughly 15,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3c for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 18,000 gallon storage tank or vault is recommended for temporary wastewater storage. The vault should be sited at the location of the existing sewer junction box. Both existing sewer laterals at Hale Ola will be replaced and re-routed to deliver wastewater to the detention vault. The detention vault will be connected to the existing 8-inch sewer main (see EXHIBIT C-12).

The relocation of 94 DOH employees to Buildings B-6 and B-7 will lead to the production of roughly 9,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3c). A 12,000 gallon storage tank or vault is recommended. The vault should be sited downstream of Buildings B-6 and B-7. New 6-inch sewer laterals will be provided,

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

connecting the buildings to the vault, and connecting the vault to the 6-inch sewer main (see EXHIBIT C-12).

2) SCHEME 2A-2

i. PARKING

Hale Ola

Based on gross building area, 107 parking stalls are provided at Hale Ola (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. The currently allotted parking includes:

- 23 existing stalls south-west of Hale Ola
- 12 existing stalls located in the lot north-east of Hale Ola (including 5 ADA stalls and 1 ADA aisle)
- 72 new stalls in a new lot north-east of Hale Ola
- * See Exhibit C-13 for schematic parking layout plan

Five ADA parking stalls are provided in the existing lot north-east of Hale Ola. This provides all required ADA stalls at Hale Ola for this scheme. There is direct access to Hale Ola from this lot, however further investigation, including a topographic survey, slope analysis, and verification of landing and rail compliance are required before the location is finalized.

The new 72 stall lot is sited in the former location of Building B-11, which has been demolished. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 190' x 135'. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided at the parking lot border and to connect the new lot to the existing sidewalk in front of Hale Ola.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

Existing parking areas will be resurfaced. New striping and signage will be provided to current C&C and ADA standards (see APPENDIX C-5, Table C-2). A new 12' x 35' loading zone will be provided in the existing parking lot north-east of Hale Ola, and will satisfy off-street loading requirements for Hale Ola.

Kitchen Building

Based on gross building area a total of 25 parking stalls are needed at the Kitchen Building (See APPENDIX C-5, Table C-1 for parking stall count calculations). The existing 12 parking stalls will be demolished and a new 25 stall parking lot will be constructed in the location of the demolished Laundry building (see EXHIBIT C-13). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot (2% in ADA areas). A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 115' x 115'. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C and ADA standards (See APPENDIX C-5, Table C-2 for parking stall and aisle dimensions). Parking and traffic related signage will be provided. Parking lot lighting will be provided.

A new 8' x 19' loading zone will be provided in the new parking lot, and will satisfy off-street loading requirements for the Kitchen building.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment.

ii. WATER - DOMESTIC AND FIRE PROTECTION

One fire hydrant is required in the new 72 stall parking lot (see Exhibit C-14). A six-inch lateral and a detector check (DC) meter are required for hydrant installation. No water utility improvements are required to establish service at the buildings.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

iii. SEWER

The relocation of 195 DOH employees to Hale Ola and the Kitchen Building will lead to the production of roughly 18,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3d for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 20,000 gallon storage tank or vault is recommended for temporary wastewater storage. The vault should be sited downstream of both tributary buildings. Both existing sewer laterals at Hale Ola and the single existing lateral at the Kitchen building will be replaced and re-routed to deliver wastewater to the detention vault. The detention vault will be connected to the existing 8-inch sewer main (see Exhibit C-14).

The relocation of 67 DOH employees to Uluakupu will lead to the production of roughly 6,500 gpd of additional wastewater (See APPENDIX C-5, Table C-3d). An 8,000 gallon storage tank or vault is required. The vault should be sited downstream of Uluakupu. New 6-inch sewer laterals will be provided, connecting Uluakupu to the vault, and connecting the vault to the 6-inch sewer main (see EXHIBIT C-14).

3) SCHEME 2A-3

i. PARKING

Hale Ola

Based on gross building area, 107 parking stalls are provided at Hale Ola (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers; however the site is constrained by topographic features. The currently allotted parking includes:

- 23 existing stalls south-west of Hale Ola
- 13 existing stalls located in the lot north-east of Hale Ola (including 5 ADA stalls and 1 ADA isle)
- 72 new stalls in a new lot north-east of Hale Ola
- See EXHIBIT C-11 for schematic parking layout plan

Five ADA parking stalls are provided in the existing lot north-east of Hale Ola. This provides all required ADA stalls at Hale Ola for this scheme. There is direct access to Hale Ola from this lot, however further investigation, including a topographic survey, slope analysis,

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

and verification of landing and rail compliance are required before the location is finalized.

The new 72 stall lot is sited in the former location of Building B-11, which has been demolished. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 190' x 135'. The lot will be surfaced with Asphalt Concrete, striped with stall and isle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New concrete 5-foot minimum width sidewalks and concrete curbs will be provided at the parking lot border and to connect the new lot to the existing sidewalk in front of Hale Ola.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

Existing parking areas will be resurfaced. New striping will be provided to current C&C and ADA standards (see APPENDIX C-5, Table C-2). A new 12' x 35' loading zone will be provided in the existing parking lot north-east of Hale Ola, and will satisfy off-street loading requirements for Hale Ola.

Kitchen Building

Based on gross building area a total of 25 parking stalls are needed at the Kitchen Building (See APPENDIX C-5, Table C-1 for parking stall count calculations). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. The existing 12 parking stalls will be demolished and a new 25 stall parking lot will be constructed in the location of the demolished Laundry building (see EXHIBIT C-15). This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot (2% in ADA areas). A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 115' x 115'. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

to C&C and ADA standards (See APPENDIX C-5, Table C-2 for parking stall and aisle dimensions). Parking and traffic related signage will be provided. Parking lot lighting will be provided.

A new 8' x 19' loading zone will be provided in the new parking lot, to satisfy off-street loading requirements for the Kitchen building.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment.

ii. WATER - DOMESTIC AND FIRE PROTECTION

One fire hydrant is required in the new 72 stall parking lot (see EXHIBIT C-12). A six-inch lateral and a detector check (DC) meter are required for hydrant installation. No water utility improvements are required to establish service at the buildings.

iii. SEWER

The relocation of 195 DOH employees to Hale Ola and the Kitchen Building will lead to the production of roughly 18,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3c for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 20,000 gallon storage tank or vault is recommended for temporary wastewater storage. The vault should be sited downstream of both tributary buildings. Both existing sewer laterals at Hale Ola and the single existing lateral at the Kitchen building will be replaced and re-routed to deliver wastewater to the detention vault. The detention vault will be connected to the existing 8-inch sewer main (see EXHIBIT C-12).

The relocation of 67 DOH employees to Uluakupu will lead to the production of roughly 6,500 gpd of additional wastewater (See APPENDIX C-5, Table C-3e). An 8,000 gallon storage tank or vault is required. The vault should be sited downstream of Uluakupu. New 6-inch sewer laterals will be provided, connecting Uluakupu to the vault, and connecting the vault to the 6-inch sewer main (see EXHIBIT C-16).

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

4. SCHEME 2A – RENOVATE AND ALTER PER USE FOR 240/262 STAFF

c. COST ESTIMATE – RIDER LEVETT BUCKNALL

See APPENDIX CE-1 for details of the Cost Estimate.

Scheme 2A-3 Estimate includes costs for:

- All items noted in RENOVATE INDIVIDUAL BUILDINGS scheme. (Item 1c.)
- Demolition and disposal of all non-structural partitions and associated doors.
- Allowance for new partitions and doors for new layouts being developed by CDS.
- Central HVAC system and ventilation to restrooms.
- Furring with insulation and gypsum board to the exterior walls.
- Acoustical tile ceiling and gypsum board ceilings where appropriate .
- Concealed electrical wiring with new lighting throughout.
- Required parking per new County Zoning Code.
- Water and Sewer improvements required to support 150 or 240 DOH staff being relocated to Waimano Ridge.
- Scheme 2A-3 includes for the DOH Staff to be relocated to Hale Ola and to the Kitchen Dining building. This Scheme calls for approximately 69 parking stalls located next to Hale Ola and the Kitchen Dining Building.

SCHEME 2A-3 COST ESTIMATE:

\$10,530,000

SCHEME 2A-1

**Space Plan for 240 → 262 Staff Relocated to Existing Buildings:
(Mainly Hale Ola)**

- **Inefficiency Factor:** About 10% (per Layout Study)
- Suite Floor Area Programmed: 42,055 SF (for 240 → 262)
- Suite Floor Area Likely Needed: 46,260 SF
- Hale Ola Floor Area: About 31,000 SF (including Basement)
- Deficiency: About 15,260 SF
- Suggestion: Use Building 6 & 7 (about 16,000 Usable SF)
Maintain Current Off-Site Storage , or
Build a Pre-Engineered Building

SUMMARY

PROVIDED PERSONNEL SPACES: 168

SHARED CONFERENCE ROOMS:

1 - 100 PN

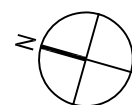
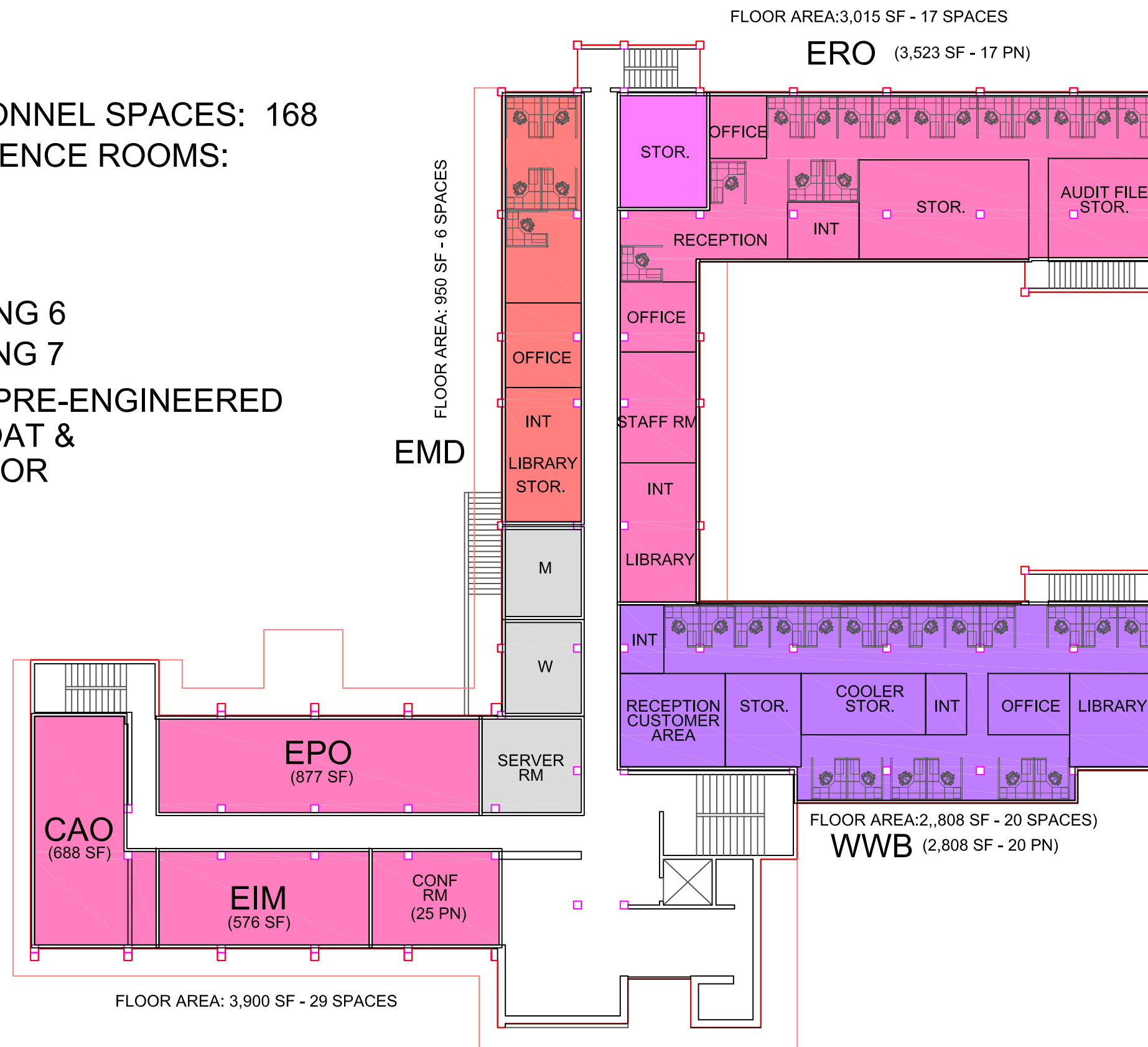
1 - 50 PN

2 - 20 TO 25 PN

HEER - IN BUILDING 6

SHWB - IN BUILDING 7

A STAND-ALONG PRE-ENGINEERED
BUILDING FOR BOAT &
SMOKE GENERATOR



GROUND FLOOR PLAN

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

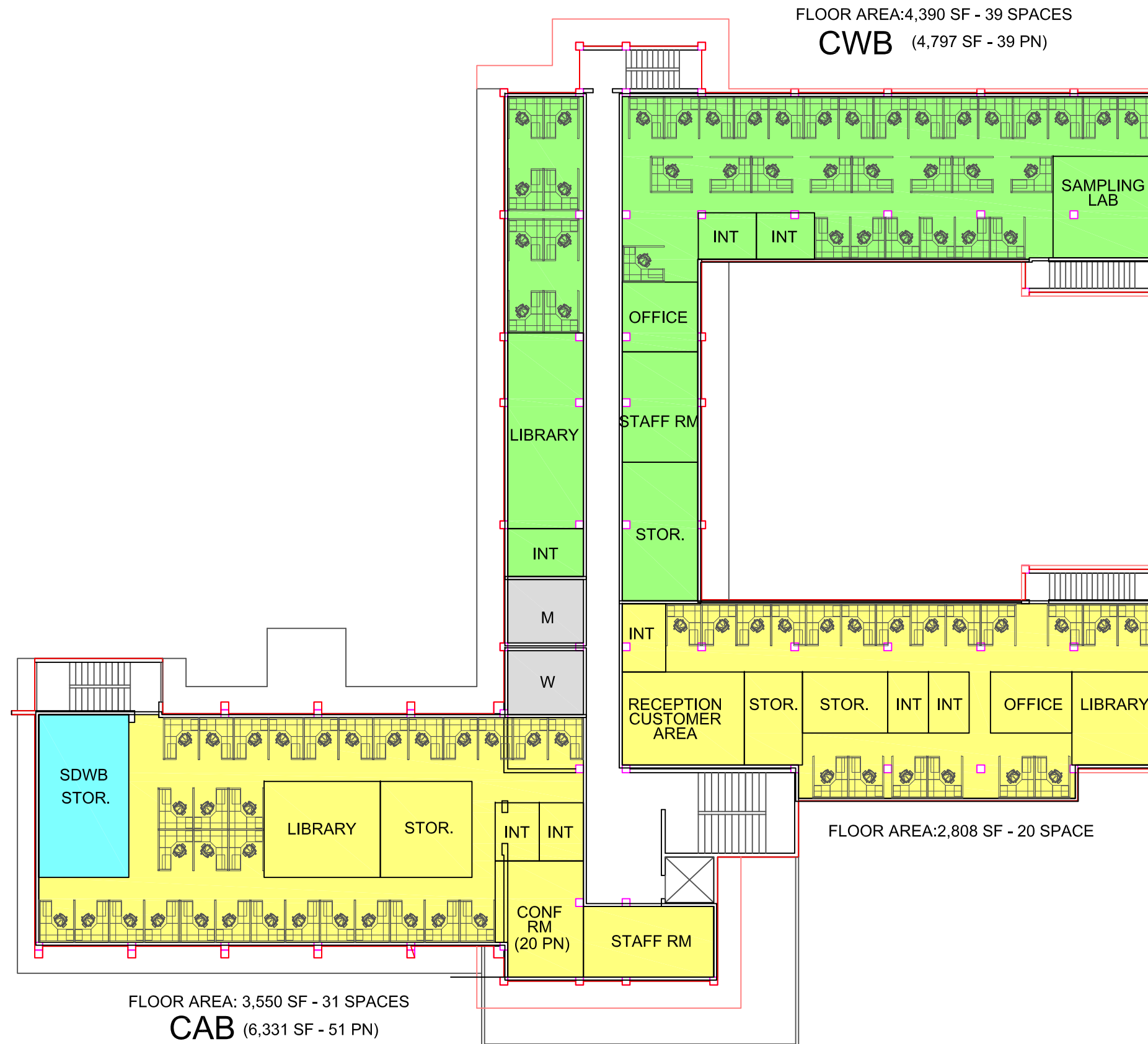
GROSS FLOOR AREA: 14,625 SF

0 8 16 32 48



1/16" = 1'-0"

**EXHIBIT A-15
SCHEME 2A-1**



FLOOR AREA: 4,390 SF - 39 SPACES
CWB (4,797 SF - 39 PN)

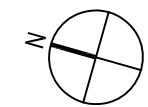
FLOOR AREA: 3,550 SF - 31 SPACES
CAB (6,331 SF - 51 PN)

FLOOR AREA: 2,808 SF - 20 SPACE

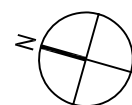
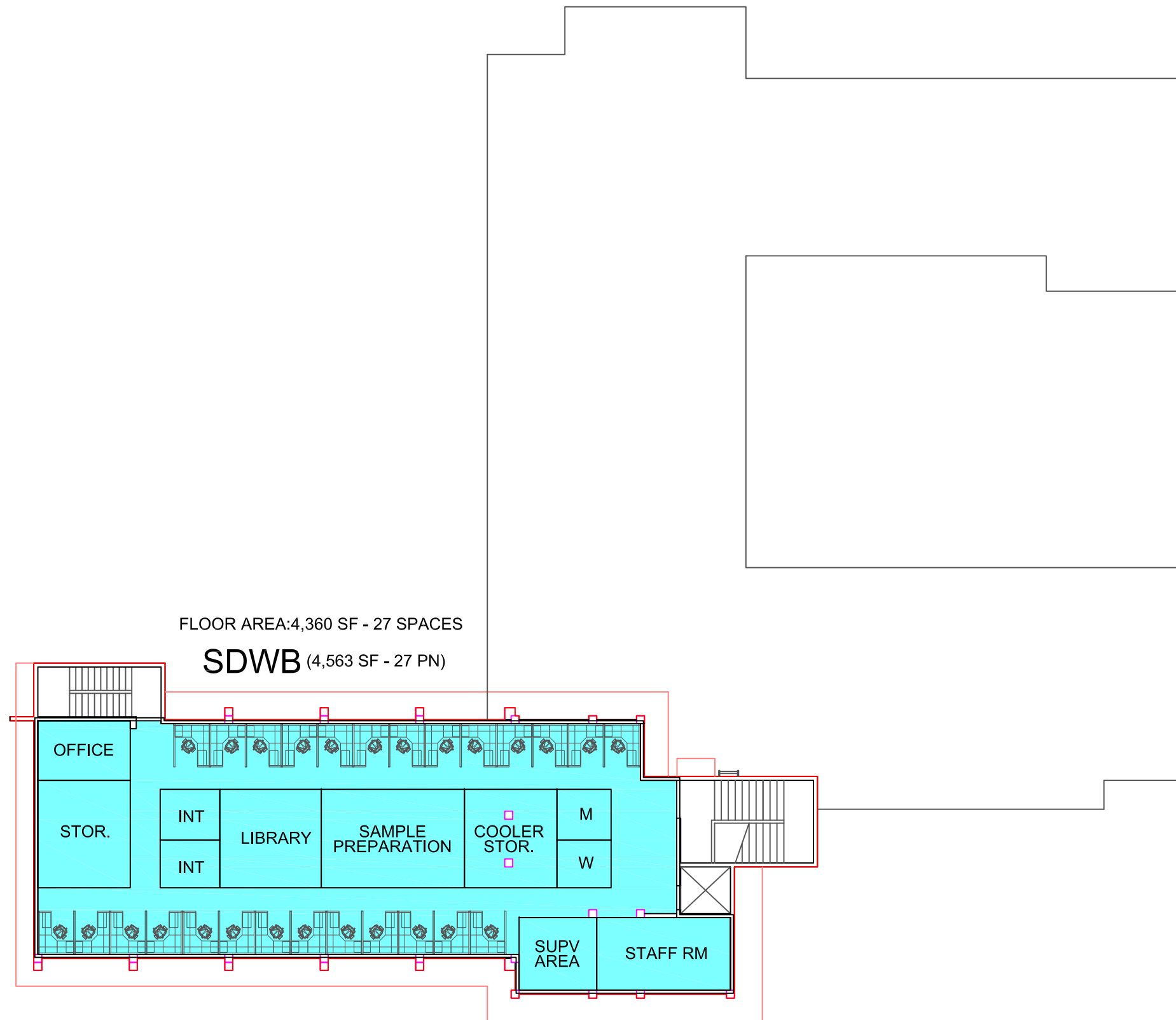
SECOND FLOOR PLAN

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

GROSS FLOOR AREA: 14,230 SF



1/16" = 1'-0"



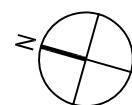
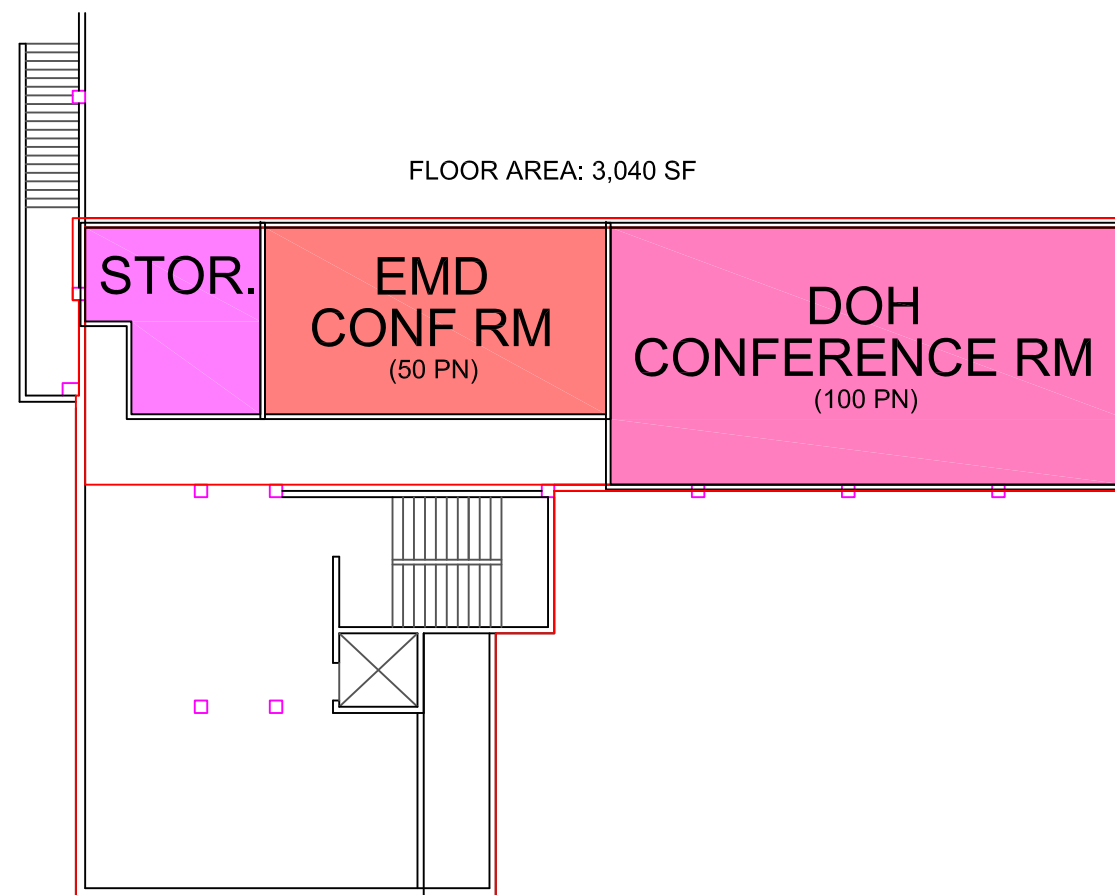
THIRD FLOOR PLAN

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

GROSS FLOOR AREA: 5,231 SF



**EXHIBIT A-17
SCHEME 2A-1**



BASEMENT FLOOR PLAN

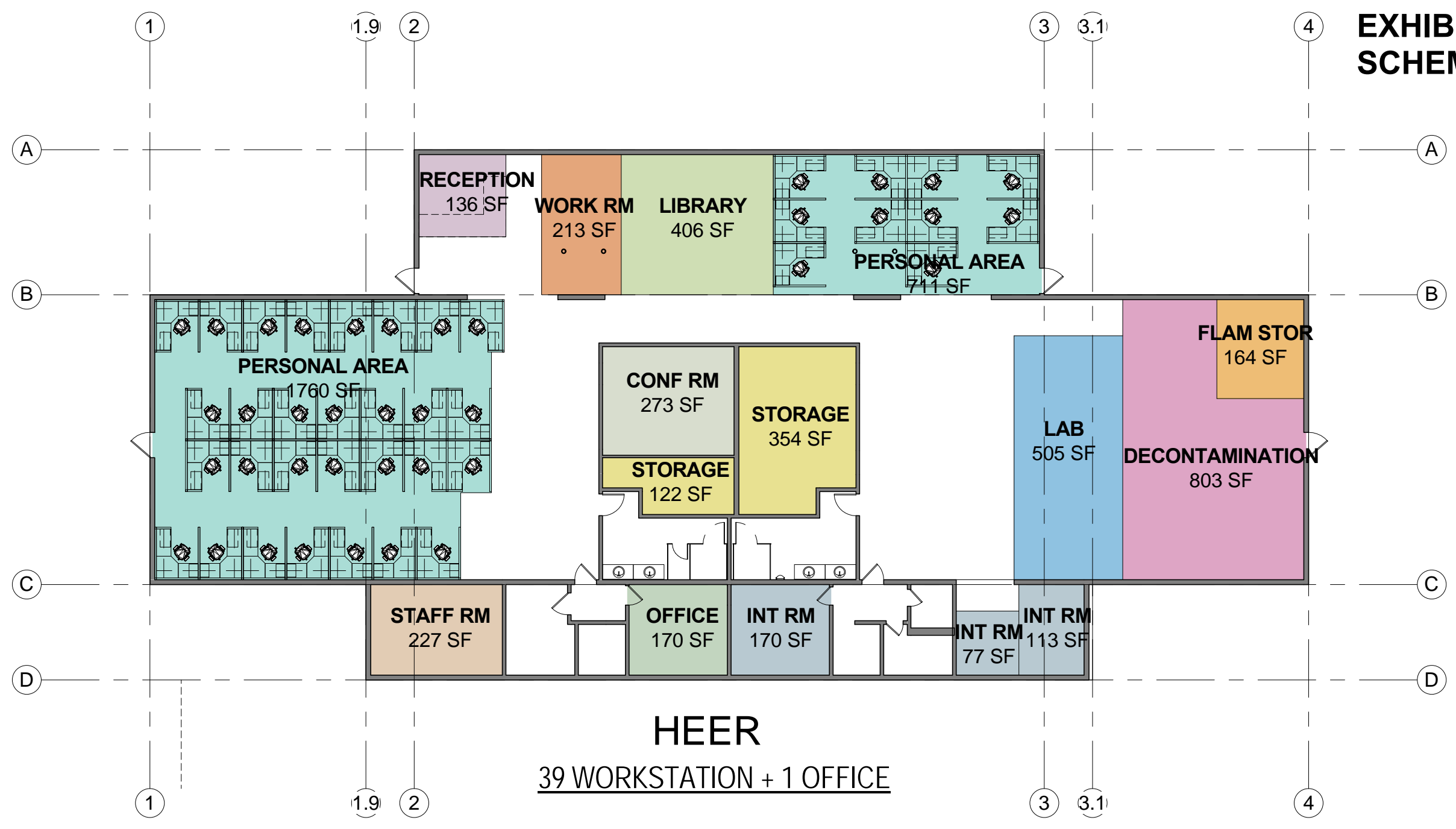
SCALE: 1/16" = 1' - 0"

GROSS FLOOR AREA: 5,310 SF





EXHIBIT A-18 SCHEME 2A-1

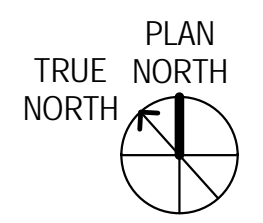
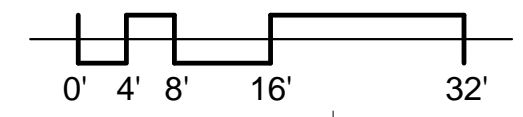


HEER
39 WORKSTATION + 1 OFFICE

① BUILDING 6 FLOOR PLAN
 1/16" = 1'-0"

Room Legend

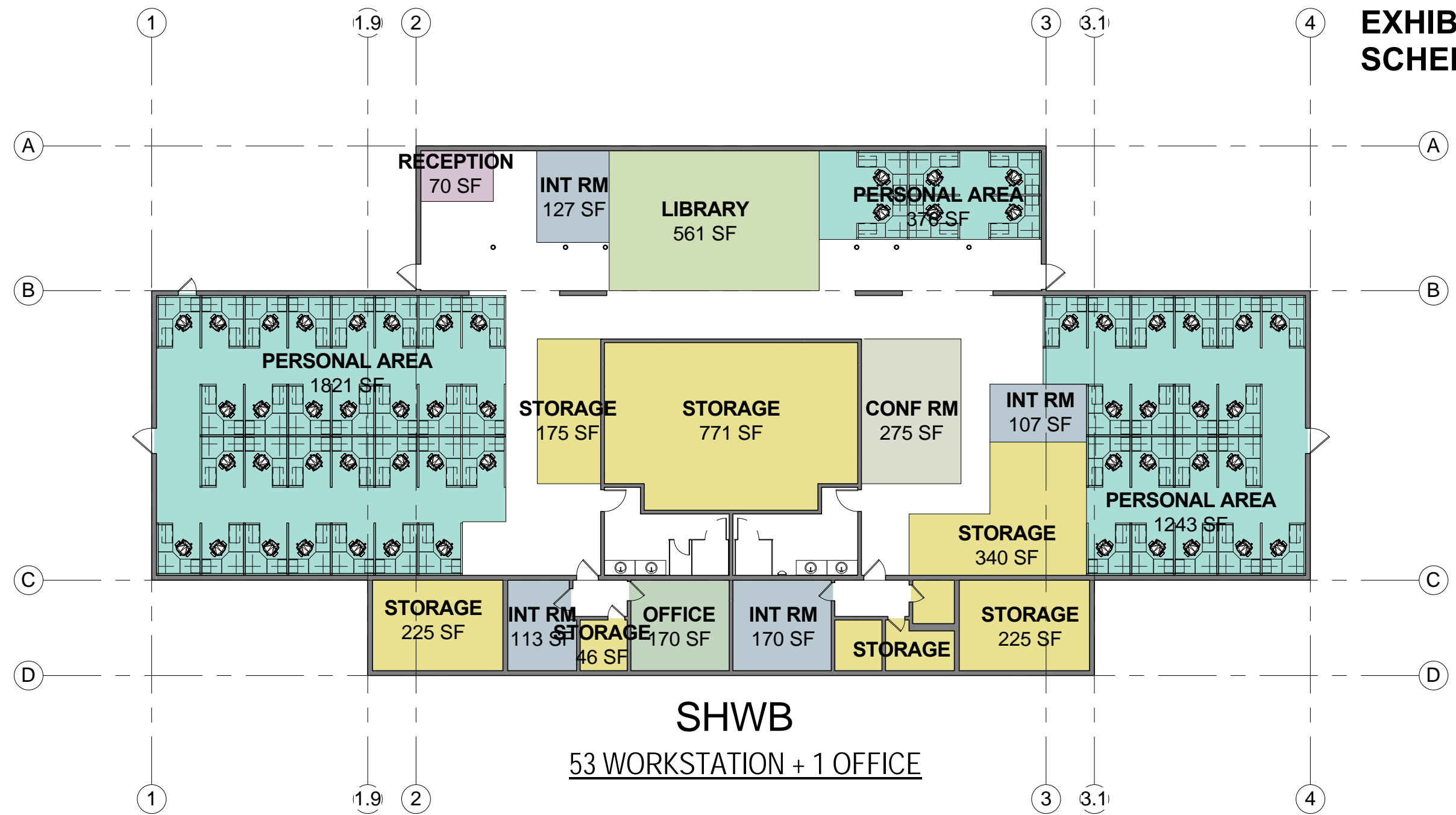
- | | | | |
|-----------------|---------|---------------|----------|
| CONF RM | INT RM | OFFICE | STAFF RM |
| DECONTAMINATION | LAB | PERSONAL AREA | STORAGE |
| FLAM STOR | LIBRARY | RECEPTION | WORK RM |



WAIMANU RIDGE - BUILDING 6	Date: 08/16/12
	Sheet No. A-02
Reference Dwg. No.	
Contract No.	



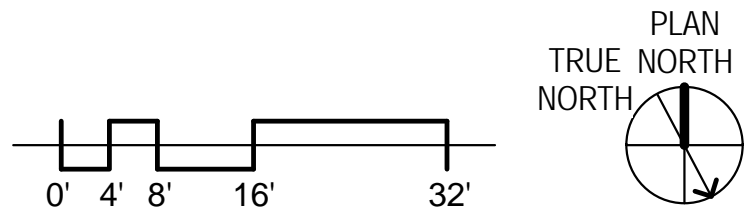
**EXHIBIT A-19
 SCHEME 2A-1**



1 BUILDING 7 FLOOR PLAN
 1/16" = 1'-0"

Room Legend

- CONF RM
- INT RM
- LIBRARY
- OFFICE
- PERSONAL AREA
- RECEPTION
- STORAGE

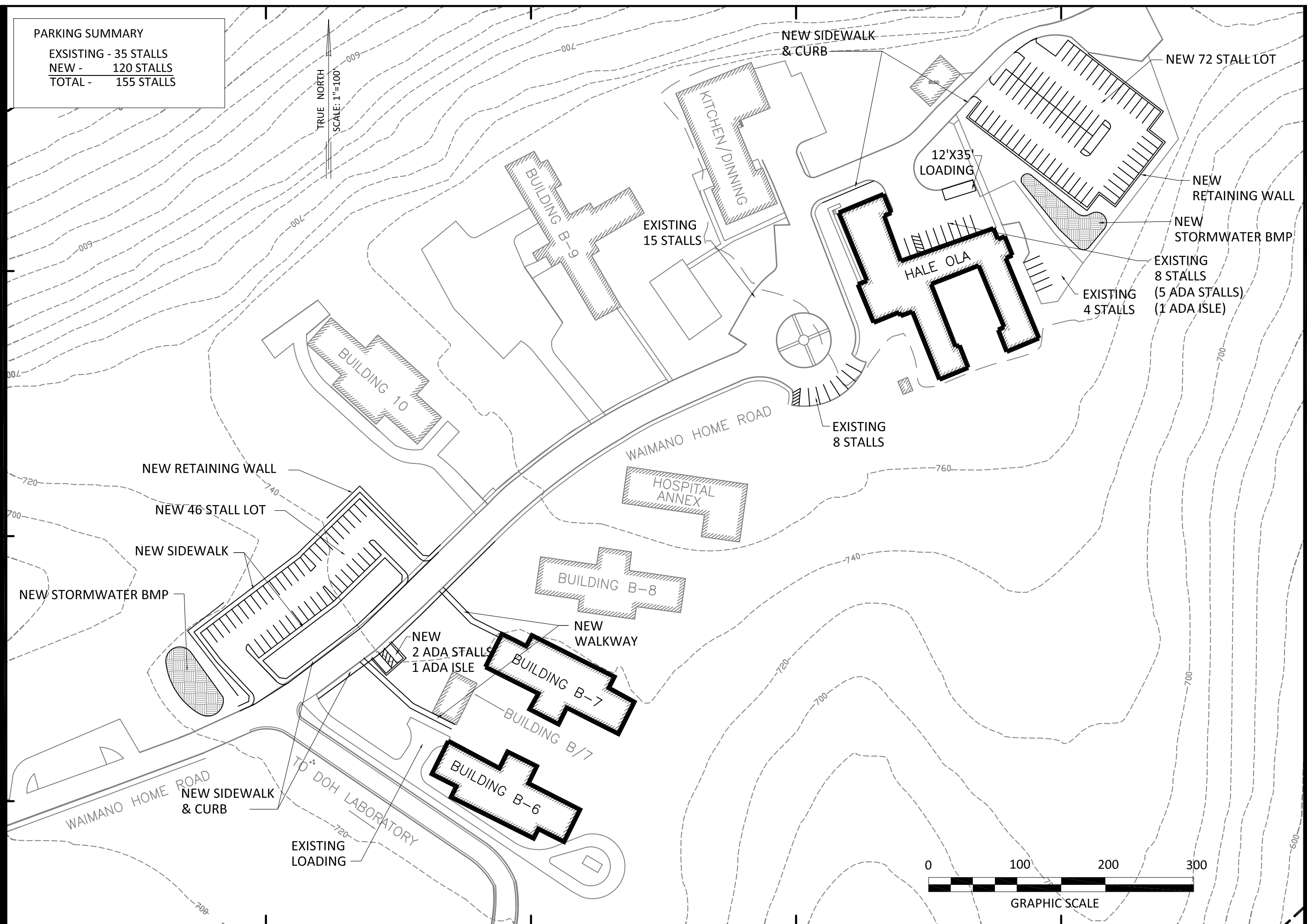


Date: 08/16/12 Sheet No. A-02	Reference Dwg. No. Contract No.
WAIMANU RIDGE - BUILDING 7	

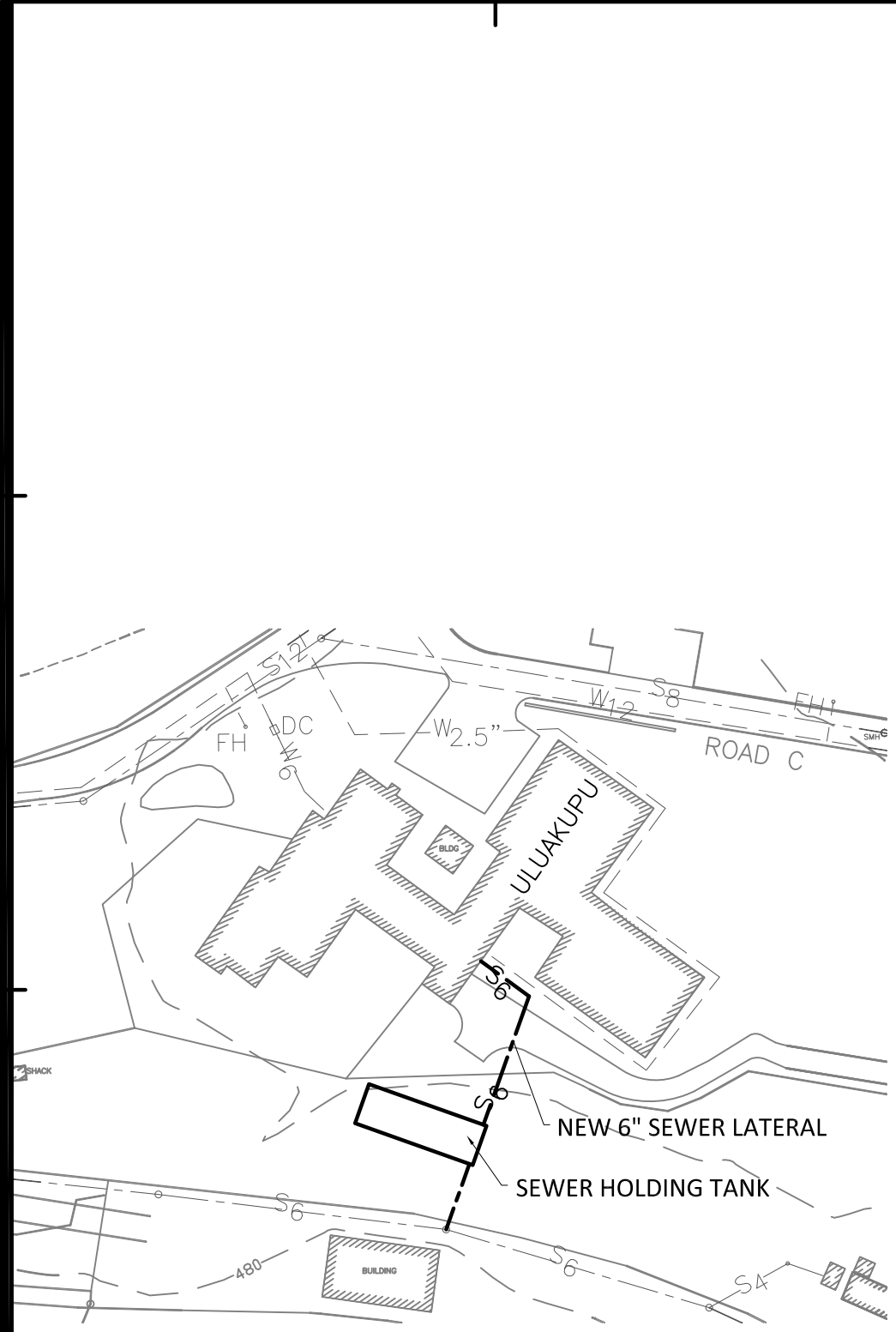
PARKING SUMMARY

EXISTING - 35 STALLS
 NEW - 120 STALLS
 TOTAL - 155 STALLS

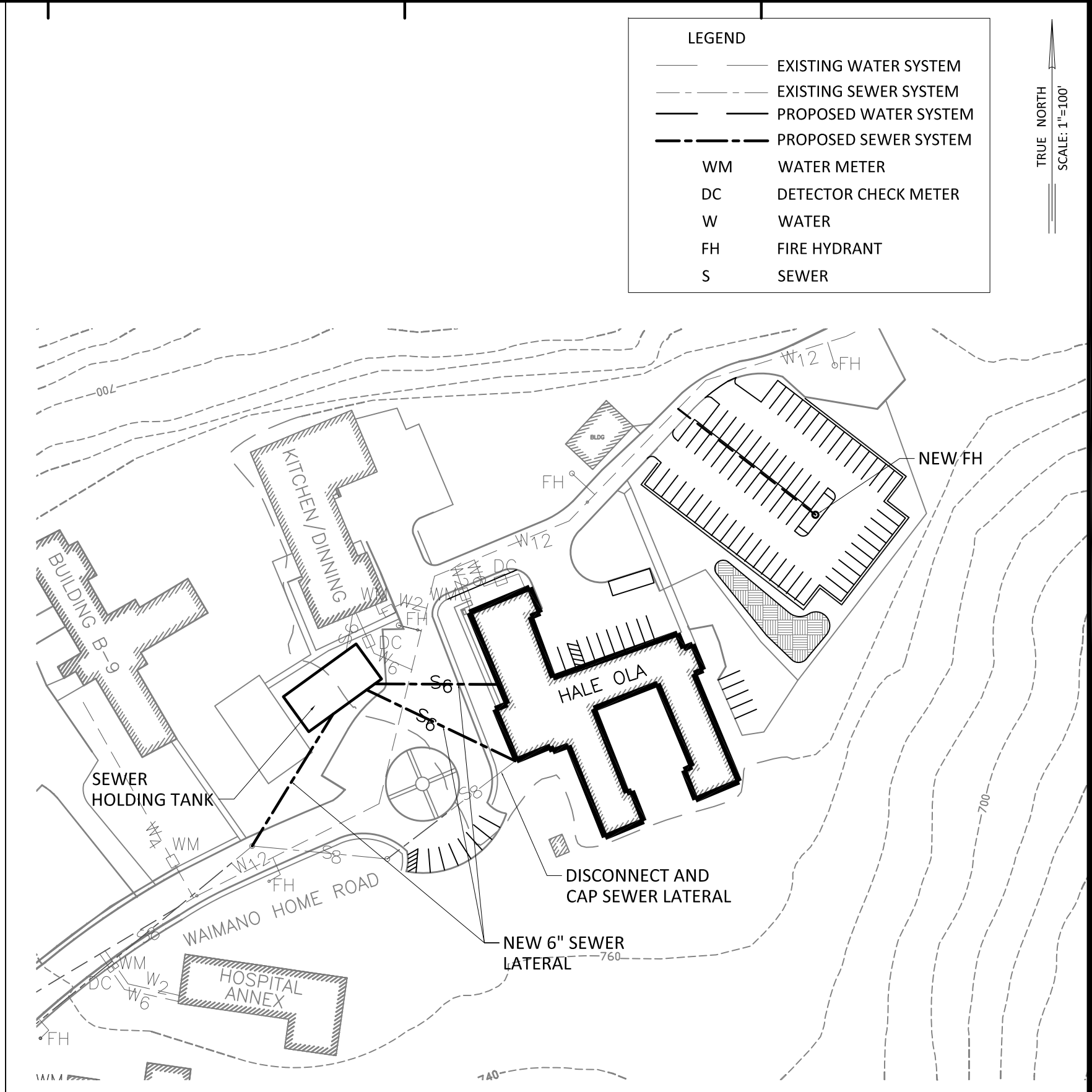
TRUE NORTH
 SCALE: 1"=100'



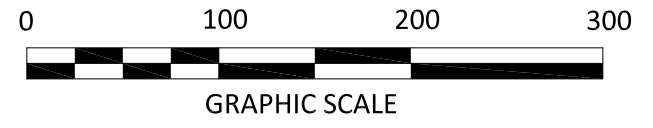
SCHEME 2A-1 PROPOSED SITE IMPROVEMENTS Contract No.	Date: 10/2/2012
	Sheet No. EXHIBIT C-11
Reference Dwg. No.	



1 SCHEME 2A MAKAI PROPOSED UTILITY IMPROVEMENTS



2 SCHEME 2A MAUKA PROPOSED UTILITY IMPROVEMENTS



LEGEND	
	EXISTING WATER SYSTEM
	EXISTING SEWER SYSTEM
	PROPOSED WATER SYSTEM
	PROPOSED SEWER SYSTEM
WM	WATER METER
DC	DETECTOR CHECK METER
W	WATER
FH	FIRE HYDRANT
S	SEWER

TRUE NORTH
SCALE: 1"=100'

SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

SCHEME 2A-1 PROPOSED UTILITY IMPROVEMENTS	Date: 10/2/2012 Sheet No. EXHIBIT C-12
Contract No.	Reference Dwg. No.

SCHEME 2A-2

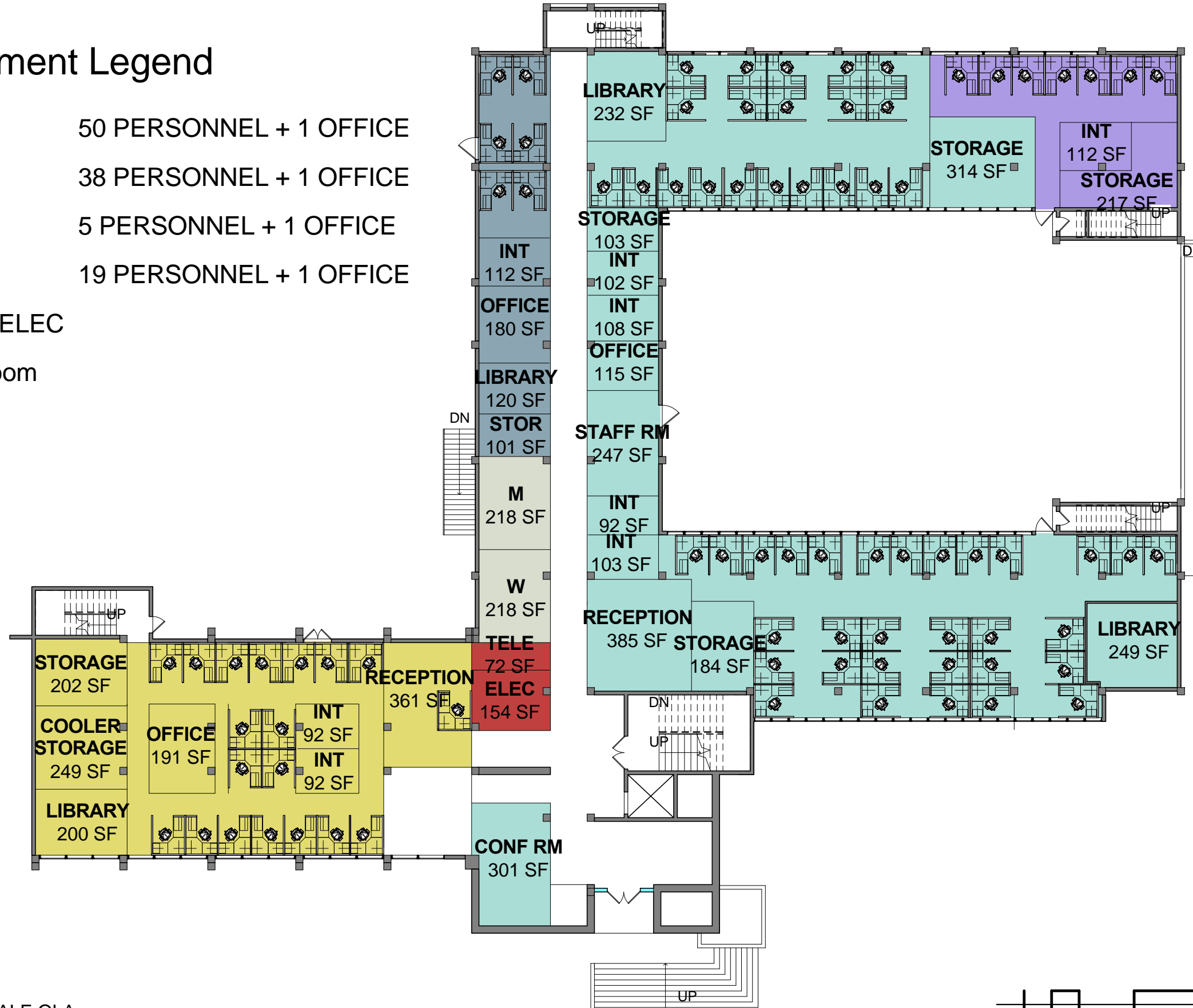
**Space Plan for 240 → 262 Staff Relocated to Existing Buildings:
(Mainly Hale Ola)**

- **Locate 70 staff in Building 4:** Assuming HEER (40) & SDWB (27) for feasibility study purpose
- **Locate large conference rooms and some storage spaces in Kitchen/Dining Building.**
- **Keep CWB boat storage at the existing Maintenance Building.**
- **Locate the remainder (192 staff) in Hale Ola.**

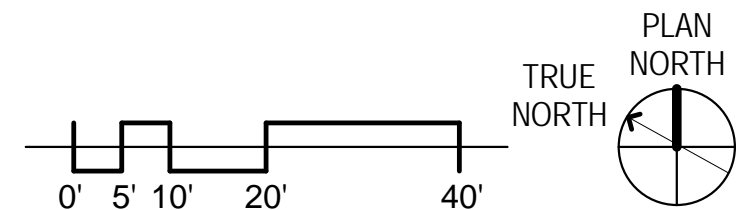
EXHIBIT 21 SCHEME 2A-2

Department Legend

- CAB 50 PERSONNEL + 1 OFFICE
- CWB 38 PERSONNEL + 1 OFFICE
- EMD 5 PERSONNEL + 1 OFFICE
- WWB 19 PERSONNEL + 1 OFFICE
- TELE/ELEC
- Restroom



① Level 1 - HALE OLA
1" = 20'-0"



CDS INTERNATIONAL
Architecture | Planning | Sustainability
1003 Bishop Street, Suite 1400 | Honolulu, HI 96813
TEL: (808) 524-4200 | FAX: (808) 521-3766



Date: 08/29/12
Sheet No. 1

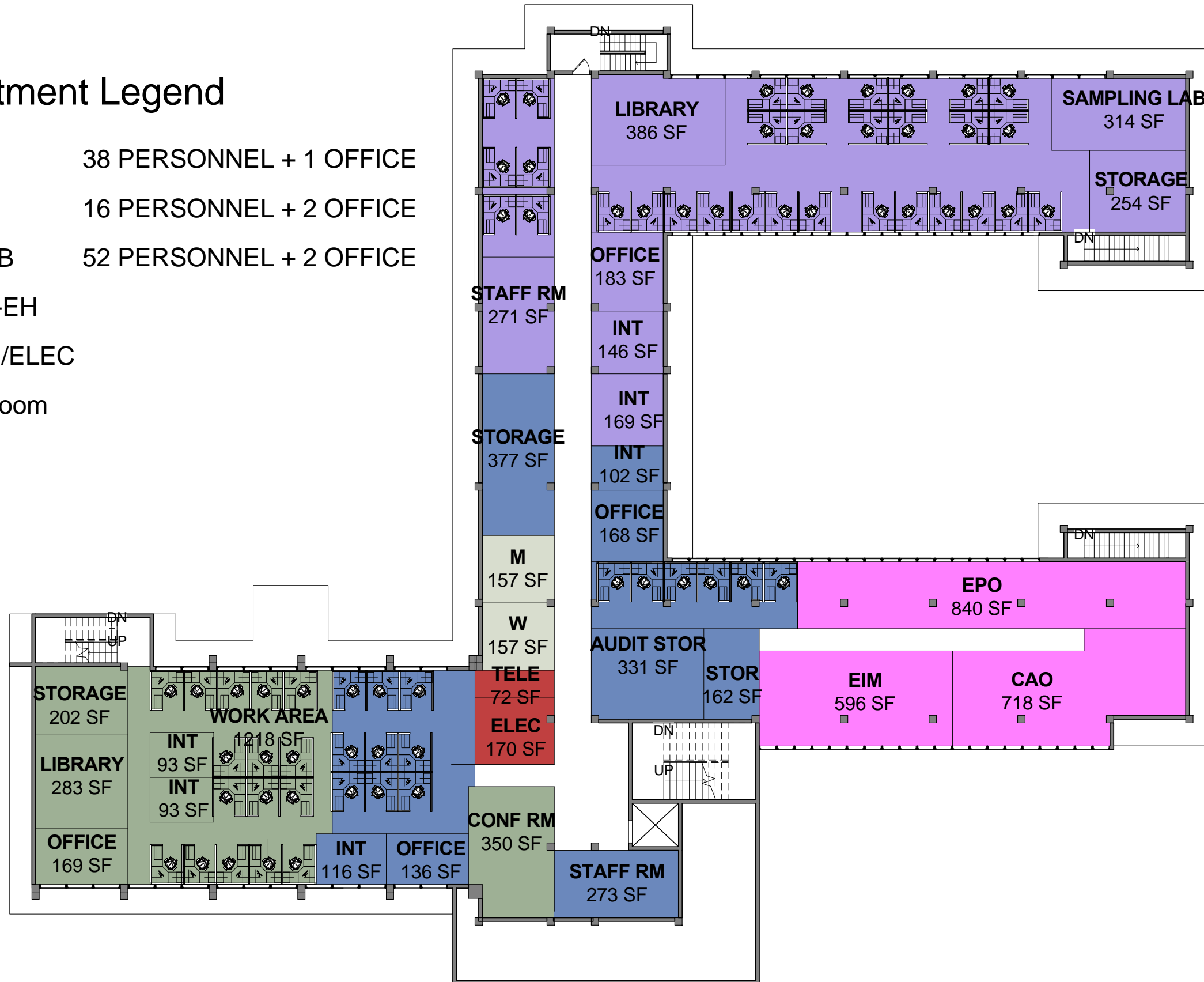
Reference Dwg. No.

WAIMANU RIDGE - HALE OLA BUILDING
Contract No.

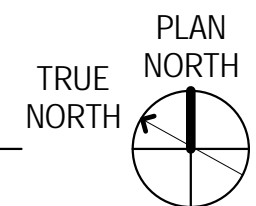
EXHIBIT 22 SCHEME 2A-2

Department Legend

- CWB 38 PERSONNEL + 1 OFFICE
- ERO 16 PERSONNEL + 2 OFFICE
- SHWB 52 PERSONNEL + 2 OFFICE
- DOH-EH
- TELE/ELEC
- Restroom



① Level 2 - HALE OLA
1" = 20'-0"



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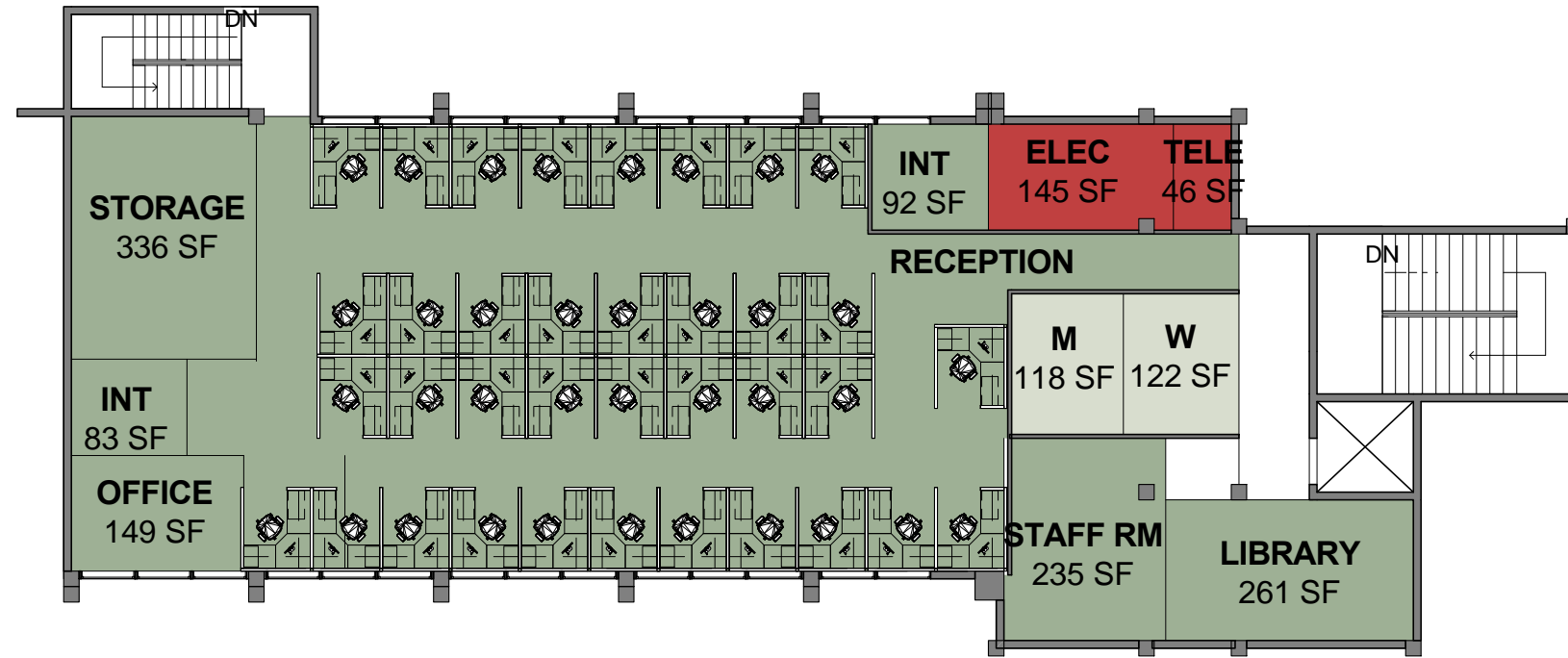


Date: 08/29/12
Sheet No. 2

Reference Dwg. No.

WAIMANU RIDGE - HALE OLA BUILDING
Contract No.

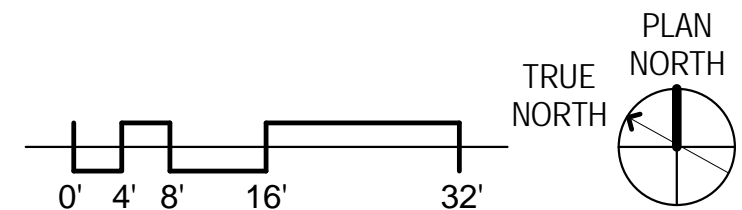
EXHIBIT 23 SCHEME 2A-2



① Level 3 - HALE OLA
1/16" = 1'-0"

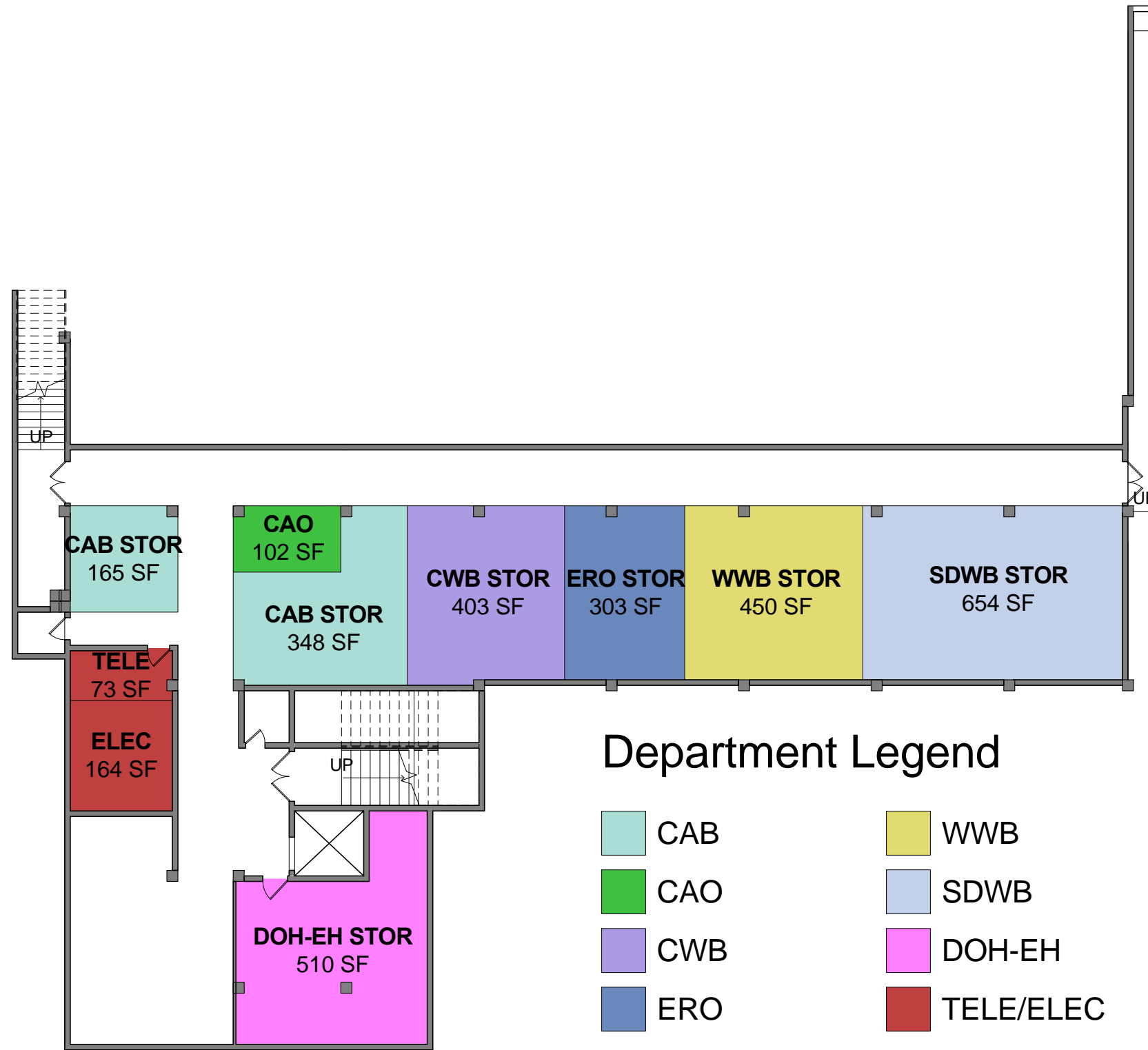
Department Legend

- SHWB 52 PERSONNEL + 2 OFFICE
- TELE/ELEC
- Restroom



Date: 08/29/12	Sheet No. 3
Reference Dwg. No.	
Contract No.	

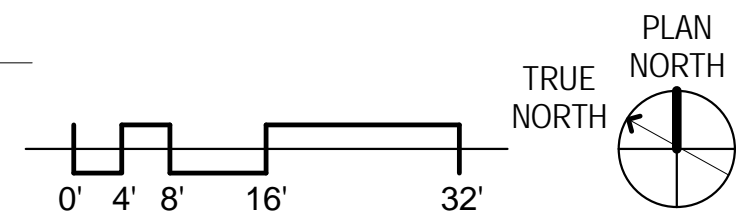
EXHIBIT 24 SCHEME 2A-2



Department Legend

- | | |
|---|---|
|  CAB |  WWB |
|  CAO |  SDWB |
|  CWB |  DOH-EH |
|  ERO |  TELE/ELEC |

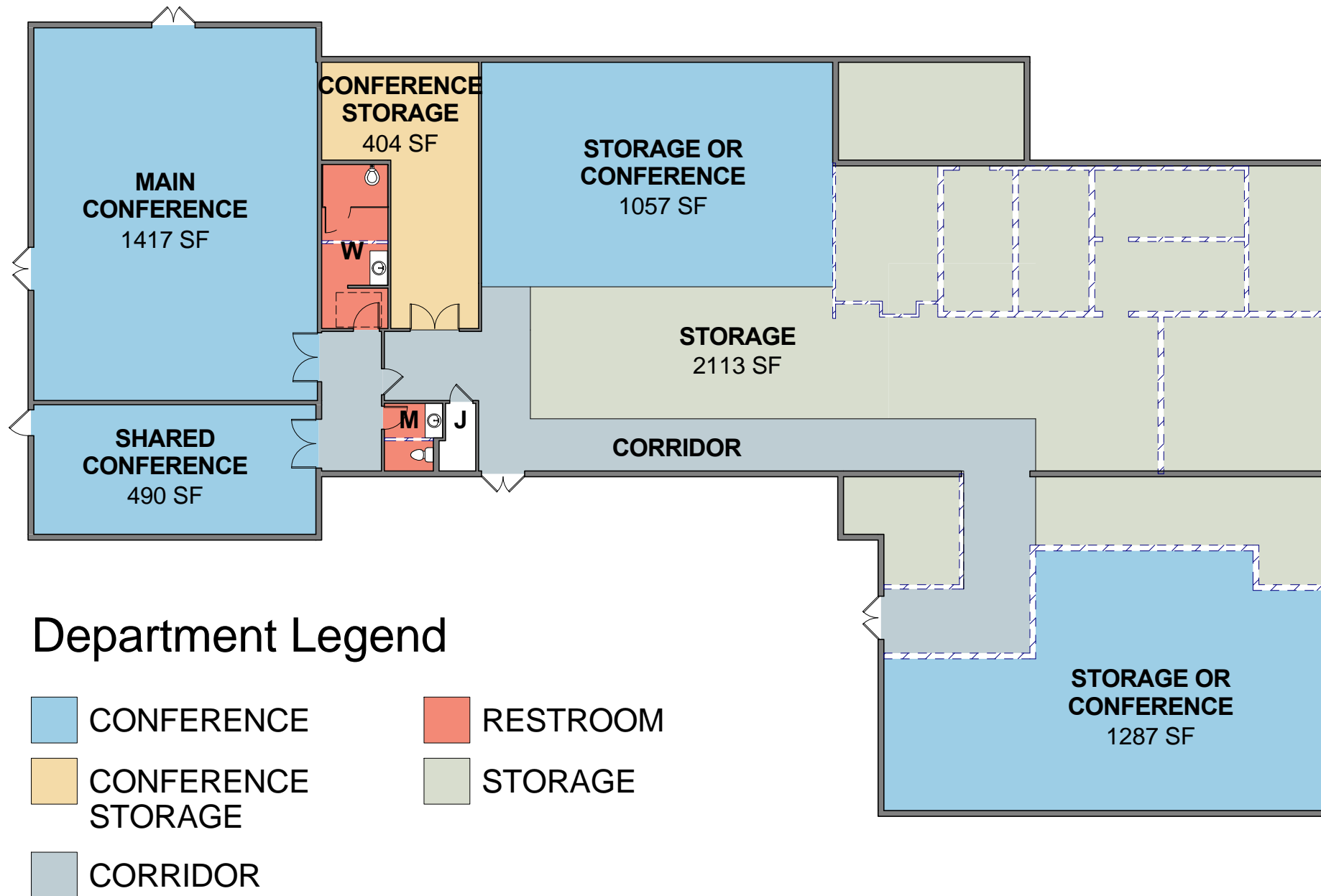
① Level 0 BASEMENT - HALE OLA
1/16" = 1'-0"



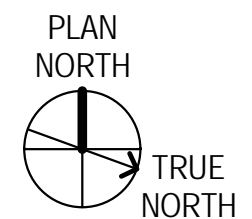
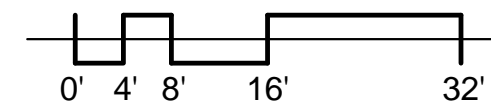
Date: 08/29/12	Sheet No. 0
Reference Dwg. No.	
Contract No.	

WAIMANU RIDGE - HALE OLA BUILDING

EXHIBIT 25 SCHEME 2A-2



1 KITCHEN/DINING LEVEL 1
1/16" = 1'-0"



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CDS

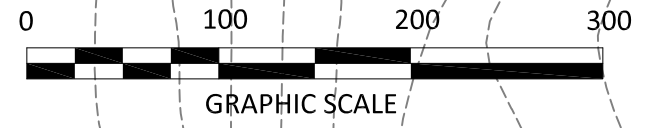
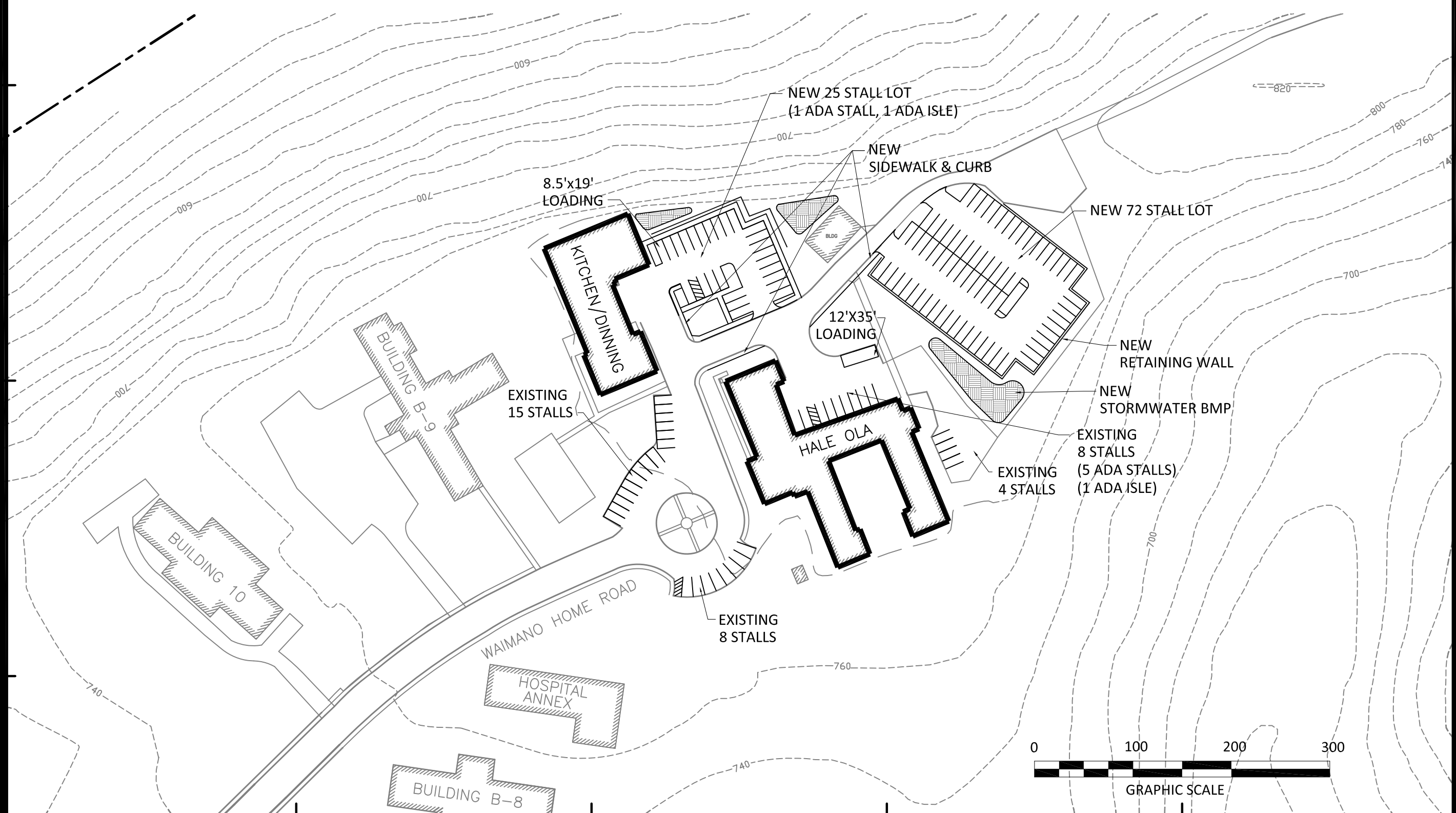
Date:	08/27/12
Sheet No.	.
Reference Dwg. No.	
Contract No.	

WAIMANU RIDGE - KITCHEN/DINING





PARKING SUMMARY

EXISTING - 35 STALLS
 NEW - 97 STALLS
 TOTAL - 132 STALLS

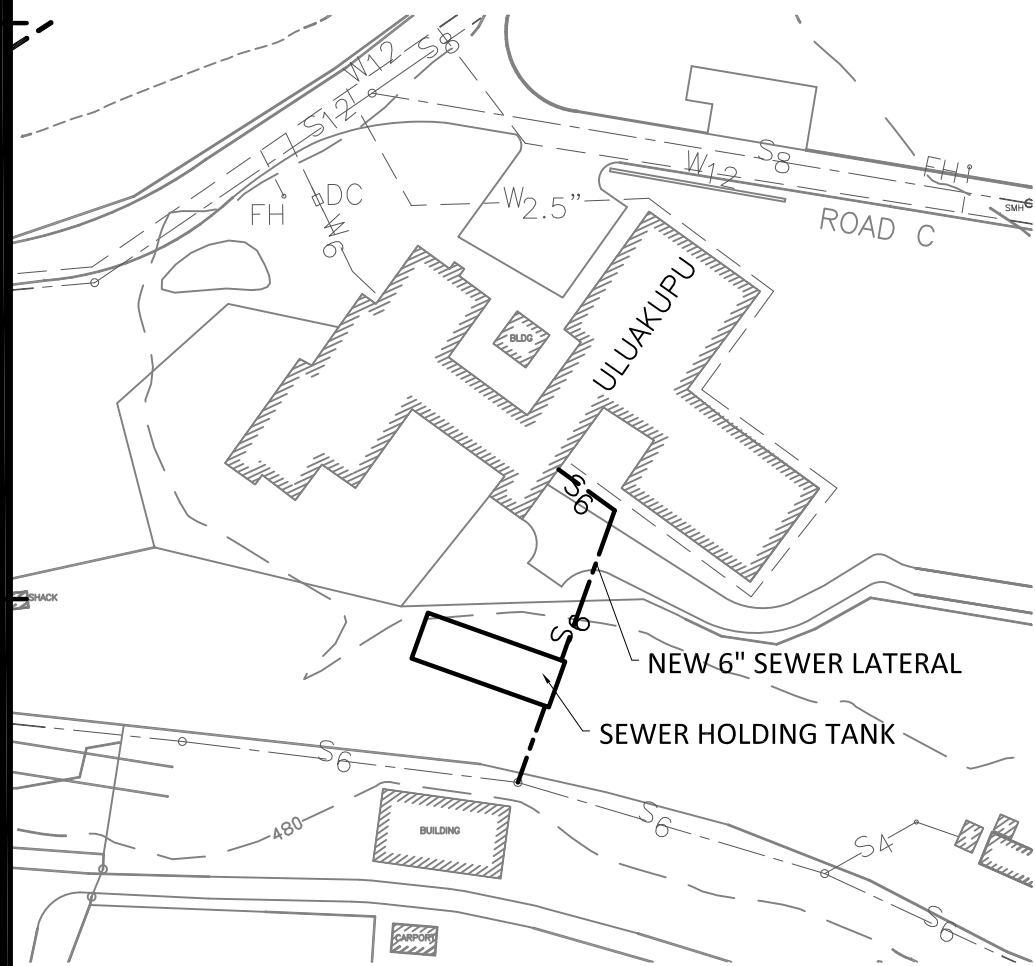
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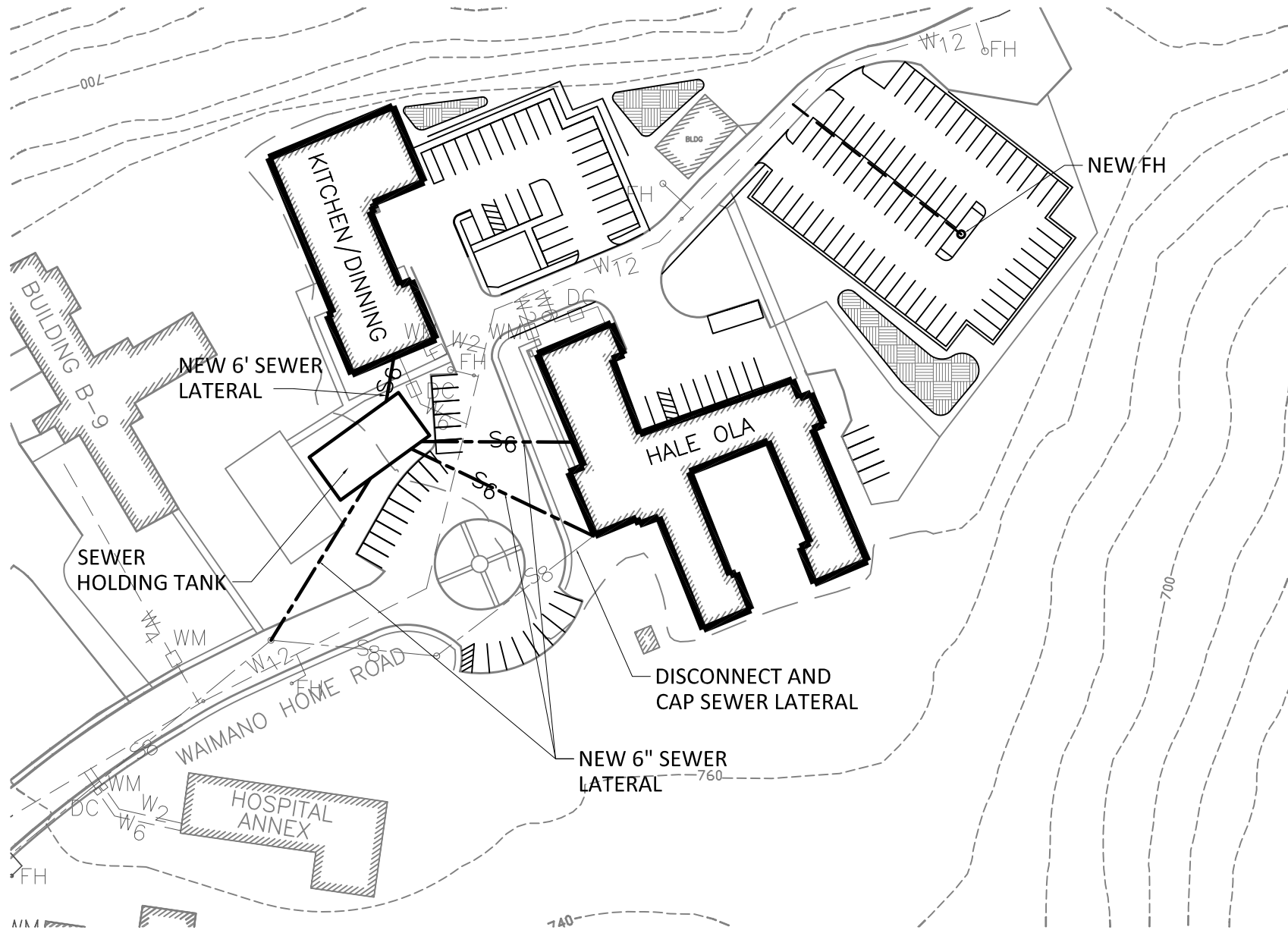
LEGEND

-  EXISTING WATER SYSTEM
-  EXISTING SEWER SYSTEM
-  PROPOSED WATER SYSTEM
-  PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

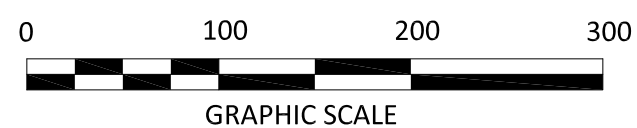
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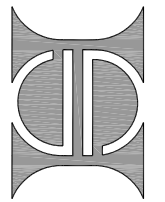
① SCHEME 2A MAKAI PROPOSED UTILITY IMPROVEMENTS



② SCHEME 2A MAUKA PROPOSED UTILITY IMPROVEMENTS



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SCHEME 2A-2 PROPOSED UTILITY IMPROVEMENTS	Date: 10/2/2012 Sheet No. EXHIBIT C-14
Reference Dwg. No.	Contract No.

SCHEME 2A-3

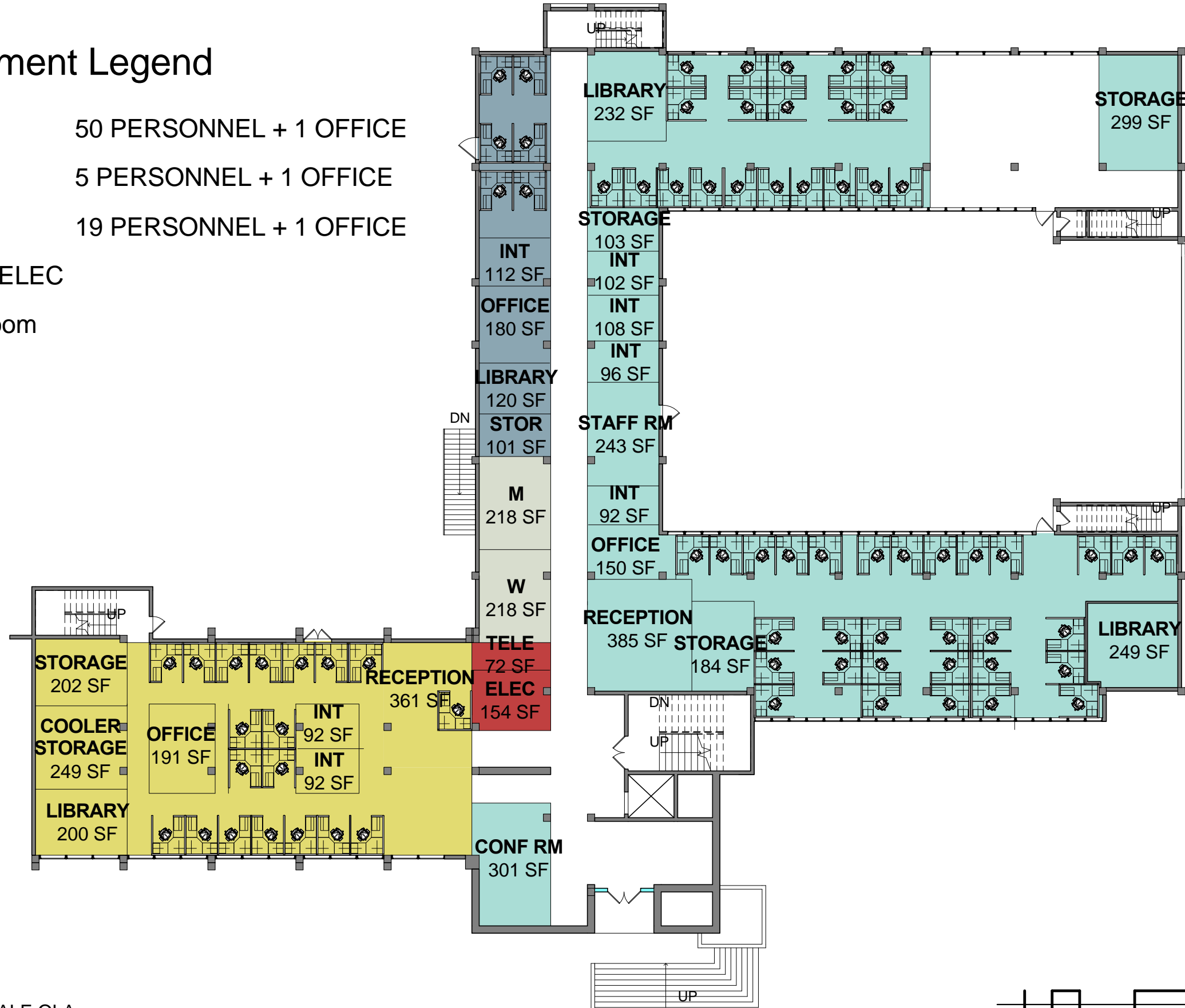
**Space Plan for 240 → 262 Staff Relocated to Existing Buildings:
(Mainly Hale Ola)**

- **Locate 70 staff in Building 4:** Assuming HEER (40) & SDWB (27) for feasibility study purpose.
- **Locate one branch in Kitchen/Dining Building:** Assuming CWB (39) for feasibility study purpose.
- **Locate large conference rooms in Kitchen/Dining Building.**
- **Keep CWB boat storage at the existing Maintenance Building.**
- **Locate the remainder (192 staff) in Hale Ola.**

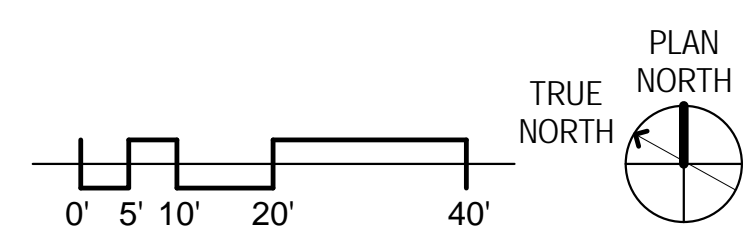
EXHIBIT A-27 SCHEME 2A-3

Department Legend

- CAB 50 PERSONNEL + 1 OFFICE
- EMD 5 PERSONNEL + 1 OFFICE
- WWB 19 PERSONNEL + 1 OFFICE
- TELE/ELEC
- Restroom



① Level 1 - HALE OLA
1" = 20'-0"



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Architecture | Planning | Sustainability
1003 Bishop Street, Suite 1400 | Honolulu, HI 96813
TEL: (808) 524-4200 | FAX: (808) 521-3766



Date: 09/04/12
Sheet No. 1

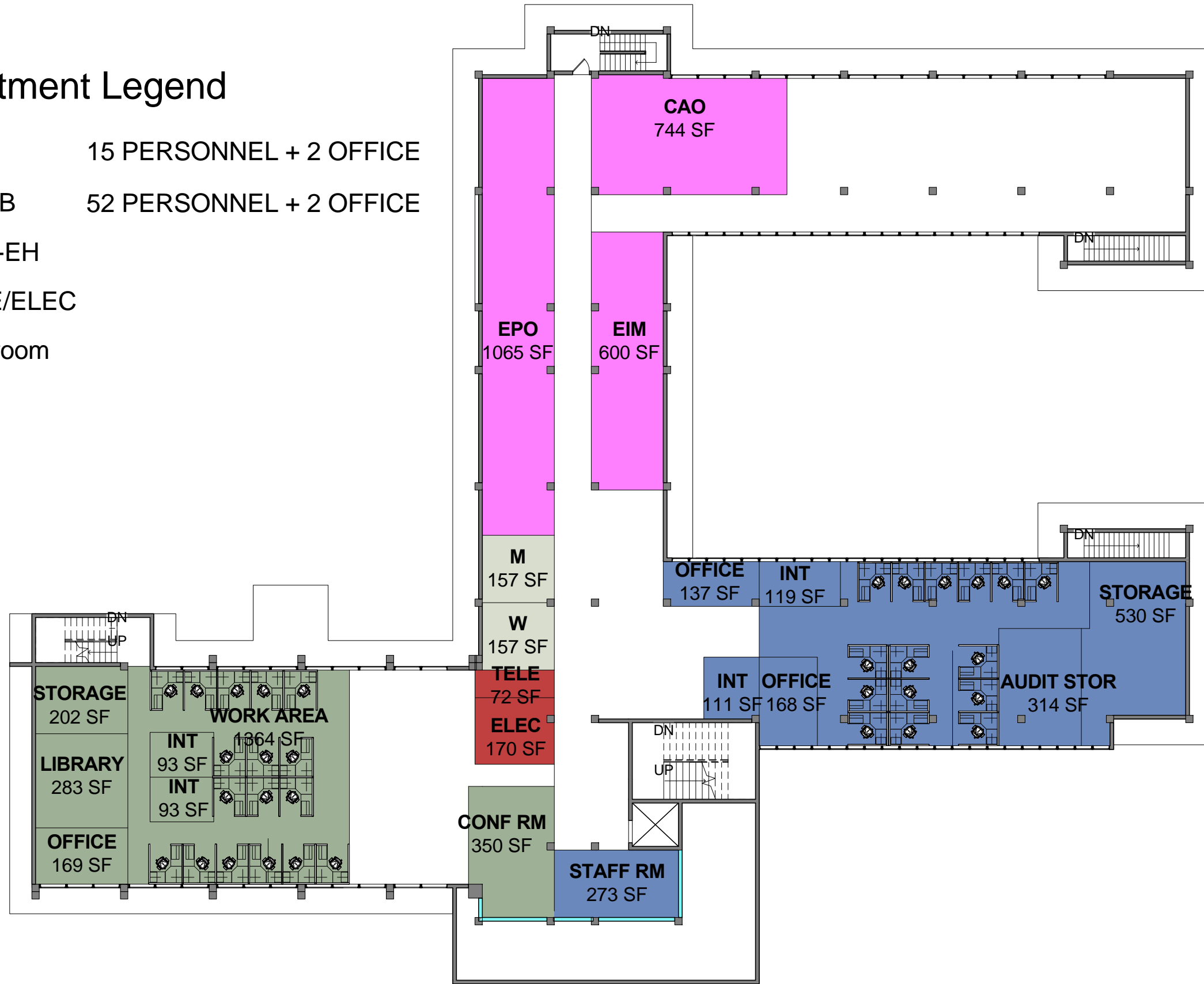
Reference Dwg. No.

WAIMANU RIDGE - HALE OLA BUILDING
Contract No.

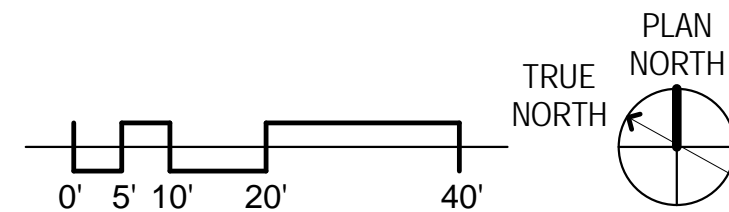
EXHIBIT A-28 SCHEME 2A-3

Department Legend

- ERO 15 PERSONNEL + 2 OFFICE
- SHWB 52 PERSONNEL + 2 OFFICE
- DOH-EH
- TELE/ELEC
- Restroom



① Level 2 - HALE OLA
1" = 20'-0"

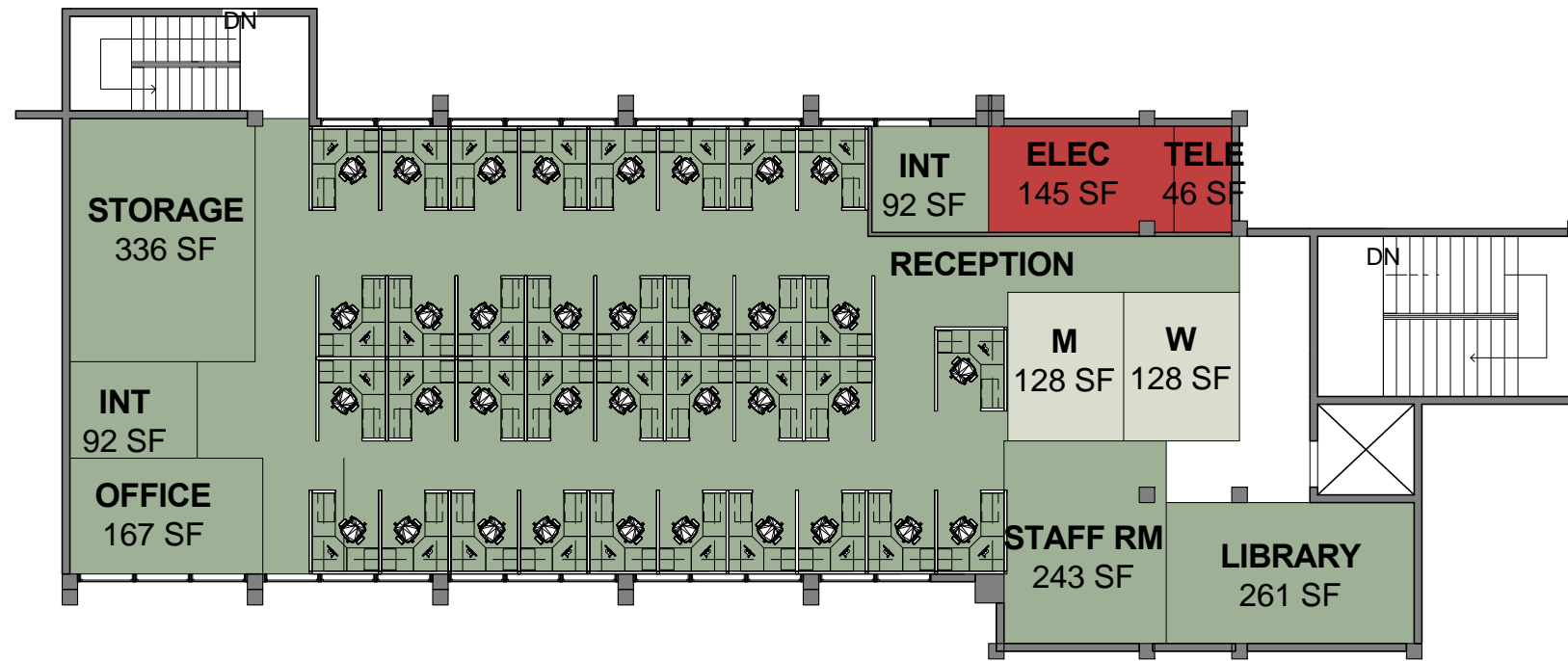


Date: 09/04/12
Sheet No. 2

Reference Dwg. No.

WAIMANU RIDGE - HALE OLA BUILDING
Contract No.

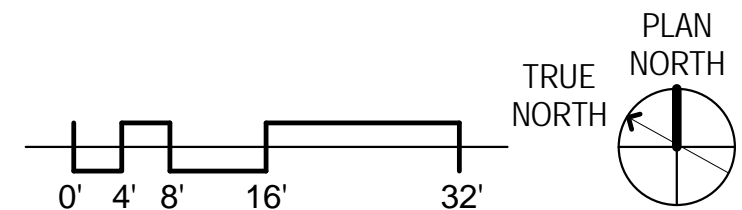
EXHIBIT A-29 SCHEME 2A-3



① Level 3 - HALE OLA
1/16" = 1'-0"

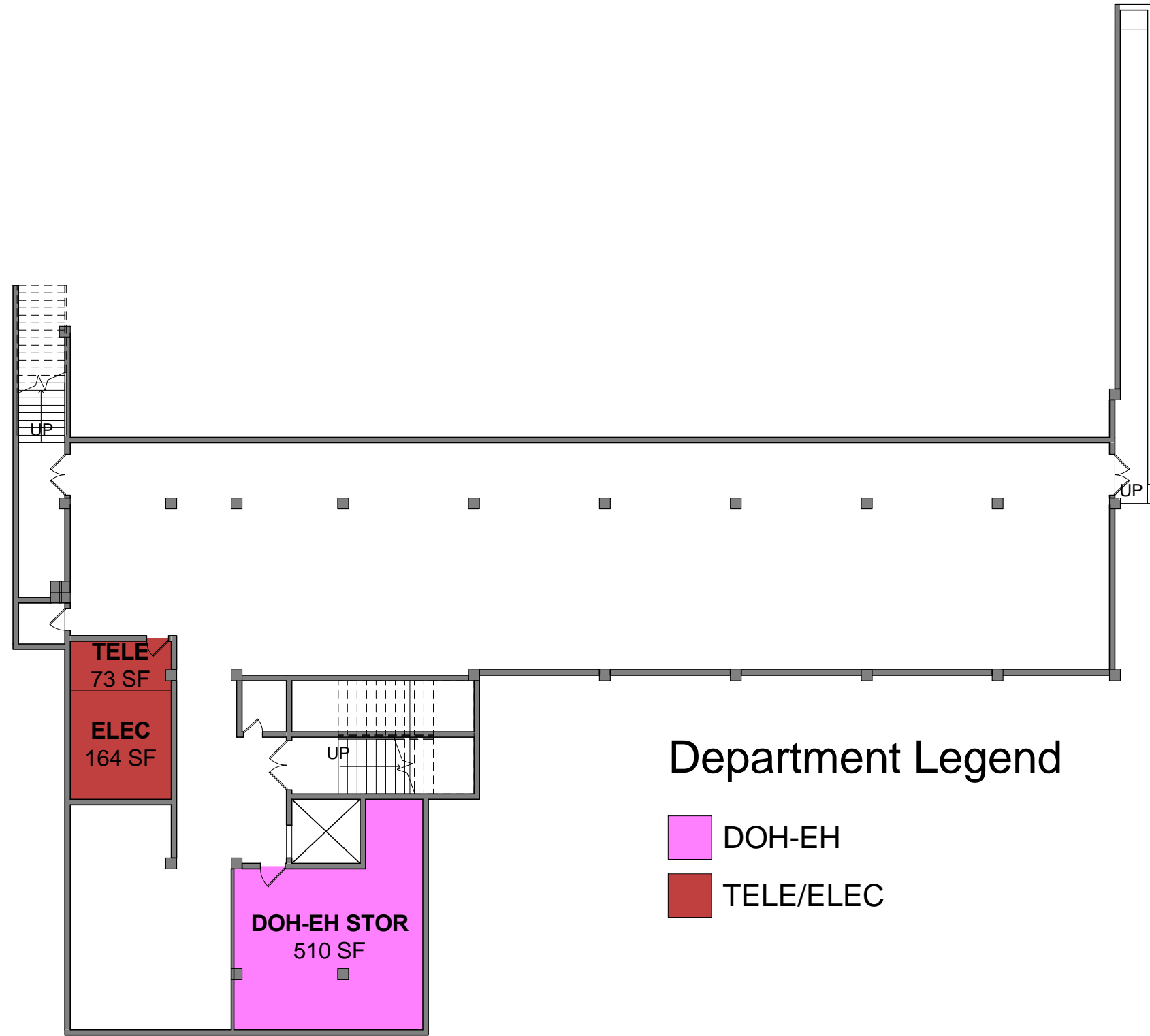
Department Legend

- SHWB 52 PERSONNEL + 2 OFFICE
- TELE/ELEC
- Restroom



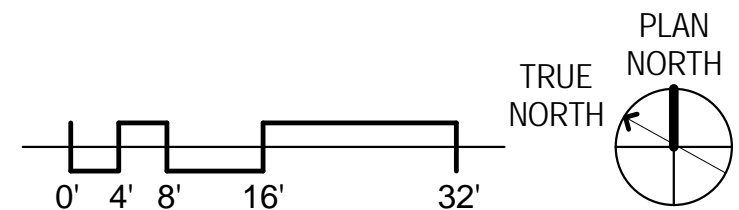
<p>Date: 09/04/12</p>	<p>Sheet No. 3</p>
<p>Reference Dwg. No.</p>	
<p>Contract No.</p>	

EXHIBIT A-30 SCHEME 2A-3



Department Legend

- DOH-EH
- TELE/ELEC



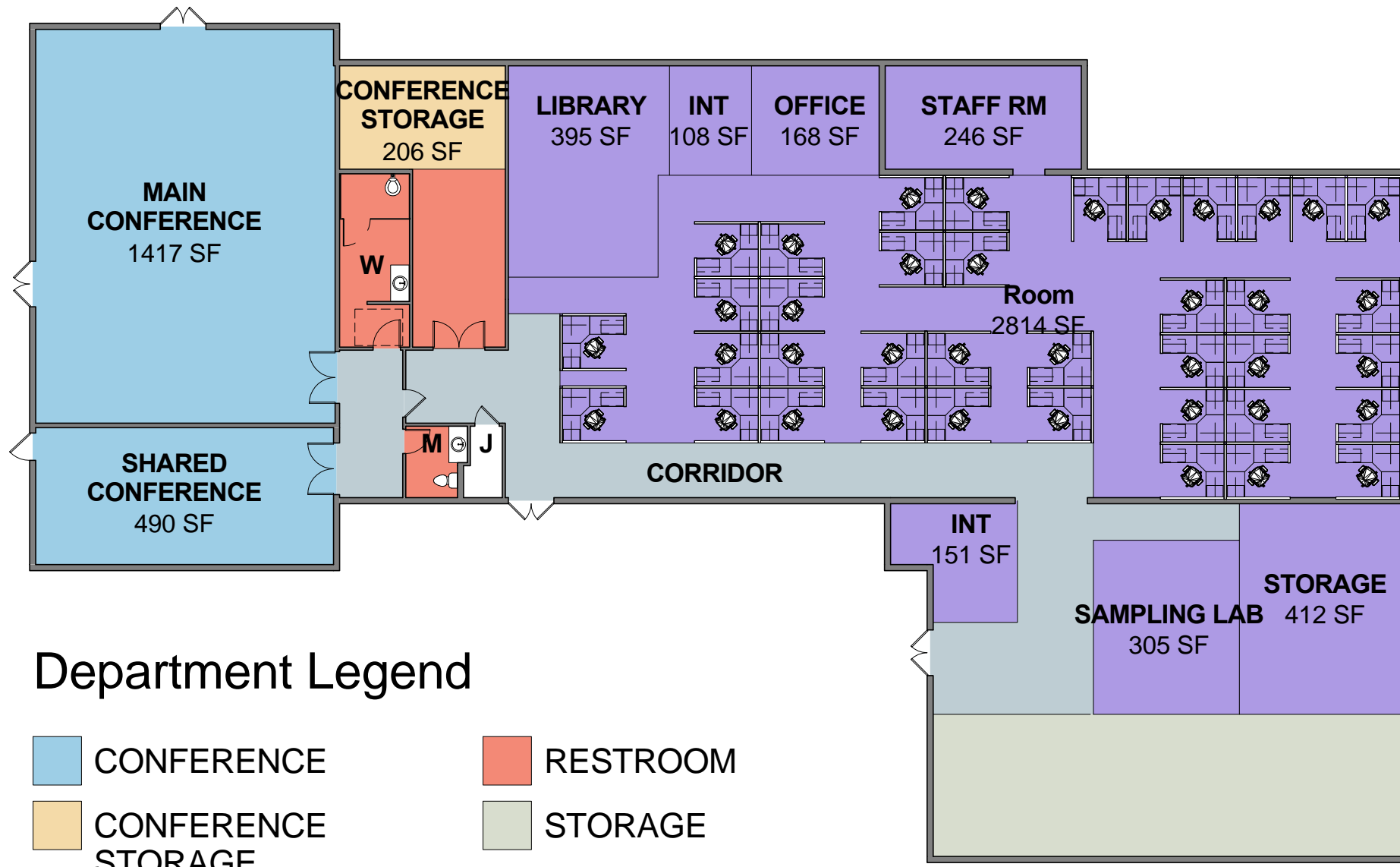
① Level 0 BASEMENT - HALE OLA
1/16" = 1'-0"

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Date: 09/04/12	Sheet No. 0
WAIMANU RIDGE - HALE OLA BUILDING	Reference Dwg. No.
Contract No.	

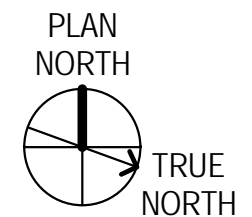
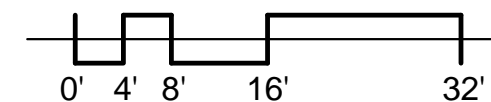
EXHIBIT A-31 SCHEME 2A-3



Department Legend

- CONFERENCE
- CONFERENCE STORAGE
- CORRIDOR
- CWB 38 PERSONNEL + 1 OFFICE
- RESTROOM
- STORAGE

① KITCHEN/DINING LEVEL 1
1/16" = 1'-0"



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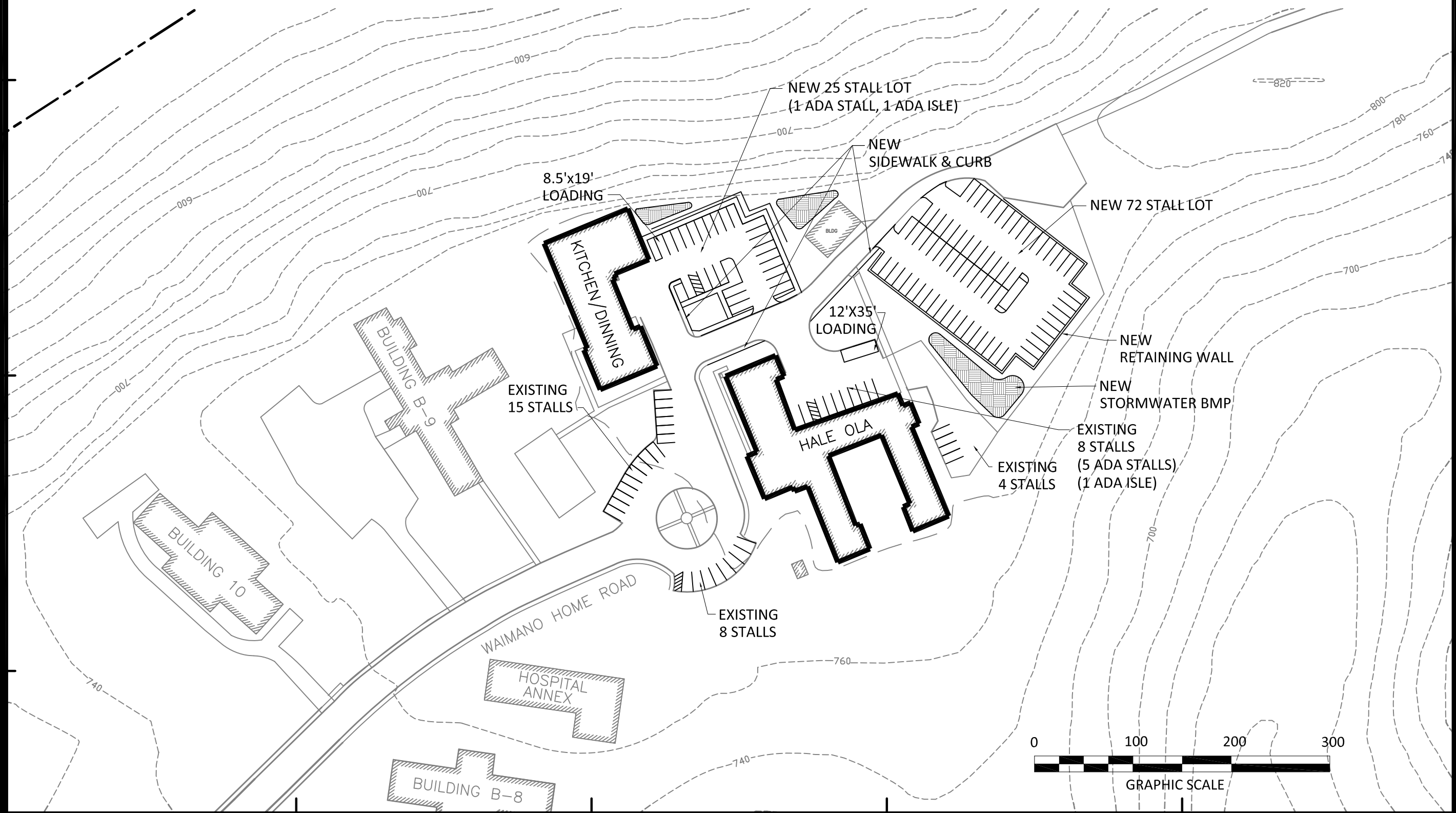
CDS

Date: 09/04/12	Sheet No. .
WAIMANU RIDGE - KITCHEN/DINING	Reference Dwg. No.
Contract No.	

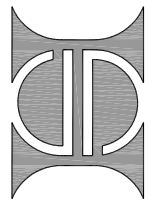
PARKING SUMMARY

EXISTING - 35 STALLS
 NEW - 97 STALLS
 TOTAL - 132 STALLS

TRUE NORTH
 SCALE: 1"=100'



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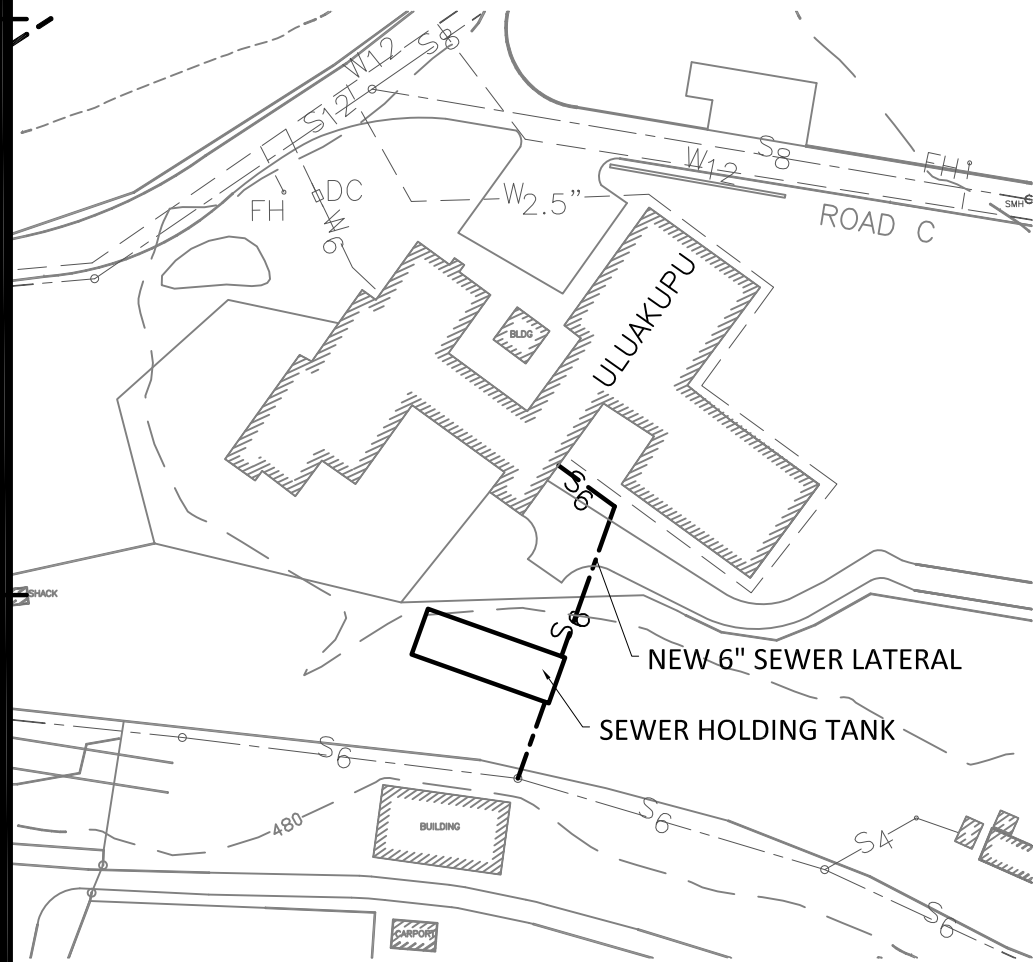


SCHEME 2A-3 PROPOSED SITE IMPROVEMENTS Contract No.	Date: 10/2/2012
	Sheet No. EXHIBIT C-15
Reference Dwg. No.	

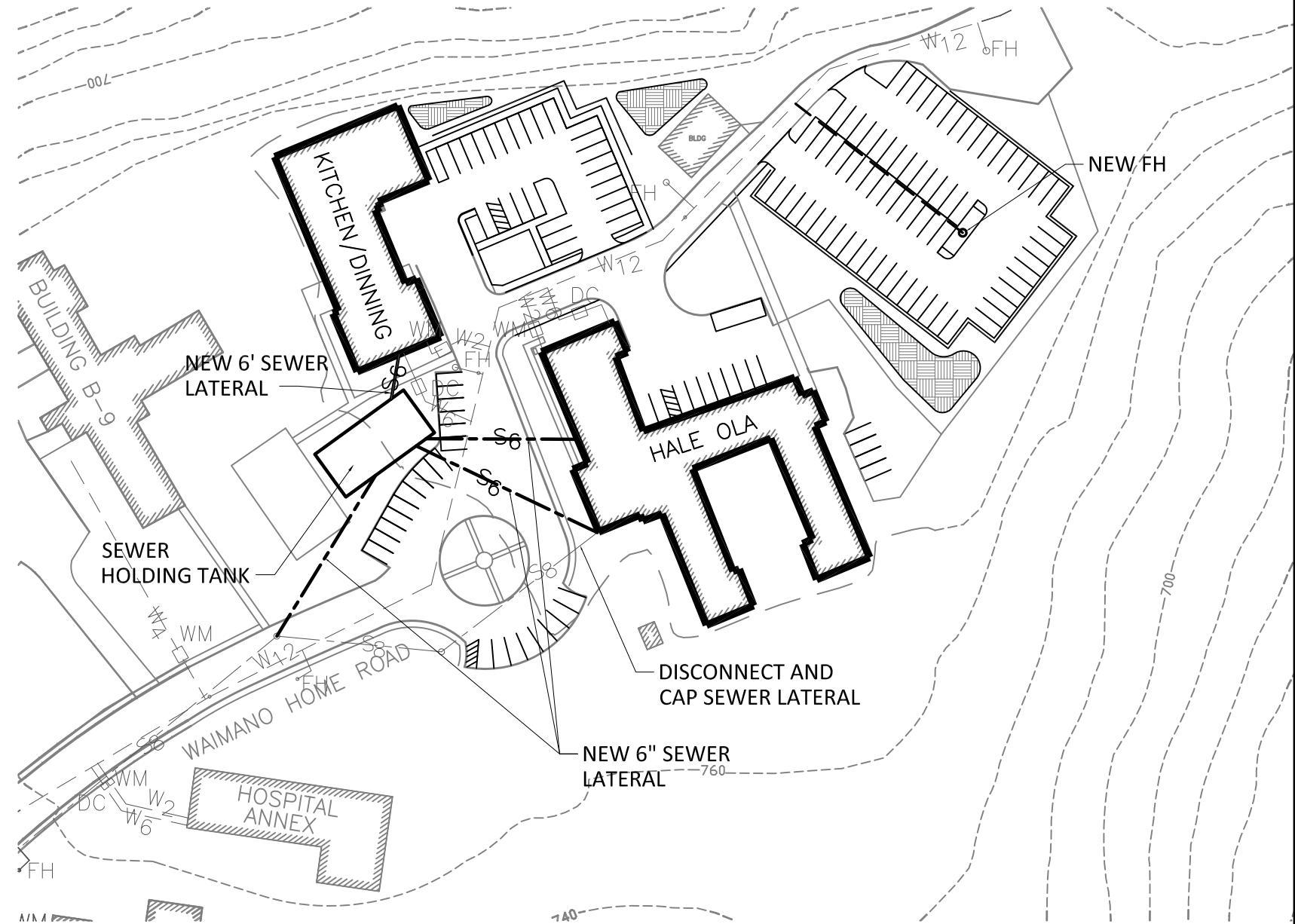
LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- PROPOSED WATER SYSTEM
- - - PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

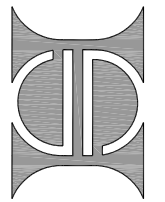
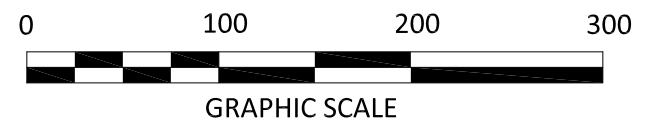
TRUE NORTH
SCALE: 1"=100'



① SCHEME 2A MAKAI PROPOSED UTILITY IMPROVEMENTS



② SCHEME 2A MAUKA PROPOSED UTILITY IMPROVEMENTS



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864 So. Beretania Street Honolulu, Hawaii 96813

SCHEME 2A-3 PROPOSED UTILITY IMPROVEMENTS	Date: 10/2/2012 Sheet No. EXHIBIT C-16
Contract No.	Reference Dwg. No.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

5. SCHEME 2B – NEW BUILDING FOR 240/262 STAFF

a. ARCHITECTURAL – CDS INTERNATIONAL

This Scheme was requested to relocate 250 staff in a new building located somewhere on the Waimano Ridge site. As noted in Scheme 2A, discussions with the group leaders led the final staff amount for relocation to be increased to 262.

Uluakupu is NOT used in this scheme. All 262 staff will be accommodated in this building and Uluakupu will be left available for other DOH uses.

All the same design parameters used in Scheme 2A were used in this scheme.

Similar to Scheme 1B, the new building for 150 staff, the main benefit of a new building is that it can be specifically designed with an office type layout in mind so it can be the most efficient use of space possible.

Based on this idea and the specific needs of this group of staff members, we propose a new single-story 55,000 SF Building will be required to accommodate 262 DOH staff. A 2,200 SF pre-manufactured storage building will be built next to the staff building to save on costs of the more expensive space. The buildings would be located near Uluakupu on a large flat part of the site to minimize site costs.

One additional efficiency gained in this scheme over Scheme 2A, and even Scheme 1B is the sharing of Conference and Storage space based on all the groups sharing the same building.

See EXHIBITS A-26 through A-31 for detail and floor plans of this scheme.

SCHEME 2B - Space Plan for 240 → 262 Staff in New Building:

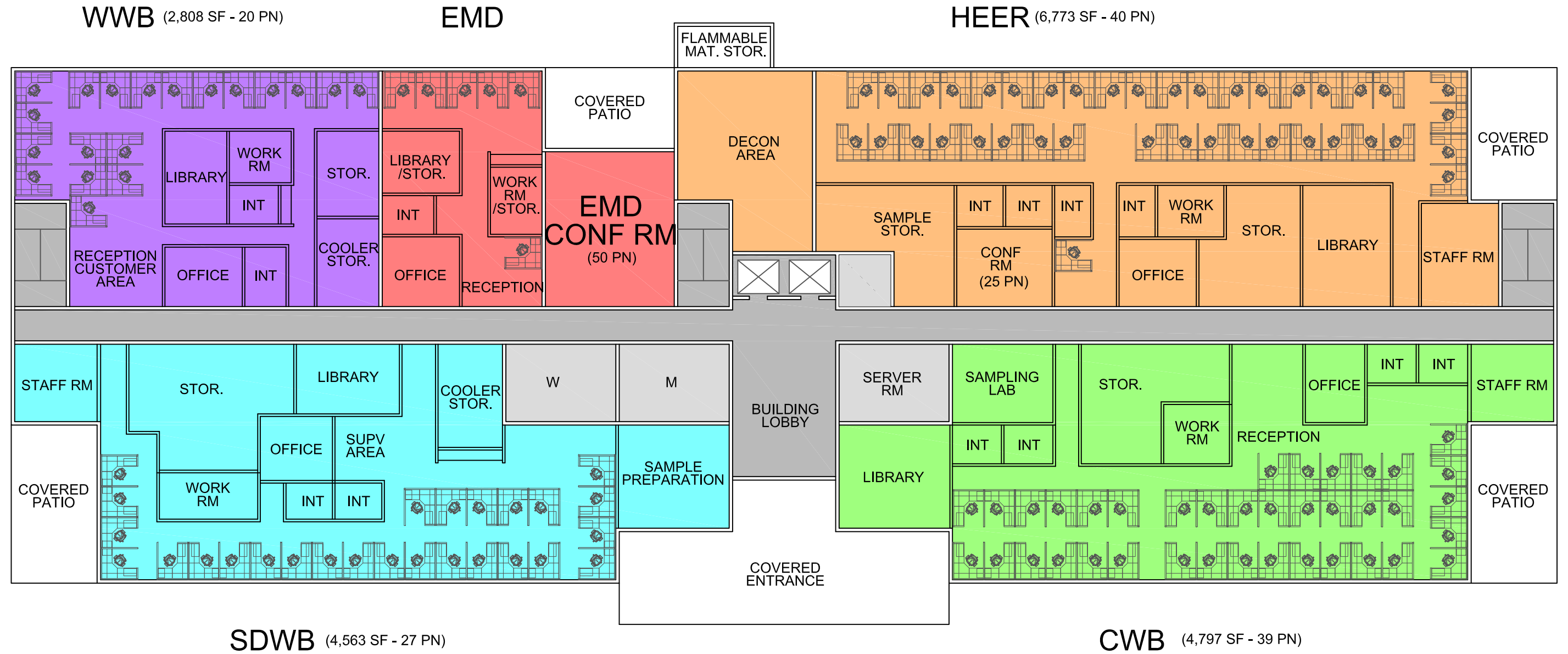
- SUITE Floor Area: 42,055 SF (for 240 → 262)
- GROSS Floor Area: 54,672 SF

- Building Footprint: 30,000 SF (300' x 100')
- No. of Stories: 2

- Ground Level: 30,000 SF (Including 2,680 SF Covered Patio)
- Second Level: 29,000 SF (Including 1,450 SF Covered Patio)

- Pre-Eng Building: 3,000 SF
 - CAB Smoke Generator Storage
 - CWS Boat Storage
 - CWS Waimano Storage
 - SHWB Additional Storage

**EXHIBIT A-33
SCHEME 2B**



GROUND FLOOR PLAN

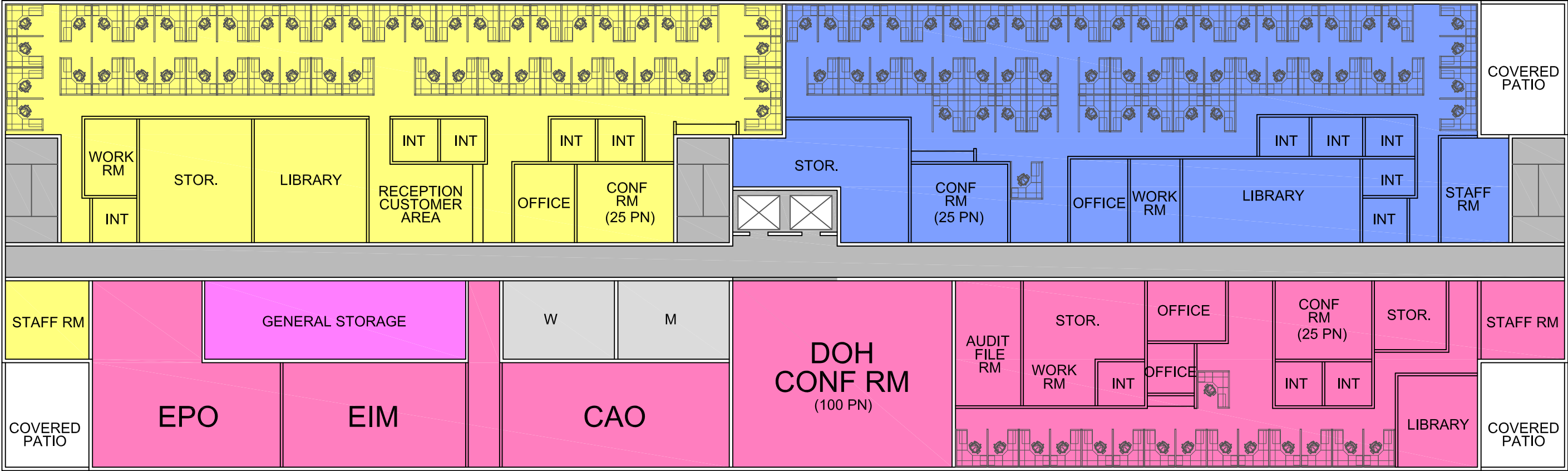
SCALE: 1/16" = 1' - 0"

GROSS FLOOR AREA: 14,625 SF

**EXHIBIT A-34
SCHEME 2B**

CAB (6,331 SF - 51 PN)

SHWB (6,214 SF - 54 PN)



ENVIRONMENTAL HEALTH

ERO

SECOND FLOOR PLAN

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

GROSS FLOOR AREA: 14,230 SF

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

5. SCHEME 2B – NEW BUILDING FOR 250 STAFF

b. CIVIL – SAM O. HIROTA, INC

1) NEW BUILDING CONSTRUCTION

The construction of a new 55,000 square foot building will require mass grading to prepare the site for construction. Based on our preliminary findings regarding the site slope, a retaining wall will be required to accommodate the building. A new sidewalk and concrete curbs will be provided along the north and west sides of the site.

The change in land use associated with construction of the new building will require stormwater management improvements to be implemented on-site. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as sheet flowing runoff to bioswales. Bioswales are utilized to reduce runoff rate, and provide water quality treatment by settling suspended solids, trapping oil and other contaminants in the soil, promoting infiltration and groundwater recharge, and minimizing irrigation demands by using native vegetation.

The sewer main which still currently serves Building B- 5 should be realigned around the proposed building footprint or connected to the Road C sewer main. The inactive sewer laterals and sections of the sewer main abandoned as a result of the realignment should be demolished and removed from under the footprint of the proposed building (see EXHIBIT C-18).

2) PARKING

The proposed 55,000 square foot building requires 138 parking stalls based on building area, including 5 ADA stalls and 1 ADA aisle (See APPENDIX C-5, Table C-1 for parking stall count calculations). A new parking lot is proposed north of the building site, across Road C in the former locations of Thayer Hall, Building B- 1, and Building B- 2 (see Exhibit C-17). The lot has rough dimensions of 650' x 75' and will use the Thayer Hall loading access drive as one entrance. DOH may elect to provide additional parking for staff and customers; however the site is partially constrained by topographic features. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot. A topographic survey and site design analysis will be required before final recommendations can be made.

The lot will be surfaced with Asphalt Concrete, will have stall striping and isle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

lighting will be provided. New concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided at the parking lot border and along Road C. A crosswalk to the proposed building will be provided.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment.

3) WATER - DOMESTIC AND FIRE PROTECTION

A new 6-inch fire protection water lateral, with associated DC meter, will serve the building's internal sprinkler system. A new 2-inch domestic water lateral, with associated meter and backflow preventer will serve the building's domestic requirements (see domestic water lateral sizing computations in APPENDIX C-5, Table 5b). The new laterals will be connected to the 12-inch water main either on Road C or Road B (see Exhibit C-18). Existing streetside hydrants will be used for exterior fire protection.

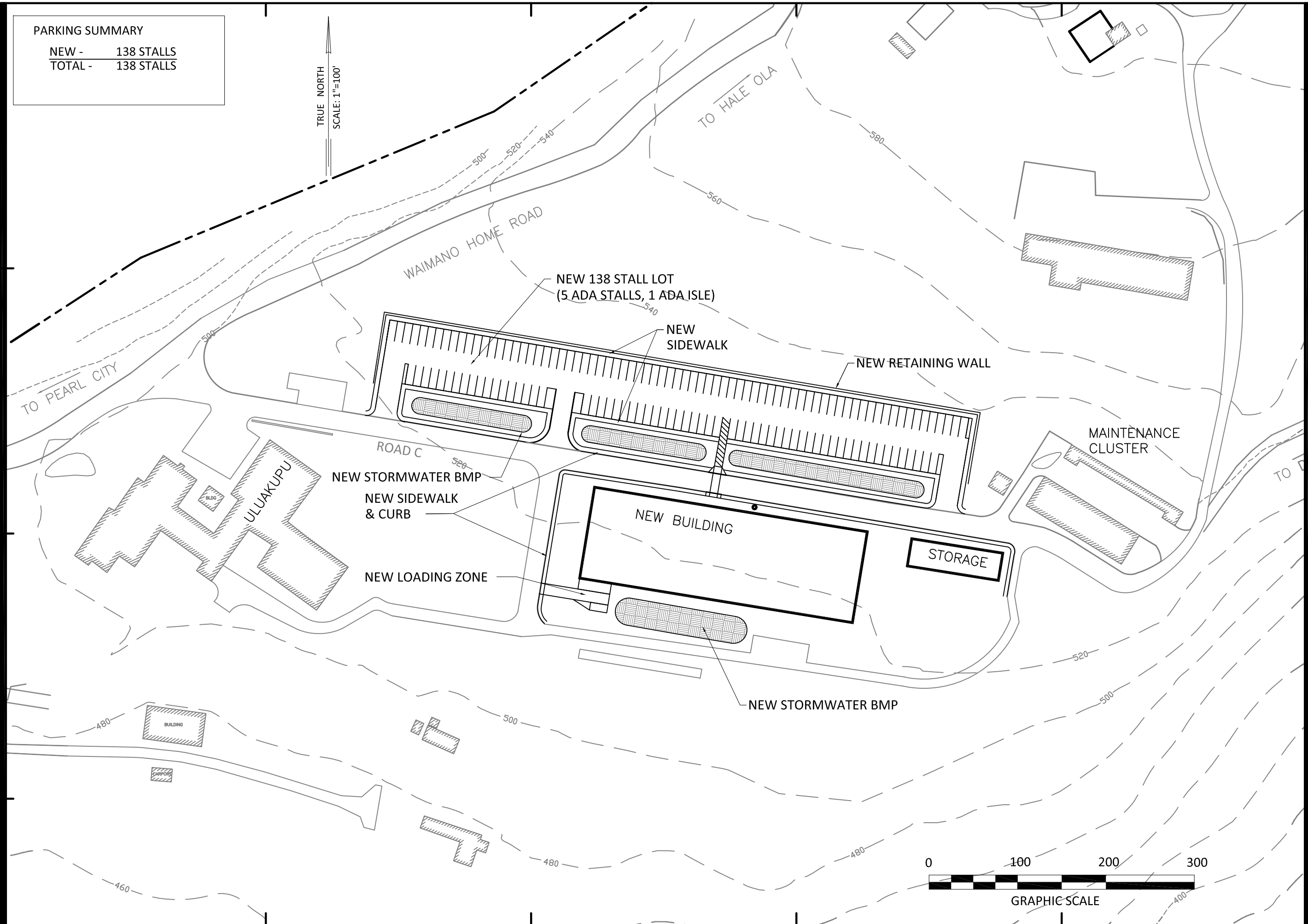
4) SEWER

The relocation of 262 DOH employees to the proposed new building will lead to the production of roughly 23,000 gpd of additional wastewater (See APPENDIX C-5, Table C-3d for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 25,000 gallon storage tank or vault is recommended. A new 6-inch sewer lateral will be provided, connecting the building to the vault. The wastewater detention vault will be connected to the existing 8-inch sewer main (see EXHIBIT C-14).

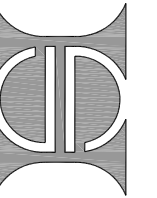
PARKING SUMMARY

NEW - 138 STALLS
 TOTAL - 138 STALLS

TRUE NORTH
 SCALE: 1"=100'



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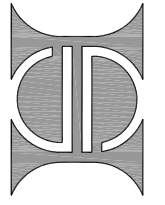
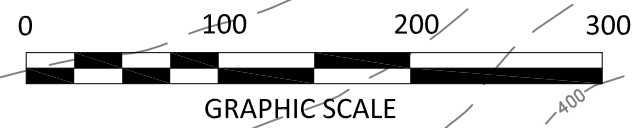
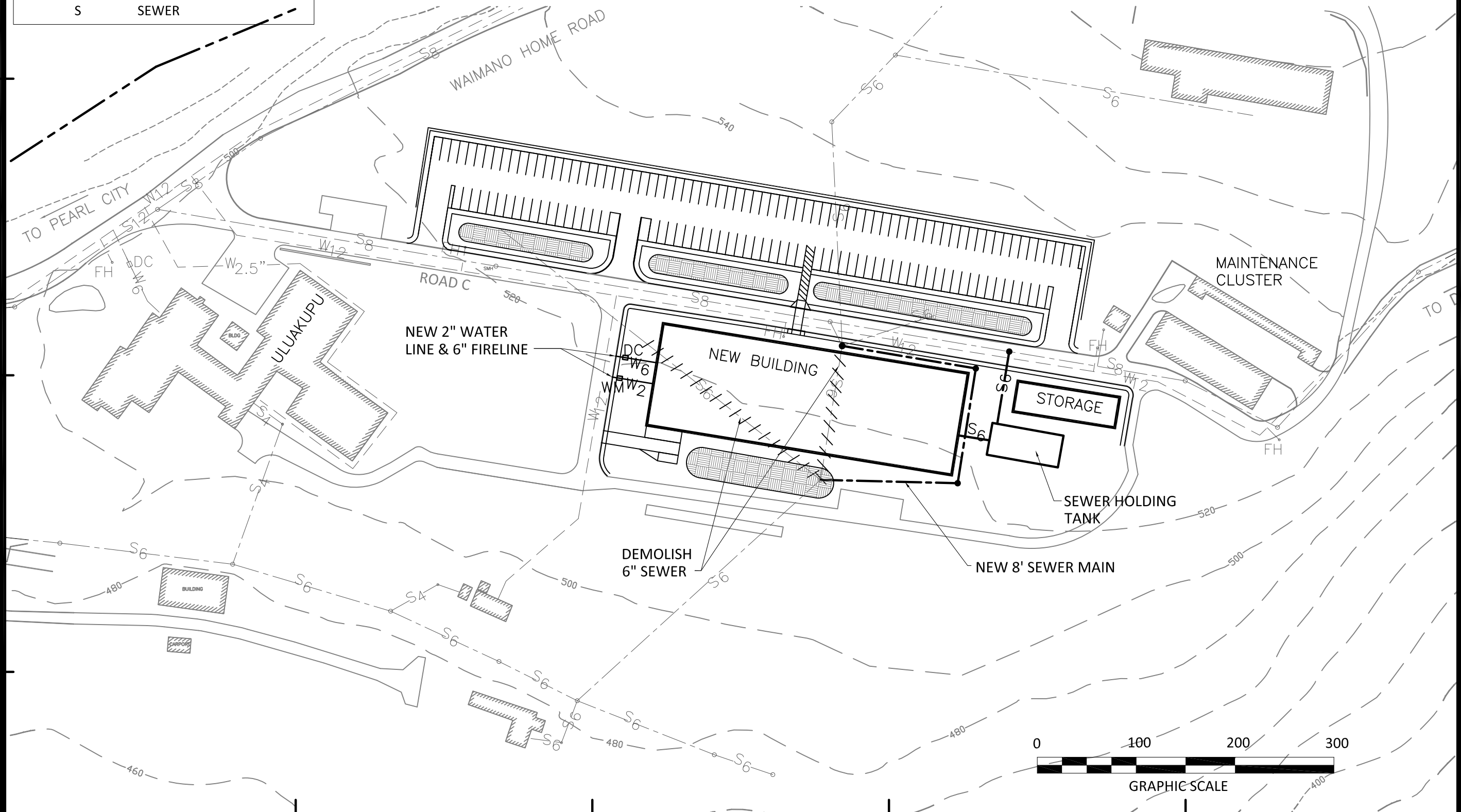


SCHEME 2B PROPOSED SITE IMPROVEMENTS Contract No.	Date: 10/2/2012
	Sheet No. EXHIBIT C-17
Reference Dwg. No.	EXHIBIT C-17

LEGEND

- EXISTING WATER SYSTEM
- - - EXISTING SEWER SYSTEM
- PROPOSED WATER SYSTEM
- - - PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

TRUE NORTH
SCALE: 1"=100'



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<p>SCHEME 2B PROPOSED UTILITY IMPROVEMENTS</p>	<p>Date: 10/2/2012 Sheet No. EXHIBIT C-18</p>
<p>Contract No.</p>	<p>Reference Dwg. No.</p>

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

5. SCHEME 2B – NEW BUILDING FOR 240/262 STAFF

c. COST ESTIMATE – RIDER LEVETT BUCKNALL

See APPENDIX CE-1 for details of the Cost Estimate.

Scheme 2B Estimate includes costs for:

- Construction of a new 55,000 square foot 2-story Type II-A office building that is centrally air conditioned and includes fit out that is appropriate for use by the State
- A 2,200 square foot pre-engineered metal storage building.
- Required parking per new County Zoning Code.
- Water and Sewer improvements required to support DOH staff being relocated to Waimano Ridge.
- Scheme 2B includes for the DOH Staff to be relocated into a new 55,000 square foot office building with approximately 150 parking stalls and a 2,200 square foot metal storage building.

SCHEME 2B COST ESTIMATE:

\$17,519,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

6. SCHEME 3 – RENOVATION AND ADDITION FOR 240/262 STAFF

a. ARCHITECTURAL – CDS INTERNATIONAL

Based on the one last complaint plaguing Scheme 2A-3 (the large distance between Hale Ola and Uluakupu), one last scheme was proposed by CDS and confirmed as desirable by DOH:

Utilize the Kitchen/Dining Building and Hale Ola as designed in Scheme 2A-3, but shift the 67 staff located in Uluakupu into an addition built onto Hale Ola. The addition would need to be approximately 14,800 SF.

The approximately 50 x 150 feet addition would be a two-story wing added to the northeast corner of Hale Ola. The new parking lots would need to be re-configured to accommodate it.

This Scheme accommodates all 262 staff in one location, across two buildings (Hale Ola and Kitchen/Dining), and leaves Uluakupu open for other DOH uses.

Parking for the addition would be accommodated in the existing lot next to Building B-9. To hold a total of 74 stalls, this lot may need to be extended down toward B-10. The sewer lines and storage capacity would be increased to accommodate the 67 additional staff at this location.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

6. SCHEME 3 – RENOVATION AND ADDITION FOR 262 STAFF

b. CIVIL – SAM O. HIROTA, INC

1) NEW BUILDING CONSTRUCTION

The construction of a 14,700 square foot addition to Hale Ola will require demolition of an existing parking lot, excavation, and mass grading to prepare the site for construction. Siting of the building addition should factor the exterior second floor ramp footing, as there is the potential for interference with the building foundation. If DOH intends to utilize the ramp it can be integrated into the building addition, otherwise it can be demolished.

Implementation of stormwater management retrofits will be required if there is a net increase in impervious area. We assume that portions of the existing parking lot that are not utilized for construction of the building addition will be converted to pervious landscape, and can be used for stormwater BMP siting. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and implementing bioswales to reduce runoff rate, and provide water quality treatment by settling suspended solids, trapping oil and other contaminants in the soil, promoting infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

2) PARKING

Hale Ola

Based on gross building area, including the proposed addition, 144 parking stalls are required at Hale Ola (See Table C-1 for parking stall count calculations). Thirty-seven additional stalls are provided, for a total parking stall count of 181 stalls. DOH may elect to provide additional parking for staff and customers, however the sites are constrained topographic features and existing buildings. The currently allotted parking includes:

- 23 existing stalls south-west of Hale Ola
- 8 existing stalls located in the lot north-east of Hale Ola (including 5 ADA stalls and 1 ADA aisle)
- 83 new stalls in a new lot north-east of Hale Ola
- 55 new stalls in an expanded existing lot located between Buildings B-9 and B-10
- 9 new stalls along Waimano Home Road
- * See Exhibit C-19 for schematic parking layout plan

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

Eight ADA parking stalls are provided in the existing lot north-east of Hale Ola. This provides all required ADA stalls at Hale Ola for this scheme. There is direct access to Hale Ola from this lot, however further investigation, including a topographic survey, slope analysis, and verification of landing and rail compliance are required before the location is finalized.

The new 83 stall lot is sited in the former location of Building B-11, which has been demolished. The dimensions of the new parking lot will be roughly 190' x 135'. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the new parking lot. A topographic survey and site design analysis is required before final recommendations can be made. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C standards (See APPENDIX C-5, Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided at the parking lot border and to connect the new lot to the existing sidewalks in front of Hale Ola.

The new 55 stall lot is sited in the location of an existing 28 stall lot, between Buildings B-9 and B-10. The existing lot will be demolished and expanded into the surrounding vegetated areas to accommodate the additional stalls. The dimensions of the new parking lot will be roughly 260' x 70'. This study assumes that no retaining wall will be needed at the new 55 stall parking lot. A topographic survey and site design analysis is required before final recommendations can be made. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C standards (See Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. New concrete sidewalks with 5-foot minimum width, and concrete curbs will be provided at the parking lot border and to connect the new lot to the existing sidewalks along Waimano Home Road.

The new 9 stall area is sited along Waimano Home Road, south-west of the traffic circle. The dimensions of the new parking lot will be roughly 70' x 20. This study assumes that no retaining wall will be needed at the new 9 stall parking area. A topographic survey and site design analysis is required before final recommendations can be made. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C standards (See Table C-2). Parking and traffic related signage will be provided. Parking lot lighting will be provided. A new concrete sidewalk with 5-foot minimum width, and concrete curb will be provided along Waimano Home Road, fronting the parking stalls.

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

Stormwater management enhancements will be needed at the new parking lots. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment. Bioswales promote settling of suspended solids, trap oil and other contaminants in the soil, promote infiltration and groundwater recharge, and minimize irrigation demands by using native vegetation.

Existing parking areas will be resurfaced. New striping will be provided to current C&C and ADA standards (see Table C-2). A new 12' x 35' loading zone will be provided in the existing parking lot north-east of Hale Ola, and will satisfy off-street loading requirements for Hale Ola.

Kitchen Building

Based on gross building area a total of 25 parking stalls are needed at the Kitchen Building (See Table C-1 for parking stall count calculations). The existing 12 parking stall parking area will be demolished and a new 25 stall parking lot will be constructed in the location of the former Laundry building (see Exhibit C-19). DOH may elect to provide additional parking for staff and customers, however the site is constrained by topographic features. This study assumes that a retaining wall will be necessary to provide a maximum slope of 5-percent at the parking lot (2% in ADA areas). A topographic survey and site design analysis will be required before final recommendations can be made. The dimensions of the new parking lot will be roughly 115' x 115'. The lot will be surfaced with Asphalt Concrete, will have stall striping and aisle widths conforming to C&C and ADA standards (See Table C-2 for parking stall and aisle dimensions). Parking and traffic related signage will be provided. Parking lot lighting will be provided.

A new 8' x 19' loading zone will be provided in the new parking lot, and will satisfy off-street loading requirements for the Kitchen building.

Stormwater management enhancements will be needed at the new parking lot. Stormwater management design will be based on the BWS Rules Relating to Storm Drainage Standards. Compliance will be achieved primarily using LID techniques such as extending sheet flow distance, and utilizing bioswales to reduce runoff rate and provide water quality treatment.

3) WATER - DOMESTIC AND FIRE PROTECTION

One new fire hydrant will be needed at the new 55 stall parking lot and at the new 86 stall parking lot. (see EXHIBIT C-20). A six-inch lateral and

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

a detector check (DC) meter are required for hydrant installation. No water utility improvements are required to establish service at the buildings.

This study assumes that the existing domestic and fire protection water lines are adequate to serve Hale Ola in the proposed condition with the new addition.

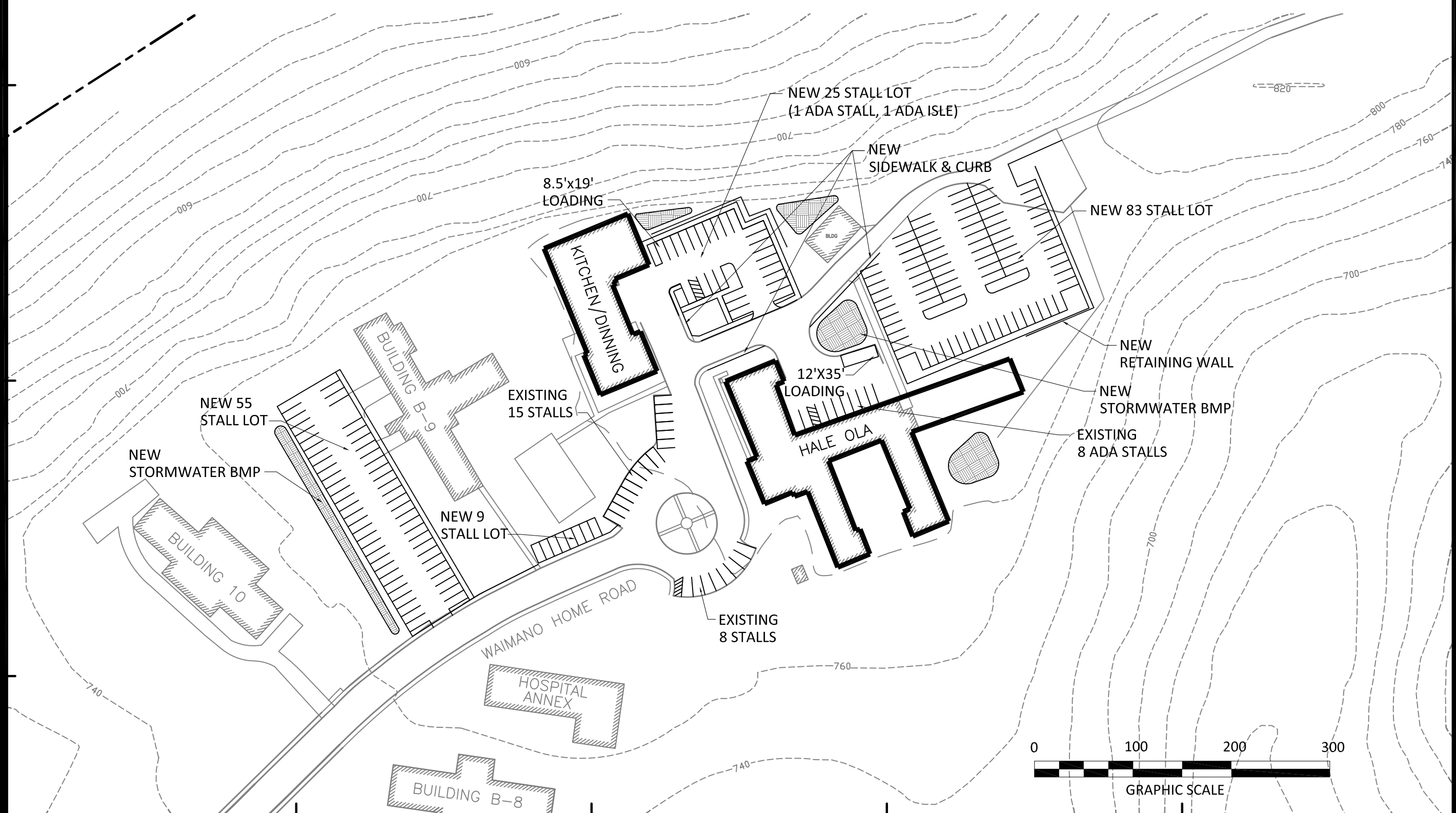
4) SEWER

The relocation of 262 DOH employees to Hale Ola and the Kitchen Building will lead to the production of roughly 23,000 gpd of additional wastewater (See Table C-3g for sewer flow calculations). This report assumes that this project can negotiate compliance with the 2012 Pearl City Wastewater Pump Station moratorium by implementing temporary wastewater storage and off-peak discharge to the C&C sewer system. A 25,000 gallon storage tank or vault is recommended for temporary wastewater storage. The vault should be sited downstream of both tributary buildings. Both existing sewer laterals at Hale Ola and the single existing lateral at the Kitchen building will be replaced and re-routed to deliver wastewater to the detention vault. The detention vault will be connected to the existing 8-inch sewer main (see Exhibit C-20).

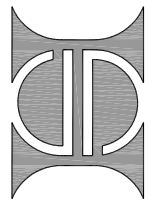
PARKING SUMMARY

EXISTING - 31 STALLS
 NEW - 175 STALLS
 TOTAL - 206 STALLS

TRUE NORTH
 SCALE: 1"=100'







SAM O. HIROTA, INC.
 ENGINEERS & SURVEYORS
 864 So. Beretania Street Honolulu, Hawaii 96813

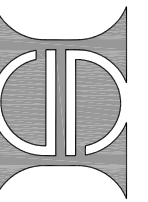
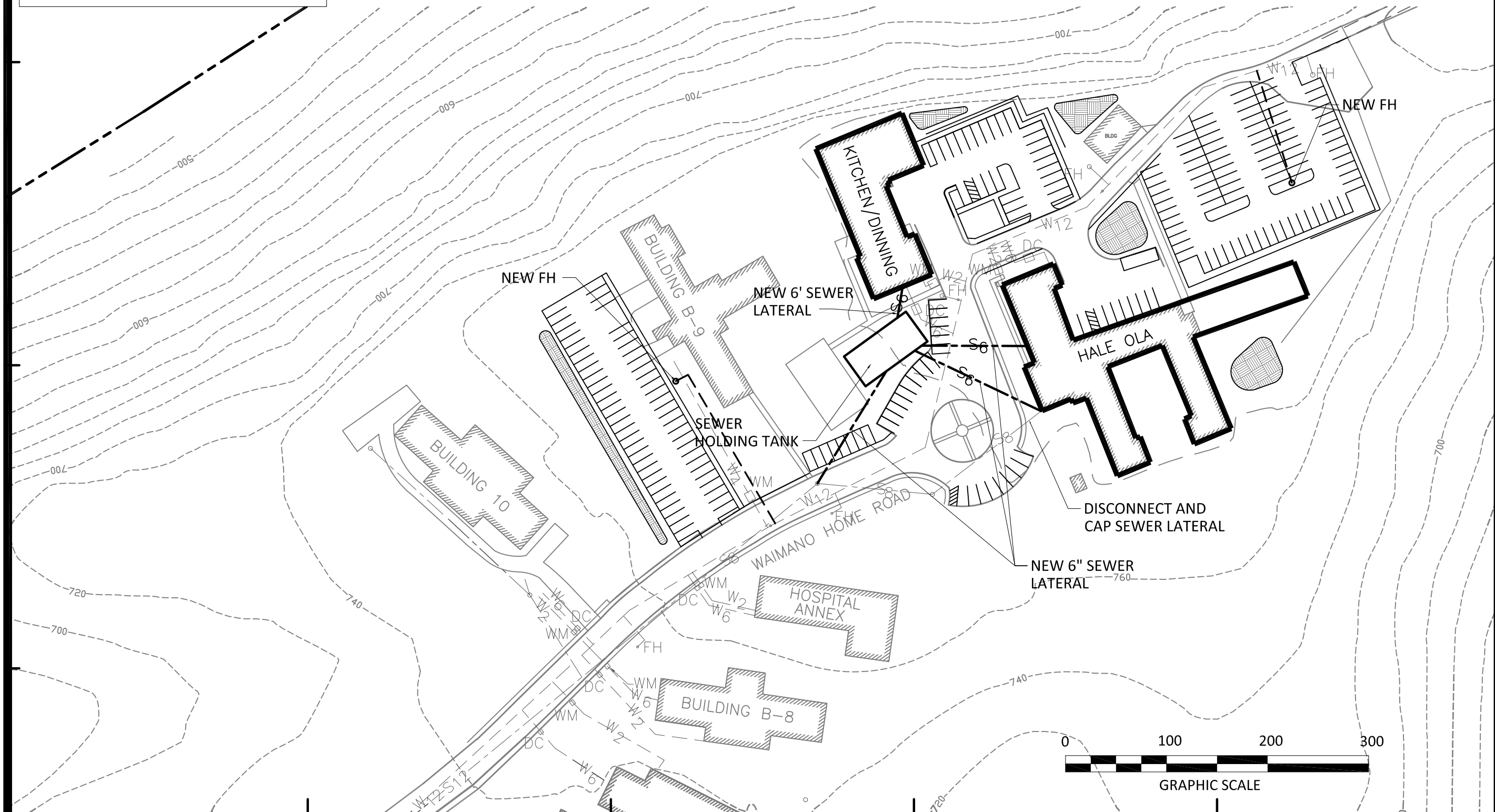


SCHEME 3 PROPOSED SITE IMPROVEMENTS Contract No.	Date: 10/2/2012
	Sheet No. EXHIBIT C-19
Reference Dwg. No.	

LEGEND

-  EXISTING WATER SYSTEM
-  EXISTING SEWER SYSTEM
-  PROPOSED WATER SYSTEM
-  PROPOSED SEWER SYSTEM
- WM WATER METER
- DC DETECTOR CHECK METER
- W WATER
- FH FIRE HYDRANT
- S SEWER

TRUE NORTH
SCALE: 1"=100'



SAM O. HIROTA, INC.
ENGINEERS & SURVEYORS
864 So. Beretania Street Honolulu, Hawaii 96813

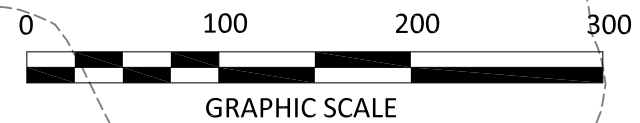
Date: 10/2/2012

Sheet No. EXHIBIT C-20

SCHEME 3 PROPOSED UTILITY IMPROVEMENTS

Reference Dwg. No.

Contract No.



FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

6. SCHEME 3 – RENOVATION AND ADDITION FOR 262 STAFF

c. COST ESTIMATE – CDS INTERNATIONAL

The cost estimate for this scheme is based on the combination of costs for renovating and building new. CDS applied the new building cost per square foot developed for Scheme 1B (from RIDER LEVETT BUCKNALL) to the square footage required in the addition. Costs were also added for the additional parking required for the addition. These addition costs were added to the total cost for Scheme 2A-3.

No detail was generated since this solution came about at the very end of the project.

SCHEME 3 COST ESTIMATE:

\$16,154,000

FEASIBILITY STUDY

Waimano Ridge Feasibility Study for AAFES Building Staff Relocation

DAGS Job No.: 12-20-2680

7. DOCUMENTATION OF DOH BRANCH AND OFFICE HEAD RESERVATIONS

Reservations were voiced by the Division, Branch, and Office heads in our final meeting on September 6, 2012. The following concerns were noted:

- a. Transportation: Concern was mentioned by multiple Office heads about public transportation access to the site being limited. City bus service stops at the Pearl City Cultural Center, but goes no further up Waimano Home Road. This would cause all employees who take the bus to walk up the hill in the morning and back down the hill in the evening for approximately a mile on a narrow winding road without sidewalk pedestrian protections. It was pointed out that many of the DOH staff are paid such low salaries that buying, servicing, and running a car would be cost prohibitive and they would most likely quit.
- b. Staff recruitment: The same transportation problem was noted as a long term problem with recruiting new employees since it would limit the pool of people who could afford to take the job.
- c. Multiple Buildings: Most Office heads stated that having the Offices separated between buildings would put considerable limitations on their collaboration. One Office head pointed out it was her job to communicate with all the separate Office which would cause her to go between buildings all day long. Some of the solutions have staff in buildings that are beyond a comfortable walk and would require use of a car. One Office head mentioned concern for the safety of his staff walking back and forth between buildings on the old, deteriorated road and sidewalk surfaces as well as exposure to the elements.
- d. Personal Space: Concern was noted about the shift from their current 9 x 10 feet cubicles to 6 x 7 feet cubicles.
- e. Waimano Home Road: Concern was voiced about the safety of DOH staff and the public walking and driving on Waimano Home Road without adding sidewalks and upgrading to county standards.
- f. Parking: Current study designs only supplied parking based on code. Office heads mentioned this would be a problem since public transportation is so limited to this location and therefore all staff will need to drive. State vehicles and public visitors will need to be accommodated as well.

Appendix B

Botanical Resources Assessment

LeGrand Biological Consulting
2005

**BOTANICAL RESOURCES ASSESSMENT FOR THE PROPOSED
WAIMANO RIDGE MASTER PLAN
WAIMANO, OAHU, HAWAII**

Prepared by:

Maya LeGrande
LeGrande Biological Surveys, Inc
68-310 Kikou Street
Waialua HI 96791

Prepared for:

CDS International
1001 Bishop Street,
Pauahi Tower, Suite 400
Honolulu HI 96813-3499

TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	.1
GENERAL SITE DESCRIPTION.....	1
SURVEY METHODS.....	1
DESCRIPTION OF THE VEGETATION.....	2
Lowland Mesic Forest.....	2
Ornamental Landscaping.....	3
DISCUSSION AND RECOMMENDATIONS.....	3
LITERATURE SITED.....	5
PLANT SPECIES LIST.....	6

INTRODUCTION

This report was prepared for use in an Environmental Assessment for the Waimano Ridge Master Plan, Department of Health (DOH) parcel, identified as TMK: 9-7-025:001 on the island of Oahu. LeGrande Biological Surveys, Inc. carried out a botanical field survey of the above location on June 2nd and 3rd 2005 for CDS International. The primary objectives of the field studies were to:

- 1) provide a general description of the vegetation on the 242-acre project site;
- 2) inventory the flora;
- 3) search for threatened and endangered species as well as species of concern;
- 4) identify areas for potential environmental problems or concerns and propose appropriate mitigation measures.

Federal and State of Hawai'i listed species status follows Federal Registers (1999a and 1999b, 2002, and 2004) and the Hawaiian Islands Plants: Updated June 15, 2004; Listed and Candidate Species, As Designated Under the U.S. Endangered Species Act.

GENERAL SITE DESCRIPTION

The DOH Waimano Ridge Parcel consists of approximately 242-acres, located at the top of Waimano Home Road. The DOH parcel has three City and County of Honolulu zoning designations: P-1 Preservation District (where all uses, structures, and development standards shall be governed by the appropriate state agencies), P-2 General Preservation District (where permitted uses and structures shall be as provided for by the City and County of Honolulu's Land Use Ordinance), and R-5 Residential District. The proposed project development is planned for the P-2 and R-5 sections, but the P-1 portions of the parcel were included in the botanical survey as they border the proposed development. The report will describe vegetation types within each zone.

SURVEY METHODS

Prior to undertaking the field studies, a search was made of the pertinent literature to familiarize the principal investigator with other botanical studies conducted in the general area. Information from the Hawai'i Natural Heritage Program database was reviewed as well as the 1989 botanical survey report for the DOH laboratory facility prepared by Char and Associates. Topographic maps were examined to determine terrain characteristics, access, boundaries, and reference points.

A walk-through survey method was used. Transects included walking along all boundaries of the survey area and running north-south along 50 meter long transects into the project area. Notes were made on plant associations and distribution, disturbances, topography, substrate types, exposure, drainage, etc. Plant identifications were made in

the field; plants which could not be positively identified, were collected for later determination in the herbarium, and for comparison with the recent taxonomic literature.

DESCRIPTION OF THE VEGETATION

At the upper, or higher elevation of the study site the vegetation resembled a Lowland Mesic Forest with a mix of native and alien plant species. The developed areas of the parcel with extant building structures was dominated by a mosaic of ornamental landscaping and weedy areas around abandoned buildings. The present study observed 177 plant species with native species making up only 6% of the total population. The alien plant species were dominant, making up more than 89% of the total plant species observed.

In this study, two vegetation types are recognized on the 242-acre project site; Lowland Mesic Forest and Ornamental landscaping. Both sections of P-1, the "upper" and "lower" within the project area are considered Lowland Mesic forest. The two sections of P-2 zoning and the remaining R-5 section are dominated by ornamental landscaping.

An inventory of all the plants observed within the entire DOH parcel is presented in the species list at the end of the report.

Lowland Mesic Forest

The upper boundary of the property is a Lowland Mesic Forest characterized by a mix of alien and native tree species interspersed with shrubs and grasses. Lowland Mesic forests are found on most of the main Hawaiian islands at 30-1600 m elevation, the substrate consists of well drained weathered rock and a thin upper layer of soil. Dominant tree species include, Eucalyptus, Cook island Pine (*Auracaria comunaris*), Hoop Pine (*Auracaria cunninghamii*), Syncarpia (*Syncarpia glomulifera*), and 'Ohi'a lehua (*Metrosideros polymorpha* var. *polymorpha*). A few native shrub species observed along the dirt roadside were pukiawe (*Leptecophylla tameiameia*), 'akia (*Wikstroemia oahuensis*), koa (*Acacia koa*), naupaka kuahiwi (*Scaevola gaudichaudiana*), and alahe'e (*Psydrax odoratum*). Native fern species scattered throughout included kilau (*Pteridium aquilinum* var. *decompositum*), pala'a (*Sphenomeris chinensis*), and moa (*Psilotum nudum*). Native plants were interspersed with increasing alien plant species as elevation decreased within the survey area. Weedy grasses such as broomesedge (*Andropogon virginicus*) and molasses grass (*Melinis repens*) along with shrubs of Koster's curse (*Clidemia hirta*), partridge pea (*Chamaecrista nictitans* var. *glabrata*), and the occasional lantana (*Lantana camara*) were some of the dominant weedy species.

The upper section gradually widens to include a few small gulches within the P-1 zone. Alien tree species such as Siris tree (*Albizia lebeck*) and Java plum (*Syzygium cumini*) were growing out of a thick mat of the native fern uluhe (*Dicranopteris linearis* f. *linearis*) on the slopes and bottoms of the gulches. Common guava (*Psidium guajava*) and strawberry guava (*P. cattleianum*) were also observed in this area.

The water tank and cemetery are included in the upper P-1 section. Several tall Siris trees surround the water tank along with Java plum trees. The cemetery is a fenced area adjacent to the water tank. It is a mowed grassy area, which appears to be a mix of Hilo grass (*Paspalum conjugatum*) and Bermuda grass (*Cynodon dactylon*).

The lower P-1 section is in the Southwest corner of the property. It is adjacent to the R-5 section to the north and the two separate P-2 sections to the east and northwest. A fence line runs along the northern border of the section. The lower P-1 zone is similar to the upper section in its Lowland Mesic designation, but it is dominated by a few additional weedy plant species. Formosan koa (*Acacia confusa*) and kolomona (*Senna surattensis*) are dominant tree species in the area. The trees grow close together and there is little understory plants in sections where they have such dense overstory. Near the upper section of this zone (below the Department of Health Laboratory) there is a dense stand of ironwood trees (*Casuarina equisetifolia*). Individuals of chinaberry (*Melia azedarach*) and gunpowder tree (*Trema orientalis*) were observed in the area.

Ornamental Landscaping

The vegetation within both the P-2 and R-5 zones are characterized by mowed or weedy grassy lawns with landscaped plantings either being actively taken care of or in various states of disrepair. There are two species of Banyan on the property, Moreton Bay fig (*Ficus macrophylla*) and Chinese of Malayan banyan (*F. microcarpa*). There are several large specimens of these trees scattered along the road in the upper section of P-2 near the Hale Ola building. Three species of shower trees can be found on the property; coral or pink shower (*Cassia grandis*), pink-and-white shower (*C. javanica*), and rainbow shower (*Cassia x nealiae*). Other trees on the property include; monkeypod (*Samanea saman*), plumeria (*Plumeria rubra*), mango (*Mangifera indica*), jacaranda (*Jacaranda mimosifolia*), gold tree (*Tabebuia donnell-smithii*), lychee (*Litchi chinensis*), and pummelo (*Citris maxima*).

Hedge plantings existed around most buildings with the most common plants being hibiscus cultivars (*Hibiscus x rosa-sinensis* and *H. schizopetalus*), croton (*Codiaeum sp.*), rose-flowered jatropa (*Jatropha integerrima*), bougainvillea (*Bougainvillea glabra*), and jasmine (*Jasminum multiflorum*). Grassy areas between buildings and along roadsides consisted mainly of manienie (*Cynodon dactylon*), Hilo grass, and West Indian dropseed (*Sporobolus indicus*). The weedy narrow-leaved plantain (*Plantago lanceolata*) was found scattered throughout the grassy lawn areas. In and around dilapidated buildings larger grasses such as guinea grass (*Panicum maximum*) and California grass (*Brachiaria mutica*) were prevalent.

DISCUSSION AND RECOMMENDATIONS

Two vegetation types are recognized on the 242-acre Waimano Ridge Master Plan project site; Lowland Mesic Forest and Ornamental Landscaping. The Lowland Mesic Forest is restricted to the upper and lower P-1 zoned sections of the project site, while the

ornamental landscaping makes up the majority of the R-5 and P-2 zoned sections. The development site is planned for the P-2 and R-5 sections only.

None of the plants which occur on the project site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service, 1999a, 1999b, 2004; Wagner et al., 1999). Although no endangered or threatened plant species were found during the survey of the project site, care should be taken while clearing the project site to limit the introduction of additional invasive plant species that have the potential to spread into adjacent native forest areas.

It is recommended that, if possible, individual trees providing shade or are significant specimens be worked into the Master plan. Several large tree species such as the monkey pod trees located at Waimano hale and the large banyan trees along the traffic circle by Hale Ola provide significant shade. Additionally, there is a large Lychee grove behind building B-2 that could be trimmed and made into a comfortable shaded area. The coconut palm trees that line the road next to the Central Supply building are of significant age and height and should be worked into the planning so they are not destroyed. Two other trees that are uncommon specimen trees in Hawaii were flagged with white and red polka-dot flagging. A magnolia tree near the south corner of Hale Ola and a velvet apple tree (*Diospyros blancoi*) located east of Waimano Hale in the Mango and Java plum grove were flagged. Both of these trees are large beautiful specimens and should be kept in the overall plan.

The proposed Waimano Ridge Master Plan is not expected to have significant negative impacts on the botanical resources of the site or the general region. A thorough two-day field survey was carried out for this project site. Transects were used to get an overall idea of the vegetation and species composition. Although no rare or endangered plant species were found during the survey, there is always a possibility that the survey team's transects did not coincide with a rare plant extant on the site.

Literature Cited

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PLANTS SPECIES LIST – Waimano Ridge, Oahu, Hawaii

The following checklist is an inventory of all the plant species observed on the 242-acre Department of Health Waimano Parcel. The plant names are arranged alphabetically by family and then by species into each of four groups: Gymnosperms, Ferns and Fern Allies (Pteridophytes), Monocots, and Dicots. The taxonomy and nomenclature of the Ferns and Fern Allies follow Palmer (2002), while the flowering plants, Monocots and Dicots, are in accordance with Wagner *et al.* (1990), Wagner and Herbst (1999), and Staples and Herbst (2005). Recent name changes are those recorded in the Hawaii Biological Survey series (Evehuis and Eldredge, eds., 1999-2002).

For each species, the following name is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
 - E= endemic= native only to the Hawaiian Islands.
 - I= indigenous= native to the Hawaiian Islands and elsewhere.
 - P=species that were introduced by the Polynesian migration to Hawaii, either intentionally or unintentionally, and are now naturalized.
 - X=introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is Cook's arrival in the islands in 1778.
 - X?= questionably introduced = date of introduction unclear or very soon after Western contact; may be indigenous or of Polynesian introduction.

WAIMANO PLANT SPECIES LIST
JUNE 2005

SCIENTIFIC NAME	COMMON NAME	STATUS
GYMNOSPERMS		
ARAUCARIACEAE		
<i>Araucaria columnaris</i> (G. Forst.) Hook.f.	Cook Pine	X
<i>Araucaria cunninghamii</i> D.Don.	Hoop Pine	X
Cycadaceae		
<i>Cycas revoluta</i> Thunberg	Japanese Sago palm	X
PTERIDOPHYTES		
DENNSTAEDTIACEAE		
<i>Pteridium aquilinum</i> (L.) Kuhn var. <i>decompositum</i> (gaudich.) RM Tryon	Kilau, bracken fern	I
GLEICHENIACEAE		
<i>Dicranopteris linearis</i> (Burm. f.) Underw. f. <i>linearis</i>	uluhe, unuhe	I
LINDSAEACEAE		
<i>Sphenomeris chinensis</i> (L.) Maxon	pala`a,	I
NEPHROLEPIDACEAE		
<i>Nephrolepis multiflora</i> (Roxb.) F.M. Jarrett ex C.V. Morton		X
POLYPODIACEAE		
<i>Phymatosorus grossus</i> (Langsdorff & Fischer) Brownlie	laua`e, maile-scented fern	X
PSILOTACEAE		
<i>Psilotum nudum</i> (L.) P. Beauv.	moa, moa nahele	I
ANGIOSPERMS--MONOCOTS		
AGAVACEAE		
<i>Cordyline fruticosa</i> (L.) A. Chev.	ti, ki	P
ARACEAE		
<i>Colocasia esculenta</i> (L.) Schott	Taro, kalo	P
<i>Dracaena</i> sp. L.	dracaena	X
<i>Monstera deliciosa</i> Liebman	monstera	X
ARACEAE		
<i>Caryota urens</i> L.	Jaggery or Fishtail palm	X

<i>Cocos nucifera</i> L.	Coconut palm, niu	P
<i>Dyopsis lutescens</i> (H. Wend) Been & J.Dran	Areca palm	X
<i>Livistonia chinensis</i> (Jacq.) R BR ex Mart	Chinese fan palm	X
<i>Roystonea regia</i> (Kunth) cook	Cuban royal palm	X
COMMELINACEAE		
<i>Dichorisandra thyrsiflora</i> JC Mikan	Blue ginger	X
CYPERACEAE		
<i>Cyperus gracilis</i> L.	McCoy grass, mau`u hunehune	X
HELICONIACEAE		
<i>Heliconia</i> sp. L.	heliconia	X
IRIDACEAE		
<i>Trimezia martinicensis</i> (Jacq.) Herbert	Walking iris	X
MUSACEAE		
<i>Musa acuminata</i> x <i>M. balbisiana</i> Colla	Banana, mai`a	P
ORCHIDACEAE		
<i>Arundina graminifolia</i> (D. Don) Hochr.	bamboo orchid	X
<i>Spathoglottis plicata</i> Blume	Malaysian ground orchid	X
POACEAE		
<i>Andropogon virginicus</i> L.	broomesedge, yellow bluestem	X
<i>Bambusa vulgaris</i> JC Wend.	Common bamboo	X
<i>Brachiaria mutica</i> (Forssk.) Stapf	California grass	X
<i>Cenchrus echinatus</i> L.	Common sandbur	X
<i>Chloris barbata</i> (L.) Sw.	Swollen finger grass	X
<i>Cynodon dactylon</i> (L.) Pers.	manienie	X
<i>Digitaria insularis</i> (L.) Mez ex Ekman	sourgrass	X
<i>Melinis minutiflora</i> P. Beauv.	molasses grass	X
<i>Melinis repens</i> (Willd.) Zizka	natal redtop	X
<i>Panicum maximum</i> (Jacq.)	Guinea grass	X
<i>Paspalum conjugatum</i> P.J. Bergius	Hilo grass	X
<i>Paspalum fimbriatum</i> Kunth	Fimbriate paspalum	X
<i>Pennisetum polystachion</i> (L.) Schult.	feathery pennisetum	X
<i>Sacciolepis indica</i> (L.) Chase	Glenwood grass	X
<i>Setaria verticillata</i> (L.) P. Beauv.	Bristly foxtail	X
<i>Sporobolus indicus</i> (L.) R BR	West Indian dropseed	X

STRELITZIACEAE		
<i>Strelitzia reginae</i> Dryander	Bird-of-paradise	X
DICOTS		
ACANTHACEAE		
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	X
<i>Justicia betonica</i> L.	White shrimp plant	X
AMARANTHACEAE		
<i>Alternanthera pungens</i> Kunth	Khaki weed	X
ANARADIACEAE		
<i>Mangifera indica</i> L.	mango	X
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	X
APIACEAE		
<i>Centella asiatica</i> (L.) Urb	Asiatic pennywort	X
APOCYNCEAE		
<i>Allamanda sp.</i> L.	allamanda	X
<i>Plumeria rubra</i> L.	Plumeria, graveyard flower, temple flower	X
ARALIACEAE		
<i>Polyscias guilfoylei</i> (W. Bull.) LH Bailey	panax	X
<i>Schefflera actinophylla</i> (End.) Harms	Octopus tree	X
<i>Schefflera arboricola</i> (Hayata) Merrill	Dwarf schefflera	X
ASCLEPIADACEAE		
<i>Calotropis gigantean</i> (L.) W.T. Aiton	Crownflower	X
ASTERACEAE		
<i>Bidens pilosa</i> L.	Ki, ki nehe	X
<i>Calyptocarpus vialis</i> Less.	calyptocarpus	X
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	X
<i>Emilia coccinea</i> (Sims) G Don.	Flora's paintbrush	X
<i>Emilia fosbergii</i> Nicolson	pualele	X
<i>Hypochoeris glabra</i> L.	Smooth cat's ear	X
<i>Pluchea indica</i> (Jacq.) L.	Indian fleabane	X
<i>Sonchus oleraceus</i> L.	Pualele	X
<i>Sphagneticola trilobata</i> (L.) Pruski	wedelia	X
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	X
<i>Tridax procumbens</i> L.	Coat buttons	X
<i>Youngia japonica</i> (L.) DC	Oriental hawksbeard	X

BIGNONIACEAE		
<i>Crescentia cujete</i> L.	Calabash tree, la'amia	X
<i>Jacaranda mimosifolia</i> D Don	Jacaranda	X
<i>Pyrostegia venusta</i> (Ker Gaw) Miers	Orange trumpet vine	X
<i>Spathodea campanulata</i> P. Beauv.	African Tulip tree	X
<i>Tabebuia donnell-smithii</i>	Gold tree, primavera	X
BORAGINACEAE		
<i>Cordia sebestena</i> L.	Geiger tree, kou haole	X
<i>Cordia subcordata</i> Lamarck	kou	X
BRASSICACEAE		
<i>Lepidium oblongum</i> Small	pepperwort	X
BUDDLEIACEAE		
<i>Buddleia asiatica</i> Lour.	dog tail	X
CARICACEAE		
<i>Carica papaya</i> L.	papaya	X
CASUARINACEAE		
<i>Casuarina equisetifolia</i> L.	Common ironwood	X
CLUSIACEAE		
<i>Clusia rosea</i> N. Jacq.	Autograph tree	X
CONVOLVULACEAE		
<i>Ipomoea obscura</i> (L.) Ker Gawl.		X
<i>Merremia tuberosa</i> (L.) Rendle	Wood-rose	X
CUCURBITACEAE		
<i>Coccinea grandis</i> L.	Ivy gourd	X
<i>Momordica charantia</i> L.	Bitter melon	X
EBENACEAE		
<i>Diospyros blancoi</i> A. de Candolle	Velvet apple	X
EPACRIDACEAE		
<i>Leptecophylla tameiameia</i> (Cham & Schlecht) C.M. Weiller	pukiawe	I
EUPHORBIACEAE		
<i>Acalypha wilkesiana</i> Muller Arg.	Beefsteak plant, copperleaf	X
<i>Aleurites moluccana</i> (L.) Willd.	kukui	P

<i>Chamaesyce hirta</i> (L.) Millsp.	hairy spurge, garden spurge	X
<i>Chamaesyce hypericifolia</i> (L.) Mill.	Graceful spurge	X
<i>Codiaeum</i> sp. L.	croton	X
<i>Jatropha integerrima</i> N. Jacq.	Rose-flowered jatropha	X
<i>Macaranga tanarius</i> L. mull. Arg	macaranga	X
<i>Phyllanthus debilis</i> Klein ex Willd.	niruri	X
FABACEAE		
<i>Acacia confusa</i> Merr.	Formosan koa	X
<i>Acacia koa</i> A. Gray	koa	E
<i>Albizia lebeck</i> (L.) Benth.	siris tree, woman's tongue	X
<i>Bauhinia monandra</i> Kurz.	Pink bauhinia	X
<i>Canavalia cathartica</i> Thouars	maunaloa	X
<i>Chamaecrista nictitans</i> (L.) Moench var. <i>glabrata</i> (DC ex Collad.) H. Irwin & Barneby	partridge pea	X
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Royal poinciana	X
<i>Desmanthus pernambucans</i> (L.) Thell.	Slender, virgate mimosa	X
<i>Desmodium incanum</i> DC.	Spanish clover	X
<i>Cassia grandis</i> L.	Coral or pink shower	X
<i>Cassia javanica</i> L.	Pink-and-white shower	X
<i>Cassia x nealiae</i> HS Irw. & Barn.	Rainbow shower	X
<i>Erythrina variegata</i> L.	Indian coral tree	X
<i>Erythrina crista-galli</i> L.	Coral tree	X
<i>Indigofera hendecaphylla</i> Jacq.	Creeping indigo	X
<i>Indigofera suffruticosa</i> Mill.	Indigo, Iniko	X
<i>Lablab purpureus</i> (L.) Sweet	Hyacinth bean	X
<i>Leuceaena leucocephala</i> (Lam.) de Wit	Koa haole	X
<i>Mimosa pudica</i> L. var. <i>unijuga</i> (Duchass. & Walp.) Griseb.	sensitive plant, sleeping grass	X
<i>Samanea saman</i> (N. Jacq.) Merrill	monkeypod	X
<i>Senna surattensis</i> (N.L. Bur.) HS Irwin & Barn.	Scrambled egg, kolomona	X
GOODENIACEAE		
<i>Scaevola gaudichaudiana</i> Cham.	Naupaka kuahiwi	E
LAURACEAE		
<i>Persea Americana</i> Mill.	Avocado, alligator pear	X
LOGANIACEAE		
<i>Fagraea berteriana</i> Benth.	puakenikeni	X

MAGNOLIACEAE		
<i>Magnolia grandiflora</i> L.	magnolia	X
MALVACEAE		
<i>Abelmoschus manihot</i> (L.) Medikus	Edible hibiscus, aibika	X
<i>Abutilon grandifolium</i> (Willd.) Sweet	Hairy abutilon	X
<i>Hibiscus x rosa-sinensis</i> L.	hibiscus	X
<i>Hibiscus schizopetalus</i> (Masters) JD Hook.	Coral hibiscus	X
<i>Malva parviflora</i> L.	cheeseweed	X
<i>Malvastrum coromandelianum</i> (L.) Garcke ssp. <i>coromandelianum</i>	Flase mallow	X
<i>Malvastrum penduliflorus</i> DC.	Firecracker hibiscus	X
<i>Sida spinosa</i> L.	Prickly sida	X
MELASTOMATACEAE		
<i>Clidemia hirta</i> (L.) D. Don var. <i>hirta</i>	Koster's curse	X
<i>Pterolepis glomerata</i> (Rottb.) Miq.		X
MELIACEAE		
<i>Melia azedarach</i> L.	Bead tree, chinaberry	X
MENISPERMACEAE		
<i>Cocculus orbiculatus</i> (L.) DC	huehue	I
MORACEAE		
<i>Ficus macrophylla</i> Desf. Ex Pers.	Moreton Bay fig	X
<i>Ficus microcarpa</i> (L.) f.	Chinese or Malayan banyan	X
MYRTACEAE		
<i>Callistemon</i> sp.		X
<i>Eucalyptus citriodora</i> W J Hooker	Lemon scented gum	X
<i>Eucalyptus crebra</i> F. Muell.	Narrow-leaved ironbark	X
<i>Eucalyptus robusta</i> Sm.	Swamp mahogany	X
<i>Eugenia uniflora</i> L.	Surinam cherry	X
<i>Leptospermum scoparium</i> JR Forst. & G. Forst.	Manuka, New Zealand teatree	X
<i>Lophostemon confertus</i> (R Br.) DG Wilson & JT Waterhouse	Vingar tree, Brisbane box	X
<i>Metrosideros polymorpha</i> Gaud. var. <i>polymorpha</i>	`ohi`a, `ohi`a lehua	E
<i>Psidium cattleianum</i> Sabine	Strawberry guava, waiwi `ula`ula	X
<i>Psidium guajava</i> L.	Common guava,	X
<i>Syncarpia glomulifera</i> (Sm.) Nied.		X
<i>Syzygium malaccense</i> (L.) Merr. & LM Perry	Mountain apple, ohi`a ha	P

<i>Syzygium cumini</i> (L.) Skeels	Java plum	X
NYCTAGINACEAE		
<i>Boerhavia coccinea</i> Mill.		X
<i>Bougainvillea glabra</i> Choisy	Lesser bougainvillea	X
OLEACEAE		
<i>Jasminum multiflorum</i> (NL Bur.) Andrews	Downy jasmine	X
OXALIDACEAE		
<i>Oxalis corniculata</i> L.	Yellow wood sorrel	X
PASSIFLORACEAE		
<i>Passiflora edulis</i> Sims.	Passion fruit	X
<i>Passiflora suberosa</i> L.	Huehue haole	X
PHYTOLACCACEAE		
<i>Rivina humilis</i> L.	Coralberry	X
PLANTAGINACEAE		
<i>Plantago lanceolata</i> L.	Narrow-leaved plantain	X
PORTULACACEAE		
<i>Portulaca oleracea</i> L.	pigweed	X
PROTEACEAE		
<i>Grevillea robusta</i> A. Cunn. ex R Br	Silk or silver oak	X
<i>Macadamia integrifolia</i> Maiden & Betche	Mac nut, queensland nut	X
ROSACEAE		
<i>Eriobotrya japonica</i> (Thunb.) Lindl.	Loquat, Japanese plum	X
RUBIACEAE		
<i>Paederia foetida</i> L.	Maile pilau	X
<i>Psychdrax odorata</i> (G. Forst.) AC Sm. & SP Darw.	Alahe'e	I
<i>Spermacoce assurgens</i> Ruiz & Pav.	buttonweed	X
RUTACEAE		
<i>Citris maxima</i> (J. Burman) Merrill	Pummelo, jabon	X
<i>Murraya paniculata</i> (L.) Jack	Mock orange	X
SAPINDACEAE		
<i>Filicium decipiens</i> (Wight & Arn.) Thwaites	Fern tree, neroli	X
<i>Litchi chinensis</i> Sonnerat	lychee	X

SAPOTACEAE		
<i>Chrysophyllum oliviforme</i> L.	Satin leaf	X
SOLANACEAE		
<i>Solanum americanum</i> Mill.	Popolo, glossy nightshade	X?
<i>Solanum lycopersicum</i> L. var. <i>cerasiforme</i> (Dun.) Spooner, GJ Anders. & RK Jansen	Cherry tomato	X
<i>Solanum mauritianum</i> Scp.	Pua nana honua	X
<i>Solanum seaforthianum</i> Andrews		X
STERCULIACEAE		
<i>Waltheria indica</i> L.	`uhaloa	I
THYMELIACEAE		
<i>Wikstroemia oahuensis</i> (A. Gray) Rock var. <i>oahuensis</i>	`akia	E
TILIACEAE		
<i>Heliocarpus popayanensis</i> Kunth	White moho	X
ULMACEAE		
<i>Trema orientalis</i> (L.) Blume	gunpowder tree	X
VERBENACEAE		
<i>Citharexylum caudatum</i> L.	fiddlewood	X
<i>Lantana camara</i> L.	Lantana, lakana	X
<i>Stachytarpheta australis</i> Moldenke		X
<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Jamaican vervain	X
<i>Vitex triflora</i> L.	Blue vitex	X

Appendix C

Survey of Avian and Terrestrial Mammals

Rana Productions
July 2005

**A Survey of Avian and Terrestrial Mammalian
Species for the Waimano Ridge Master Plan, 'Ewa
District, O'ahu, Hawai'i.**

Prepared for:

CDS International
Pauahi Tower, Suite 400
Honolulu, Hawai'i 96813

Prepared by:

Reginald E. David
Rana Productions, Ltd.
P.O. Box 1371
Kailua-Kona, Hawai'i 96745

July 2005

Table of Contents

Table of Contents2
Introduction.....3
General Site Description.....3
Mammalian Survey Methods.....5
Avian Survey Methods5
Mammalian Survey Results.....5
Avian Survey Result5
Discussion7
Conclusion8
Glossary.....9
Literature Cited.....10

Figures & Tables

Figure 1. Waimano Ridge Master Plan Project Site4
Table 1. Avian Species Detected During Station Counts: Waimano Ridge6

Introduction:

This report summarizes the findings of an ornithological and mammalian survey conducted on an approximately 242-acre parcel of land within the boundaries of the existing State of Hawai‘i, Department of Health, Waimano Training School and Hospital located on Waimano Ridge within the ‘Ewa District, Island of O‘ahu (Figure 1). The State of Hawai‘i, Department of Health is in the process of developing a master plan for the redevelopment of the facilities on the subject property.

The primary purpose of the survey was to determine if there were any federally or State of Hawai‘i listed endangered, threatened, proposed, or candidate avian or mammalian species on, or in the immediate vicinity of the site. In addition, to the study we assessed the probability of any usage of the site by listed avian and mammalian species given the habitat currently found within the site. Federal and State of Hawai‘i listed species status follows species identified in the following referenced documents (DLNR, 1998, Federal Register, 1999a, 1999b, 2001, 2002, 2004). Fieldwork was conducted on June 2nd and 3rd, 2005.

Avian phylogenetic order and nomenclature follows *The American Ornithologists’ Union Checklist of North American Birds 7th Edition* (American Ornithologists’ Union 1998), and the 42nd through the 45th supplements to *Check-list of North American Birds* (American Ornithologists’ Union 2000; Banks et al. 2002, 2003, 2004). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Manual of the Flowering Plants of Hawai‘i* (Wagner et al. 1990, 1999). Place names follow *Place Names of Hawaii* (Pukui et al. 1974).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text on (Page 9).

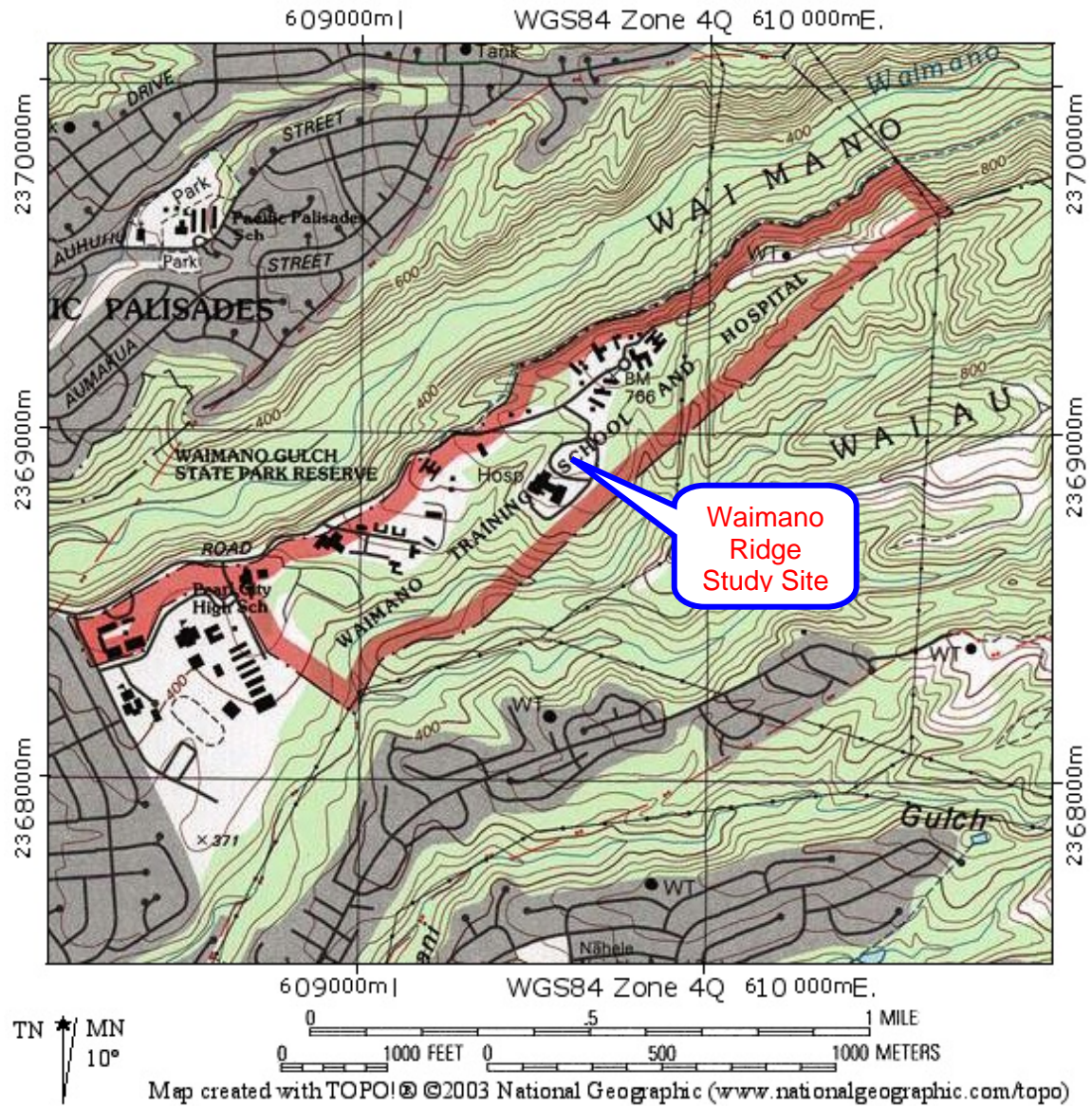
General Site Description:

The site is located on Waimano Ridge extending upslope (*mauka*) from Ho‘oki‘eki‘e Street directly north of Pearl City High School, to a point located approximately 750-meters above the *mauka* fence above the Social Services facility within the Waimano Training School and Hospital (Figure 1). The site slopes gently northeast from an elevation of approximately 95-meters above mean sea level (ASL) at the southeastern corner to an altitude of approximately 297-meters ASL at the northeastern corner of the property (Figure 1).

A large portion of the study area has been developed as the Waimano Training School and Hospital, with paved roads, parking lots and over 25 buildings (Figure 1). The vegetation present on the site is dominated by alien grasses, shrubs and trees with a large number of

Figure 1

Waimano Ridge Master Plan Study Site



ornamental plantings within the grounds of the existing facility.

Mammalian Survey Methods

All observations of mammalian species were of an incidental nature. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or *Ōpeʻapeʻa* as it is known locally, all terrestrial mammals currently found on the Island of Oʻahu are alien species, most are ubiquitous. No trapping program was proposed or undertaken to quantify the use of the area by alien mammalian species. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the study area.

Avian Survey Methods

Ten avian count stations were established approximately 250-meters apart along a linear transect traversing the site from north to south (Figure 1). Six-minute unlimited distance point counts were made at each station. Each station was counted once. Field observations were made with the aid of Leitz 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated in the early morning hours, the time of day that bird activity is typically at its peak. An additional two hours were spent within the project area on the evening of the June 2nd and the morning of June 3rd 2005, in an attempt to detect nocturnally flying seabirds and owls over-flying the area. Time not spent counting was used to search the site and the surrounding area for species and habitats not detected during count sessions.

Mammalian Survey Results

Five mammalian species; rat (*Rattus sp.*), domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auropunctatus*), cat (*Felis catus*), and pig (*Sus s. scrofa*), were detected within the study site. A single rat was seen near the start of the Waimano trail. Two cats and several mongooses were seen within the Training School and Hospital grounds. Scat, tracks and sign of dog, cat, mongoose and pig were encountered above the current development within the study site. All of these introduced mammalian species are deleterious to native species. The endangered Hawaiian hoary bat was not detected during the course of this survey.

Avian Survey Results

A total of 378 individual birds of 15 different species, representing 12 separate families were recorded during the course of station counts (Table 2). All 15 species detected during the course of this survey are considered to be alien to the Hawaiian Islands.

Table 1

**Avian Species Detected During Station Counts
Waimano Ridge**

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Red Junglefowl	<i>Gallus gallus</i>	DA	0.70
COLUMBIFORMES			
COLUMBIDAE - PIGEONS & DOVES			
Spotted Dove	<i>Streptopelia chinensis</i>	A	1.60
Zebra Dove	<i>Geopelia striata</i>	A	2.30
PASSERIFORMES			
PYCNONOTIDAE - BULBULS			
Red-vented Bulbul	<i>Pycnonotus cafer</i>	A	5.90
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	A	1.60
SYLVIIDAE - OLD WORLD WARBLERS & GNATCATCHERS			
Sylviinae - Old World Warblers			
Japanese Bush-Warbler	<i>Cettia diphone</i>	A	3.40
TURDIDAE - THUSHES			
White-rumped Shama	<i>Copsychus malabaricus</i>	A	2.20
TIMALIIDAE - BABBLERS			
Hwamei	<i>Garrulax canorus</i>	A	0.50
Red-billed Leiothrix	<i>Leiothrix lutea</i>	A	1.90
ZOSTEROPIDAE - WHITE-EYES			
Japanese White-eye	<i>Zosterops japonicus</i>	A	7.90
STURNIDAE - STARLINGS			
Common Myna	<i>Acridotheres tristis</i>	A	2.30
EMBERIZIDAE - EMBERIZIDS			
Red-crested Cardinal	<i>Paroaria coronata</i>	A	1.10
CARDINALIDAE - CARDINALS SALTORS & ALLIES			
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	0.80
FRINGILLIDAE - FRINGILLINE AND CARDUELINE FINCHES & ALLIES			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	0.80
ESTRILDIDAE - ESTRILDID FINCHES			
Estrildinae - Estrildine Finches			
Common Waxbill	<i>Estrilda astrild</i>	A	1.10

KEY TO TABLE 1

- ST** Status
DA Domesticated Alien – a species not currently known to be established in the wild on the island of O‘ahu
A Alien – introduced to the Hawaiian Islands by humans
RA Relative Abundance - Number of birds detected divided by the number of station counts (10)
-

Avian diversity was low, though the densities of several species were quite high. Three species, Japanese White-Eye (*Zosterops japonicus*) and Red-vented Bulbul (*Pycnonotus cafer*) and Common Waxbill (*Estrilda astrild*) accounted for 49% of the total number of birds recorded during station counts. Japanese White-eyes were the commonest bird recorded accounting for 21 % of the total number of birds recorded. An average of 38 individual birds were detected per station count.

No avian species currently listed by either the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, as amended, or by the State of Hawai‘i under its endangered species program were detected within the study area (DLNR 1998, Federal Register 1999a, 1999b, 2001, 2002, 2004).

Discussion:

A one-time survey cannot provide a total picture of the wildlife using any given area. Certain species will not be detected for one reason or another. Seasonal variations in populations, coupled with seasonal availability and use of resources, will cause different use patterns throughout a year and, in fact, over a number of years. Coupling the results of a one time survey with the results of previous surveys conducted in similar habitats and locations, greatly expands the value of the information gathered.

The findings of the mammalian survey are consistent with the results of other recent surveys conducted within the general project area (David and Guinther 2000; Guinther and David 2005). All of the alien mammalian species detected are deleterious to native ecosystems and the endemic species that are dependant upon them.

The findings of the avian survey are consistent with the findings of other recent surveys conducted within the general project area (David and Guinther 2000; Guinther and David 2005). Given the highly disturbed nature of the site and the almost completely alien dominated vegetation present, it is not surprising that all avian species detected were commonly occurring low-to-mid elevation alien species.

Conclusion:

It is not expected that the modification of existing structures currently found on the site or the development of additional facilities will have a negative impact on any avian or mammalian species currently listed as endangered, threatened, proposed, or as a candidate for listing under either federal or State of Hawai'i endangered species statutes.

Glossary:

Alien - Introduced to Hawai'i by humans.

Domesticated – Feral species, not considered established in the wild on the Island of O'ahu

Endangered – Listed and protected under the ESA as an endangered species.

Endemic – Native and unique to the Hawaiian Islands

Indigenous - Native to the Hawaiian Islands, but also found elsewhere naturally.

Mauka – Upslope, towards the mountains

Threatened - Listed and protected under the ESA as a threatened species.

ASL – Above mean sea level

DLNR – Hawaii State Department of Land & Natural resources.

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Appendix D

Historic Structure Overview,
Hale Ola and Adjacent Kitchen and Dining
Former Waimano Training School and Hospital

Virginia D. Murison, AIA
August 20, 2013

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

**Waimano Ridge
Pearl City, Oahu, Hawaii**

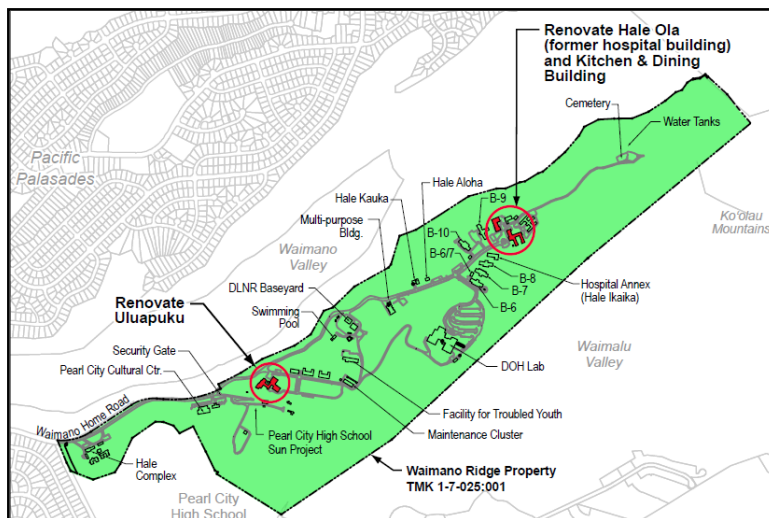
Virginia D. Murison, AIA

August 20, 2013

Table of Contents

Overview	1
Hale Ola	
A. Historic Description.....	4
B. Alteration History.....	6
C. Character-Defining Features.....	10
D. Eligibility for the National Register.....	15
Kitchen & Dining Facility	
E. Historic Description.....	17
F. Alteration History.....	18
G. Character-Defining Features.....	19
H. Eligibility for the National Register.....	22
Effect of the Project on Historic Properties	23

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)



Built: 1951
Architect: Hart Wood
Original Use: Hospital for the Treatment of Persons with Developmental Disabilities

¹ Photo from "Aloha Land Blog" posted June 27, 2011: <http://aloha-land.blogspot.com/search/label/waimanohome>

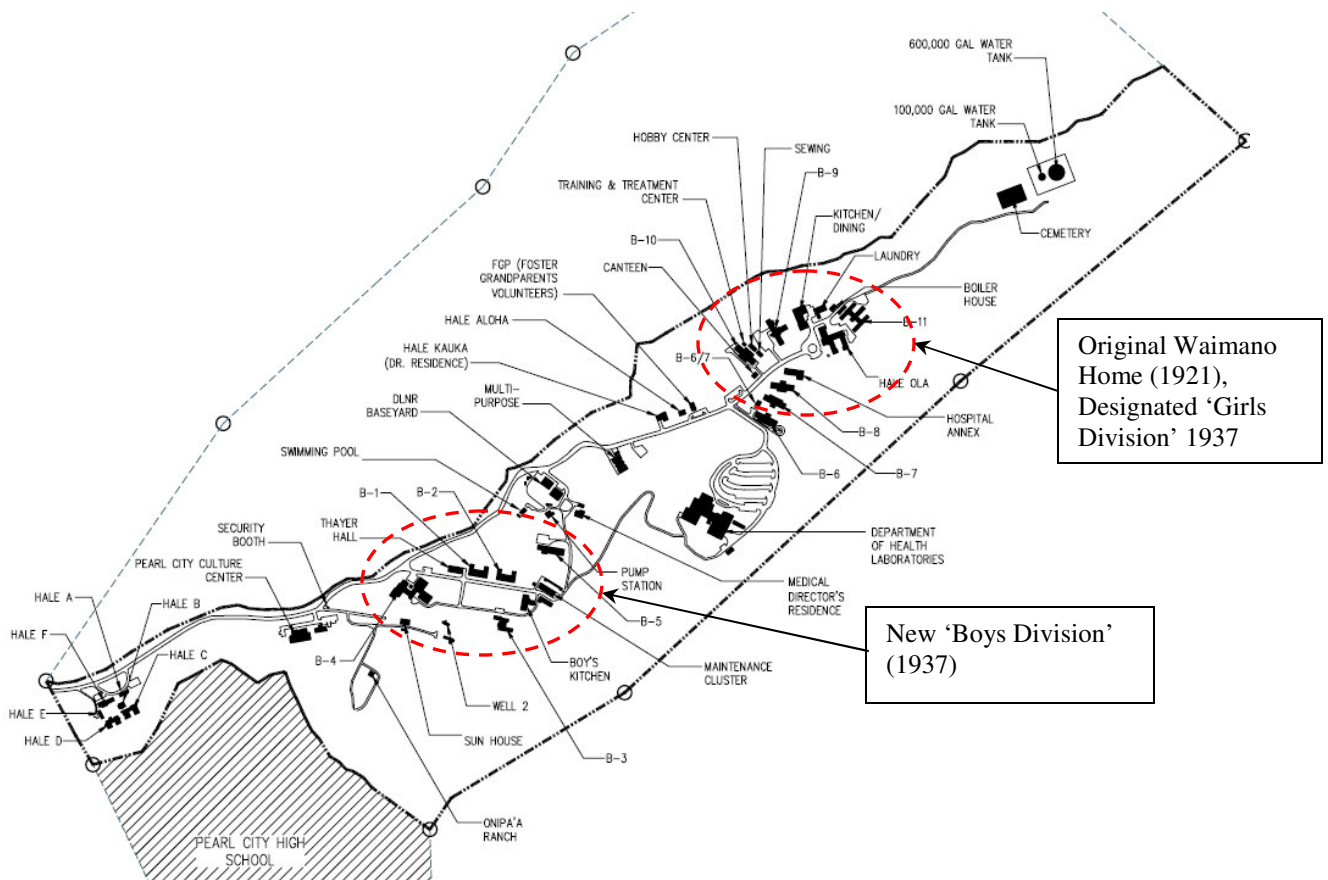
Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

Brief Overview

“Prior to 1919 the Territory of Hawaii had made no provision for the care of the feebleminded as such. Juvenile feebleminded had been committed to the training schools along with dependents and delinquents, but there were no facilities for the care and treatment of adults. At the regular session of the Legislature in 1919, provision was made for the establishment of a home for the feebleminded and 612 acres of Territorial land was set aside on a plateau about three miles above Pearl City for this purpose. An initial appropriation of \$82,000 was made by the legislature to provide dormitories for both male and female patients, a central kitchen, laundry, boiler house, superintendent’s residence and necessary roads, walks and utilities. Construction was completed on this unit and the institution formally opened on March 27, 1921.”²

The original facilities were of wood frame construction.

In 1936 a second grouping of residences and support facilities was constructed about a half mile below the original Waimano Home. Facilities included three dormitories, a kitchen and dining room, and a boiler house. At that time the upper facilities were designated for women with the new facilities constructed for the men.



² Hawaii (Terr.) Department of Institutions, "Annual Report for the Decade 1939-49, and for the Year 1948-1949", (Honolulu, Hawaii, June 30, 1949): p.37.

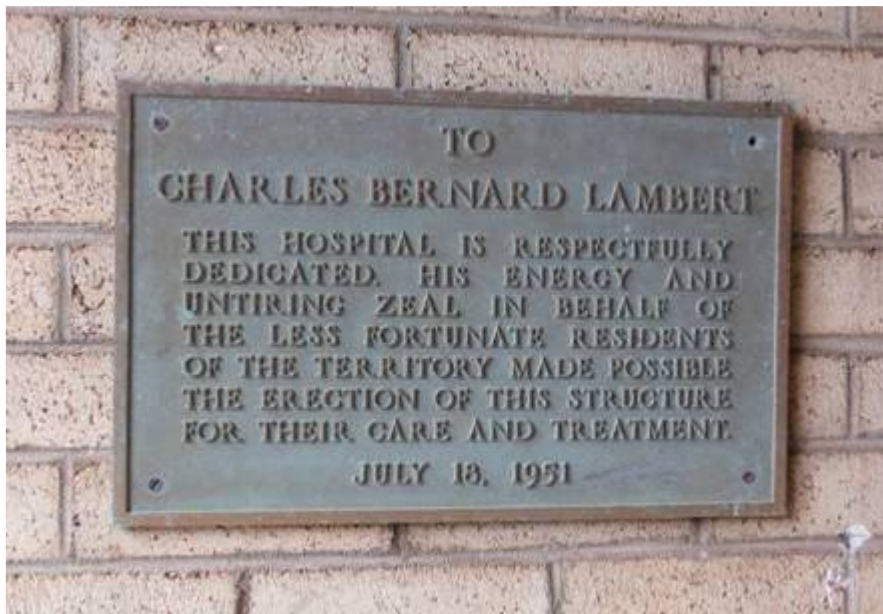
Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

“From its inception in 1919 until July 1, 1941, when Waimano Home was placed under the jurisdiction of the Department of Institutions, it was operated under the control of an unpaid Board of Commissioners consisting of five individuals appointed by the Governor”³.

In 1947 the Territorial Legislature authorized funding for the construction of a 100 bed Hospital. Additional nearby support facilities authorized included a new Kitchen/Dining facility, Laundry and Boiler Plant. Architect Hart Wood was retained to design these facilities. He is well known for his design of significant public and private buildings in Hawaii from 1919 to 1956. Many of these buildings display the influence of Asian features and ornament. (Notable examples include the Gumps Building in Waikiki and the Alexander and Baldwin Building downtown.) Hale Ola and the adjacent Kitchen/Dining facility were designed near the end of his career when he was experimenting with the more modern International Style of Architecture gaining popularity.⁴

The decision to build Hale Ola reflected a shift in thinking about the treatment of persons with developmental disabilities. This facility was designed to incorporate doctors’ examination and surgical rooms. Furthermore, improvements in treatment included the implementation of rehabilitation efforts in lieu of just housing the committed individuals away from society indefinitely. As such this building is representative of innovations in medical treatment in the Territory of Hawaii.

Opened in 1951, the Hospital was dedicated to Charles B. Lambert, the second Superintendent of Waimano Home (appointed 1942). He passed away in the Superintendent’s Residence on April 28, 1948, after a brief illness.⁵



³ Hawaii (Terr.) Department of Institutions, "Annual Report for the Decade 1939-49, and for the Year 1948-1949", (Honolulu, Hawaii, June 30, 1949): p.37.

⁴ Don Hibbard, Glenn Mason and Karen Weitze, "Hart Wood: Architectural Regionalism in Hawaii" (Honolulu: University of Hawai'i Press, 2010), pp 233-235

⁵ Obituary for C. B. Lambert, "Garden Island News", 1948

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

Project Proposal

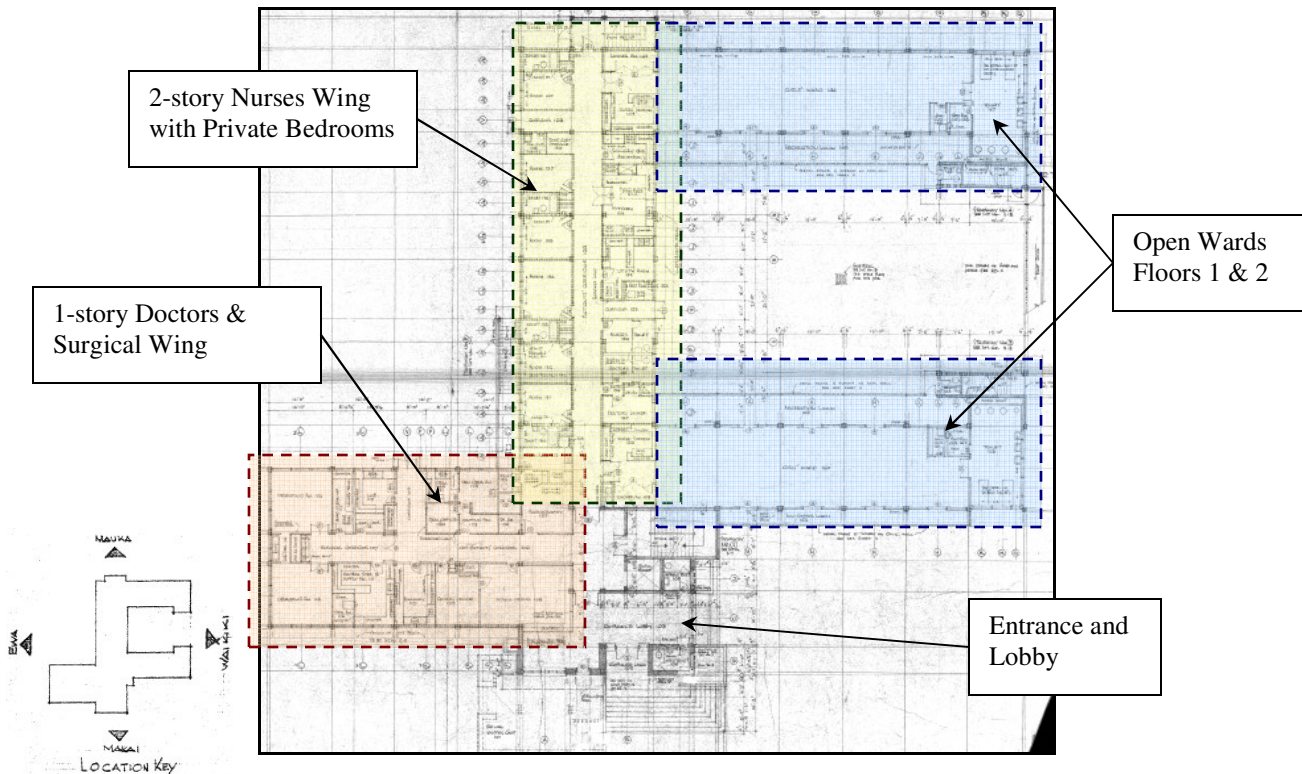
The Department of Health proposes to relocate several departments up to Waimano Ridge from their current location at the former Army and Air Force Exchange Services (AAFES) building (919 Ala Moana Blvd) in Kaka‘ako. This will involve the rehabilitation and adaptive reuse of two historic structures:

Historic Buildings Affected				
Name	Original Use	Year Built	National Register Eligible?	Proposed use
Hale Ola	Hospital with doctor’s offices and wards for Boys and Girls	1951	Yes Criteria A & C	Offices with related conference and storage facilities
Kitchen/Dining	Kitchen and Dining	1951	Yes, Criterion C	Open plan offices, Conference and Library facilities

Hale Ola

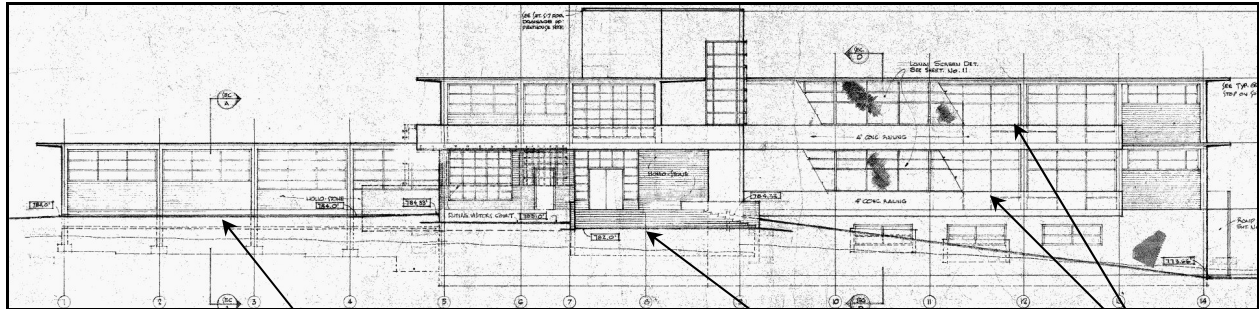
A. Historic Description

The original building is a non-symmetrical two-story concrete building with a partial basement. The main entrance is located on the right corner of the Makai Elevation. There was a one story Doctors and Surgical Wing to the left of the main entrance. Going forward in the Mauka direction was a 2-story spline of Nurses stations, private bedrooms, restrooms and a small kitchen. Coming off of this spline were two 2-story open wards with restrooms at the far ends, one for girls and one for boys.

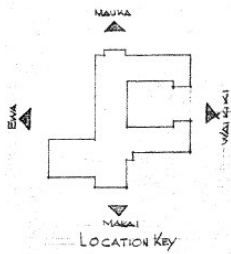


Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

The exterior elevations featured a low ‘hollo-stone’ curb or wall with banks of horizontal windows, some operable awnings and some fixed, creating a strong horizontal component. At the second floor level and the flat rooflines were thin projecting concrete sun shades, ‘Brise-Soleil’. This was very much in the International style of architecture, with strong horizontal lines and minimal ornamentation.



Makai Elevation



1-story Doctors & Surgical Wing

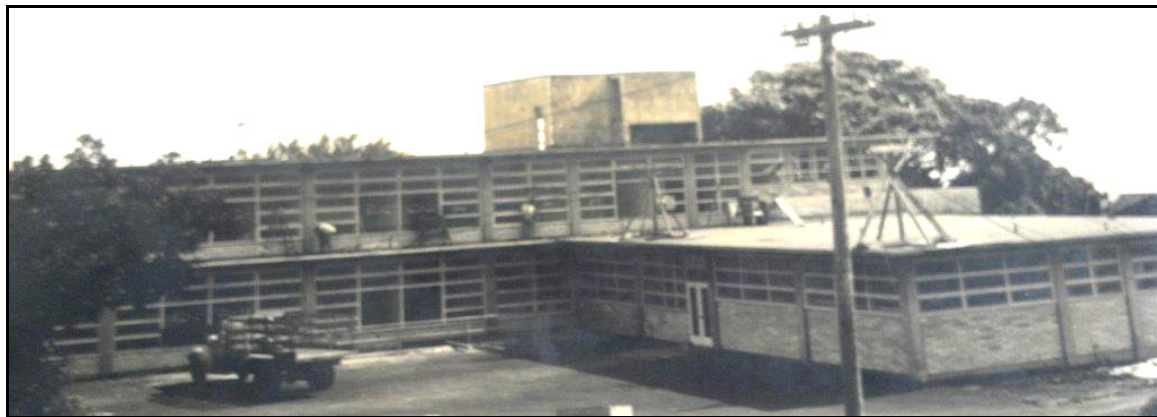
Entrance and Lobby

Open Wards Floors 1 & 2

- Brise-Soleil
- Horizontal Awning Windows
- Asymmetrical Entrance Stair



Front Entrance (ca 2010)



Ewa Side During Construction (ca 1950)

Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

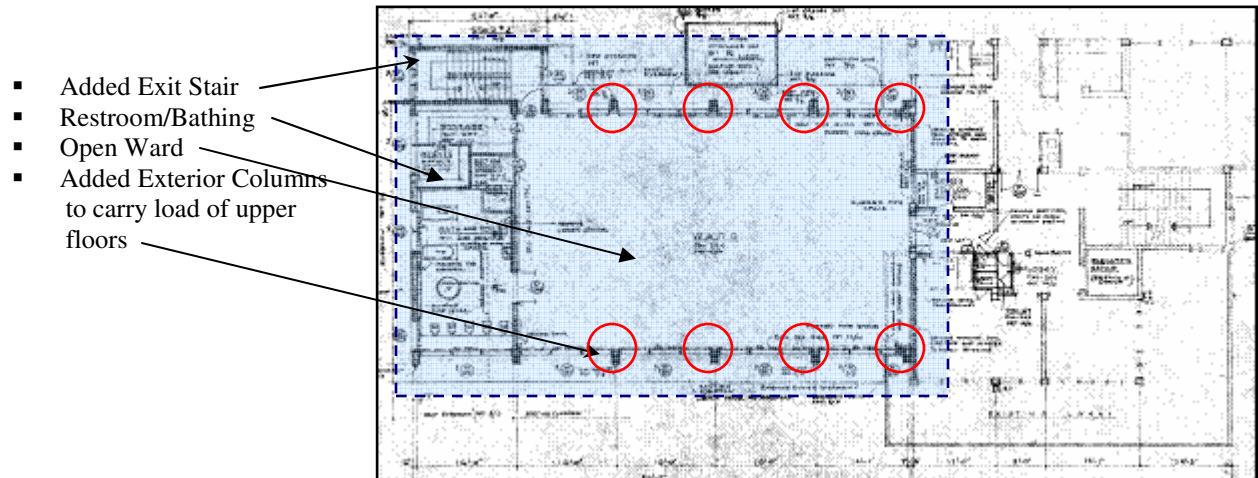
B. Alteration History

The Hospital Building underwent 2 major alterations and a window replacement project between 1951 and 1988.

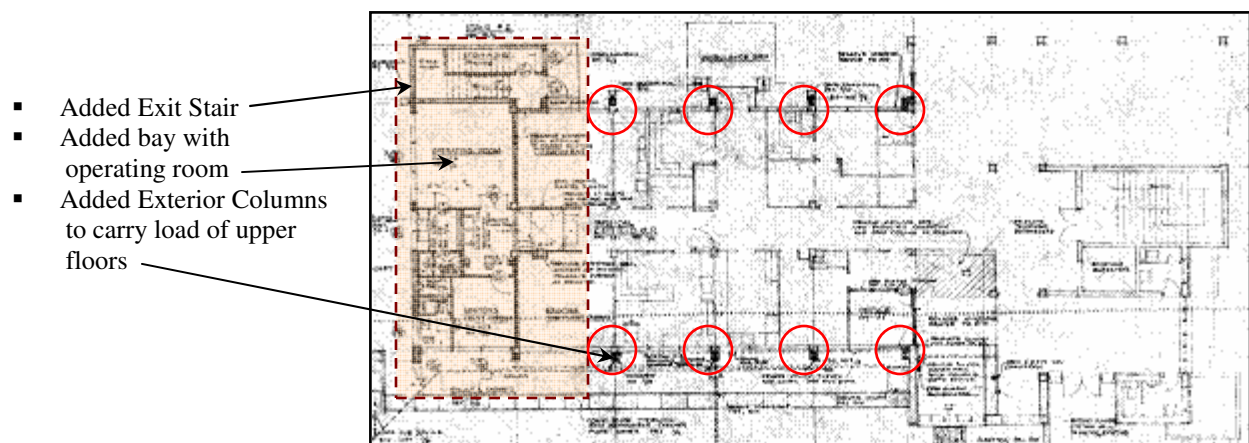
1956 - 2nd and 3rd Story addition above the Doctor's Wing:

- Designed by Ernest H. Hara and Frank Slavsky, collaborating Architects
- Drawings Dated June 25, 1956

Two new open wards were built on top of the original One-Story Doctors wing. This required the wing to be lengthened by an additional 16' bay which accommodated an operating room on the first floor and restroom/bathing facilities and an exit stair on the 2nd and 3rd floors. The additional load of this addition was carried by adding columns to the exterior of the wing and inserting trusses to carry the column-free wards above.



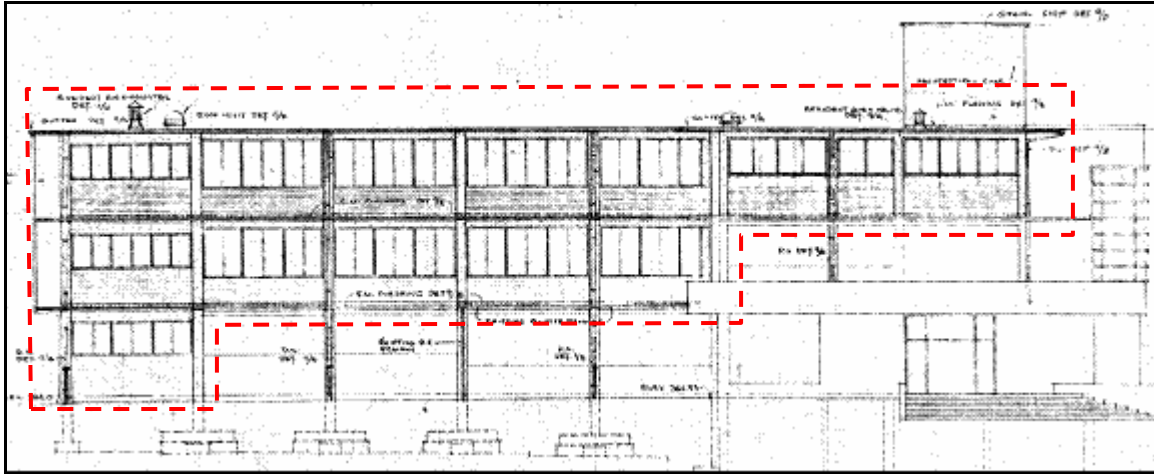
2nd and 3rd Floor Ward Additions



1st Floor Extension

Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

The fenestration of the wing addition did not match the original building, rather divided the window spacing in half vertically thus abandoning the horizontal effect. Also, operable windows were jalousies thus eliminating the framing of the individual windows.



Dashed line denotes 1956 Addition



Ewa Makai Corner of Doctors Wing with New 2-story Addition (ca 2013)

Building lengthened by one bay

Existing original awning and fixed horizontal window pattern

Detracting Jalousie windows in new 2-Story addition

Building lengthened by one bay with added exit stair



Back-side of Doctors Wing with 2-Story Addition (ca 2013)

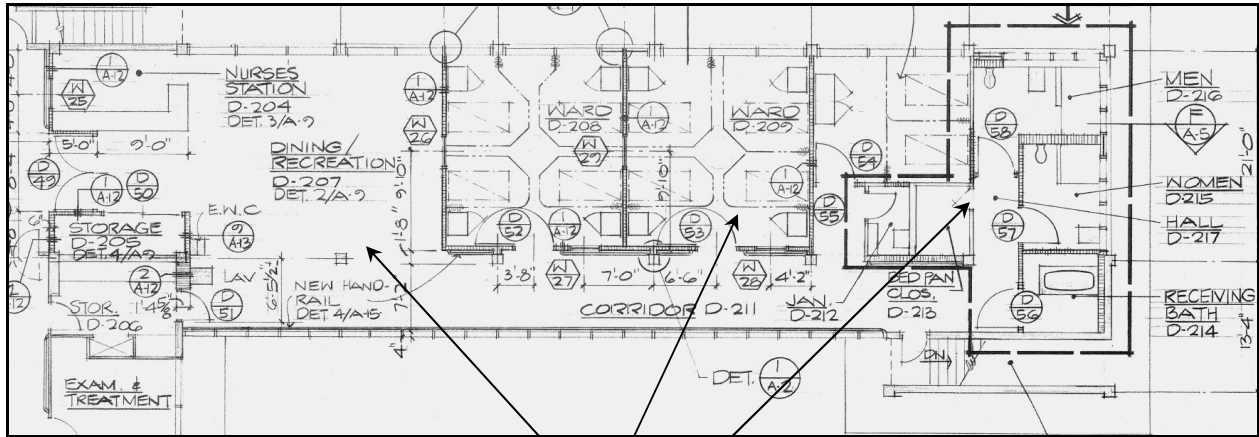
Historic Structure Overview

Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

1980 - 2nd and 3rd Story Alterations to the Existing Open Wards

- Designed by Park Associates, Architects and Engineers
- Stamped by James M. Young
- Drawings Dated March 1980

In this mostly interior renovation, each of the open wards was subdivided into smaller 2 & 4-bed sleeping rooms with an adjacent open Dining/Recreation space, and renovated common restrooms/bathing facilities. At some time prior to this the screened recreation lanais facing the interior courtyard had been enclosed with jalousie windows, and the original doors and awning windows eliminated.

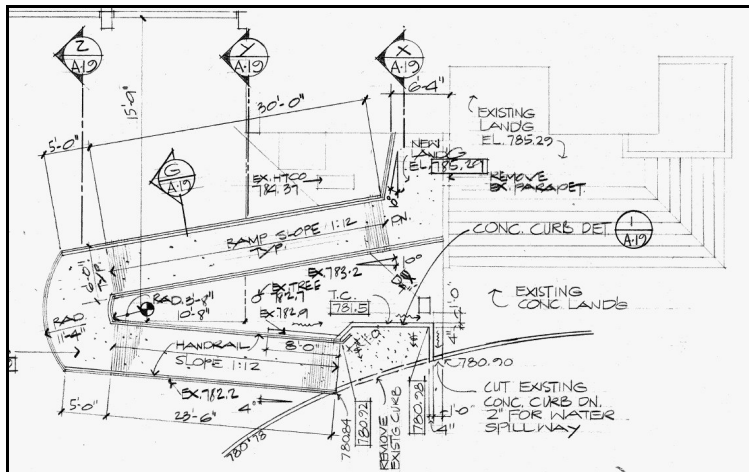


Second Floor Mauka Ward (others similar)

- Dining/Recreation space for each Ward
- Smaller 2-4 bed sleeping rooms
- Renovated Restrooms/Bathing



Note that the ramp adjacent to the front stairs was added in this renovation, as well as a ramp from the rear parking lot to the 2nd Floor Mauka Ward, the main exterior alterations.

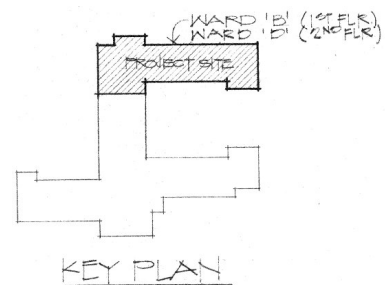
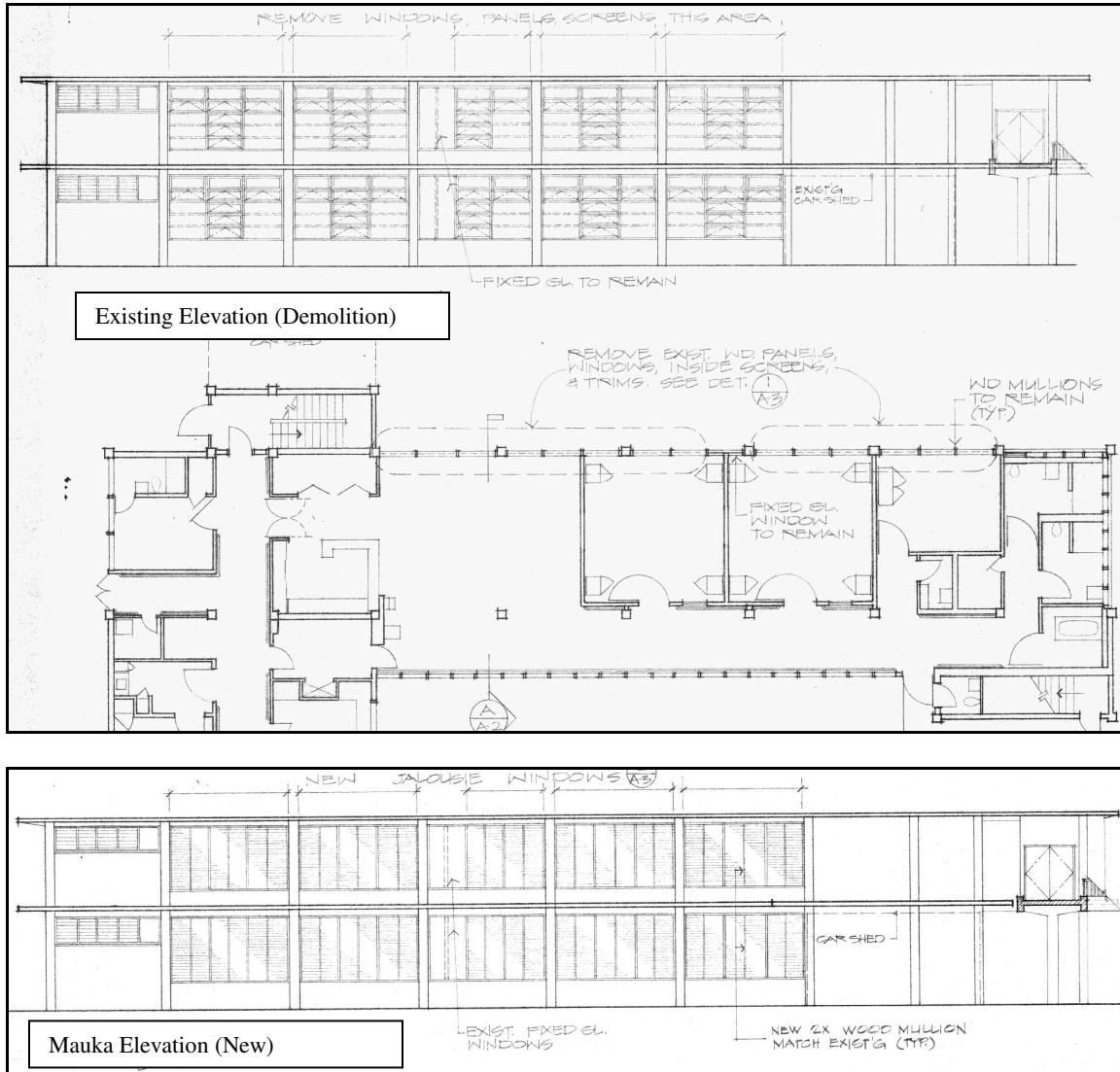


Front Entrance

Historic Structure Overview Hale Ola and Adjacent Kitchen & Dining (Former Waimano Training School and Hospital)

1988 Mauka Window Replacement

- Designed by Kodama/Okamoto Architects
- Drawings Dated April 18, 1988



Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

C. Character-Defining Features

	Feature (Note 1)	Description	Condition	Recommended Preservation Treatment	Proposed Project Treatment
1	Building Form	Rectangular with asymmetrical wings	Good	Retain original footprint	Retain
2	Exterior Material	Reinforced concrete end walls and columns	Good to Fair	Retain	Retain and repair spalling
3	Exterior Material	Hollo-Stone block wall and veneer	Good to Excellent	Retain as a significant feature of this design	Retain, repair in-kind if necessary
4	Roof Form	Flat with extended Eaves	Good	Retain and screen any roof-top mechanical	Retain and screen any roof-top mechanical
5	Roof Material	Thin slab, reinforced concrete, combined with "T" system at open Wards	Good	Retain	Retain
6	Sun Shades	Reinforced concrete Brise-Soleil	Good	Retain and repair in-kind as required	Retain, repair in-kind as necessary
7	Front Steps	Asymmetrical with gentle rise. Historic acid-stained finish	Good	Retain and restore finish	Retain and restore finish
8	Entry Door	Pair of 4 lite glazed Koa wood doors	Good	Retain, repair and restore finish	Retain, repair and restore finish
9	Doors	Combination historic & non-historic	Good, fair, & poor	Retain and repair in-kind as required	Retain openings, repair, replace as necessary
10	Windows - Koa	1 st and 2 nd floor lobbies	Good, fair, & poor	Retain and repair in kind. Restore finish.	Retain, repair and refinish.
11	Windows – Original Elevations	1 st floor Doctors Wing 1 st & 2 nd floor Nurses Wing	Good, fair & poor	Retain and repair or replace in-kind.	Open for discussion (need to meet energy requirements)
12	Windows – 1956 Addition	Inappropriate Jalousie Windows	Good, fair & poor	Detracting feature	Replace with appropriate infill window. TBD
13	Windows – 1988 Replaced	Inappropriate Jalousie Windows	Good, fair & poor	Detracting feature	Replace with appropriate infill window. TBD
14	Exterior Det. Block Screen	Hollo-Stone blocks spaced for ventilation	Good	Retain and repair in-kind as required	Retain, repair in-kind as necessary
15	Interior Detail Entry Lobby	Original interior space, plan & finishes	Good	Retain, Restore finishes	Retain, restore/replace finishes as appropriate
16	Interior Detail 2 nd Flr Lobby	Original interior space, plan & finishes	Good	Retain, Restore finishes	Retain, restore/replace finishes as appropriate
17	Interior Detail Interior Stair	Original plan and finishes	Good	Retain and repair in kind. Restore finishes	Retain and repair in kind. Restore finishes
18	Interior Detail Tile Wainscot	Original 'Salt Glazed Tile' wainscot	Good to Excellent	Retain, avoid altering door openings	Retain, repair in-kind as necessary
19	Interior Detail Borrowed Light	Occasional borrowed light windows into corridors	Missing or infilled	Restore if feasible	Restore if feasible, and introduce more of similar scale, location

Note 1: Shaded items indicate most significant features

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

Details - Hale Ole - Most Significant Character-Defining Features

C – 3 Hollo-Stone Block Wall and Veneer



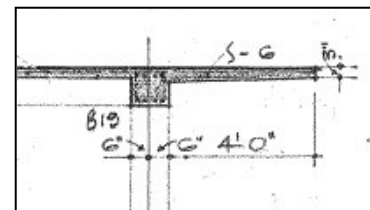
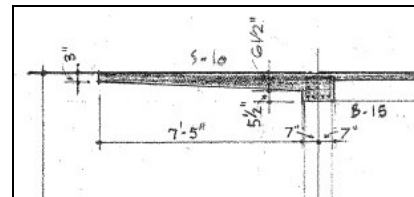
Hollo-Stone block is a long, narrow masonry unit comprised of a combination of concrete and pumice. Promoted in the 1940's for its fire-resistant properties⁶

As used in this building the blocks are 12" wide (nominally) by 4" high. At this front elevation the blocks are used as a veneer over a structural concrete wall. Elsewhere the blocks are 8" thick and used as a low wall below windows.

C – 6 Brise-Soleil



All windows and doors are shaded by continuous thin reinforced concrete overhangs, know as 'Brise-Soleil' (French for "sun breaker"). This building element is a strong characteristic of International Style architecture in the 1930's and 40's.



The cantilevered concrete tapers from 6 1/2" to 3" at the edge for a very narrow profile as shown in the details to the right.

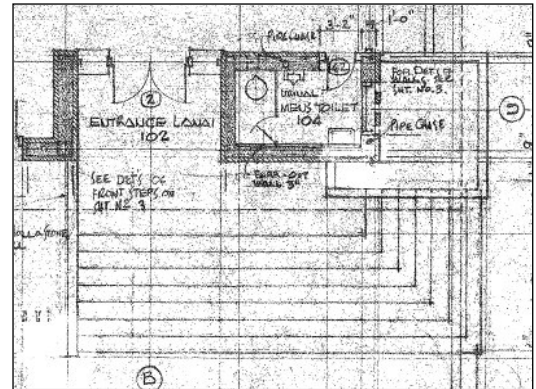
⁶ Hollo-Stone Advertisement, Reno Evening Gazette, Wednesday February 26, 1947, P.8

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

C-7 Front Steps and Entry



This asymmetrical entry is a very distinctive feature of this building



The finish is acid-stained concrete, a distinctive finish in Hawaii in the 1940's, patented by Robert Lammens⁷ and referred to as "Lammens Stain" in the finish schedule. It is now a lost art and should be carefully preserved and restored.

C-8 Entry Door and C-10 Koa Windows

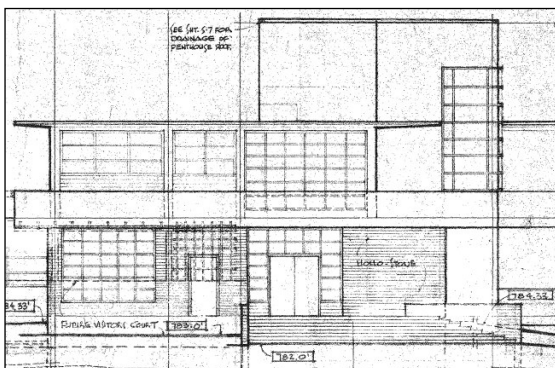


Very significant features of this building are the entry doors and lobby windows, and those at the second floor lobby immediately above, all detailed in Koa.

Entry Door (ca 2013)



2nd Floor Koa Windows (ca 2013)



Original Drawing 1948 – Front Entry

⁷ Robert B. Lammens, "Process of Staining and Hardening Concrete and the Like", Patent No. 1,666,423, April 17, 1928

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

C – 11 Windows Original Elevation



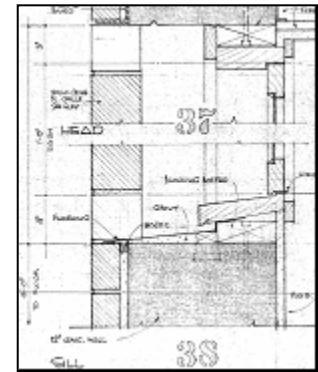
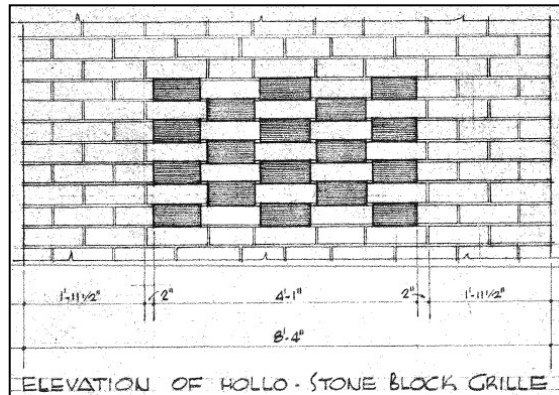
Remaining original windows in Ewa Elevation. Discussion about how to treat these is ongoing



C – 14 Block Screen Detail



A screened window detail, in this case at the lobby restroom windows.



Window Detail Behind

C – 15 Entrance Lobby and C – 16 Second Floor Lobby



Entrance Lobby (ca 2013)
Both Lobbies are distinctive interior spaces to be preserved



Second Floor Lobby (ca 2012)

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

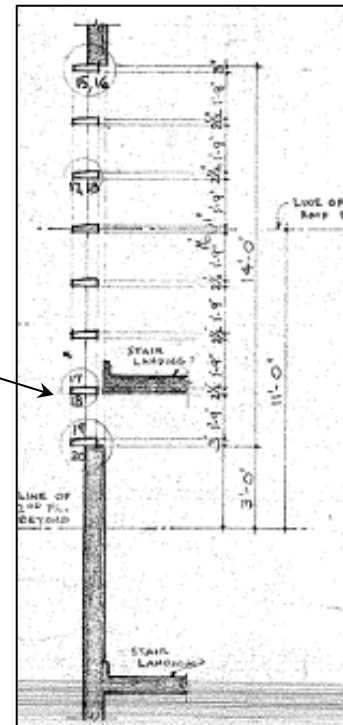
C – 17 Interior Stairway



This 3- Story interior stair with its distinctive window is an important interior feature to be preserved and repaired.

Note how the 2 ½ floor landing floats in front of the window.

The finish of this stairway is also “Lammens Stain” like the front entry steps and should be preserved and maintained.



1948 Window Detail

C – 18 Tile Wainscot at Corridors & C – 19 Borrowed Light



The original 1-Story Doctors Wing and the 1st & 2nd floor Mauka/Makai Nurses Wing corridors were lined with “Salt Glazed Tile”. Throughout the past renovations the tile wainscots have remained mostly intact along these 3 corridors.

To the extent possible, offices planned along these corridors should maintain the existing tile wainscoting and door openings.

Note the louver on the left which replaced an original “borrowed light”. To the extent feasible, the use of borrowed light should be reinstated to provide daylight into the corridors. As a rehabilitation activity, introducing additional borrowed light openings would be appropriate.

Corridor in Doctors Wing (ca 2012)

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

D. Eligibility for Listing on the National Register of Historic Places

Hale Ola, the former Waimano Home Hospital building, is eligible for listing on the National Register of Historic Places under Criteria ‘A’ and ‘C’ and possesses the integrity required for eligibility.

Criterion A – Historic Properties “That are associated with events that have made a significant contribution to the broad patterns of our history”⁸

The Hospital building, dedicated as the Lambert Building in 1951, was built to alleviate overcrowding of Waimano Home following World War II and to provide modern facilities reflecting advancing Societal and Governmental attitudes toward the treatment of persons with developmental disabilities.

“When the Department of Institutions took over Waimano Home [1941], there was a slow but increasing development [of] a “more intensive program of training with a view to returning (the residents) to the community.....The idea of Waimano as a mere custodial institution was being replaced by ideas of treatment and rehabilitation.”⁹

As a modern hospital with treatment and surgical facilities, in addition to bright and airy Wards of 100 beds, the design of this hospital appears to reflect these advances in medical treatment. (The context of the evolving treatment and rehabilitation approach is described in detail in the 1962 report by William G. Brueggemann cited below. That history is beyond the scope of this report.)

Criterion C – Historic Properties “That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction”.¹⁰

Hale Ola was designed by Hart Wood, a recognized leader in the design of significant architectural landmarks in Hawaii. As stated by Hibbard, Mason and Weitz in their eloquent book about the life and work of Hart Wood:

“He pioneered a design language that was unique to Hawaii and did so by looking not only at its benign weather but by using local materials in innovative ways and incorporating the cultures of the various peoples of Hawaii. The latter alone is sufficient to elevate Wood above his contemporaries.”¹¹

This building is one of three significant Commercial buildings designed at the end of his career. Of these 3 buildings, this is the clearest expression of the International Style of architecture. Key character-defining elements of this building have been charted and described in detail in Section C of this report.

“Sited at the top of the Waimano Home grounds on [Waimano Ridge], the building presided over the complex and offered splendid views of the Pearl Harbor area. This highly asymmetric plan is one of the most modernist of the projects to come from Wood’s office. The bands of windows, roof overhangs, and rough block patterns all emphasized the horizontality of the building.”¹²

⁸ CFR 36, Part 60

⁹ William G. Brueggemann “Mental Retardation: Program of MR Division in Hawaii’s Health Department”, 1962

¹⁰ CFR 36, Part 60

¹¹ Hibbard, Mason and Weitz, “Hart Wood”, p. 246.

¹² Ibid., p. 234.

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

Integrity: - “The quality of significance in American.....architecture.....is present in...buildings.... that possess integrity of location, design, setting, materials, workmanship, feeling, and association...”¹³

- Integrity of location (presiding over Waimano Ridge), setting (rural in a conservation area), materials, and workmanship are intact. The original concrete roof, Brise-soleil and brick infill walls have been largely untouched by later alterations.
- Design integrity has been compromised by the 1956 addition and a window replacement on the North elevation in the 1980’s. Despite that, the outline, materials, and horizontality of the original building are clearly visible. The 1956 addition is historically significant in that it represents the need for more Ward space just 5 years after the construction of the original hospital.
- Original association with the history of prior residents is no longer valid. The Waimano Home ‘campus’ was closed for treatment and housing of persons with developmental disabilities in the 1990’s.

¹³ Excerpt from: CFR 36, Part 60

Historic Structure Overview

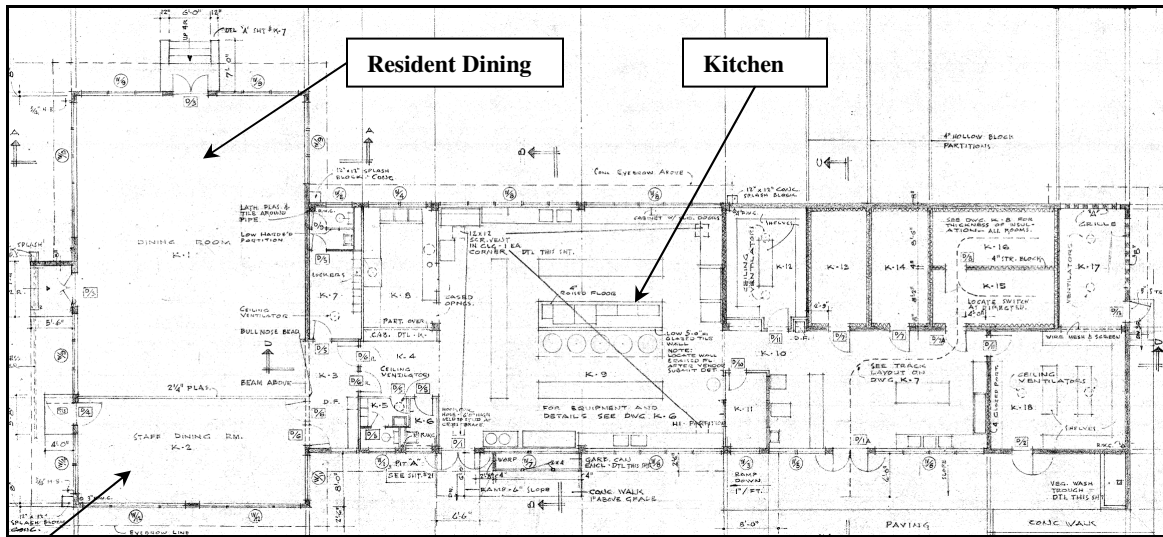
Hale Ola and Adjacent Kitchen & Dining

(Former Waimano Training School and Hospital)

Kitchen & Dining Facility

E. Historic Description

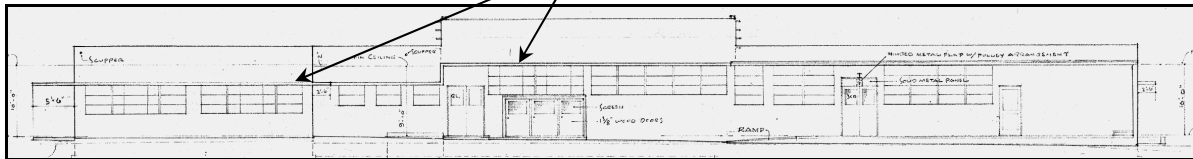
The original building is a non-symmetrical one-story reinforced concrete building with a flat roof. There are 3 entrances: one for the kitchen staff, one for the residents and a separate one for the Hospital staff. This is actually the second design for this facility. An earlier set of plans showed some design details that echoed the Hospital, especially the entry and windows. This second set of plans is scaled down and very basic in its design elements, apparently a case of value-engineering back in 1948. The roof over the center section, the cooking area, is raised for air circulation and ventilation



Original Plan

Staff Dining

Continuous Brise-Soleil



Original Elevation

Like the Hospital, the Kitchen/Dining Building displays the simple, unornamented International Style of design. Significant elements are the horizontal modular windows (in this case metal), and the projecting concrete eye-brow 'Brise-Soleil' over the windows and doors.



Historic Structure Overview

Hale Ola and Adjacent Kitchen & Dining

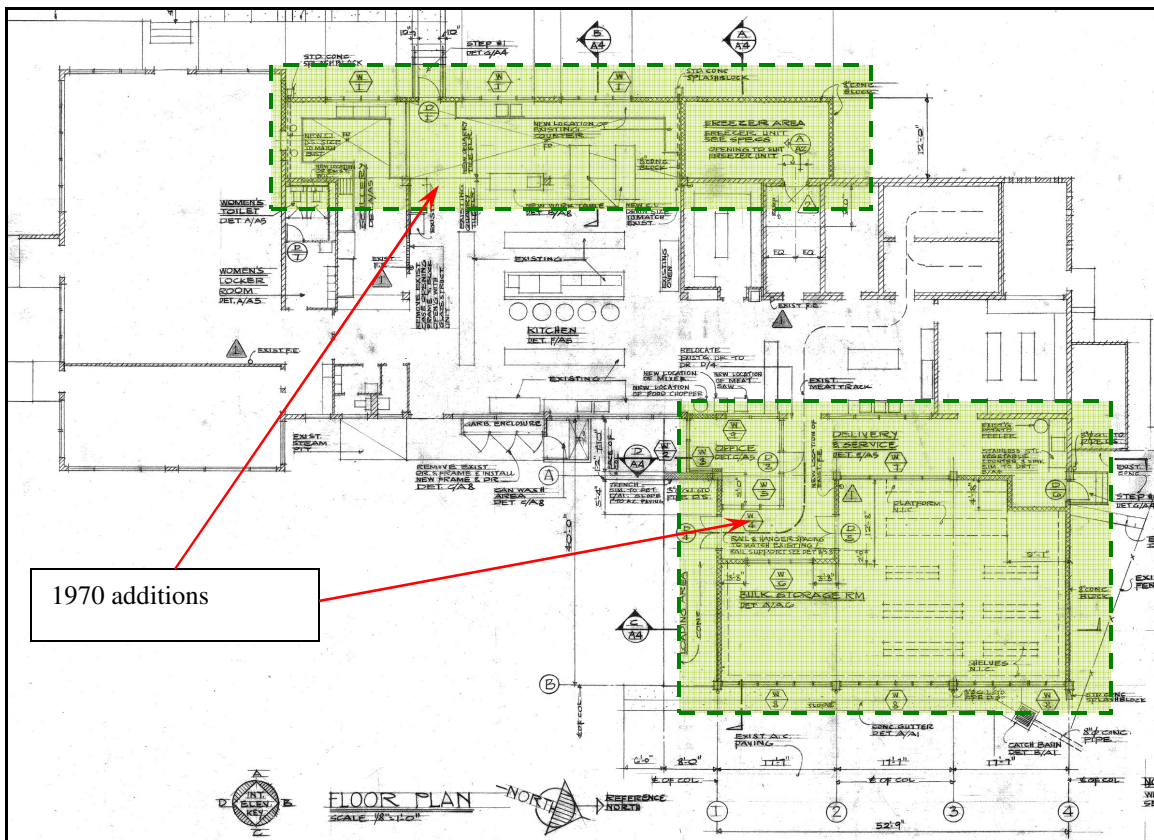
(Former Waimano Training School and Hospital)

F. Alteration History

The Kitchen/Dining Building underwent one major alteration with significant non-contributing additions on the Mauka and Makai faces of the kitchen portion.

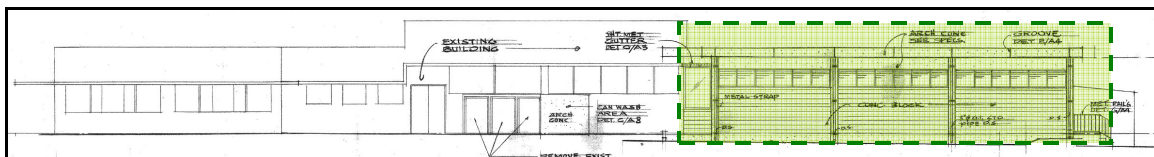
1970 - Mauka and Makai additions to the kitchen:

- Designed by Thomas T. Nishida Architects;
- Drawings Dated June 1970.



1970 Plan Showing Detracting Additions

Two major additions were added to the kitchen leaving very little of the original kitchen elevations. The walls were made of concrete block with small windows that do not relate to the historic window spacing and modules.



1970 Elevation Showing Detracting Additions

The adaptive reuse of this building will require larger windows for daylight and natural ventilation. Enlarging the windows in these non-contributing, insensitive additions will not adversely affect the building more than this addition has already done.

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

G. Character-Defining Features

	Feature (Note 1)	Description	Condition	Recommended Preservation Treatment	Proposed Project Treatment
1	Building Form	Rectangular with major non-contributing additions	Good to Fair	Remove non-contributing additions	Retain current footprint including additions. Adapt for open office use
2	Exterior - Orig. Material	Reinforced concrete walls	Good	Retain and repair in-kind as necessary	Retain and repair spalling
3	Exterior - 1970 Addition Material	Concrete block	Good to Fair	Remove detracting additions	Retain additions, alter to provide larger windows
4	Roof Form	Flat with parapets	Good	Retain and screen any roof-top mechanical	Retain and screen any roof-top mechanical
5	Roof Material	Reinforced concrete	Good	Retain	Retain, repair and re-roof
6	Sun Shades	Reinforced concrete eyebrow 'Brise-Soleil'	Good	Retain and repair in-kind as required	Retain, repair in-kind as necessary
7	Entry Door – Kitchen	Metal with wire-glass upper light	Fair	Repair or replace in-kind	Open for discussion
8	Entry Doors - Dining	Metal with Monel screen upper light	Fair	Repair or replace in-kind	Replace in-kind with glass in place of screen (due to A/C)
9	Windows – Dining Wing	Narrow frame aluminum, combined awning and fixed sash	Good to Fair, some have been replaced	Repair or replace in-kind	Open for discussion (need to meet energy requirements)
10	Windows – Kitchen	Narrow frame aluminum, combined pivot and fixed sash	Good to Fair, most have been removed in 1970 alt.	Repair or replace in-kind	Enlarge few remaining original openings and install energy efficient windows
11	Windows – 1970 Addition	Small, incompatible screened and glazed openings	Fair	Remove detracting element	Enlarge & create new openings and install energy efficient windows
12	Exterior Det. Brick Grille	Bricks spaced for ventilation	Good	Retain and repair in-kind as required	Retain, repair in-kind as necessary
13	Interior Detail Tile Wainscot	Original 'Salt-glazed Tile' wainscot	Good	Retain	Remove and salvage for repairs to Hale Ola walls

Note 1: Shaded items indicate most significant character-defining features

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

Details – Kitchen/Dining - Most Significant Character-Defining Features

G – 6 Concrete Sunshade Eyebrows - “Brise-Soleil”



All windows and doors are shaded by continuous thin reinforced concrete eyebrows; know as ‘Brise-Soleil’ (French for “sun breaker”). This building element is a strong characteristic of International Style architecture in the 1930’s and 40’s.

G – 9 Original Windows – Dining Wing



Resident Dining Room (ca 2013)

Original awning sash in Dining Room



The Dining/Kitchen building was designed with 2 window types. In the dining wing the sill was 3’-2” high with narrow framed aluminum windows in vertical arrangements of 3 lights. The bottom sash was fixed with the top 2 lights operating as one projecting awning sash.

The windows to the left in the photo above were apparently replaced with kitchen ‘pivoting’ sash at some point. The windows adjacent to the doors are the original awning sash.

Original awning sash in Dining Room

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

G – 10 Original Windows – Kitchen



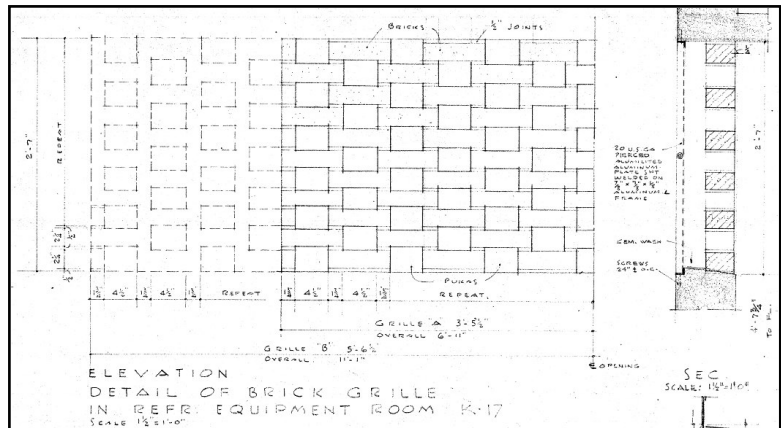
The original windows designed for the kitchen work and storage areas had higher sills, varying between 4’-6” and 5’-9” above the floor to clear the equipment. The operable sash was up higher and designed as a pivoting panel.

The alterations of the 1970’s removed all but the 2 sets of windows shown to the left.

Due to the change in use to office space, the project proposal includes lowering the sill of these 2 openings to add one or 2 more modules of fixed light matching the sill height of the Dining Wing.

G – 12 Exterior Detail – Brick Screen Grille

Like the ventilation detail at Hale Ola, this building contains 2 brick grill details to ventilate a prior equipment room within the kitchen.



G – 13 Interior Detail – Tile Wainscot



The majority of the interior walls that subdivided the kitchen into bulk and cold storage areas will be removed. Portions of the “Salt Glazed Tile” wainscot will be salvaged for repair at Hale Ola.

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

H. Eligibility for Listing on the National Register of Historic Places

The Kitchen and Dining Facility, a support structure to the Waimano Home Hospital building, is eligible for listing on the National Register of Historic Places under Criterion ‘C’.

Criterion C – Historic Properties “That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction”¹⁴.

The Kitchen/Dining building was designed as a support facility by noted Hawaii architect Hart Wood. As a stand-alone structure, it is not currently eligible for listing on the National Register due to the major prior alterations. However, it is eligible as a contributing structure to the Waimano Home Hospital site.

Integrity: - “The quality of significance in American.....architecture.....is present in....buildings.... that possess integrity of location, design, setting, materials, workmanship, feeling, and association...”¹⁵

- Like Hale Ola, the integrity of location and setting (at the top of Waimano ridge in a rural setting, conservation area) are intact.
- Design integrity has been compromised by detracting additions over significant portions of the front and rear elevations.
- The dining wing of the building is intact with respect to design, materials and workmanship. The proposed project will continue to utilize this portion of the building as an open space, housing conference and library facilities.
- As with Hale Ola, the original association with the history of Waimano Home is no longer valid. Following the closing of the Hospital, the kitchen continued use as a kitchen for several years to serve the Meals-on-Wheels Program. That use was discontinued in early 2000.

¹⁴ CFR 36, Part 60

¹⁵ Excerpt from: CFR 36, Part 60

**Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)**

I. Effect of the Proposed Project on the Historic Properties

Hale Ola

The adaptive reuse of the hospital building as office space for the Department of Health's (DOH) Environmental Management Division (EMD) employees presents the following requirements:

- Open Office Space :
 - This is readily accommodated by removing recent interior alterations that have sub-divided the original open Ward Wings. *(no adverse effect)*
- Air-conditioning:
 - A remote central plant will be constructed consisting of 2 exterior type packaged AC chiller units. The units will be placed on a concrete pad, surrounded by a tall concrete masonry enclosure with appropriate landscape screening. The central plant will be in the approximate location of the original Boiler building (demolished) which is historically appropriate. Underground chases, some original, will be utilized to circulate chilled water and other utilities. *(no adverse effect)*
 - Air handler units will be placed in the basement and windowless prior storage and bath spaces. *(no adverse effect)*
 - Distribution of ductwork from the air handlers to the office wings will be across the flat roof, located away from major elevations, close to the non-visible courtyard side of each wing. The ducts will be low, elevated slightly to permit roof maintenance, and screened. The only vantage point from which these will be visible is the offices on the back side of the 3rd floor of the original Doctors wing. *(potential adverse effect minimized by placement away from primary elevations and screening)*
 - Distribution of the ductwork on the roof will minimize the impact of dropped ceilings in the interior spaces of the open wings. New dropped ceilings will be held away from the original floor to ceiling window openings. *(no adverse effect)*
- Energy Efficiency:
 - The exterior walls and roof will need to be insulated on the interior to minimize heat transmission. *(no adverse effect)*
- Window Repair and Replacement:
 - The feasibility of repairing the Koa windows in kind is being investigated. *(no adverse effect)*
 - The feasibility of repairing the vertical stairway window is being investigated. *(no adverse effect)*
 - The need to replace the jalousies of prior non-original additions will be done with aluminum framed fixed and operable windows, preserving the vertical modules of the 1956 addition work. *(no adverse effect)*
 - The need to alter the original Hart Wood wood framed windows to achieve reasonable thermal values for the air conditioned spaces has the potential to have an adverse effect on the original materials. *(window alteration and/or replacement, and possible mitigation, to be discussed with SHPD)*
- Interior Finishes:
 - Interior corridor walls of original Doctors Wing (1st floor) and Nurses Wing (1st & 2nd floors) to be preserved, thus also preserving the historic salt glazed tile wainscot. *(no adverse effect)*

Historic Structure Overview
Hale Ola and Adjacent Kitchen & Dining
(Former Waimano Training School and Hospital)

Kitchen & Dining Building

The adaptive reuse of the kitchen building as office space for 51 Department of Health (DOH) employees presents the following requirements:

- Open Office Space :
 - The change of function from kitchen to office will require the removal of bulk and cold storage rooms. Since there have been significant non-historic alterations to this space in the past, we do not believe that this alteration will adversely affect this building. *(no adverse effect)*
 - The former large open dining rooms will be used as conference space and a small library without altering the walls and doorways. The existing 10 foot ceiling may need to be lowered slightly to accommodate A/C and lighting; however the head height of the windows is roughly 7'-4" which will allow for the ceiling to be lowered without impacting the windows. *(no adverse effect)*
- Air-conditioning:
 - The chiller units in the central plant previously described will also serve this building.
 - Air handling units will be placed within a mezzanine created in the center portion of the building. This portion of the building is roughly 16'-6" to the underside of the roof slab, which previously housed the exhaust hoods. *(no adverse effect)*
 - Ductwork will cross over the roof to serve the major spaces. Although visible from Hale Ola, the ductwork will be screened to minimize the visual appearance. The prior function of this building required rooftop placement of several ventilators and a hood exhaust fan. *(potential adverse effect minimized by placement away from primary elevations and screening)*
- Energy Efficiency:
 - The exterior walls and roof will need to be insulated on the interior to minimize heat transmission. *(no adverse effect)*
- Window Repair and Replacement
 - To achieve more daylight in the open offices, the non-historic CMU walls will be altered to allow for the introduction of windows in prior windowless storage rooms. *(no adverse effect)*
 - To increase the daylight in the center of the former kitchen, where the cold storage rooms were, the project is considering skylights. Again, the former exhaust hood has set a precedence for this type of roof-top opening. *(no adverse effect)*
 - As noted in item G-10, the original 2 sets of kitchen windows over the sinks are high and relatively small. The project proposes to lower the sill height and install more sash, repeating the historic sash modules of roughly 15" high by 3'-9" wide. *(potential adverse effect minimized by repeating historic window module sizes)*
 - The need to alter the original Hart Wood aluminum framed windows to achieve reasonable thermal values for the air conditioned spaces has the potential to have an adverse effect on the original materials. Except for the 2 windows over the sinks discussed above and 3 small bathroom windows, and due to prior non-historic alterations, the only remaining original windows are in the Dining Wing. *(window alteration and/or replacement, and possible mitigation, to be discussed with SHPD)*
- Interior finishes:

The majority of the interior walls that subdivided the kitchen into bulk and cold storage areas will be removed. Portions of the "Salt Glazed Tile" wainscot will be salvaged for repair at Hale Ola. *(potential adverse effect minimized by salvaging and reusing as needed)*

Appendix E

Archaeological Reconnaissance of the Waimano
Training School and Hospital

Cultural Surveys Hawai'i
(undated)

ARCHAEOLOGICAL RECONNAISSANCE

Preface

The material presented in this section was taken from a report previously prepared by William H. Folk, II and Hallett H. Hammatt, PhD of Cultural Surveys Hawaii titled “Archeological Reconnaissance of the Waimano Training School and Hospital, Waimano, Ewa, Oahu”, undated. The archeological survey for this report was conducted on June 23, 1990. For purposes of this report, the information is assumed to be accurate as conditions have not changed significantly since the preparation of this report.

ARCHAEOLOGICAL RECONNAISSANCE
OF THE WAIMANO TRAINING SCHOOL AND HOSPITAL
WAIMANO, 'EWA, O'AHU

By

WILLIAM H. FOLK, II

Prepared For

KRP INFORMATION SERVICES

and

AM PARTNERS, INC.

By

CULTURAL SURVEYS HAWAII

HALLETT H. HAMMATT, Ph.D.

ABSTRACT

A cemetery, a dressed stone irrigation ditch and a cache of loose, dressed stones were recorded during a reconnaissance of the Waimano Training School and Hospital site. The cemetery is known to contain deceased members of the Waimano Institution. The irrigation ditch and loose stones are clearly historic and believed to be associated with sugar cane cultivation by Honolulu Plantation Co. in the early 20th century. There are no literary or physical records of traditional Hawaiian enterprise in the project area. No Kuleana claims were filed in the project area which appears to have been government lands since the Mahele of 1848. Portions of the project area may have been under cultivation of sugar or pineapple prior to establishment of the Waimano Home in 1919-1921. None of the existing structures of the facility are deemed significant for preservation. Preservation of the cemetery, irrigation ditch and dressed stones is recommended. No further archaeological investigation nor monitoring during construction is recommended upon the plateaus in the project area.

TABLE OF CONTENTS

	PAGE
ABSTRACT	i
LIST OF FIGURES.	iii
ACKNOWLEDGEMENTS	iv
INTRODUCTION	1
HISTORICAL REVIEW.	4
NATURAL HISTORY	4
CULTURE HISTORY	5
INDUSTRY.	9
PREVIOUS ARCHAEOLOGY WITHIN THE STUDY AREA.	11
SURVEY RESULTS AND RECOMMENDATIONS	14
REFERENCES	18

LIST OF FIGURES

		PAGE
Figure 1	State of Hawaii	2
Figure 2	General Location Map, O'ahu Island	2
Figure 3	Portion of U.S.G.S. Topographical Map, Waipahu Quadrangle. Showing Project Area and Historical Sites.	3
Figure 4	View of Waimano Stream Valley Facing Mauka, From Study Area.	6
Figure 5	View of Waimano Stream Valley (to right) and Study Area Plateau. Facing Makai.	6
Figure 6	Portion of 1924 Territory of Hawaii Survey Map (R. M. 2715).	8
Figure 7	Portion of Study Area; 5' Contours. Showing Reservoir Area and Ditch.	11
Figure 8	<u>Makai</u> Portion of Irrigation Ditch Showing Primary Ditch and Smaller South Branching Ditch.	12
Figure 9	View of South Side of Ditch Showing Road to Left and Smaller Branch to Right.	12
Figure 10	Dressed Stones on <u>Mauka</u> Side of Parking Lot Entrance.	15
Figure 11	Dressed Stones on <u>Makai</u> side of Parking Lot Entrance.	15
Figure 12	View of Graveyard, Facing West.	17

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Special thanks to Dr. Hal Hammatt for his enthusiasm and support.

INTRODUCTION

On June 23, 1990 the author conducted an archaeological reconnaissance of the grounds of the existing Waimano Training School and Hospital (Figs. 1-3) situated on the ridge east of Waimano Stream, at the mauka end of Waimano Home Road. This study area is within the traditional land division (ahupua'a) of Waimano in the 'Ewa District. The purpose of this work was to identify any archaeological or historical resources prior to construction to modernize the facility.

The reconnaissance involved on-site examination of the plateau areas of the ridge from Pearl City High School at about 425 ft. elevation, mauka to the Hawaiian Electric Co. powerline easement at an elevation of about 1,000 ft. The ravines and gulches along the edges of the plateau were not included in the study area and an easterly spur of the plateau at 600 to 700 ft. elevation was also excluded.

In addition to the field work, a search for pertinent prior archaeological studies was made. Survey and tax maps and basic historical works were reviewed as well to obtain a general historical perspective.

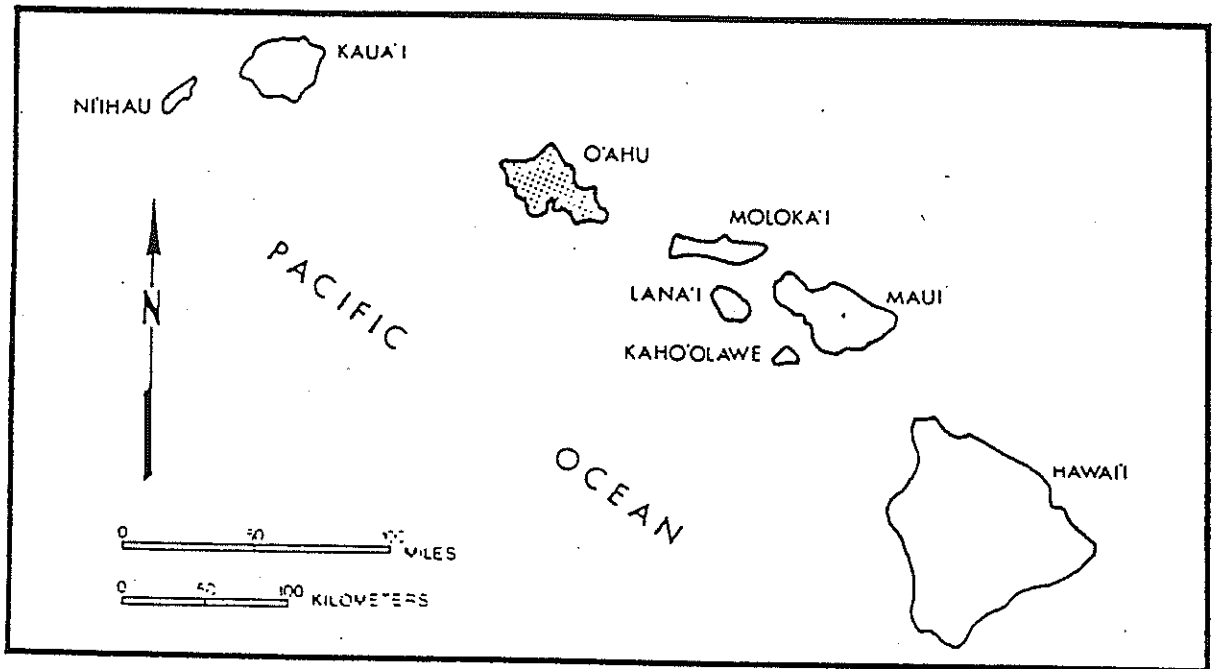


Fig. 1. State of Hawaii

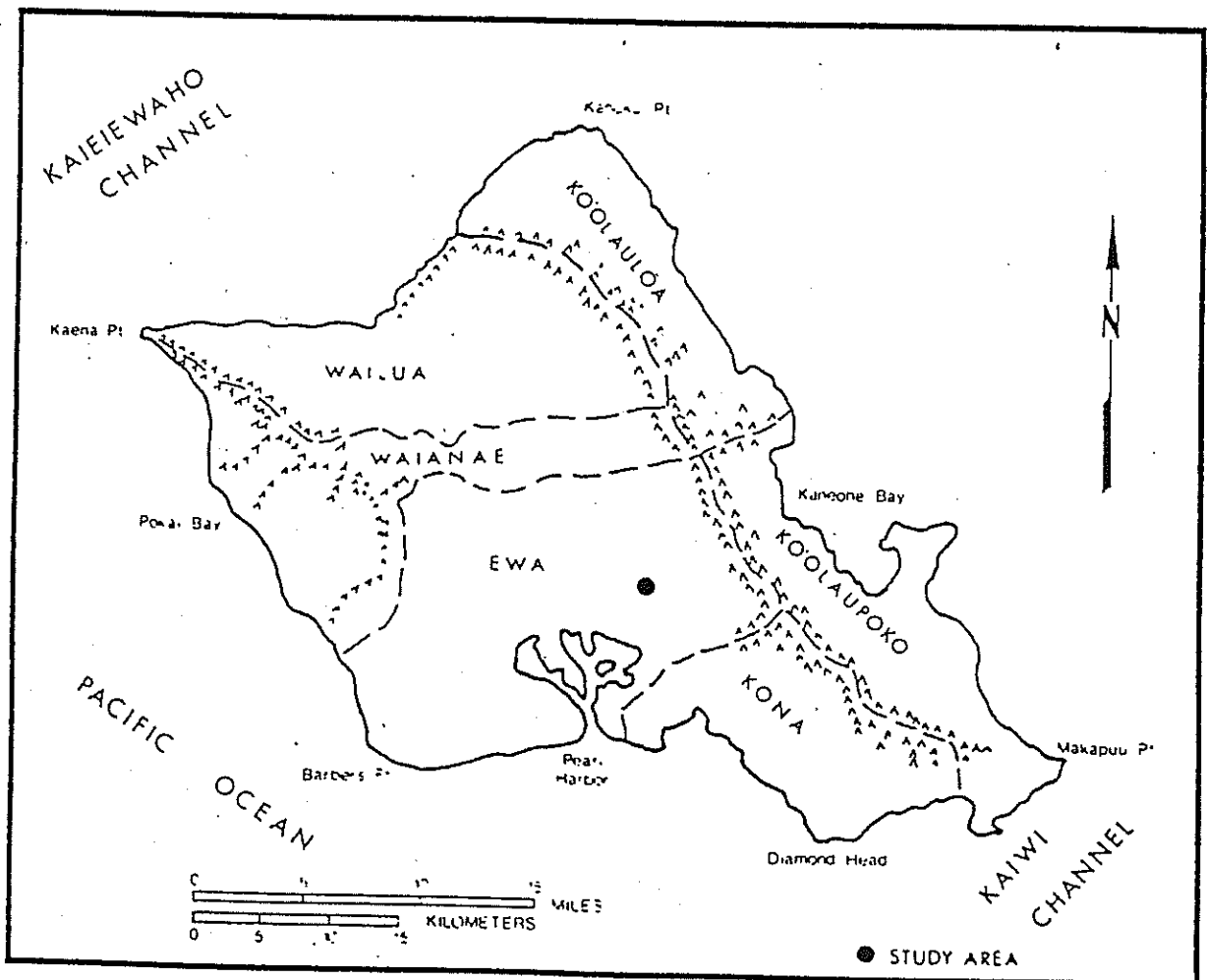


Fig. 2. General Location Map, Oahu Island.

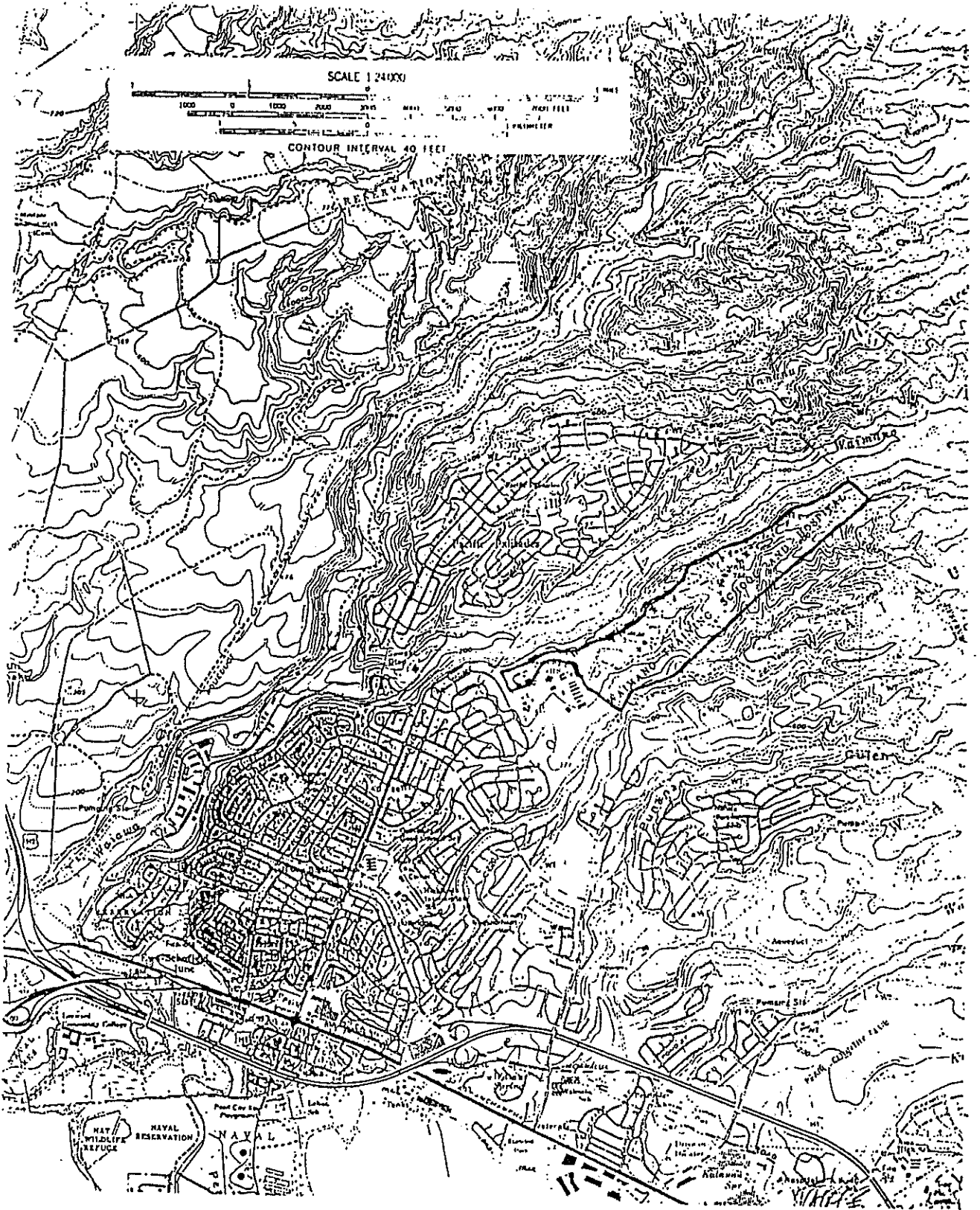


Fig. 3 Portion of U.S.G.S. Topographical Map, Waipahu Quadrangle. Showing Project Area and Historical Sites.

HISTORICAL REVIEW

Natural History

Waimano ahupua'a in Ewa District is translated literally as "many waters" by Pukui et. al. (1984). The significance of this translation is not apparent in terms of stream flow within the boundaries of the ahupua'a. Although two streams are associated with the ahupua'a neither have their entire course within it.

The first of these, bearing the name Waimano Stream on current U.S.G.S. maps, originates at the summit of Koolau within Waimano ahupua'a and has only two major tributaries whose confluence is above 400 ft elevation. Mauka of this elevation in the stream bed the stream valleys are V-shaped, steeply rising to knife edged ridges clearly unsuitable to Hawaiian settlement of any magnitude. Old terraces in the stream bottoms may have been used for planting of food crops in the past. However, it is very unlikely the ridges above, at elevations of 1,000 ft. and more, were used for anything other than collecting the natural products of the forest. (Fig. 4)

Below the 400 ft. elevation in the stream bed, Waimano stream travels a horizontal distance of only 8,000 ft. before it passes out of Waimano ahupua'a, over 2 miles from the shore, crossing Manana ahupua'a towards its confluence with Waiawa Stream. Within that 8,000 ft. section the old stream terraces are wider than the valley bottom, flatter with a very low gradient, more amenable to traditional Hawaiian agriculture. It is also in this same stretch that the ridge tops, at about 800

ft. elevation, becomes flatter and broader as rainfall decreases to 50 to 75 in. per year. It is upon this plateau of the ridge forming the south east side of Waimano Stream that the study area is situated (Fig. 5).

The second stream associated with Waimano ahupua'a originates in the Koolau in Waiiau ahupua'a and enters Waimano ahupua'a from the south east about 1.5 miles from the shore at an elevation of approximately 300 ft. This stream is unnamed on the U.S.G.S. map and is intermittent. It flows into the east loch of Pearl Harbor within Waimano ahupua'a just east of Pearl City peninsula.

Culture History

There is relatively little information on early land use as well as on the inhabitants of Waimano ahupua'a. Although it borders on Pearl Harbor it is overshadowed in all respects by neighboring ahupua'a in ethnographic records. No archaeological sites are noted in Waimano ahupua'a by McAlister (1933). Sterling and Summers (1978:16) note only three references to Waimano the most descriptive of which is from Archibald Campbell. Campbell relates that he received from the King, sixty acres of land called "Wymannoo" (Waimano) on Pearl Harbor; that it is four or five miles from the mouth of a river. Although this locational information is confusing in that Waimano Stream does not enter Pearl Harbor, but joins Waiawa stream well inland, it does suggest the prior existence of agriculture well inland in



Fig. 4 View of Waimano Stream Valley Facing Mauka from Study Area.

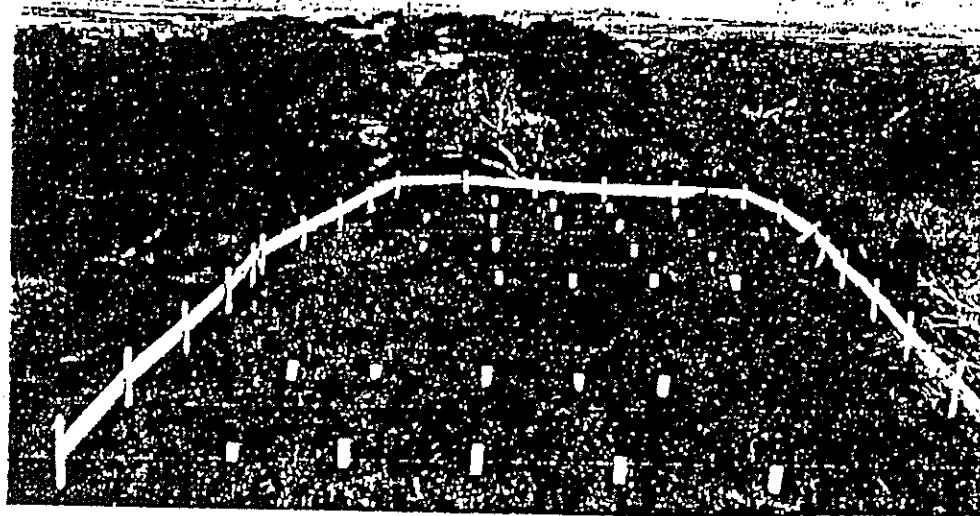


Fig. 5 View of Waimano Stream Valley (to right) and Study Area Plateau. Facing Makai.

Area Plateau. Facing Makai.

the valleys. This is confirmed by agricultural and habitation sites located in two surveys of the Waimano Stream bed by Griffin and Yent (1978 and 1979).

Early agriculture is also supported indirectly by use of the Waimano Valley floor for growing sugar cane evidenced by notations on the 1924 Territory of Hawaii Survey Map (R.M. 2715) (Fig. 6) and physical remains of a railroad bed and plowed fields in the valley (Griffin and Yent 1979). Further evidence of upland agriculture can be gleaned from the missionary census (Schmitt 1973:22) that records in 1835 a population of 184 people in (upland) Manananui (Handy 1940:81).

Current U.S.G.S. maps apparently show the west boundary of Waimano ahupua'a incorrectly, as not including any part of the Pearl City peninsula in Pearl Harbor. Territory of Hawaii Survey Maps of 1924 (R.M. 2715) however, show that the peninsula was divided between Manana ahupua'a on the west and Waimano ahupua'a on the east. The majority of the population probably lived in this area near the shore of the lagoon.

This contention that the majority of the population was distributed near the shore of Pearl Harbor is supported by a number of data including the location of the ten land commission awards (tax maps of Zone 9 Section 7) assigned in Waimano ahupua'a. Nine are located near the lagoon below 100 ft. elevation. The 10th, being an award of Kula lands immediately mauka of the near shore taro lands, at about 100 ft. to 400 ft.

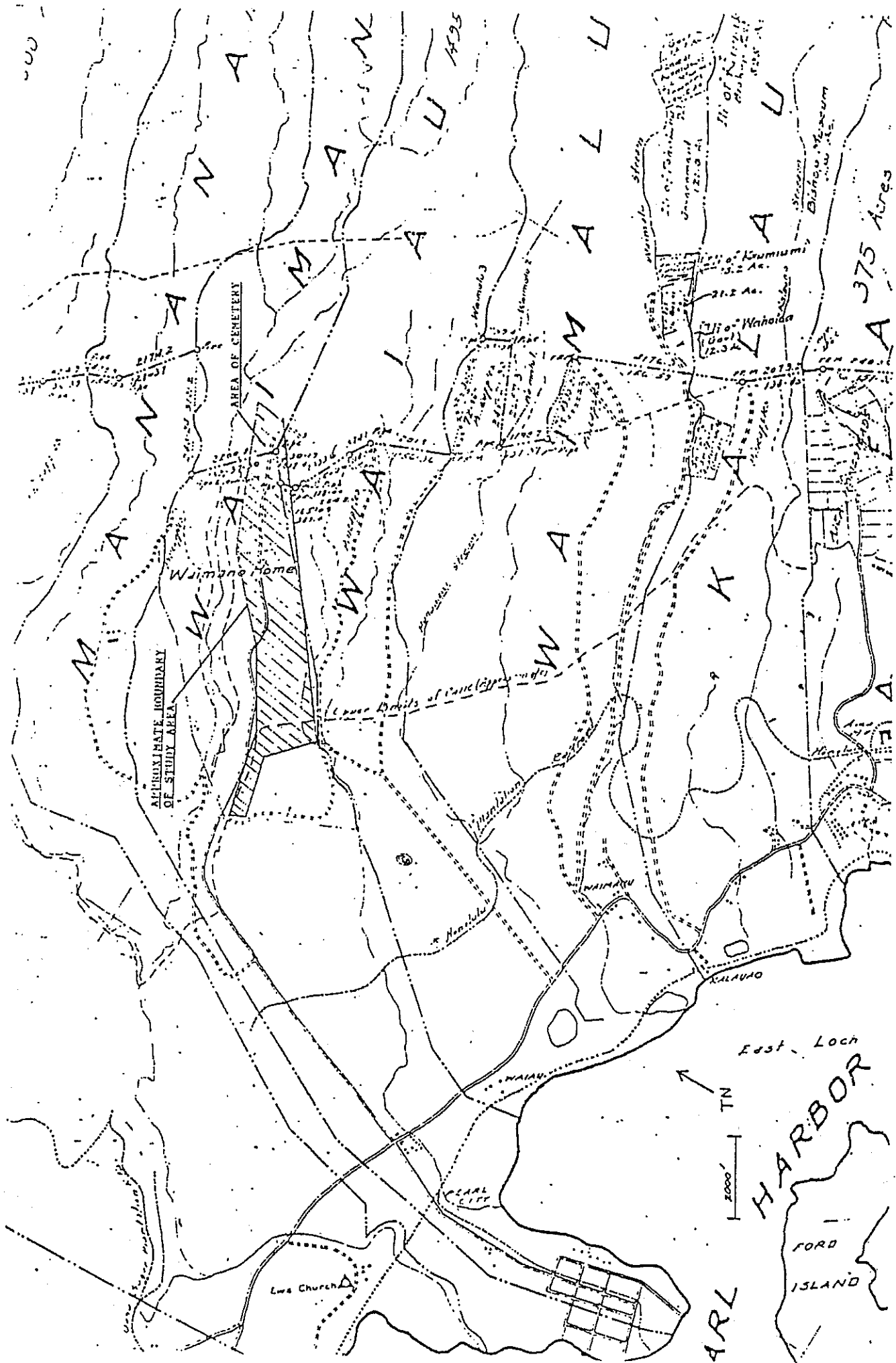


Fig. 6 Portion of 1924 Territory of Hawaii Survey Map (RM 2715).

elevation, was awarded to the foreigner Stevenson (Indices of Awards 1929). Furthermore, the 1924 Territory Survey map shows continuous agricultural plots and fishponds in the area of the L.C. awards and on Pearl City peninsula. The configuration of the two streams in Waimano ahupua'a probably helped to divide the population where Waimano Stream supported a smaller upland community, and the unnamed stream from Waiiau ahupua'a supported the larger coastal community. The coastal community was more populous because, as Hammatt et. al. (1988:10) aptly put it, "Fresh water, good agricultural land and abundant sea food (emphasis added) were to be found around the north central portion of Pearl Harbor and this is where people liked to live." This is also the immediate area where the legendary shark chiefess, Kaahupahau was said to bathe (Sterling and Summers 1978), where Handy (1940) recorded irrigated terraces, and where John Papa Ii (1959:97) locates the main trail from Honolulu through the taro patches and maika fields of Waiiau "to Waimano, to Manana, and to Waiawa.

Industry

The advent of sugar cane cultivation in Waimano ahupua'a may have been as early as 1850 or as late as 1900, first as the Honolulu Sugar Plantation, then as the Honolulu Plantation Company and finally, after 1947, as part of the Oahu Sugar Company. By the 1940's virtually all the accessible ridge top plateaus from Red Hill to Waiawa and Waimano Streams, up to elevations of 1,000 ft. or more were under sugar cultivation by

the Honolulu Plantation company. (Conde and Best 1973:331). The upper reaches of some of these ridge plateaus were also planted in pineapple as shown on the 1924 Territory Survey Map (R.M. 2715). This map also shows buildings of the Waimano Home, already in existence in 1924 (Refer to Fig. 6)..

The 1924 Territorial Survey Map also shows an approximate upper limit of cane that appears to be at the lower boundary of the present study area. However, this line does not correlate with the field boundary lines shown on an undated map of the Honolulu Plantation Co. in Conde and Best (1973:331). Comparing the meanders and tributaries of Waiawa - Waimano streams on the plantation map to the current U.S.G.S. Topographical Map it appears plausible that Honolulu Plantation's field #34 was situated in the study area. In any event the study area was utilized by the sugar plantation to bring water to their fields. A dam at 636 ft. elevation in the Waimano Stream bed (mauka of the study area) collects water for the ditch that runs along the southeast side of the valley, tunneling through one ridge spur, and tops the study area plateau at about the 600' elevation contour mauka of the present day swimming pool (Refer to Fig. 3). This site (of the present day pool) was previously a reservoir of the plantation (personal communication). From the reservoir a formal ditch, constructed of hand dressed, basalt stones cemented with mortar using beach sand, proceeds makai upon the northwest side of the plateau (Figs. 7-9). The ditch presently appears to terminate within the Pearl City High School grounds.

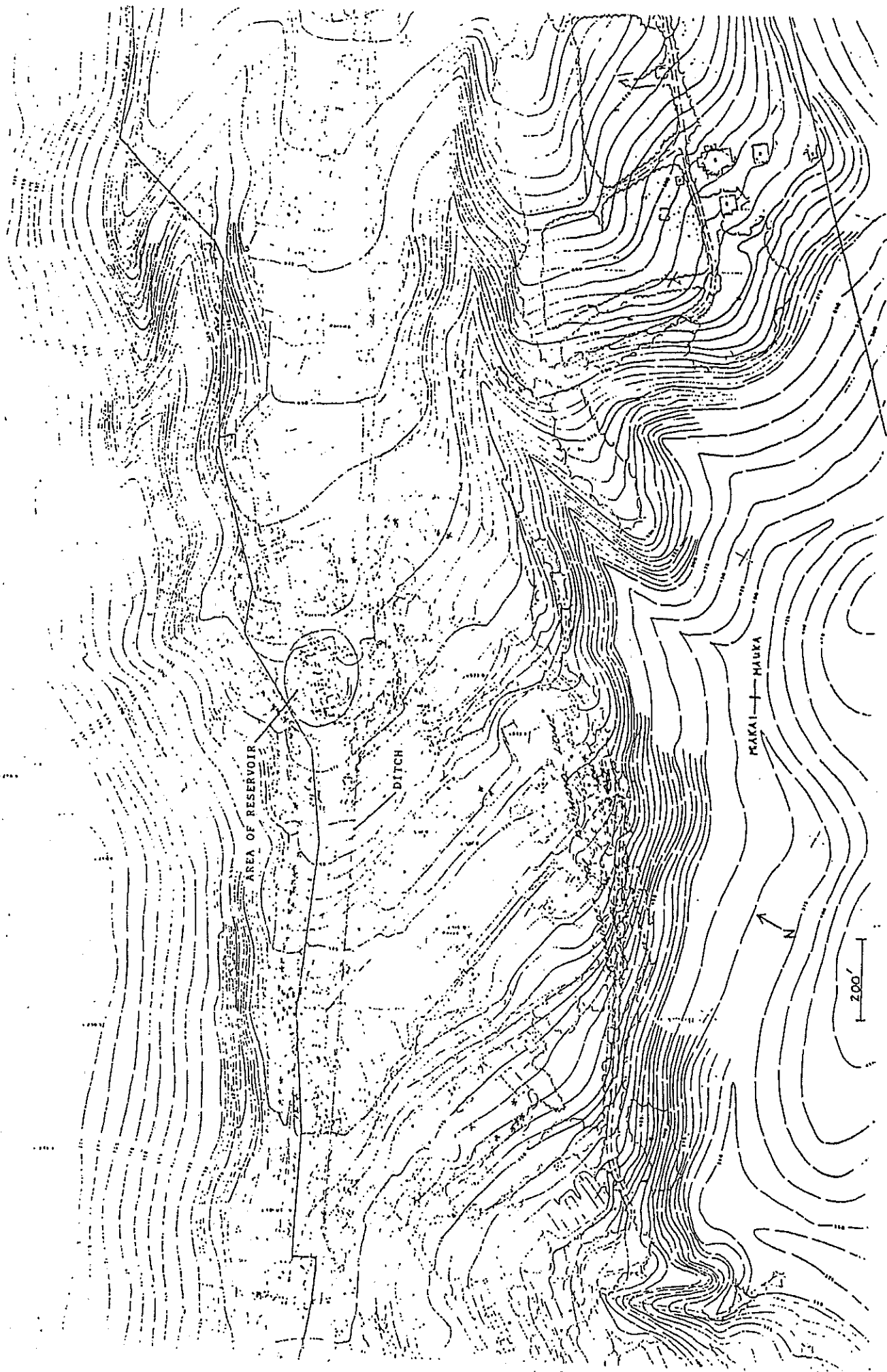


Fig. 7 Portion of Study Area, 5' Contours. Showing Reservoir Area and Ditch.

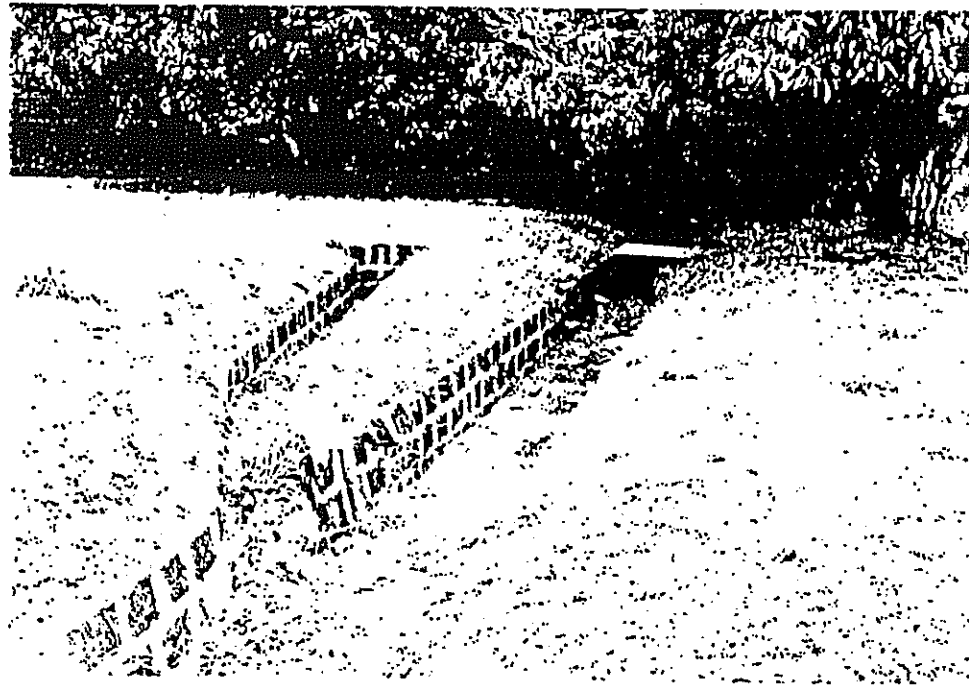


Fig. 8 Makai Portion of the Irrigation Ditch Showing Primary Ditch and Smaller South Branching Ditch

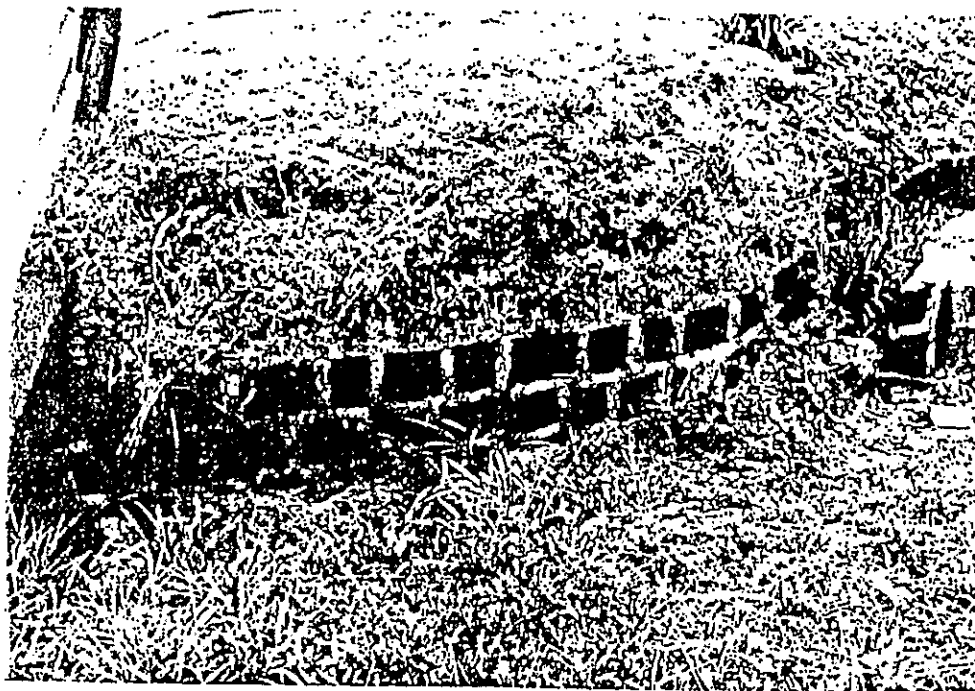


Fig. 9 View of South Side of Ditch Showing Road to Left and Smaller Branch to Right.

Previous Archaeology Within the Study Area

In 1989 Peter Jensen conducted an archaeological study of the proposed Test Laboratory site that is located within the boundaries of the Waimano Training School and Hospital project area, but is excluded from the present study report herein. No archaeological sites were found by Jensen and he concludes that no further archaeological work is needed in the Test Laboratory site.

RESULTS AND RECOMMENDATIONS

No traditional Hawaiian archaeological sites were located in the study area. It is very probable that this area was a part of the wao kele or wao kanaka, the inland and upland forest regions where people "may live or occasionally frequent" (Pukui and Elbert 1985). Used for its resources of flora and fauna. If isolated occupation sites did exist all surface traces of them have been obliterated by sugar cultivation and/or the building of the Waimano Home in 1919-1921. No Hawaiian archaeological sites were located by Jensen (1989) in the excluded Test Laboratory site. It is not expected that subsurface features or sites will be unearthed during construction. However, if sites are, unearthed, an archaeologist at the State Historic Sites Office should be contacted before construction work proceeds.

Only two items of historic interest were found during this study. The most prominent is the dressed-stone irrigation ditch. This ditch appears to be in good condition and is pleasing to the eye and it is, therefore, recommended that it be preserved within the proposed new landscape. Based on the National Register criteria for site significance this site is assigned the criterion code "C" (site is an excellent example of a site type). If preservation is not possible then the individual stones that makeup the ditch should be preserved and utilized in landscaping elsewhere, preferably in the Waimano School and Hospital project. A crude example of such usage is extant on the grounds along the parking lot entrance northwest of Waimano Home Road at the 765' elevation. (Figs. 10-11) These stones are of a similar type to



Fig. 10 Dressed Stones on Mauka side of Parking Lot Entrance.



Fig. 11 Dressed Stones on Makai side of Parking Lot Entrance

those used in the ditch and should be preserved or reused. Also as the technical expertise to produce this material is not readily available today as it was early in this century.

Finally, the graveyard on the ridge above the school buildings must be addressed (Fig. 12). It's somewhat remote and obscure location would seem to facilitate its remaining undisturbed, which is recommended. The National Register criterion code "E" (site has cultural significance. . . burials present) is assigned to this site. The ridge line in this area is generally less than 200' wide and seems best suited to be left as is.



Fig. 12 View of Graveyard, Facing West

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Appendix F

A Cultural Impact Analysis for the Waimano Training
School and Hospital Staff Relocation Project

Cultural Surveys Hawai 'i
July 2013

**A Cultural Impact Analysis for the Waimano Training
School and Hospital Staff Reallocation Project,
Waimano Ahupua‘a, ‘Ewa District, Island of O‘ahu**

TMK: (1) 9-7-025:001

**Prepared for
Kimura International, Inc.**

**Prepared by
Andrea Kay, M.Sc.
David Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: WAIMANO 6)**

July 2013

O‘ahu Office
P.O. Box 1114
Kailua, Hawai‘i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawai‘i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	A Cultural Impact Analysis for the Waimano Training School and Hospital Staff Reallocation Project, Waimano Ahupua'a, 'Ewa District, Island of O'ahu TMK: (1) 9-7-025:001 (Hammatt, Shideler and Kay 2013)
Date	July 2013
Project Number	WAIMANO 6
Agencies	State of Hawai'i Department of Health / Office of Environmental Quality Control (DOH / OEQC)
Project Location	The Waimano Training School and Hospital (WTSH) (2201 Waimano Home Road Pearl City, HI, 96782) was established in 1919 on approximately 265 acres of land above Pearl City residential neighborhoods.
Land Owner	State of Hawai'i
Project Description	<p>The Waimano Training School and Hospital Staff Reallocation Project will renovate the old hospital, kitchen and dining building and Uluapuku, an existing structure currently used as an office by Lanakila Health. There will be some trenching for infrastructure and grading for new parking lots adjacent to the existing buildings; and these parking lots will be on sites where old structures were recently demolished.</p> <p>This Cultural Impact Analysis is a review of previous research on site and in the general vicinity, in order to evaluate the cultural impact, if any, of the planned work. The facility is fenced off from public access, therefore no interviews were conducted. A field inspection was conducted on July 26, 2013 in order to photograph and assess the condition of the grounds and locate the features identified in a previous archaeological report (Folk 1990).</p>
Project Area and Reallocation Areas Acreages	While the WTSH includes the entire 244 acre TMK parcel, the Reallocation Area(s) are estimated at 2.34 acres in three discontinuous sections.
Document Purpose	The document is intended to support the project's environmental assessment review.
Recommendations	<p>No cultural impact.</p> <p>5 m buffers around plantation era irrigation ditch and re-used stone alignment.</p>

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 Project Background	1
1.2 Environmental Setting	6
1.2.1 Natural Environment.....	6
1.2.2 Built Environment	11
Section 2 Traditional and Historic Background	12
2.1 Traditional Background	12
2.1.1 Ka‘ahupāhau, the Queen Shark of O‘ahu	12
2.1.2 The Eel Boy of Pilimo‘o.....	12
2.1.3 The Pearl City Stone.....	12
2.1.4 Pōhaku ‘Anae.....	12
2.2 Historical Background	12
2.2.1 Pre-Contact and Early Post-Contact Periods	12
2.2.2 Observations of Early Explorers and Foreign Residents	15
2.2.3 Mid-Nineteenth Century and the Māhale	17
2.2.4 Mid- to late-1800s.....	17
2.2.5 1900 to Present	19
Section 3 Previous Archaeological Research	23
3.1 Within the Current Project Area	23
3.2 Near the Current Project Area	23
3.3 Background Summary and Predictive Model.....	27
3.3.1 Human Burials.....	27
Section 4 Cultural Practices and Features of the Landscape.....	28
4.1 Hawaiian Habitation and Agriculture	28
4.2 Gathering of Plant Resources	28
4.3 Freshwater Resources	29
4.4 Cultural Properties and Burials.....	29
4.5 Hawaiian Trails.....	29
4.6 <i>Wahi Pana</i> (Storied Places)	29
Section 5 Summary and Recommendations	33
Section 6 References Cited	35

List of Figures

Figure 1. Portion of US Geological Survey map, Waipahu quadrangle, showing project area.....	2
Figure 2. Aerial view of project area (source: USGS Orthoimagery 2005)	3
Figure 3. Tax map showing project area.....	4
Figure 4. Client provided schematic of Project Area and specific buildings to be reallocated	5
Figure 5. Aerial view of project area (source: USGS Orthoimagery 2005) showing streams.....	8
Figure 6. Soil survey (Foote et al. 1972) map showing Project Area	9
Figure 7. Overgrown swing set in front of B-6 and B-7; view to the south	10
Figure 8. Hospital and surrounding buildings; view to the west from upper gate of Waimano Home Road	10
Figure 9. Project area in relation to leeward trail network as mapped by Paul Rockwood, based on 'Ī'ī's description ('Ī'ī 1959:96).....	14
Figure 10. Malden's 1825 map of the south coast of O'ahu showing cultivation around Pearl Harbor and the Project Area to the north.....	16
Figure 11. Map of Honolulu Sugar Co. lands showing project area.....	18
Figure 12. 1954 USGS Topographic map showing Project Area, Reallocation Areas and the abandoned irrigation ditch	21
Figure 13. 1978 USGS Orthophoto showing Project Area, Reallocation Areas and the progress of development.....	22
Figure 14. Previous archaeological and ethnographic studies in the vicinity of the current Project Area	26
Figure 15. Irrigation ditch with Uluakupu Building in the background; view to the southwest ...	30
Figure 16. Re-used stone alignment in front of B-9; view to the north.....	30
Figure 17. Cemetery, with Waimano Home buildings in background and Waimano Stream Valley at right (Folk 1990:6); view to the west	31
Figure 18. Cemetery (Folk 1990:17); view to the west	31
Figure 19. Stitched photos showing the Hospital Building at right and the Kitchen and Dining Building at left; view to the north.....	32
Figure 20. Map of Project Area and Reallocation Areas showing previously identified features recommended for preservation	34

List of Tables

Table 1. Previous Archaeological Research in Waimano and in the Vicinity of the Project
Area.....25

Section 1 Introduction

1.1 Project Background

The Waimano Training School and Hospital (WTSH) (2201 Waimano Home Road Pearl City, HI, 96782) was established in 1919 on approximately 244 acres of land above Pearl City residential neighborhoods. This area is shown below on a USGS map (Figure 1), an aerial photo (Figure 2), and a TMK map (Figure 3). The hospital has been described as “an institutional incarceration facility” (*Honolulu Magazine* November 2009) for people with developmental disabilities. The hospital, which was originally known as the Waimano Home for the Feebleminded, was shuttered in 1999 following years of rumors about inappropriate conditions and questionable patient treatment.

Today, the medical facility hosts a number of state organizations and programs: The old Waimano Training School and Hospital was renovated and is being used by the Department of Public Safety. Other buildings house Department of Health (DOH) offices, the DOH Laboratory facility, Mental Health Transformation State Incentive Grant offices and a juvenile sex offender program. The oldest extant structures are understood to have been built in the mid-1930s, and the newest, Hale Aloha, was built in 1977.

The Waimano Training School and Hospital Staff Reallocation Project will renovate the old hospital, kitchen and dining building and Uluapuku, an existing structure currently used as an office by Lanakila Health (Figure 4). There will be some trenching for infrastructure and grading for new parking lots adjacent to the existing buildings; and these parking lots will be on sites where old structures were recently demolished.

This Cultural Impact Analysis is a review of previous research on site and in the general vicinity, in order to evaluate the cultural impact, if any, of the planned work. This project does not address the adaptive re-use of the buildings or historic architecture concerns. The facility is fenced off from public access, therefore no interviews were conducted. A field inspection was conducted on July 26, 2013 in order to photograph and assess the condition of the grounds and locate the features identified in a previous archaeological report (Folk 1990).

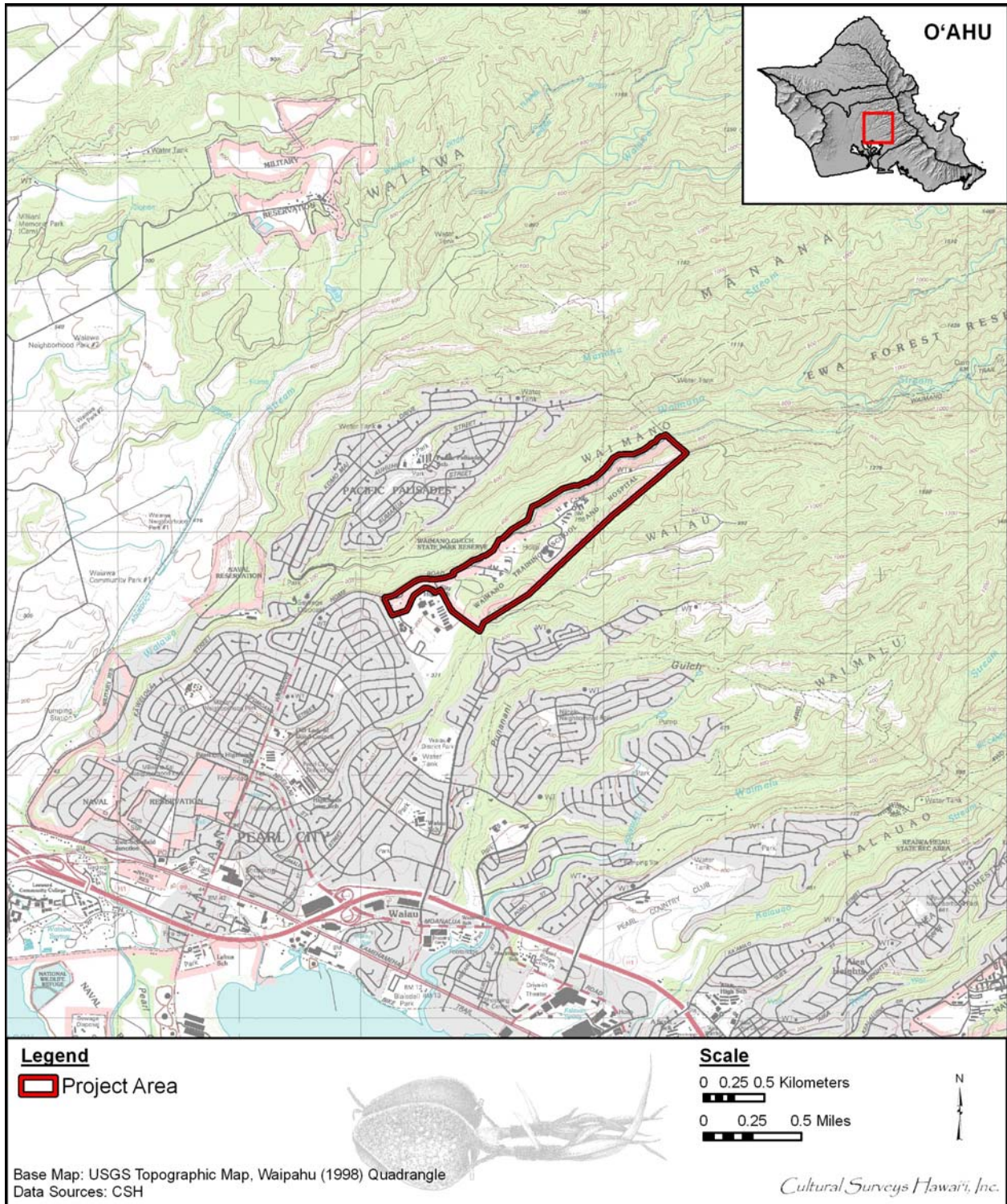


Figure 1. Portion of US Geological Survey map, Waipahu quadrangle, showing project area

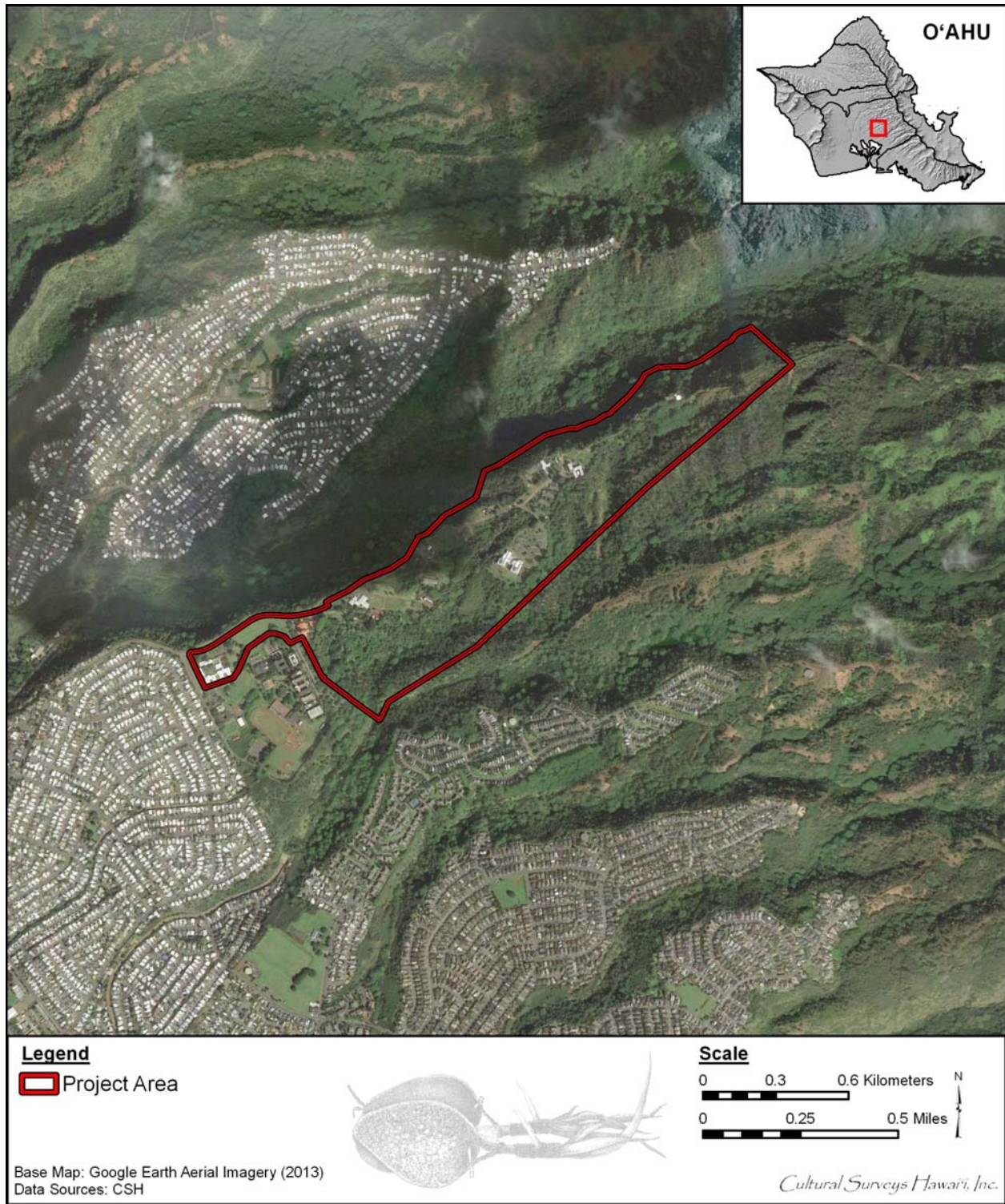


Figure 2. Aerial view of project area (source: USGS Orthoimagery 2005)

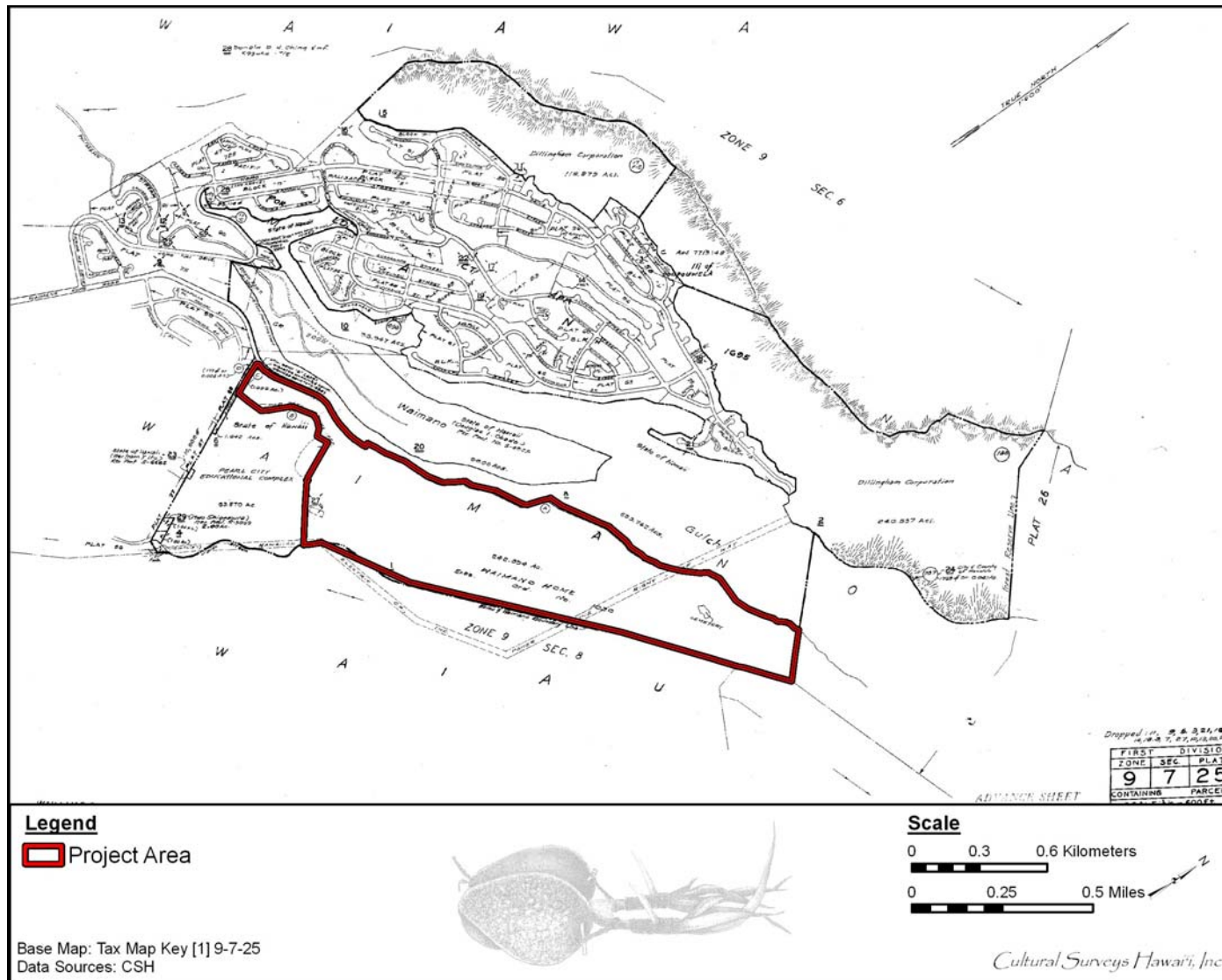


Figure 3. Tax map showing project area

Cultural Impact Analysis for the Waimano Training School and Hospital Staff Reallocation Project, Waimano Ahupua'a, Ewa District, Island of O'ahu

TMK: (1) 9-7-025:001

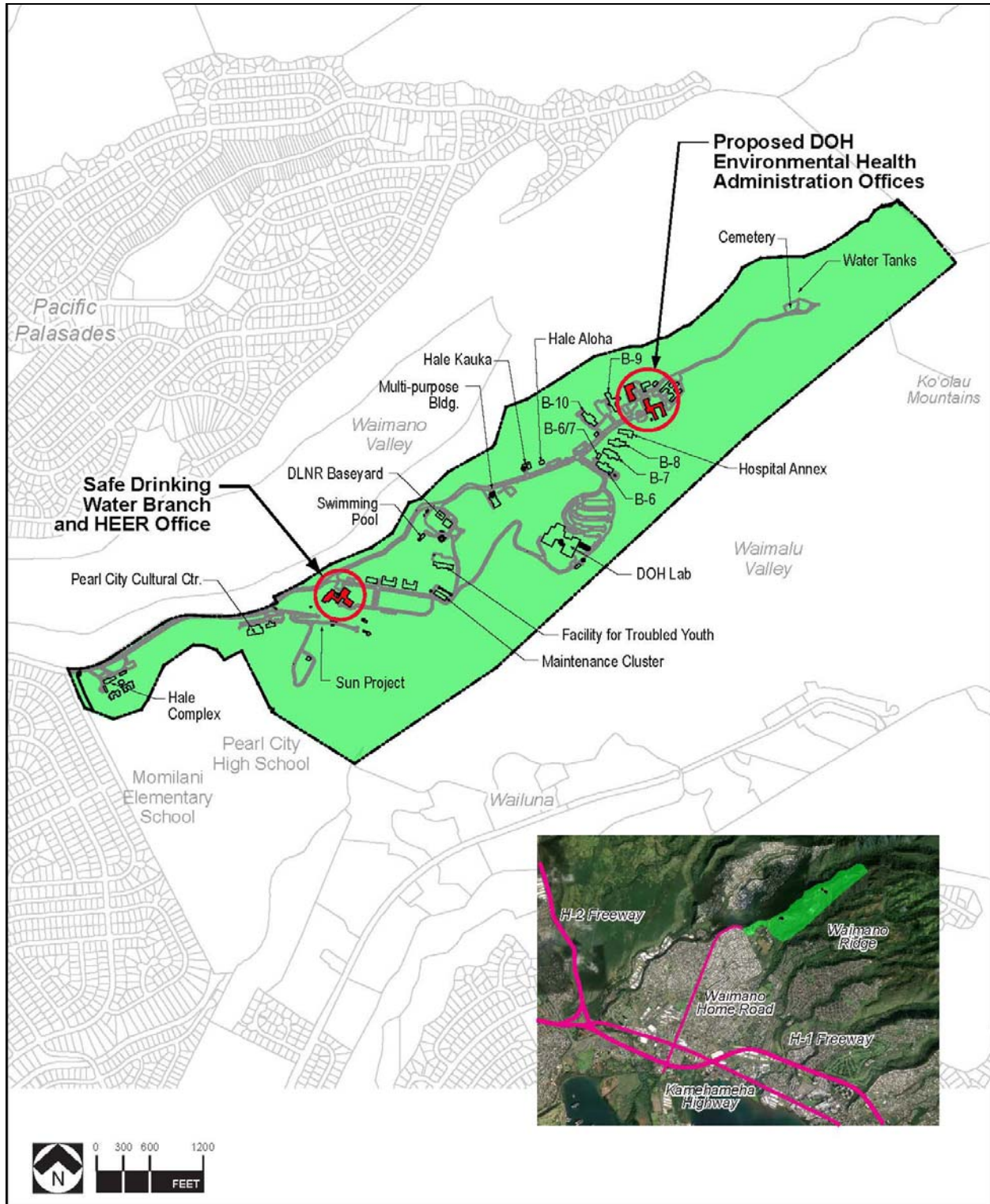


Figure 4. Client provided schematic of Project Area and specific buildings to be reallocated

1.2 Environmental Setting

1.2.1 Natural Environment

Waimano Ahupua‘a in Ewa District is translated literally as “many waters” (Pukui, Elbert and Mookini 1989:225; Thrum 1922:673). The significance of this translation is not apparent in terms of stream flow within the boundaries of the ahupua‘a. Although two streams are associated with the ahupua‘a, neither has their entire course within it (Figure 5).

The first of these, bearing the name Waimano Stream on current U.S.G.S. maps, originates at the summit of the Ko‘olau range within Waimano Ahupua‘a and has only two major tributaries whose confluence is above 120 m (400 ft) elevation. *Mauka* of this elevation in the stream bed, the stream valleys are V-shaped, steeply rising to knife edged ridges clearly unsuitable to Hawaiian settlement of any magnitude. Old terraces in the stream bottoms may have been used for planting food crops in the past. However, it is very unlikely that the ridges above, at elevations of 300 m (1,000 ft) and more, were used for anything other than collecting the natural products of the forest.

Below the 120 m (400 ft) elevation in the stream bed, Waimano Stream travels a horizontal distance of only 2438 m (8,000 ft) before it passes out of Waimano Ahupua‘a, 3.3 km (2 miles) from the shore, crossing Manana Ahupua‘a towards its confluence with Waiawa Stream. Within that 2438 m (8,000 ft) section, the old stream terraces are wider and flatter than the valley bottom, with a very low gradient, and more amenable to traditional Hawaiian agriculture. It is also in this same stretch that the ridge tops, at about 243 m (800 ft) elevation, become flatter and broader as rainfall decreases to 1270 to 1905 mm (50 to 75 in) per year. It is upon this plateau, of the ridge forming the south east side of Waimano Stream, that the study area is situated.

The second stream associated with Waimano Ahupua‘a originates in the Ko‘olau in Waiiau Ahupua‘a and enters Waimano Ahupua‘a from the south east about 2.4 km (1.5 mi) from the shore of Pearl Harbor at an elevation of approximately 91 m (300 ft) This stream is unnamed on the U.S.G.S. map and is intermittent. It flows into the east loch of Pearl Harbor within Waimano Ahupua‘a just east of Pearl City peninsula.

The Project area lies along Waimano Ridge from approximately 300 m (1,000 ft) elevation in the northeast corner down to approximately 97 m (320 ft) elevation at the southeast corner. This area receives approximately 1500 mm (59 in) of rainfall per year (Giambelluca *et al* 1986) and encompasses a range of soil types (Figure 6): Helemano silty clay, 30 to 90 percent slopes (HLMG); Manana silty clay loam, 2 to 6 percent slopes (MoB); Manana silty clay loam, 6 to 12 percent slopes (MoC); Wahiawa silty clay, 0 to 3 percent slopes (WaA); Wahiawa silty clay, 3 to 8 percent slopes (WaB); Wahiawa silty clay, 8 to 15 percent slopes (WaC); and Fill land (FL). Soils of the Helemano series consist of:

... well-drained soils on alluvial fans and colluvial slopes on the sides of gulches. These soils are on the island of Oahu. They developed in alluvium and colluvium derived from basic igneous rock. They are steep to extremely steep. Elevations range from 500 to 1,200 feet [152 to 365 m]. The annual rainfall dominantly

amounts to 30 to 60 inches [762 to 1524 mm] but ranges to 75 inches [1905] at the highest elevations. (Foote et al 1972:40)

While the Helemano series soils are generally used for pasture or woodland and wildlife habitat (Foote *et al* 1972:40), soils of the Manana and Wahiawa series are used for sugarcane, pineapple, and pasture. Both series consists of well-drained soils on uplands on the island of Oahu. The soils of the Manana series:

... developed in material weathered from basic igneous rock. They are gently sloping to steep. Elevations range from 500 to 1,200 feet [152 to 365 m]. The annual rainfall amounts to 40 to 60 inches [1016 to 1524 mm]. It is well distributed throughout the year. (Foote et al 1972:94)

Soils of the Wahiawa series:

... developed in residuum and old alluvium derived from basic igneous rock. They are nearly level to moderately steep. Elevations range from 500 to 1,200 feet [152 to 365 m]. Rainfall amounts to 40 to 60 inches [1016 to 1524 mm] annually; most of it occurs between November and April. (Foote *et al* 1972:124)

The area of Fill land coincides approximately with the lower portion of the facility; beginning near the security gate and extending up the ridge as far as the DLNR Baseyard. The Uluapuku Building portion of the project area is entirely within this fill area, while the other two buildings are higher up the ridge on an area of Manana silty clay loam (MoB).

Vegetation within the project area (Figure 7) consists of an overgrown collection of exotic grasses, vines and trees including Albizia, as well as closely cropped lawns. The ridge above the project area, however, contains some native species such as *lama*, *koa*, *uluhe* ferns, *'ōhi'a 'ai*, *naupaka*, *pū'ahanui*, *kōpiko* and *'ōhi'a* (Ball 2000:113-114).

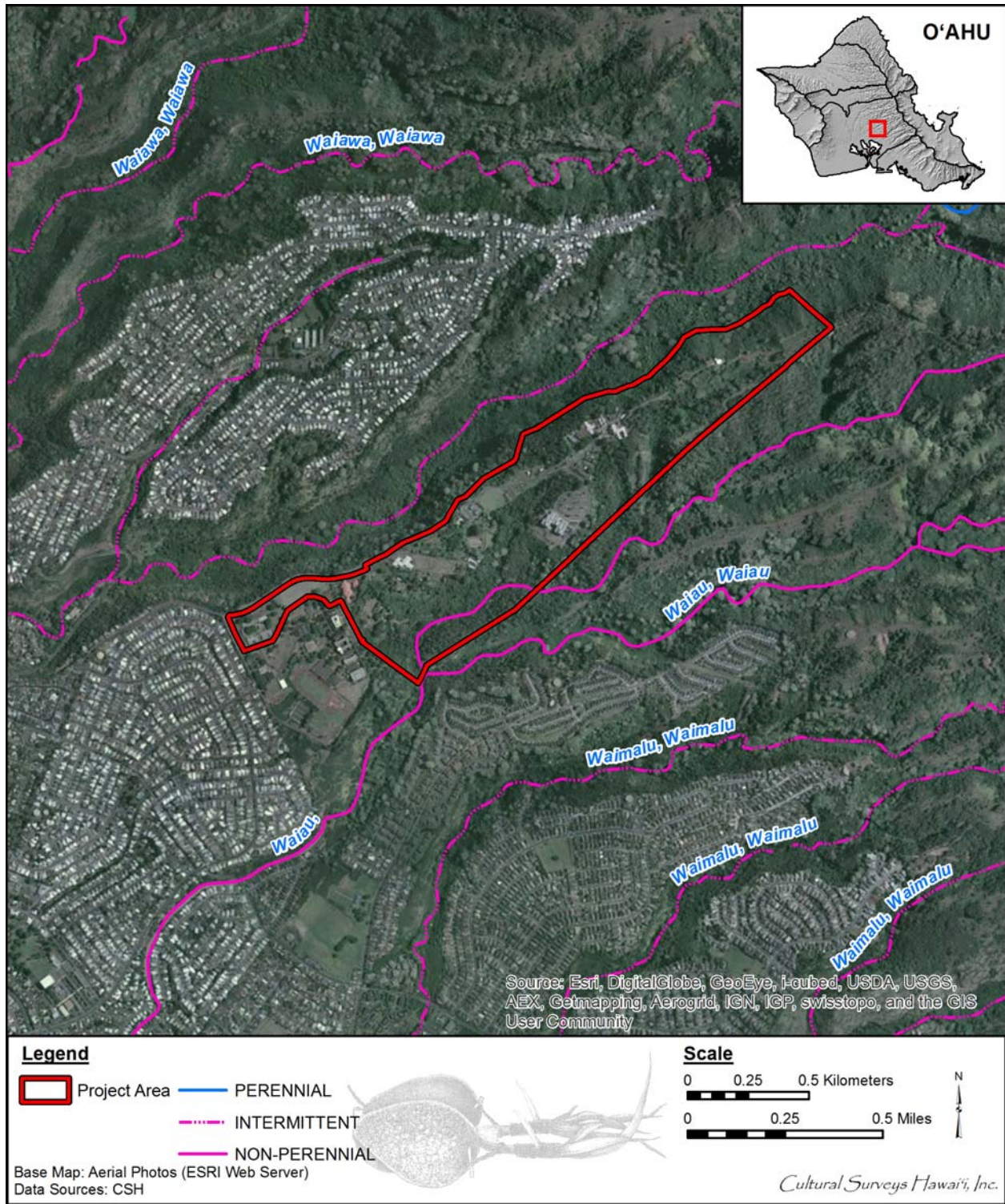


Figure 5. Aerial view of project area (source: USGS Orthoimagery 2005) showing streams

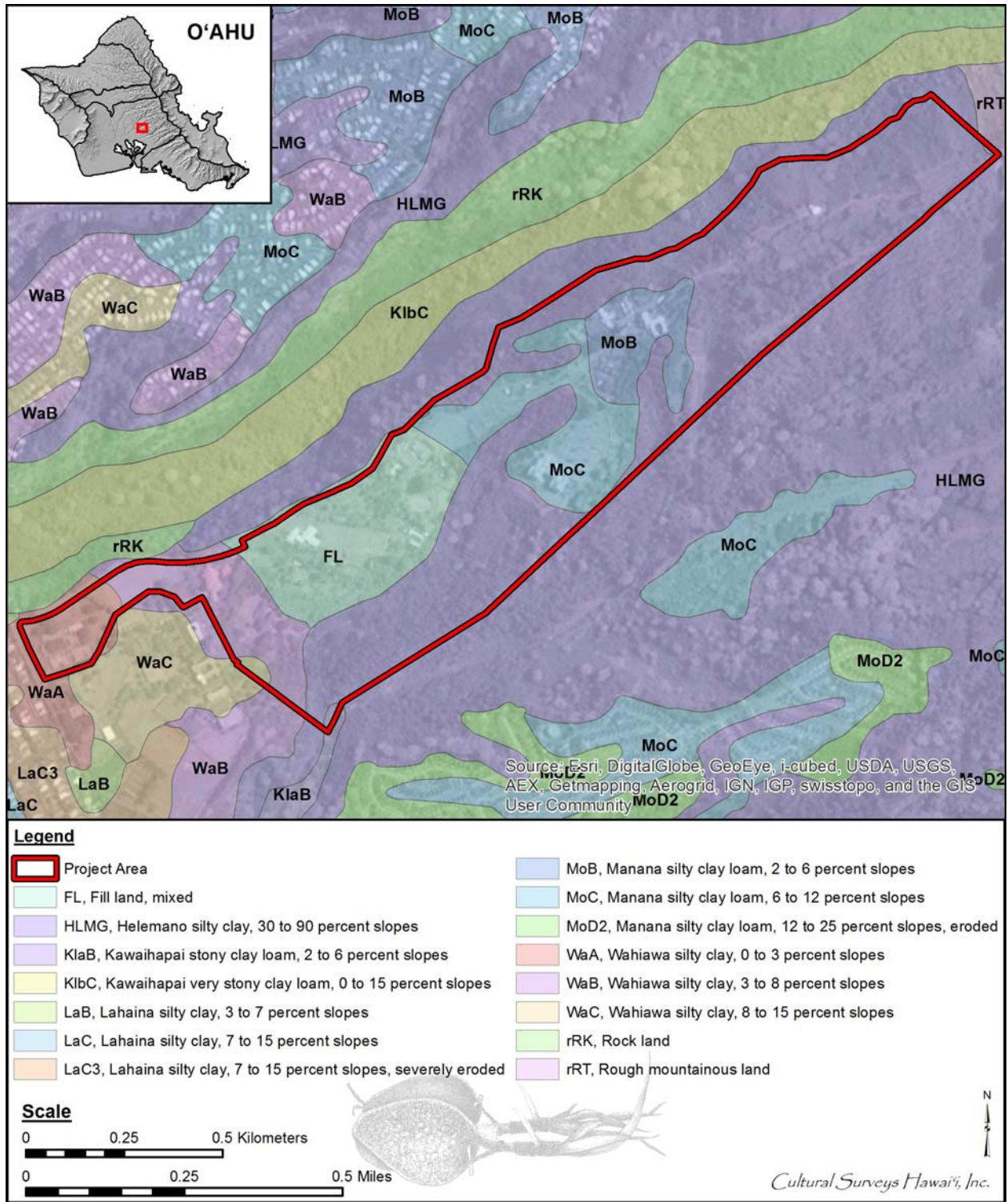


Figure 6. Soil survey (Foote et al. 1972) map showing Project Area



Figure 7. Overgrown swing set in front of B-6 and B-7; view to the south



Figure 8. Hospital and surrounding buildings; view to the west from upper gate of Waimano Home Road

1.2.2 Built Environment

Numerous historic and modern structures are extant on the grounds, most of which are associated with the many incarnations of the Waimano Home facility (Figure 8). The oldest extant structures are understood to have been built in the mid-1930s, and the newest, Hale Aloha, was built in 1977. Pearl City High School, founded in 1971, abuts the southwest edge of the project area. Waimano Home Road runs almost the entire length of the project area, turning to dirt near the top. It is clear from the topography that the majority of this area has been previously graded.

Section 2 Traditional and Historic Background

2.1 Traditional Background

The word Waimano literally translates to ‘many waters’ (Pukui, Elbert and Mookini 1989:225; Thrum 1922:673). Most of the Waimano *mo‘olelo* concern the coastal area at Pearl Harbor, not the uplands of the current project area. These traditions include accounts of: Ka‘ahupāhau, the Queen Shark of O‘ahu; The Eel Boy of Pilimo‘o; The Pearl City Stone; and Pōhaku ‘Anae.

2.1.1 Ka‘ahupāhau, the Queen Shark of O‘ahu

Legendary traditions of Waimano and Pearl Harbor are closely associated with Ka‘ahupāhau and other shark *‘aumakua*, guardian spirits for specific Hawaiian families or clans (*Ke Au ‘Oko‘a* April 7, 1870; Pukui 1943; Pukui 1983; Kamakau 1991a; Pukui and Green 1995).

2.1.2 The Eel Boy of Pilimo‘o

Sterling and Summers (1978:16-17) provide an account of the legend of the eel boy of Pilimo‘o. Children would swim without fear of danger in a pool in Pearl City. However, a man-eating shark soon discovered a tunnel leading to the pool and was able to access it at will. The gods changed a boy into a small eel, so that he could live in the depth of the pool and warn the children of danger by whistling (Makahonu Naumau (informant) May 22, 1940, Hawaiian Ethnographic Notebook v. 1:1595, in Sterling and Summers 1978:17).

2.1.3 The Pearl City Stone

The Pearl City Stone myth (Sterling and Summers 1978:17) tells about a supernatural rock that once stood where the Pearl City Mormon Church was once located. The men who moved it sickened and died. Years later, the roadway was widened and the stone was blasted (Makahonu Naumau (informant) May 22, 1940, Hawaiian Ethnographic Notebook v. 1:1592, in Sterling and Summers 1978:17).

2.1.4 Pōhaku ‘Anae

There is also a famous *pōhaku*, or rock shrine, associated with the traveling mullet of Pearl City: Mulletts were bred in the ancient times and a flat stone near the beach by Ewa mill was called Mullet Rock or Pōhaku ‘Anae (Ka Nūpepa Kū‘oko‘a, Oct. 2, 1908, from Sterling and Summers 1978:53).

2.2 Historical Background

2.2.1 Pre-Contact and Early Post-Contact Periods

By circa A.D. 1320, ‘Ewa, along with Kona, and Ko‘olaupoko were the dominant polities, ruled by the sons of a chief named Māweke (Cordy 2002:21). ‘Ewa at this time included the traditional districts of ‘Ewa, Wai‘anae, and Waialua (Fornander 1880:48). Around A.D. 1400,

the entire island was ruled by King La'akona; chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center in Līhu'e, in 'Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line; he was slain by his men at the fortress of Waewae near Līhu'e (Kamakau 1991b:54; Fornander 1880:88).

Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs, then the 'Ewa chiefs, and then expanding his control on windward Kaua'i. Peleiholani, the heir of Kūali'i, gained control of O'ahu circa 1740, and later conquered parts of Moloka'i. He ruled O'ahu until his death circa 1778 when Kahahana, of the 'Ewa line of chiefs was selected as the ruler of O'ahu (Cordy 2002:24-41).

The primary reason for 'Ewa's prominence in history and as an *ali'i* stronghold was undoubtedly the existence of the great number of fishponds at different points around Pearl Harbor, which was 'Ewa territory (Handy and Handy 1972:470).

'Ewa was also known for a rare variety of taro, *kai taro*. Referred to as *kai o 'Ewa*, the taro was native to 'Ewa and delicious. Handy and Handy (1972:471) detail an 1899 description of extensive taro mounds in the 'Ewa wetlands. The *kai* variety of taro sent out so many shoots, one planting reproduced itself for as many as ten years.

Other resources also promoted settlement of the 'Ewa district:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the 'awa for which the area was famous. The length or depth of the valleys and the gradual slope of the ridges made the inhabited lowlands much more distant from the wao, or upland jungle, than was the case on the windward coast. Yet the wao here was more extensive, giving greater opportunity to forage for wild foods in famine time. (Handy and Handy 1972:469)

John Papa 'Ī'ī described a network of Leeward O'ahu trails, which in historic times encircled and crossed the Wai'anae Range, by three different trails ('Ī'ī 1959:96-98). The coastal trail branched north near Kunia and ran to Wai'anae by way of Pōhākea. Following 'Ī'ī's description, the closest portion of the coastal trail would have passed near today's Farrington Highway, approximately 2 km south of the project area (Figure 9).

The trail is described by 'Ī'ī as:

The trail went down to the stream and up again, then went above the taro patches of Waiau, up to a makai field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other makai fields, Pueohulunui and Haupuu. At Pueohulunui was the place where a trail branched off to go to Waialua and down to Honouliuli and on to Waianae. As mentioned before, there were three trails to Waianae, one by way of Pu'u o Kapolei, another by way of Pohakea, and the third by way of Kolekole. ('Ī'ī 1959:97)

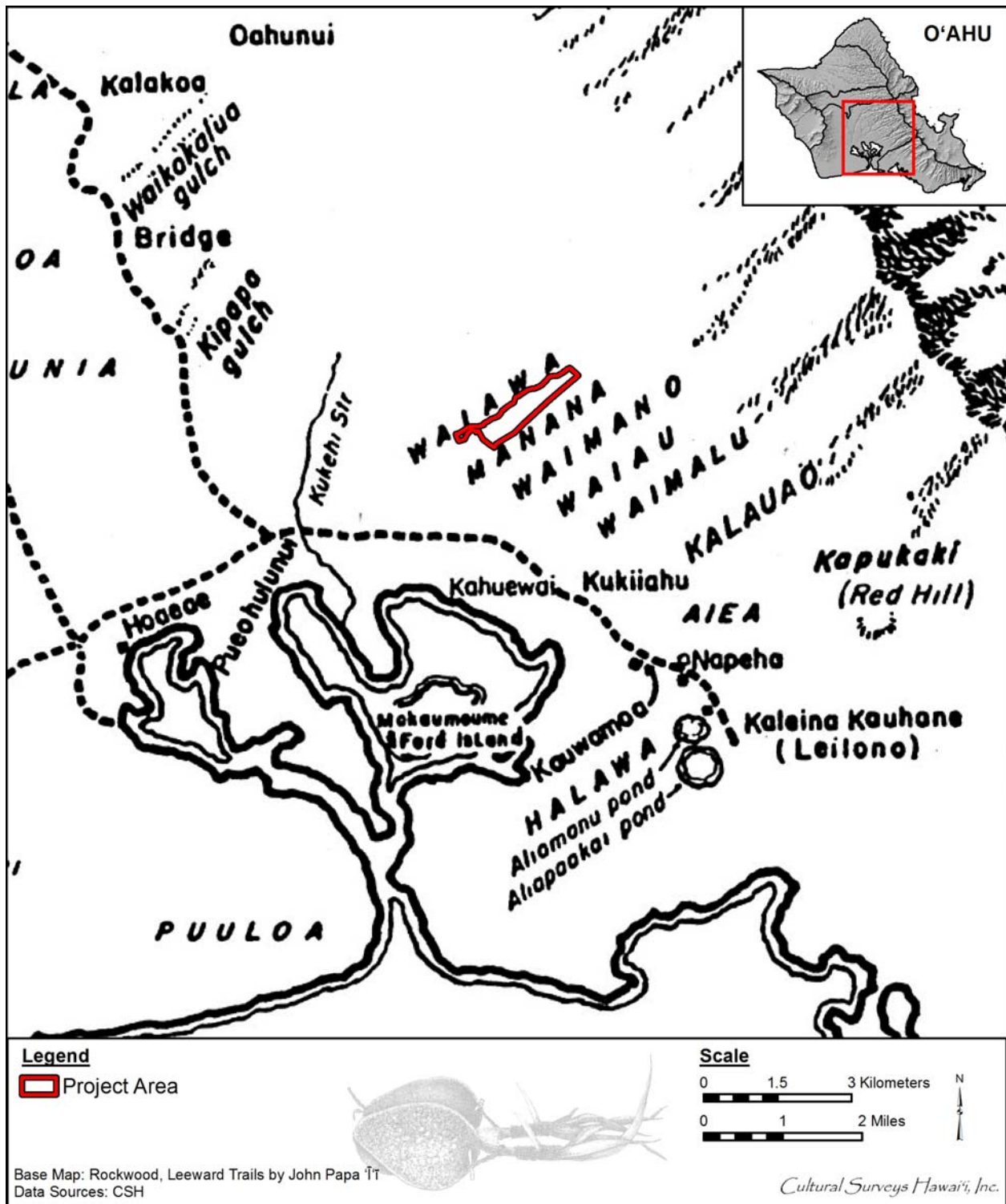


Figure 9. Project area in relation to leeward trail network as mapped by Paul Rockwood, based on Īi's description (Īi 1959:96)

2.2.2 Observations of Early Explorers and Foreign Residents

During the first decades of the 19th Century, several western visitors described the 'Ewa landscape near Pearl Harbor. Archibald Campbell, an English seaman, received 60 acres in Waimano Ahupua'a from King Kamehameha in 1809. Campbell described his land:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymummee [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroorā [Honolulu]. . . . We passed by footpaths winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains are covered with wood to a great height. . . . My farm, called Wymannoo [Waimano], was upon the east side of the river, four or five miles from its mouth. Fifteen people with their families resided upon it, who cultivated the ground as my servants. There were three houses upon the property; but I found it most agreeable to live with one of my neighbours, and get what I wanted from my own land. This person's name was William Stevenson a native of Borrowstouness. (Campbell 1967:103-104)

Lieut. C.R. Malden from the British ship the *Blonde* mapped the south coast of "Woahoo" (O'ahu) in 1825 (Figure 10). The map shows cultivation within and adjacent to the project area. The botanist F.J.F. Meyen, visiting in 1831, also confirms the abundant vegetation described by Campbell in the vicinity of Pearl Harbor:

At the mouth of the Pearl River the ground has such a slight elevation, that at high tide the ocean encroaches far into the river, helping to form small lakes which are so deep, that the long boats from the ocean can penetrate far upstream. All around these water basins the land is extraordinarily low but also exceedingly fertile and nowhere else on the whole island of Oahu are such large and continuous stretches of land cultivated. The taro fields, the banana plantations, the plantations of sugar cane are immeasurable. (Meyen 1981:63)

Protestant missionaries traveled throughout the Hawaiian Islands beginning in 1831 to provide the earliest record of the native population after the first decades of western contact. The 1831-32 census of O'ahu recorded a population of 4,015 within the 'Ewa district. In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). By 1836, the 'Ewa population had dropped to 3,423 (Schmitt 1973:9, 36).

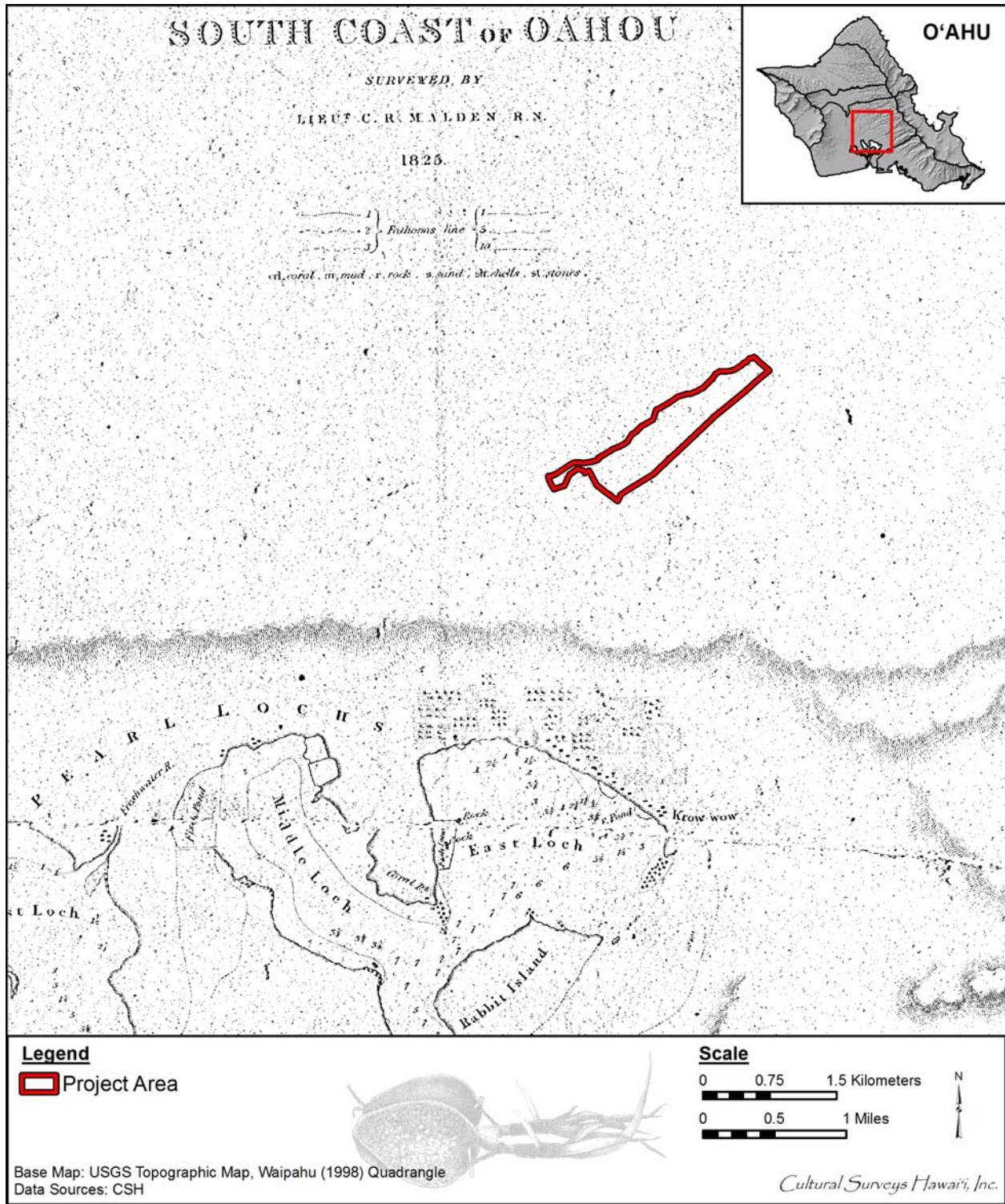


Figure 10. Malden's 1825 map of the south coast of O'ahu showing cultivation around Pearl Harbor and the Project Area to the north

2.2.3 Mid-Nineteenth Century and the Māhale

The Organic Acts of 1845 and 1846 initiated the process of the Māhale, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848 the crown, the Hawaiian government, and the *ali'i* (royalty) received their land titles. Waimano and Waiawa were awarded to Victoria Kamāmalu, daughter of Mataio Kekuanaoa and sister of Kamehameha IV and Kamehameha V. Subsequently in the *Māhale*, LCAs for *kuleana* (tenant) parcels were given to commoners and others who could prove residency on and use of the parcels they claimed. Twelve LCAs were claimed in Waimano during the Māhale, all of which were near the shores of Pearl Harbor or not in any proximity to the current Project Area.

2.2.4 Mid- to late-1800s

King Kalākaua signed the 1876 Treaty of Reciprocity or Annexation ceding the Pearl River to the United States. The U.S. Navy subsequently took control of the area and dredged the river to create a viable harbor (Ellis 1995:20-22).

Although sugar cane was already being grown as far back as the early 1800s, the industry revealed its economic potential in 1879 when the first artesian well was drilled in 'Ewa (Ellis 1995:22). The availability of subsurface water resources enabled greater irrigation possibilities for expanding plantations besides the use of water diversions from the surrounding stream systems. This prompted the drilling of many other wells amongst the Hawaiian Islands, thereby commencing the Hawai'i sugar plantation era. By the early 1900s, the entire main Hawaiian Islands had land devoted to the production of sugar cane.

In 1886, Campbell and B.F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1887:74). This homestead idea failed; two factors for the failure were the lack of water and the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale cultivation (Pagliaro 1987:4). The transportation problem was solved by the construction of a railroad, which B.F. Dillingham soon began to finance as OR&L.

By 1889, the OR&L had completed its first nine miles of railway. It connected the wharves at the Honolulu Harbor to Hālawā and the agricultural coastline of Pearl Harbor. O'ahu's 'Ewa Plantation was incorporated in 1889 and the growing railroad of B.F. Dillingham was leveling the Waipahu-to-'Ewa Junction in anticipation of service to the 'Ewa plains and beyond. Due to this increased construction, harbor commissioners for the new Territory planned for extensive terminal construction and harbor development to accommodate the steady growth of O'ahu's sugar industry (U.S. War Department, Army Corps of Engineers 1935). The railroad extended from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:100). This railroad line eventually ran across the center of the 'Ewa Plain at the lower boundary of the sugar fields (Frierson 1972:15).

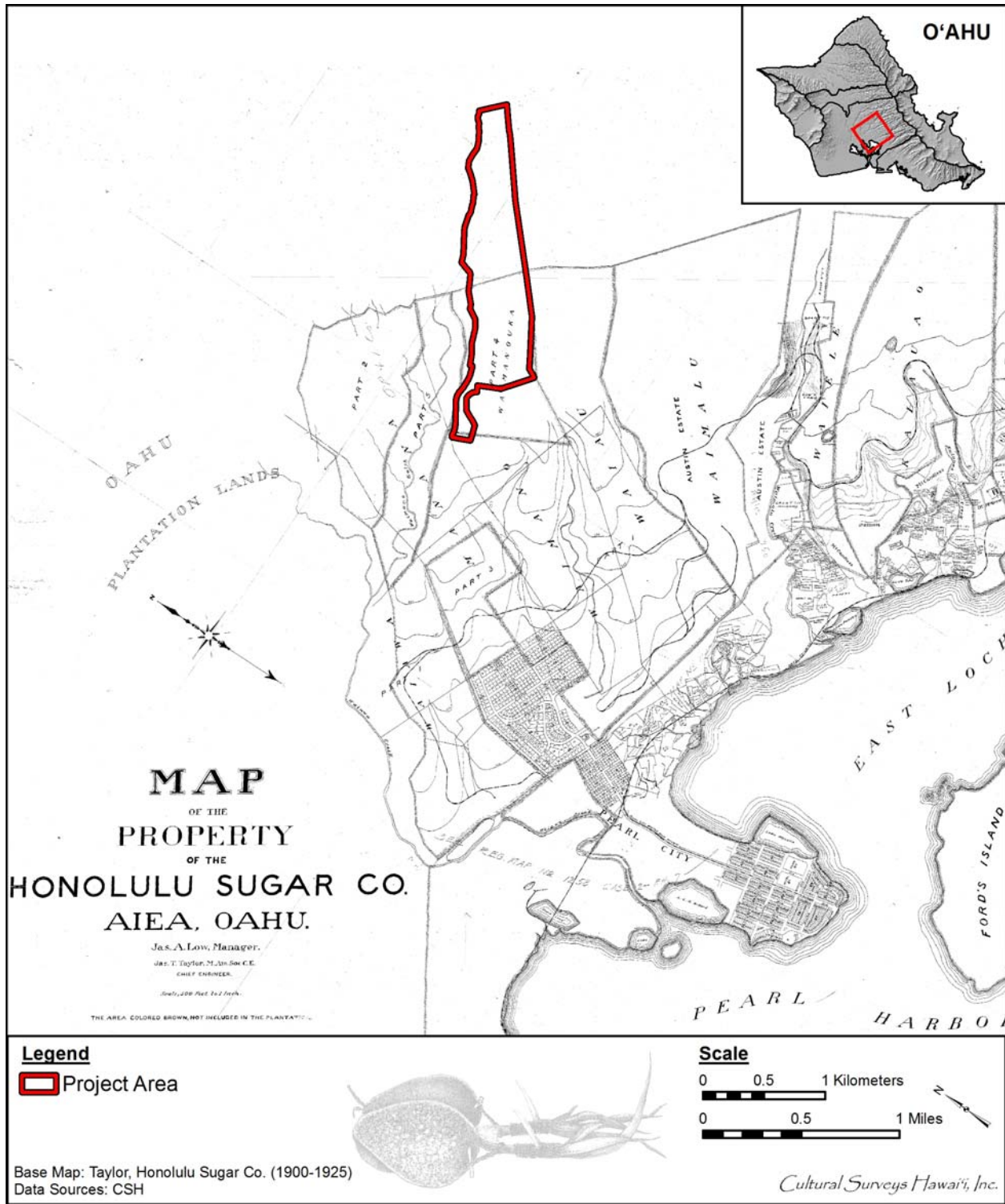


Figure 11. Map of Honolulu Sugar Co. lands showing project area

2.2.5 1900 to Present

The development of the railroad system was spurred further by the needs of sugar plantations in the early 1900s. The Honolulu Plantation Company, formed in 1900, utilized vast tracts of land in Waimano and surrounding ahupua'a for the production and refinement of cane sugar (Figure 11). Railroad development was required for the handling of ever-increasing cane loads (Conde and Best 1973:327). In 1914, construction began on 4 miles of railroad track that would branch off the main line and cross through 314 acres of new plantation land between Waimano and Waiawa. This construction involved "fairly heavy grading around Waimano Gulch" (Conde and Best 1973:328). Originally located in 'Aiea, the Honolulu Plantation Company expanded its territory along the northern inshore and upland areas of Pearl Harbor. Additionally, several land sections lay southeast of Pearl Harbor where the present Honolulu International Airport and Hickam Air Force Base are located. In 1914, the company harvested 19,000 tons of sugar.

The increased productivity of the sugar cane industry relied heavily on transporting the raw product from the field to the mills, including the 'Aiea sugar mill, as well as then taking the processed sugar to port for loading onto ships (or to storage facilities). Railway lines, which were established in the Honolulu Plantation Company fields by OR&L in 1901, provided a means to transport material, workers, and goods in an adequate amount of time. By 1910, the network of railways circumnavigated the plantation with over 36 miles of main railroad, utilizing four locomotives and 500 cane cars. This transportation system greatly enhanced the plantation's product output and economic growth, having taken in 900 tons of raw sugar per week and producing 1100 tons of processed sugar daily (Condé and Best 1973:328).

Despite its economic promise and gains, gradual land condemnation of Honolulu Plantation lands by the government caused declines in production and removal of rail lines. Continued pressure by the U.S. military proved to be too much. Large shares of Honolulu Plantation land were gradually turned over to the government for military use. In 1907, a sizeable portion was used for the expansion of the U.S. Naval Facilities at Pearl Harbor. In 1935, all of the Pu'uloa lands (approximately 15% of the plantation) were handed over for the construction of Hickam Air Field. The plantation lands were given up during World War II and post-war urbanization brought an end to the Honolulu Plantation Company in 1947. The plantation equipment and remaining land were sold to the neighboring Oahu Sugar Company, and the mill was dismantled and shipped to the Philippines. However, the refinery continued to operate, producing a liquid sugar product for canners and bottlers until the Hawai'i bottlers switched to corn syrup and the operation shut down in 1996. The refinery building is now the site of the Hawai'i Agriculture Research Center (Dorrance and Morgan 2000:50).

The Waimano Home for the Feeble-minded was established in 1919 on approximately 265 acres of land above Pearl City residential neighborhoods where the Waimano Training School and Hospital is currently located (2201 Waimano Home Road, Pearl City, HI, 96782). The Home, which opened its doors in 1921, was "an institutional incarceration facility" (*Honolulu Magazine* 2009) for people with developmental disabilities.

Waimano Home was isolated from the greater community, on the slopes of the Ko'olau Mountains up a narrow dirt road. The facility has been described as an institution for mentally retarded persons where, "under the pretense of training, inmates worked seven days a week, with

no vacation or pay,” (Takemoto 1984:17). The greater part of the work was farming, and the Waimano Home lands were used extensively for agriculture. Crops grown included sugar cane, tomatoes, lettuce, peas, beets, and beans; livestock included goats, pigs, mules, dairy cows, chickens and rabbits (Takemoto 1984:28–29). Over time, agricultural production became a primary focus of the institution:

Agriculture thrived at Waimano during the 1940's and 1950's. Each year more land was put in cultivation. Each year more money was made. In fiscal year ending June 1942, the gross production value was \$18,033.16. In 1945 it was \$89,068.19; in 1950 it was \$111,977.05; and in 1955 it was \$183,133.34. (Takemoto 1984:29)

A 1954 U.S. Geological Survey map, Waipahu Quad (Figure 12) shows the facility name as Waimano Home Farm Colony. Also indicated on this map are portions of the “abandoned ditch” and the Waimano Trail, which parallels the ditch in some sections (Ball 2000). Both of the *mauka* project buildings are present on the 1954 map, but not the *makai* Uluapuku Building.

A 1978 U.S. Geological Survey orthophoto, Waipahu Quad (Figure 13) shows significant residential development of the lands immediately *makai* of the current project area. In addition, the Uluapuku Building, Pearl City Cultural Center Building and the Hale Complex are all visible in this photo. Pearl City High School, founded in 1971, is visible SSW of the project area.

The hospital was shuttered in 1999 following years of rumors about inappropriate conditions and questionable patient treatment. Today, the facility hosts a number of state organizations and programs: The old Waimano Training School and Hospital was renovated and is being used by the Department of Public Safety. Other buildings house Department of Health (DOH) offices, the DOH Laboratory facility, Mental Health Transformation State Incentive Grant offices and a juvenile sex offender program. The oldest extant structures are understood to have been built in the mid-1930s, and the newest, Hale Aloha, was built in 1977.

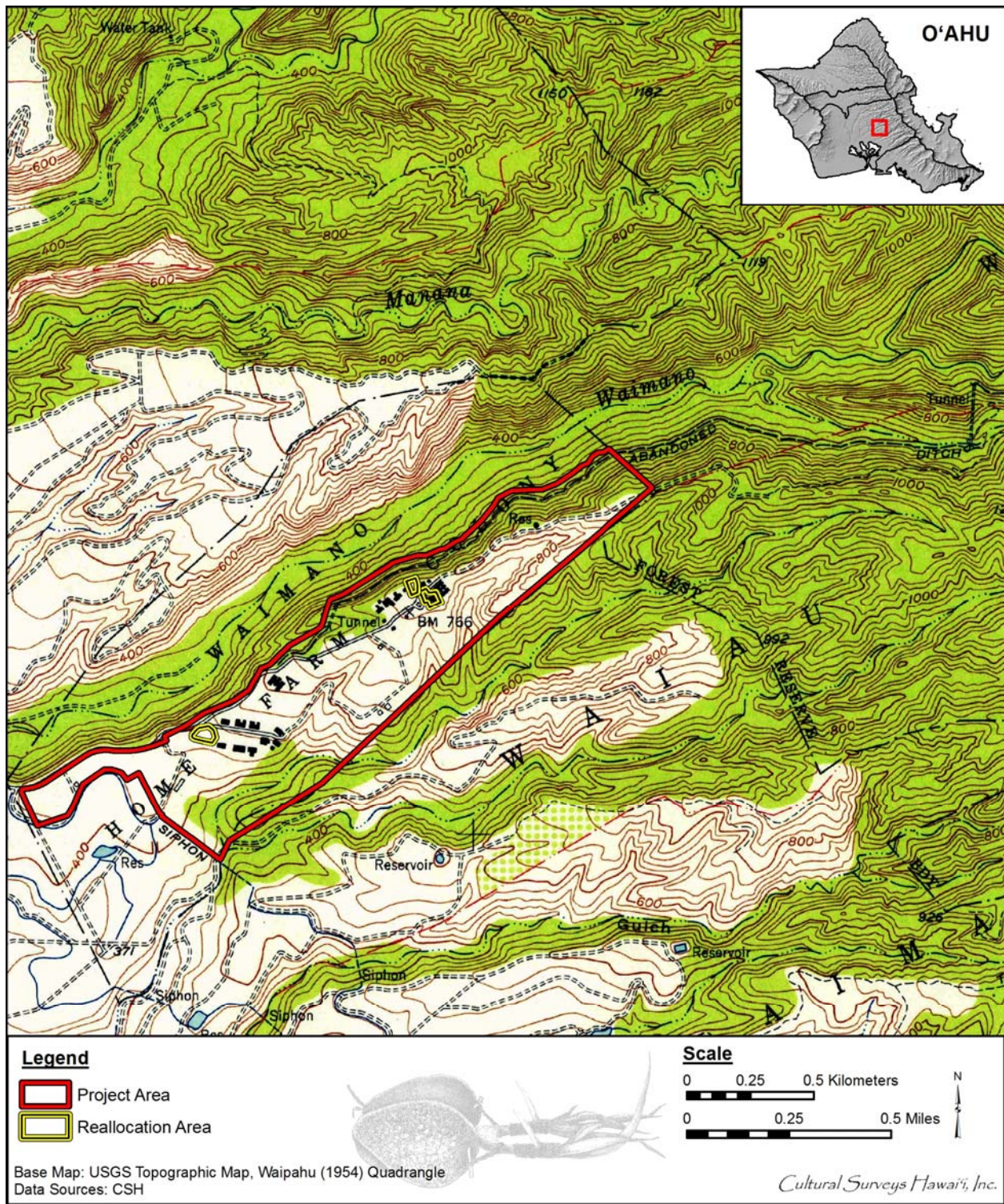


Figure 12. 1954 USGS Topographic map showing Project Area, Reallocation Areas and the abandoned irrigation ditch

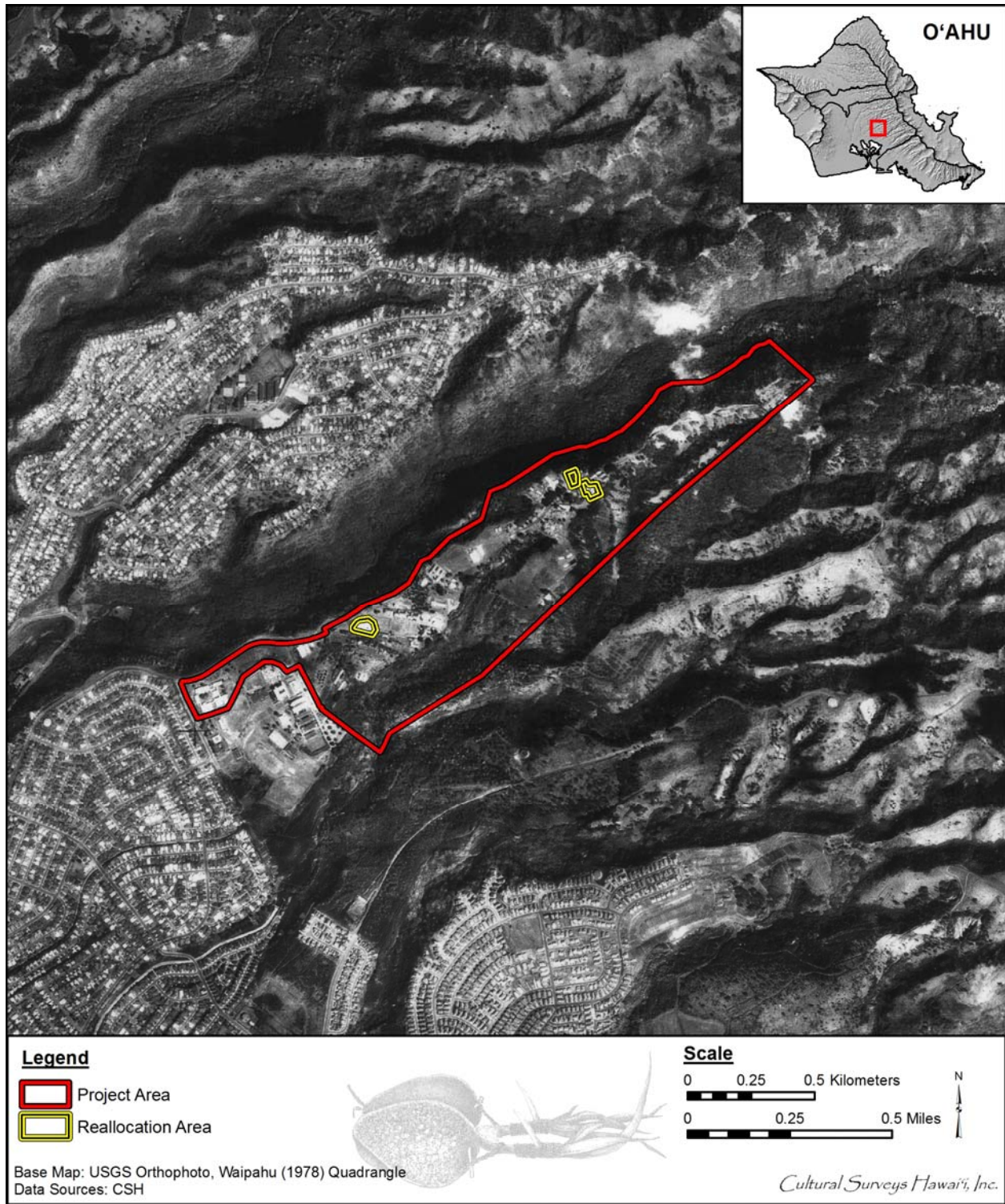


Figure 13. 1978 USGS Orthophoto showing Project Area, Reallocation Areas and the progress of development

Section 3 Previous Archaeological Research

Relatively few archaeological studies have been undertaken within Waimano Ahupua'a, and McAllister (1933) does not list any sites for Waimano. However, the two fishponds, Loko Kukona and Loko Luakahaole, that McAllister notes as being in Waiiau Ahupua'a, are actually in Waimano. McAllister identified the fishponds as Sites 114 and 115; Loko Kukona was formerly 27 acres and little remained during McAllister's survey and Loko Luakahaole, formerly one acre, was "filled in" (McAllister 1933:105).

Two archaeological studies were previously conducted within the current project area and others were conducted adjacent to the current project area or in neighboring ahupua'a (Figure 14). Short synopses of these reports with findings that may be relevant to the present project area are below.

3.1 Within the Current Project Area

Jensen (1989) conducted an approximately 20-acre archaeological inventory survey of a portion of the Waimano Home Department of Health Facility. The field survey was conducted by walking systematic transects across 100% of the undeveloped and ungraded portions of the project area; with transect spacing maintained at 10 to 15 meter intervals. No subsurface evaluations were undertaken. Modern foundation, structures, a sewer pond and several roads were found. "No evidence of traditional Hawaiian cultural sites" was found and no additional archaeological investigation was recommended (Jensen 1989:8).

CSH previously conducted an archaeological reconnaissance of the grounds of the existing Waimano Training School and Hospital in Waimano, prior to its modernization (Folk 1990). The reconnaissance involved on-site examination of the plateau areas of the ridge from Pearl City High School at about 130 m (425 ft) elevation, *mauka* to the Hawaiian Electric Co. powerline easement at an elevation of about 304 m (1,000 ft). A dressed-stone irrigation ditch, likely associated with the early 20th century Honolulu Plantation Company, and the Waimano Institution graveyard on the ridge above the school were determined to be historically significant, however no SIHP #s were assigned. Recommendations included: preservation, or at minimum incorporation of the irrigation ditch stones into the landscaping; preservation of the graveyard; and no further archaeological investigation nor construction monitoring (Folk 1990:i).

3.2 Near the Current Project Area

In February of 1978, Agnes Griffin and Martha Yent conducted a pedestrian reconnaissance of a portion of Waimano Gulch between Waimano Home Farm Colony and Pacific Palisades (Griffin and Yent 1978). The survey work centered on the valley floor and both sides of the stream bed. Several agricultural features were identified at the base of the valley where the slope is gentle and abuts the floodplain of Waimano Stream. Walled terraces, indicating probable dryland agricultural components, were observed, although no evidence for irrigation or water diversion was noted. Additional habitation structures were identified including platforms and a possible ahu. All of the archaeological features identified within the valley were flagged and tentative feature numbers were assigned, though no SIHP #s were assigned. The researchers also

recommended further archaeological study in order to properly evaluate these components. In 1979, Griffin and Yent expanded their coverage *makai* of the previous project area to document the remnants of an Oahu Sugar Company railroad (Griffin and Yent 1979). In an addendum to the report, Griffin and Yent note that “a complex of archaeological features which consists of possible residential platforms, terraces, and walls were found on a talus slope at the bottom of the dirt road/trail” (Griffin and Yent 1979:2), but no precise location is given. All of the features documented by Griffin and Yent are in the valley bottom and slopes of the Waimano Gulch, well below the current project area, and do not have SIHP #s.

In 1987, the Applied Research Group of the Bishop Museum conducted an archaeological reconnaissance survey of approximately twenty-six-acres of Waiau Ahupua‘a, on the lower portion of the ridge that comprises the southern boundary of Waiau Valley. The resulting report (Yamauchi 1987) details a landscape of “extensive prior disturbance, mainly bulldozer activity” (Yamauchi 1987:6) due to historic commercial sugar production in the area. The only features encountered were recent.

Between November 28 and December 12, 1989, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted a variable-coverage surface and limited subsurface archaeological inventory survey of the Waimalu Golf Course project area, situated in the land of Waimalu, Ewa District, Island of Oahu (Dunn & Haun 1992). The basic objective of the survey was to provide information appropriate to and sufficient for the preparation of an Environmental Assessment (EA) being prepared in conjunction with a Conservation District Use Application to be submitted to the Hawaii State Land Use Commission. Four single-feature sites were newly identified. The sites ranged in condition from poor to good and appeared to be historic. The features constituted two formal types (subsurface concrete structure and excavated pits) and two functional types (water containment and indeterminate [possibly animal traps]). Based on the survey data, the four sites identified in the project area were assessed as significant solely for information content. No further work was recommended for the sites.

Cultural Surveys Hawaii (CSH) conducted an ethnohistoric study of Waiawa Ahupua‘a, Waiau Ahupua‘a, and Ka‘ōnohi ‘Ili of Kalauao Ahupua‘a between 2009 and 2010 (Genz, O’Hare and Hammatt 2010). The discontinuous project area falls on either side of Waimano Ahupua‘a, and shares many historical themes. This study was contracted by Kamehameha Schools (KS) and was intended to gather historical, ethnographic and cultural information to compile a comprehensive narrative of the unique traditions of these areas. The report serves to guide land management in, and perpetuate the cultural knowledge of the ahupua‘a of Waiawa and Waiau, and the ‘ili of Ka‘ōnohi in the ahupua‘a of Kalauao, as well as helping to inform appropriate land management strategies and protocol, provide new context to educational initiatives, and to build a more informed community with regard to the unique resources and traditions of these ahupua‘a.

Table 1. Previous Archaeological Research in Waimano and in the Vicinity of the Project Area

Source	Type of Investigation	General Location	Findings (SIHP Site 50-80-09-)*
McAllister 1933	Survey	Island-wide	Loko Kukona (-114) and Loko Luakahaole (-115).
Griffin and Yent 1978 & 1979	Pedestrian Reconnaissance	Waimano Gulch, between Waimano Home Farm Colony and Pacific Palisades, Waimano Valley State Park	Agricultural complex inclusive of terraces, habitation structures, ahu and rockshelters. (not numbered) Historical usage in the lower valley was also noted including a railroad bed and plowed fields.
Yamauchi 1987	Reconnaissance Survey	Wailuna Subdivision, Waiau Ahupua'a	A concrete cistern next to a shack was noted.
Jensen 1989	Archaeological Inventory Survey	Waimano Home Department of Health Facility, Waimano Ahupua'a	No evidence of traditional Hawaiian cultural sites was encountered.
Folk 1990	Archaeological Reconnaissance	Waimano Training School and Hospital, Waimano Ahupua'a	Irrigation ditches dating to the Sugar Plantation era and the Waimano Institution Graveyard. No traditional Hawaiian archaeological sites were located.
Dunn & Haun 1992	Archaeological Inventory Survey	Waimalu Golf Course, Waimalu Ahupua'a	Four sites (-4205, -4206, -4207 and -4208); all historic. No traditional Hawaiian sites were located.
Genz, O'Hare and Hammatt 2010	Ethnohistoric Study	Kamehameha Schools' Lands in Waiawa, Waiau, and Kalauao (Ka'ono'ihī 'Ili) Ahupua'a	Identified community histories and concerns throughout the area; relevant to the current project area were the <i>mauka</i> watershed resources.

*All SIHP site numbers begin with 50-80-09

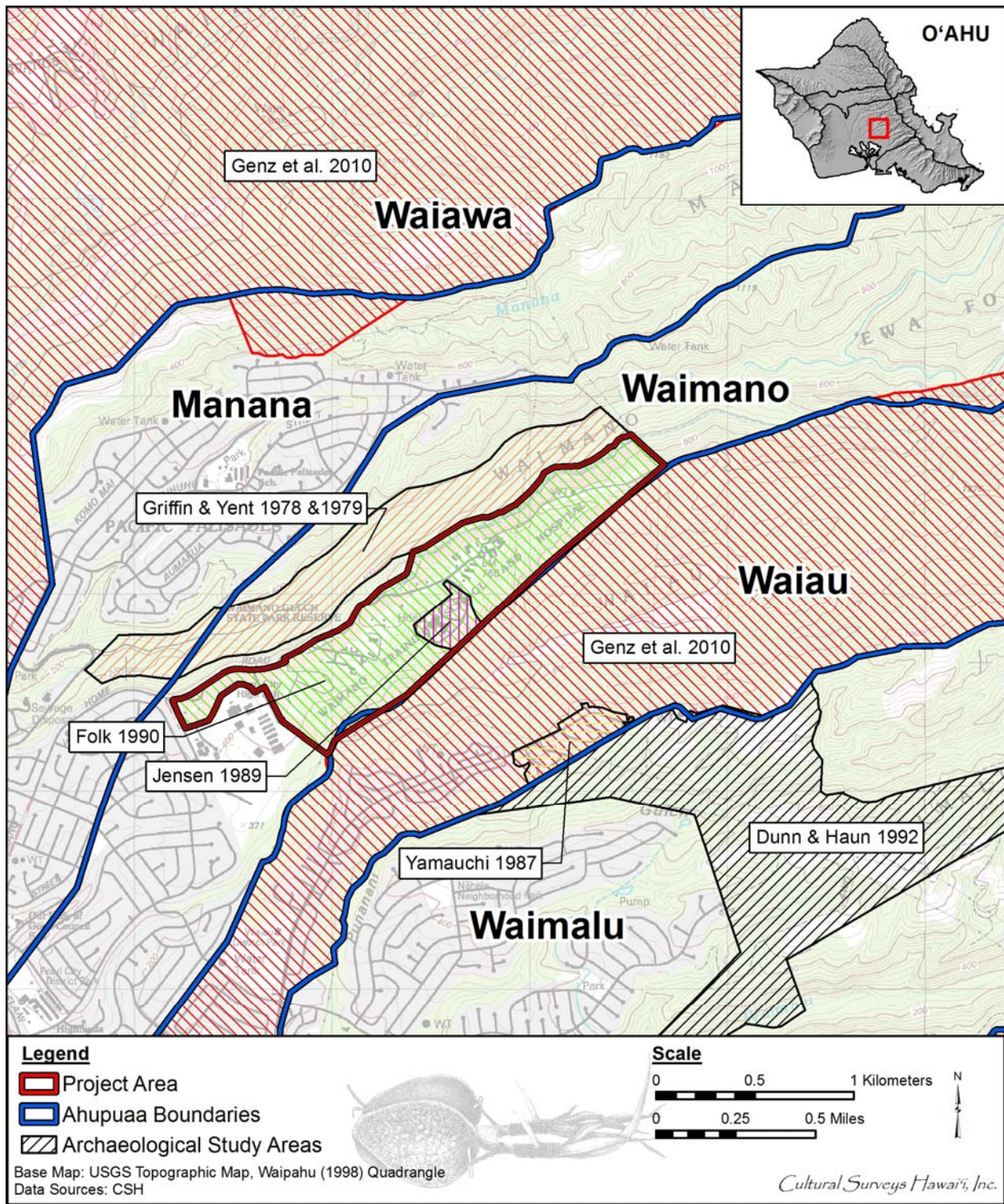


Figure 14. Previous archaeological and ethnographic studies in the vicinity of the current Project Area

3.3 Background Summary and Predictive Model

Before the arrival of Europeans, the district of 'Ewa contained abundant natural and cultivated resources supporting a large population that included the highest-ranking *ali'i*. In the 19th Century, after a period of depopulation, 'Ewa was revitalized by Hawaiian *ali'i*, foreign residents, and farmers who worked dry and irrigated taro fields, and banana fields that were later converted to rice. Nineteenth Century maps and documents indicate that Waimano Ahupua'a contained fishpond farming, wetland agriculture, and human burials in the lowlands, with mid-slope to upland areas being converted to sugar plantations or kept as forest reserve areas.

The majority of the population probably lived in the *makai* portion of the ahupua'a, close to the marine resources provided by Pearl Harbor. This is also pointed out by Folk (1990:7-9):

This contention that the majority of the population was distributed near the shore of Pearl Harbor is supported by a number of data including the location of the ten land commission awards (tax maps of Zone 9 section 7) assigned in waimano ahupua'a. Nine are located near the lagoon below 100 ft. [30 m] elevation. The 10th, being an award of Kula lands immediately mauka of the near shore taro lands, at about 100 ft. to 400 ft. [30 to 121 m] elevation, was awarded to the foreigner stevenson (Indices of Awards 1929).

It is likely that the current project area was a part of the upland forest regions *wao kele* "rain belt, upland forest" (Pukui and Elbert 1986:382) or *wao kanaka*, "inland region where people may live or occasionally frequent" (Pukui and Elbert 1986:382). These zones were utilized for their resources of flora and fauna, but not generally settled. If isolated occupation sites did exist, all surface traces of them have been obliterated by sugar cultivation and/or the building of the Waimano Home in 1919-1921 (Folk 1990:14).

3.3.1 Human Burials

No pre-Contact Hawaiian burials have been documented within the project area, nor are they likely to be present given the ridgetop topography and the tendency of pre-Contact Hawaiians to bury their dead in the sand or in caves. Folk (1990) documented and recommended preservation of the historic cemetery associated with the Waimano Institution:

Finally, the graveyard on the ridge above the school buildings must be addressed. It's somewhat remote and obscure location would seem to facilitate its remaining undisturbed, which is recommended. The National Register criterion code "E" (site has cultural significance ... burials present) is assigned to this site. The ridge line in this area is generally less than 200' [60 m] wide and seems best suited to be left as is. (Folk 1990:16)

Section 4 Cultural Practices and Features of the Landscape

Discussions of specific aspects of Hawaiian cultural resources and practices identified within the project area or the broader context of the encompassing Waimano Ahupua'a landscape are presented below.

4.1 Hawaiian Habitation and Agriculture

In pre- and early post-Contact times, the lower reaches of the 'Ewa district, with its many streams and springs, was fertile ground for wetland taro, as well as bananas, sweet potato and sugar, and, in particular a rare variety of taro, *kai o 'Ewa* (Handy and Handy 1972:471). Archibald Campbell, an English seaman, received 60 acres in Waimano Ahupua'a from King Kamehameha in 1809. Campbell described his land:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymummee [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroora [Honolulu]. . . . We passed by footpaths winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains are covered with wood to a great height. . . . My farm, called Wymannoo [Waimano], was upon the east side of the river, four or five miles from its mouth. Fifteen people with their families resided upon it, who cultivated the ground as my servants. There were three houses upon the property; but I found it most agreeable to live with one of my neighbours, and get what I wanted from my own land. This person's name was William Stevenson a native of Borrowstouness. (Campbell 1967:103-104)

The botanist F.J.F. Meyen, visiting in 1831, also confirms the abundant vegetation by Campbell described in the vicinity of Pearl Harbor, "All around these water basins the land is extraordinarily low but also exceedingly fertile and nowhere else on the whole island of Oahu are such large and continuous stretches of land cultivated. The taro fields, the banana plantations, the plantations of sugar cane are immeasurable (Meyen 1981:63).

4.2 Gathering of Plant Resources

In ancient Hawai'i, upland forest regions provided various woods needed for canoes, tools and more, as well as cordage, food and herbs (Abbott 1992). Handy and Handy reported that upland forest (*wao*) in 'Ewa was extensive, "giving greater opportunity to forage for wild foods in famine time" (1972:469). The ridge above the project area does have natural vegetation with Hawaiian ethnobotanical uses such as, *lama*, *koa*, *uluhe* ferns, *'ōhi'a 'ai*, *naupaka*, *pū'ahanui*, *kōpiko* and *'ōhi'a* (Ball 2000:113-114).

4.3 Freshwater Resources

The word Waimano literally translates as ‘many waters’ (Pukui 1989:225). As Handy and Handy report, “The primary reason for ‘Ewa’s prominence in history and as an *ali‘i* stronghold was undoubtedly the existence of the great number of fishponds at different points around Pearl Harbor, which was ‘Ewa territory” (1972:470).

The water resources of Waimano-uka were utilized in historic times by the sugar plantations, as evidenced by the stone-lined diversion ditches (within project area) and water tunnels (adjacent to project area) extant along Waimano Ridge.

4.4 Cultural Properties and Burials

No traditional Hawaiian properties have been found within the project area. There are no literary records of traditional Hawaiian enterprise within the project area since there were no *kuleana* claims filed for the area. The extant cultural remains consists of: stone-lined diversion ditches (Figure 15), dating to the plantation period; alignments of re-used stone (Figure 16); historic building remains associated with the Waimano Home; and the cemetery (Figure 17 and Figure 18) “known to contain deceased members of the Waimano Institution” (Folk 1990:i).

4.5 Hawaiian Trails

John Papa ‘Ī‘Ī described a network of Leeward O‘ahu trails, which in historic times encircled and crossed the Wai‘anae Range, by three different trails (‘Ī‘Ī 1959:96-98). The coastal trail branched north near Kunia and ran to Wai‘anae by way of Pōhākea. Following ‘Ī‘Ī’s description, the closest portion of the coastal trail would have passed near today’s Farrington Highway, approximately 2 km south of the project area.

A modern trail, the Waimano Ridge Trail (Ball 2000:108-114), is popular with hikers and hunters. The trail begins near the guard shack and wraps around the facility fence on the north before climbing the ridge to the top of the Ko‘olaus. Portions of this trail are within, though just at the north edge of, the project area; however, the trail is outside the facility fence and not near any of the project buildings.

4.6 *Wahi Pana* (Storied Places)

There are many *mo‘olelo* about Pearl City and Waimano Ahupua‘a such as Ka‘ahupāhau, the Queen Shark of O‘ahu; the “silent” *pipi*, pearl oyster or clam, of Pearl Harbor; the story of Ka‘ehu-iki-manō-o-Pu‘uloa, the Little Yellow Shark; the eel boy of Pilimo‘o, the Mullet Rock or Pōhaku Anae of Pearl City and more (see Section 2.1). However, none of these stories relate specifically to the Waimano-Uka, or uplands, near the project area.



Figure 15. Irrigation ditch with Uluakupu Building in the background; view to the southwest



Figure 16. Re-used stone alignment in front of B-9; view to the north



Figure 17. Cemetery, with Waimano Home buildings in background and Waimano Stream Valley at right (Folk 1990:6); view to the west



Figure 18. Cemetery (Folk 1990:17); view to the west



Figure 19. Stitched photos showing the Hospital Building at right and the Kitchen and Dining Building at left; view to the north

Section 5 Summary and Recommendations

In the pre-Contact period, it is likely that the Waimano Ridge was an occasionally used upland forest area. No pre-Contact cultural resources have been previously identified and no oral histories refer specifically to this area. The landscape of the project area was transformed in the late 19th and early 20th centuries, first as part of the Honolulu Sugar Company and then for the construction of the Waimano Home buildings; all of which would have removed any extant pre-Contact cultural remains.

Historic features were documented and recommended for preservation by Folk (1990): a stone lined irrigation ditch, dating to the plantation era; and the cemetery associated with the Waimano Home. While the cemetery may be a contributing element to a historic property, this actively maintained cemetery with clearly marked graves is not a “burial site” per HAR 13-13-280-2. In addition to these extant features, he also noted an alignment of re-used stone. Though these features are within the Project Area, they are not endangered by the Reallocation plans, which would be limited to three of the buildings in the facility and their immediate grounds. The cemetery is 425 m (1394 ft) *mauka* of the nearest project building, and beyond a locked gate. It will not be affected by this project (Figure 20).

Both the irrigation ditch and the alignment of re-used stone are in close proximity to Project buildings. The north end of the alignment is 55m (180 ft) southwest of the south corner of the old kitchen and dining building, beyond B-9. If possible no ground disturbing activity should take place within a 5 m buffer of the edge of the alignment.

An extant portion of the irrigation ditch runs parallel to Waimano Home Road, between the road and the Uluapuku building; it is approximately 7 m (22 ft) from the Uluapuku building at the nearest point. An access road crosses the irrigation ditch via a small bridge just north of the Uluapuku building. The access road is clearly well maintained, the Uluapuku Building and its adjacent parking lot are currently in use and the use of them does not seem to have negatively impacted ditch preservation. Since this feature was previously recommended for preservation (Folk 1990), no ground disturbing activity should take place within a 5 m buffer of the edge of the ditch.

The cultural impact of the Waimano Training School and Hospital Staff Reallocation Project will be minimal. The area is not open to the public (fenced and guarded) and the publicly accessible trail runs outside the fenced area and away from the facility. No pre-Contact cultural resources are known, nor are they likely to be present given the history of the landscape. The historic resources in the project area are either far from the construction areas, or protected by the above recommendations.

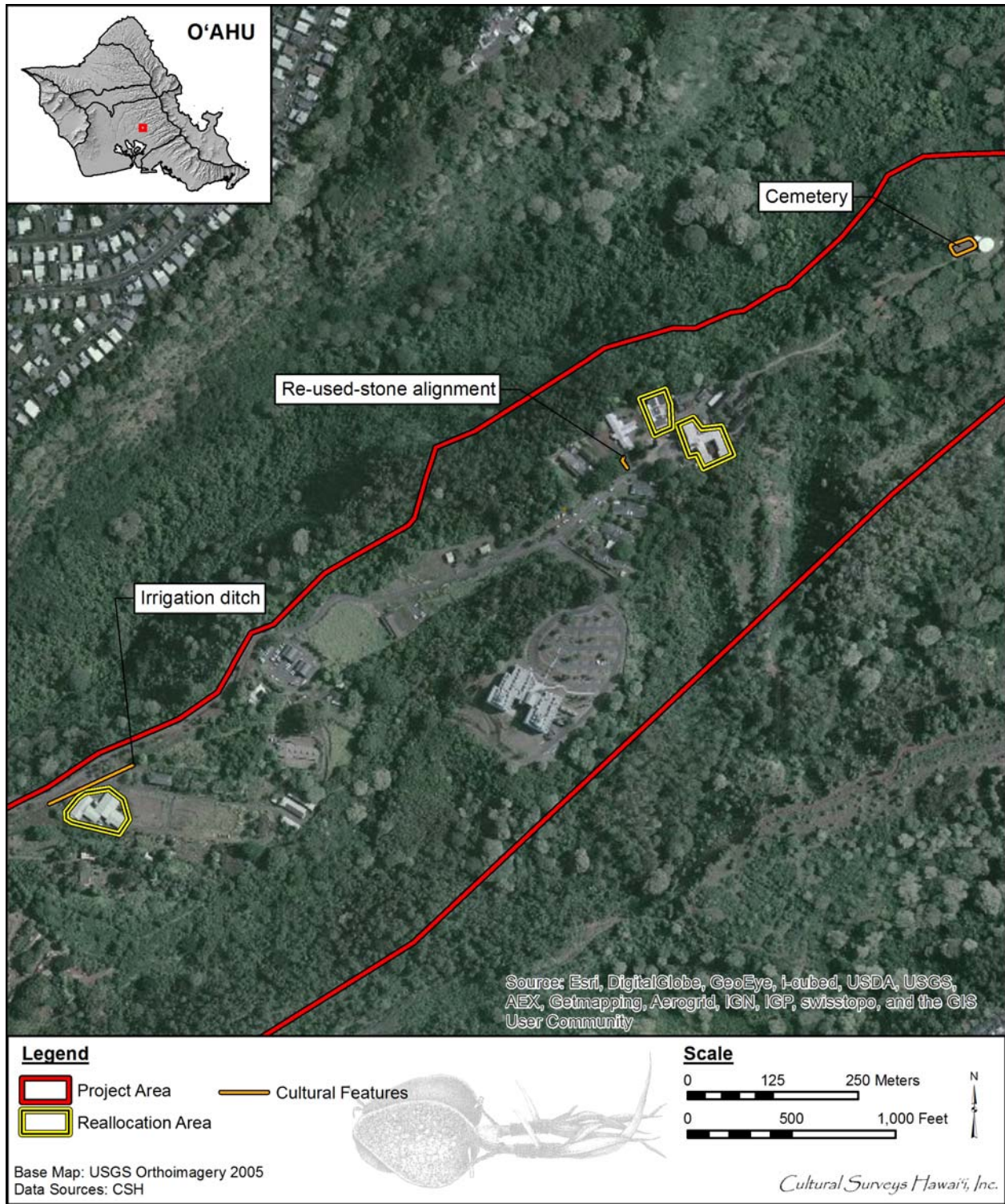


Figure 20. Map of Project Area and Reallocation Areas showing previously identified features recommended for preservation

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Appendix G

Traffic Impact Report
Waimano Ridge DOH "AAFES" Building Staff
Relocation

Julian Ng, Inc.
September 2013

Traffic Impact Report
Waimano Ridge
DOH “AAFES” Building Staff Relocation
Pearl City, Hawaii
TMK (1) 9-7-025: 001

September 2013

Prepared for:

State of Hawai‘i
Department of Health (DOH)



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION


Signature

Expiration Date: April 30, 2014

Prepared by:

Julian Ng Inc.
P. O. Box 816
Kaneohe, Hawaii 96744

Table of Contents

	<u>Page</u>
Summary	1
Table 1 – Summary of Traffic Impacts	1
Introduction	2
Figure 1 – Project Location	2
Figure 2 – Site Plan	3
Table 2 – Trip Generation Rates	5
Table 3 – Traffic Generation	5
Figure 3 – Traffic Impacts of Proposed Project, AM Peak Hour	6
Figure 4 – Traffic Impacts of Proposed Project, PM Peak Hour	7
Table 4 – Traffic Impacts Beyond Study Area	7
Existing Conditions	8
Figure 5 – Existing AM Peak Hour Traffic Assignments	9
Figure 6 – Existing PM Peak Hour Traffic Assignments	9
Table 5 – Results of Level of Service Analyses – 2013 Field Counts (signalized)	10
Table 6 – Results of Level of Service Analyses – 2013 Field Counts (unsignalized) ...	11
Future Traffic Conditions	12
Figure 7 – Future Baseline AM Peak Hour Traffic Assignments	13
Figure 8 – Future Baseline PM Peak Hour Traffic Assignments	13
Table 7 – Results of Level of Service Analyses – Future Baseline (signalized)	14
Table 8 – Results of Level of Service Analyses – Future Baseline (unsignalized)	15
Figure 9 – Future with Project AM Peak Hour Traffic Assignments	16
Figure 10 – Future with Project PM Peak Hour Traffic Assignments	16
Table 9 – Results of Level of Service Analyses – Future with Project (signalized)	17
Table 10 – Results of Level of Service Analyses – Future with Project (unsignalized) ..	18
Table 11 – Results of Level of Service Analyses – Future with Project (all-way stop) .	19
Other Transportation Impacts of the Proposed Project	20
Conclusions and Recommendations	21
Appendix A – Summary of Manual Count Data (cover + 5 pages)	
Appendix B – Level of Service Calculations (cover + 54 pages)	

Traffic Impact Report

Waimano Ridge DOH “AAFES” Building Staff Relocation

Pearl City, Hawaii
 TMK (1) 9-7-025: 001

Summary

The State of Hawai‘i Department of Health has proposed to renovate several buildings located within the State-owned property at Waimano Ridge, which was the site of the former Waimano Training School and Hospital (Waimano Home). The proposed project will provide office space for approximately 262 employees who are being displaced from their current offices in the former Army and Air Force Exchange Service (“AAFES”) building in Kaka‘ako. Occupancy of the new office space is expected in mid-2016.

The proposed project will relocate jobs from the city center, thereby increasing traffic in the non-peak direction and decreasing traffic in the peak direction during peak commuting hours; regional impacts, therefore, will be a reduction in peak direction travel demand. Vehicular access to the site is from the mauka end of Waimano Home Road. Major roadways that connect to Waimano Home Road, including Kamehameha Highway, Moanalua Road, and Kuala Street, will disperse the traffic impact and the added traffic on any segment of these major roadways will be less than 50 vehicles per hour in the peak hours. Traffic analyses reported herein found that the proposed project will not have a significant impact to traffic conditions at the major intersections along Waimano Home Road. The comparison of future traffic conditions without and with the proposed project shows no significant traffic impacts.

Table 1 – Summary of Traffic Impacts

	AM Peak Hour			PM Peak Hour		
	Existing	Future Baseline	Future w/ project	Existing	Future Baseline	Future w/ project
Stopped or yielding movements (Levels of Service)						
Left Turn to Hookiekie Street	B	B	B	A	A	A
Hookiekie Street approach	F	F	F	B	B	B
Signalized Intersections on Waimano Home Road (overall Levels of Service)						
Komo Mai Drive	D	D	D	C	C	C
Noelani Street	C	C	C	C	C	C
Kuala Street / Moanalua Road	D	D	D	D	D	D
Kamehameha Highway	E	E	E	E	E	E

Introduction

The State of Hawai'i Department of Health has proposed to renovate several buildings located within the State-owned property at Waimano Ridge, which was the site of the former Waimano Training School and Hospital (Waimano Home). The proposed project will provide office space for department employees who are being displaced from their current offices in the former Army and Air Force Exchange Service ("AAFES") building in Kaka'ako. Occupancy of the new office space is expected in mid-2016. Figure 1 shows the project location.

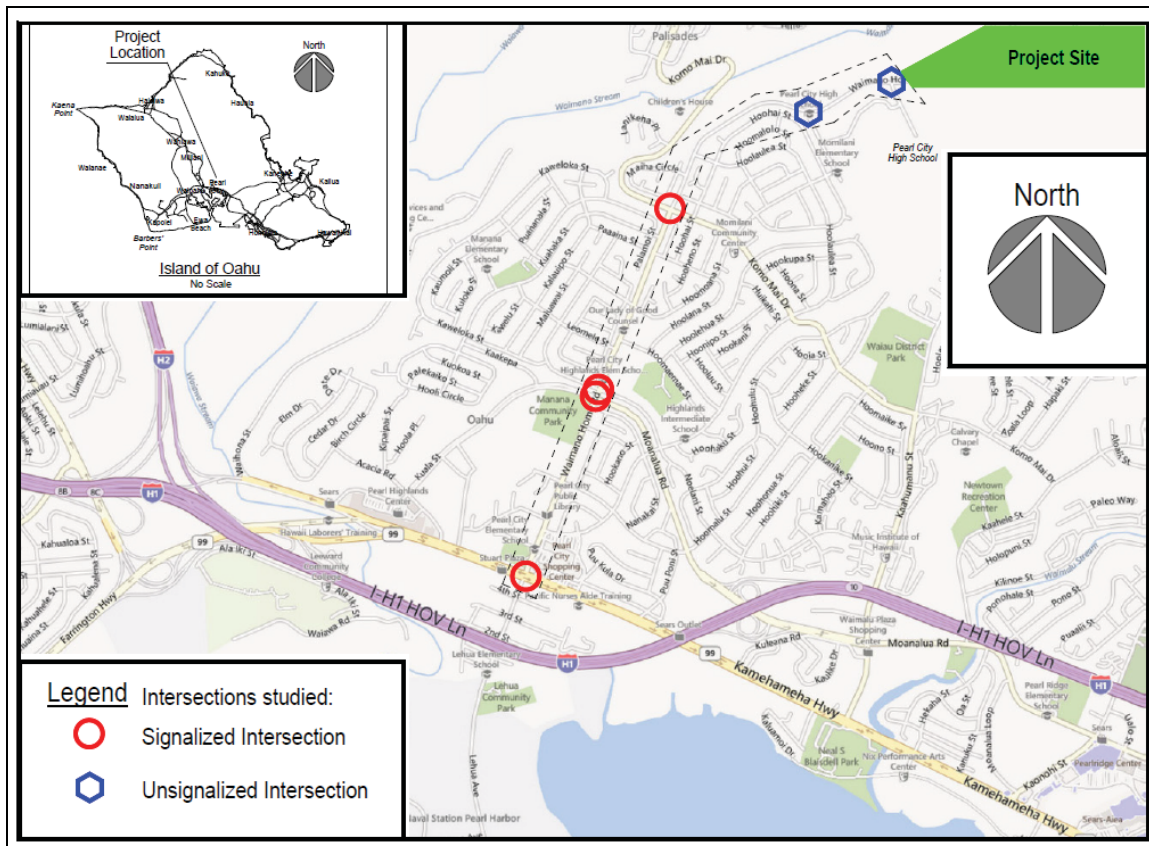


Figure 1 – Project Location

This traffic impact report was prepared to identify the potential traffic impact of the relocation of 262 Department of Health employees to Waimano Ridge. Six intersections along Waimano Home Road were analyzed to determine the traffic impact of the proposed action. Traffic counts were taken at these intersections to establish existing conditions.

For future conditions, existing traffic volumes to the site were factored downward to account for the reduction in the number of employees on the site, independent of the proposed project, to establish a baseline for the analyses of project impacts. The traffic volumes generated by the proposed project were then estimated using trip generation factors from a widely-used reference, distributed onto the roadway system, and added to the baseline volumes for the future with project conditions.

Figure 2 shows the existing buildings on the subject property. The project will locate new offices in renovated buildings identified as the Uluapuku, Hale Ola, and Kitchen & Dining Building

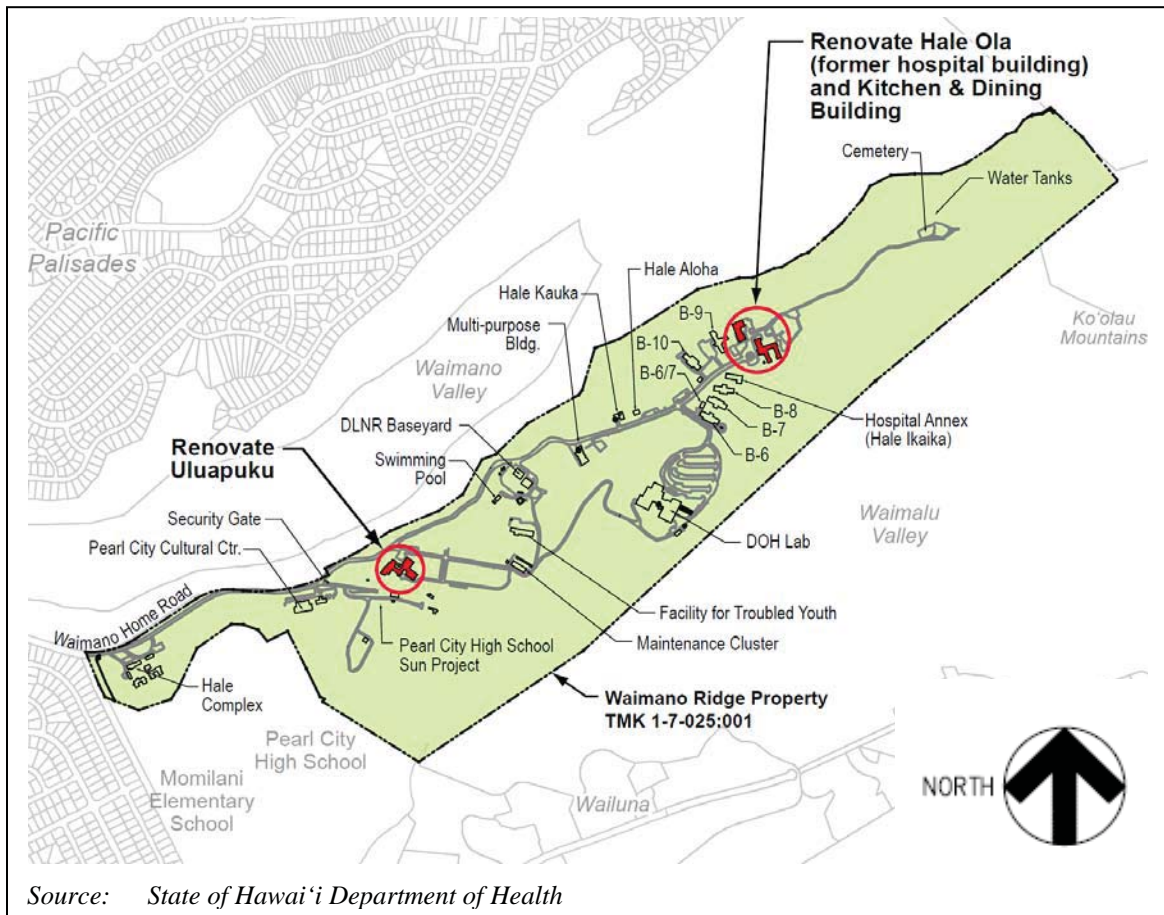


Figure 2 – Site Plan

The project site is presently used for State government offices. At the time traffic counts were taken for this study, the State reported that there were 314 employees on the property. Without the proposed project, the number of employees on the property will be reduced to 220 before the year 2016.

Peak traffic hours were identified and the intersections analyzed for those peak hours. The concepts from the *Highway Capacity Manual*¹ were used to identify the impacts of the proposed project. The “Level of Service” concept used by traffic engineers describes traffic operating conditions, ranging from “A” representing free flow and very little delay to “F” describing congested over-capacity conditions and very long delays. Levels of Service for intersections are based on average delays per vehicle, which are computed from capacities and other operating characteristics, using the methods described in the *Highway Capacity Manual*. The table below summarizes the criteria for Levels of Service.

Average Delay (seconds per vehicle)		General Description of Delay	Level of Service (LOS)
Unsignalized Intersections	Signalized Intersections		
≤ 10	≤ 10	Little or no delay	A
> 10 and ≤ 15	> 10 and ≤ 20	Short traffic delays	B
> 15 and ≤ 25	> 20 and ≤ 35	Average traffic delays	C
> 25 and ≤ 35	> 35 and ≤ 55	Long traffic delays	D
> 35 and ≤ 55	> 55 and ≤ 80	Very long traffic delays	E
> 55	> 80	Very long traffic delays	F

For peak hour conditions, LOS D or better are generally considered acceptable. However, especially at signalized intersections with long cycle lengths, delays in the LOS E or LOS F range are not unusual for turning movements that have relatively low volumes.

Traffic counts were taken in the field at two unsignalized intersections near the site and at four signalized intersections along Waimano Home Road during morning and afternoon peak periods on several weekdays in the spring of 2013. The counts were taken while schools in the area were in normal session. The study area was determined from a review of available traffic data and a preliminary estimate of the project impact, along with

¹ Transportation Research Board, National Research Council, *Highway Capacity Manual*, Washington, D.C. 2000.

current guidelines ² for the need for a traffic impact study. Potential traffic impacts beyond the studied intersections have been verified to be within those guidelines.

Trip rates based on the number of employees were obtained from the widely-used *Trip Generation Manual* ³ published by the Institute of Transportation Engineers; these rates were applied to develop trip estimates for the proposed project. Applicable trip rates from the *Trip Generation Manual* are shown in Table 2 and the traffic estimates shown in Table 3.

Table 2 – Trip Generation Rates

	Average weekday	Peak Hour of adjacent street			
		AM Peak Hour		PM Peak Hour	
	rate	rate*	%enter	rate*	%enter
Single Tenant Office Building	3.70	0.53	89%	0.51	15%
Government Office Complex	7.75	0.61	89%	0.79	31%
Source: Institute of Transportation Engineers, <i>Trip Generation Manual</i> , 9 th Edition (2012). * = per employee					

Table 3 – Traffic Generation

Traffic estimates for 262 employees, based on rates for:	Average weekday	Peak Hour of adjacent street			
		AM Peak Hour		PM Peak Hour	
	In+out	In	Out	In	Out
Single Tenant Office Building	970	124	15	20	114
Government Office Complex	2,030	142	18	64	143

The rates for a “Government Office Complex” were chosen for use in the analyses (while the rates for this land use are based on limited data, these rates provide slightly higher estimates of project traffic than those for “Single Tenant Office Building” and would provide conservative estimates of the peak hour traffic impact of the proposed project).

² The Highway Planning Branch of the State of Hawaii Department of Transportation has stated that impact analysis is required for any intersection where the increase in traffic exceeds 3%; in addition, a published guideline for the preparation of traffic impact studies uses an impact of 100 or more additional vehicles per hour as the threshold for preparing a traffic study (Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development*, Washington, D.C. 2005).

³ Institute of Transportation Engineers, *Trip Generation Manual*, 9th Edition, Washington, D.C. 2012.

For the early afternoon peak hour, estimated project traffic is one-fourth of those for the AM Peak Hour (volumes would be 35 vehicles per hour entering the site and 5 vehicles per hour exiting the site).

In consideration of the existing roadway network, possible locations of the other ends of the peak hour trips, and the existing traffic counts, the traffic generated by the proposed project were assigned to the study area intersections, as shown in Figures 3 and 4.

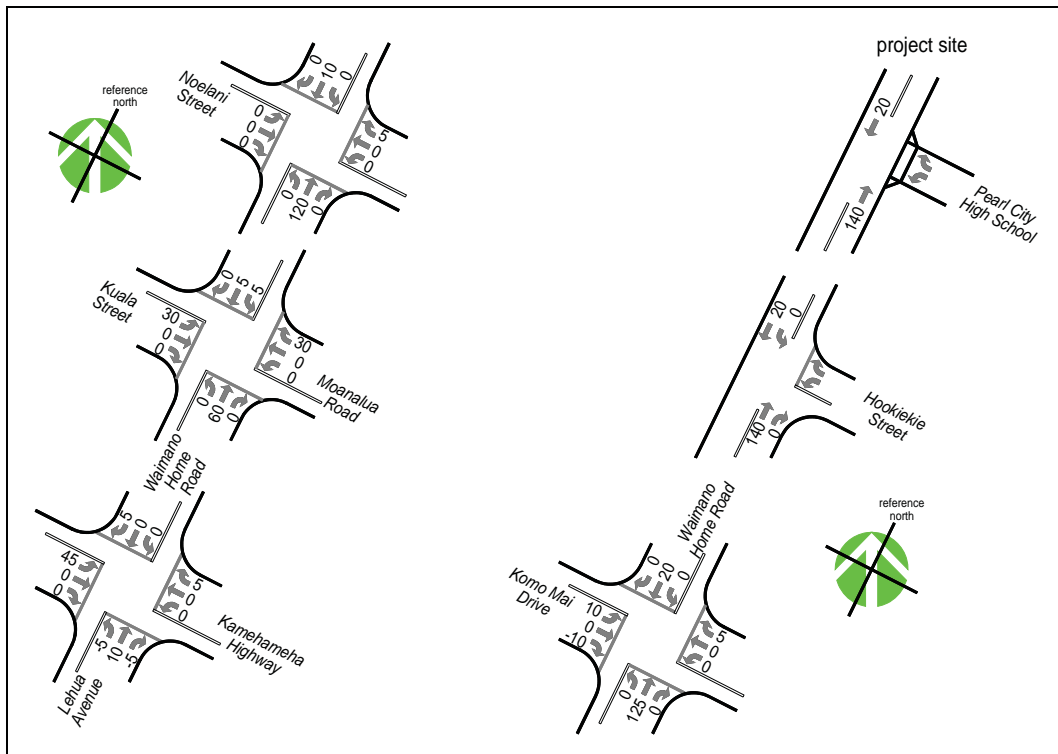


Figure 3 – Traffic Impacts of Project, AM Peak Hour

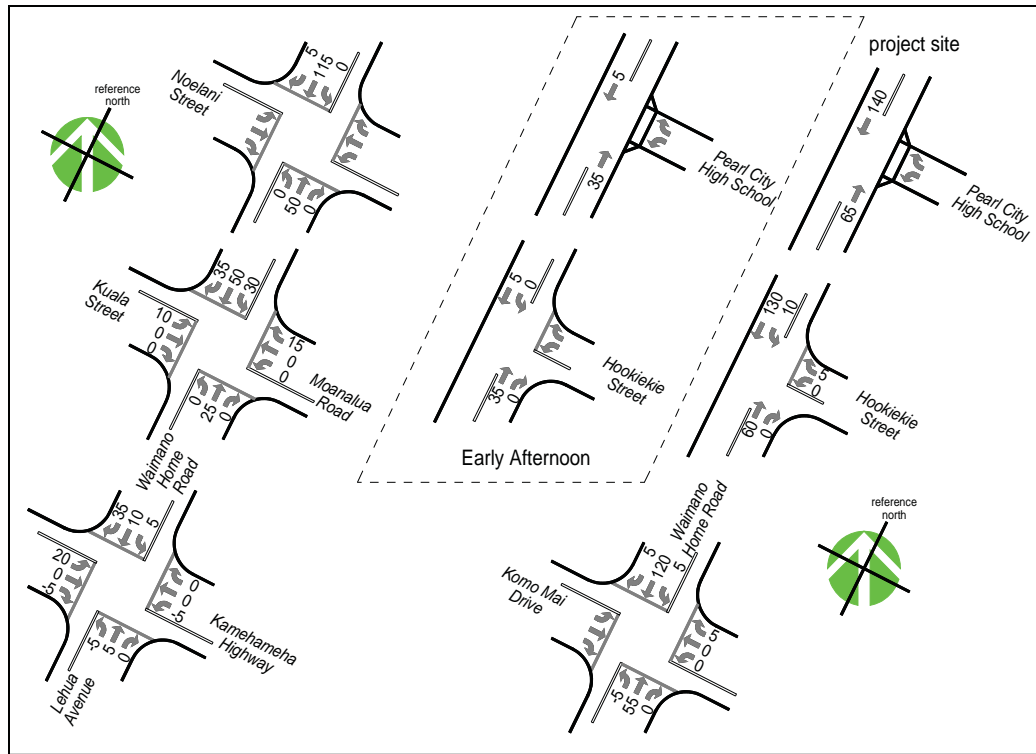


Figure 4 – Traffic Impacts of Project, PM Peak Hour

The project traffic impacts have been rounded to the nearest 5 vehicles per hour (and rounding explains why volumes may not always add up). The project impacts are less than 100 vehicles per hour and 3% of existing traffic volumes (indicators of significant traffic impact) on the major roadway segments beyond the study area, as shown in Table 4.

Table 4 – Traffic Impacts Beyond Study Area

	AM Peak Hour			PM Peak Hour		
	Existing	Impact		Existing	Impact	
Kuala Street, west of Waimano Home Road	1,545	+30	+1.9%	1,664	+45	+2.7%
Moanalua Road, east of Waimano Home Road	1,553	+35	+2.3%	1,767	+45	+2.5%
Kamehameha Highway, west of Waimano Home Road	3,163	+50	+1.6%	3,382	+50	+1.5%
Kamehameha Highway, east of Waimano Home Road	2,086	-5	-0.2%	2,141	0	0.0%

Existing Conditions

The project site is located at the mauka end of Waimano Home Road. The subject parcel extends down to the Hookiekie Street, which is a two-lane minor collector street that forms a “T”-intersection with Waimano Home Road. A existing driveway from the Pearl City High School campus crosses the parcel and connects to Waimano Home Road.

Waimano Home Road is oriented in a generally north-south direction from Kamehameha Highway to north (mauka) of Komo Mai Drive, then curves to the right to become more of an east-west orientation. However, to reduce confusion, the discussion herein will use the mauka (uphill) direction as the reference north.

Mauka of Hookiekie Street, Waimano Home Road is a two-lane roadway. An exit-only driveway from the high school campus connects to this portion of Waimano Home Road at an unsignalized “T”-intersection. Traffic from Waimano Home Road can enter the high school campus through the Pearl City Cultural Center parking lot (when the gates between the parking lots are open). Mauka of the Pearl City Cultural Center, a guardhouse and gate controls access to the remainder of the site.

Hookiekie Street is a two-lane local roadway that provides access to Momilani Elementary School, as well as Pearl City High School and the surrounding residential area. At the “T”-intersection with Waimano Home Road, the westbound Hookiekie Street approach consists of a single wide lane on which traffic is controlled by a stop sign. Traffic on Waimano Home Road is served by a single lane in each direction, with no signed controls at the intersection (makaibound left turns yield to oncoming maukabound traffic).

Waimano Home Road continues as a two-lane roadway until it nears the intersection with Komo Mai Drive. The southbound approach is widened to provide a separate left turn lane. South of Komo Mai Drive, Waimano Home Road is an undivided four-lane collector street; lanes are narrowed at selected intersections to provide for a separate left turn lane.

Existing peak hour volumes and intersection levels of service are shown in Figures 5 and 6. Summaries of the count data are attached to this report as an appendix and results of the intersection analyses of existing volumes are shown in Tables 5 and 6.

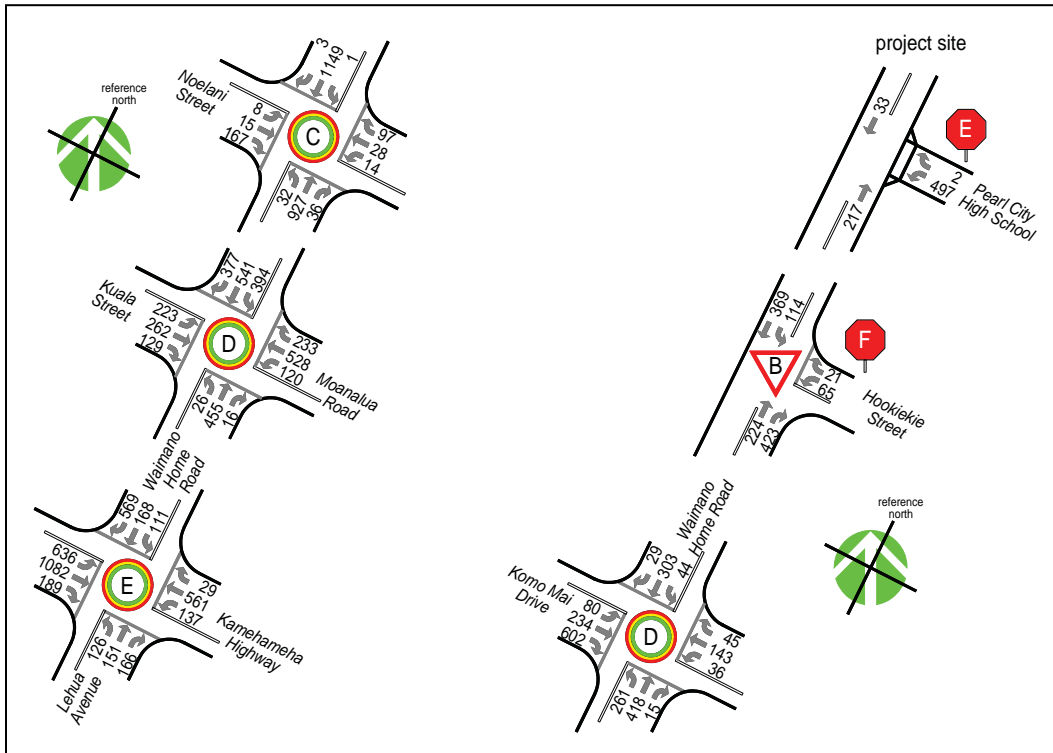


Figure 5 – Existing AM Peak Hour Traffic Assignments

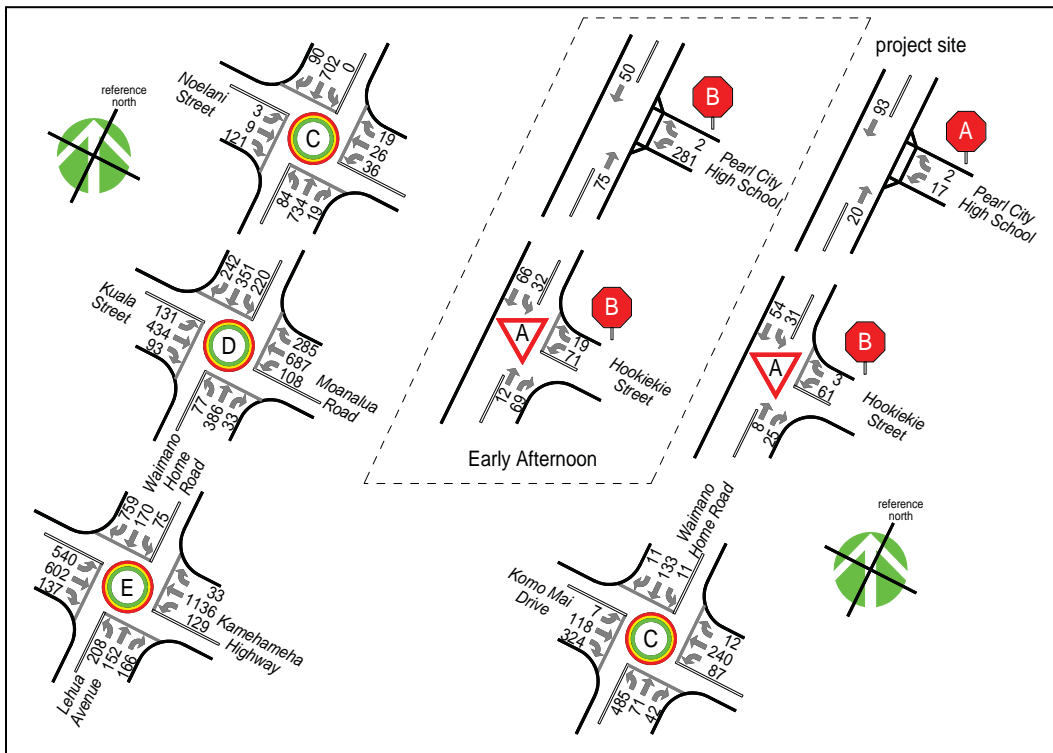


Figure 6 – Existing PM Peak Hour Traffic Assignments

Table 5 – Results of Level of Service Analyses – 2013 Field Counts

Signalized Intersection, Waimano Home Road and:	AM Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS
Komo Mai Drive	0.82	38.2	D	0.59	33.8	C
Eastbound left turn/through lane	0.90	63.9	E	0.26	33.7	C
Eastbound right turn only lane	0.70	20.4	C	0.28	8.0	A
Westbound approach	0.38	33.2	C	0.45	36.5	D
Northbound left turn lane	0.80	57.3	E	0.86	50.8	D
Other northbound lanes	0.63	26.0	C	0.14	15.5	B
Southbound left turn lane	0.49	68.0	E	0.10	54.4	D
Southbound through/right turn lane	0.76	46.6	D	0.38	41.3	D
Noelani Street	0.47	28.1	C	0.32	25.3	C
Eastbound left turn/through lane	0.10	53.7	D	0.04	48.6	D
Eastbound right turn lane	0.64	68.4	E	0.35	54.2	D
Westbound approach	0.64	69.7	E	0.29	53.4	D
Northbound left turn lane	0.07	37.8	D	0.17	39.4	D
Northbound through/right turn lanes	0.43	6.6	A	0.31	7.2	A
Southbound approach	0.63	34.5	C	0.43	33.3	C
Kuala Street / Moanalua Road	0.80	49.7	D	0.62	44.3	D
Eastbound left turn lane	0.83	83.4	F	0.46	61.6	E
Eastbound through/right turn lanes	0.39	39.4	D	0.46	38.7	D
Westbound left turn only lane	0.80	99.6	F	0.56	74.0	E
Westbound through/right turn lanes	0.64	52.8	D	0.69	50.0	D
Northbound left turn lane	0.62	56.0	E	0.62	51.5	D
Northbound through lane	0.20	45.7	D	0.38	50.1	D
Northbound right turn lane	0.55	49.6	D	0.47	47.8	D
Southbound left turn lane	0.94	59.7	E	0.54	33.8	C
Other southbound lanes	0.64	31.9	C	0.43	30.5	C
Kamehameha Highway	0.60	72.6	E	0.73	75.4	E
Eastbound left turn lanes	0.94	116.5	F	0.84	104.7	F
Eastbound through/right turn lanes	0.46	26.0	C	0.31	31.6	C
Westbound left turn only lane	0.89	155.5	F	0.75	129.0	F
Westbound through/right turn lanes	0.25	34.6	C	0.56	50.3	D
Northbound left turn lane	0.73	126.7	F	0.86	130.7	F
Northbound through lane	0.83	137.4	F	0.60	105.6	F
Northbound right turn lane	0.66	101.8	F	0.50	82.3	F
Southbound left turn lane	0.64	119.2	F	0.36	100.9	F
Southbound through/left turn lane	0.92	152.9	F	0.78	125.1	F
Southbound right turn lanes	0.69	76.9	E	0.89	90.4	F
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service						

Table 6 – Results of Level of Service Analyses – 2013 Field Counts

Unsignalized Intersection, Waimano Home Road and:	AM Peak Hour			AS Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS	X	AD	LOS
Pearl City High School driveway									
Southbound left turn	0.00	7.8	A	0.01	7.4	A	0.00	7.3	A
Westbound driveway, shared lane	0.91	40.2	E	0.42	12.6	B	0.03	9.4	A
Hookiekie Street									
Southbound left turn	0.19	10.7	B	0.03	7.5	A	0.03	7.4	A
Westbound approach, shared lane	0.67	62.9	F	0.16	10.7	B	0.14	10.1	B
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service									

Existing levels of service at the signalized intersections are affected by the signal timing and phasing, which are set to minimize delays to the major traffic flows. Minor movements such as left turns with a separate phase will often have poor levels of service (“E” or “F”) despite having more than adequate capacity (as indicated by low utilization) due to signal cycle lengths. Overall delays at signalized intersections are the best indicator of the impact of added traffic. Acceptable conditions were found at the Komo Mai Street, Noelani Street, and Kuala Street/Moanalua Road intersections. At the Kamehameha Highway intersection, the higher volumes with very long delays on the Waimano Home Road (southbound) approach result in overall LOS E conditions.

Existing levels of service at the high school driveway and the intersection of Waimano Home Road and Hookiekie Street in the AM Peak Hour are not in the ranges that are generally considered “acceptable” due to very long delays at the stopped westbound approaches. In the afternoon, conditions in both the early afternoon (“After School” or AS) peak hour and the later PM Peak Hour are acceptable. The situation in the AM Peak Hour, which occurs only during a portion of that hour, is not unusual at stop-controlled intersections, and mitigation (such as intersection widening or traffic signals) is not considered feasible.

Future Traffic Conditions

Future peak hour traffic volumes were projected to provide a baseline to evaluate the traffic impacts of development of the site. No specific development project other than the proposed actions on the property was identified that would significantly change traffic volumes at any of the study intersections. However, to account for other development in the area, a growth factor * of 2% was applied to the counted through volumes between Kuala Street and Moanalua Road, and on all movements at the Kamehameha Highway intersection, to establish a baseline for future conditions with no development of the proposed project.

Figures 7 and 8 show the future baseline traffic assignments and Tables 7 and 8 show the results of the analyses. Volumes in some cases decreased due to less employment at Waimano Ridge, and there were only minor changes in the intersection delays, compared to existing. There were no changes in the intersection levels of service.

* Note: as a comparison, the projections for year 2035 for the Oahu Regional Transportation Plan, a long-range transportation plan that includes forecasts of future traffic based on land use and economic factors, show a 13.3% increase in travel demand at a nearby screenline, over a period of 28 years 2007 to 2035. This increase would be an annual average increase of 0.45%; three years (2013 to 2016) at such an increase would net an increase of 1.35%.

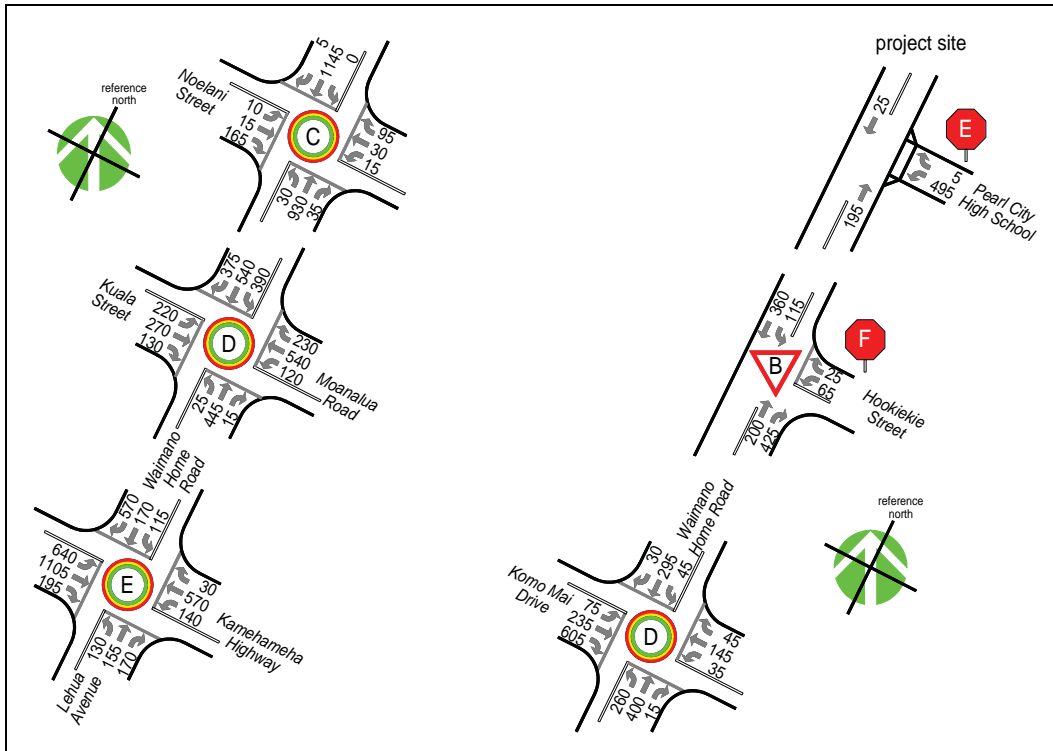


Figure 7 – Future Baseline AM Peak Hour Traffic Assignments

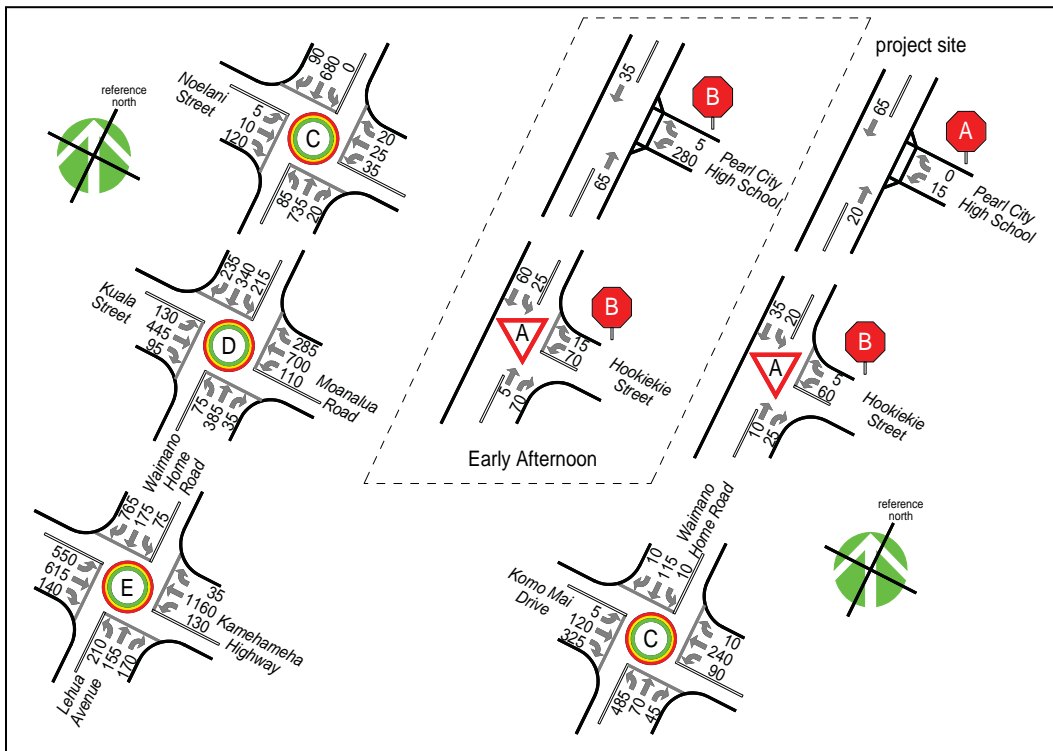


Figure 8 – Future Baseline PM Peak Hour Traffic Assignments

Table 7 – Results of Level of Service Analyses – Future Baseline

Signalized Intersection, Waimano Home Road and:	AM Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS
Komo Mai Drive	0.81	37.5	D	0.58	33.6	C
Eastbound left turn/through lane	0.88	60.9	E	0.26	33.7	C
Eastbound right turn only lane	0.71	20.5	C	0.28	8.0	A
Westbound approach	0.37	33.1	C	0.45	36.5	D
Northbound left turn lane	0.79	57.1	E	0.86	50.8	D
Other northbound lanes	0.61	25.3	C	0.14	15.5	B
Southbound left turn lane	0.50	68.5	E	0.10	54.5	D
Southbound through/right turn lane	0.75	45.6	D	0.33	40.3	D
Noelani Street	0.46	28.1	C	0.32	25.1	C
Eastbound left turn/through lane	0.11	54.0	D	0.05	48.7	D
Eastbound right turn lane	0.64	68.1	E	0.35	54.2	D
Westbound approach	0.64	69.7	E	0.28	53.3	D
Northbound left turn lane	0.07	37.8	D	0.17	39.5	D
Northbound through/right turn lanes	0.43	6.6	A	0.31	7.2	A
Southbound approach	0.63	34.5	C	0.42	33.1	C
Kuala Street / Moanalua Road	0.79	49.2	D	0.62	44.5	D
Eastbound left turn lane	0.82	82.2	F	0.46	61.6	E
Eastbound through/right turn lanes	0.40	39.5	D	0.47	39.0	D
Westbound left turn only lane	0.80	99.6	F	0.57	74.5	E
Westbound through/right turn lanes	0.65	53.3	D	0.70	50.5	D
Northbound left turn lane	0.61	55.7	E	0.62	51.5	D
Northbound through lane	0.19	45.4	D	0.36	49.5	D
Northbound right turn lane	0.54	49.3	D	0.47	47.8	D
Southbound left turn lane	0.92	56.1	E	0.53	33.5	C
Other southbound lanes	0.64	31.8	C	0.41	30.3	C
Kamehameha Highway	0.61	73.4	E	0.74	76.0	E
Eastbound left turn lanes	0.95	117.6	F	0.86	106.1	F
Eastbound through/right turn lanes	0.47	26.3	C	0.32	31.8	C
Westbound left turn only lane	0.91	159.3	F	0.75	129.7	F
Westbound through/right turn lanes	0.26	34.7	C	0.58	50.7	D
Northbound left turn lane	0.75	129.0	F	0.87	132.0	F
Northbound through lane	0.85	140.5	F	0.61	106.2	F
Northbound right turn lane	0.68	102.9	F	0.51	82.8	F
Southbound left turn lane	0.66	121.3	F	0.36	100.9	F
Southbound through/left turn lane	0.93	155.1	F	0.81	127.7	F
Southbound right turn lanes	0.69	76.9	E	0.90	91.3	F
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service						

Table 8 – Results of Level of Service Analyses – Future Baseline

Unsignalized Intersection, Waimano Home Road and:	AM Peak Hour			AS Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS	X	AD	LOS
Pearl City High School driveway									
Southbound left turn	0.00	7.8	A	0.00	7.4	A	0.00	7.3	A
Westbound driveway, shared lane	0.88	36.1	E	0.41	11.9	B	0.02	9.2	A
Hookiekie Street									
Southbound left turn	0.19	10.5	B	0.02	7.5	A	0.02	7.4	A
Westbound approach, shared lane	0.64	55.5	F	0.14	10.3	B	0.13	10.1	B
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service									

The project impacts shown in Figures 3 and 4 were added to the future baseline volumes shown in Figures 7 and 8, resulting in the future peak hour traffic volumes with the proposed project shown in Figures 9 and 10.

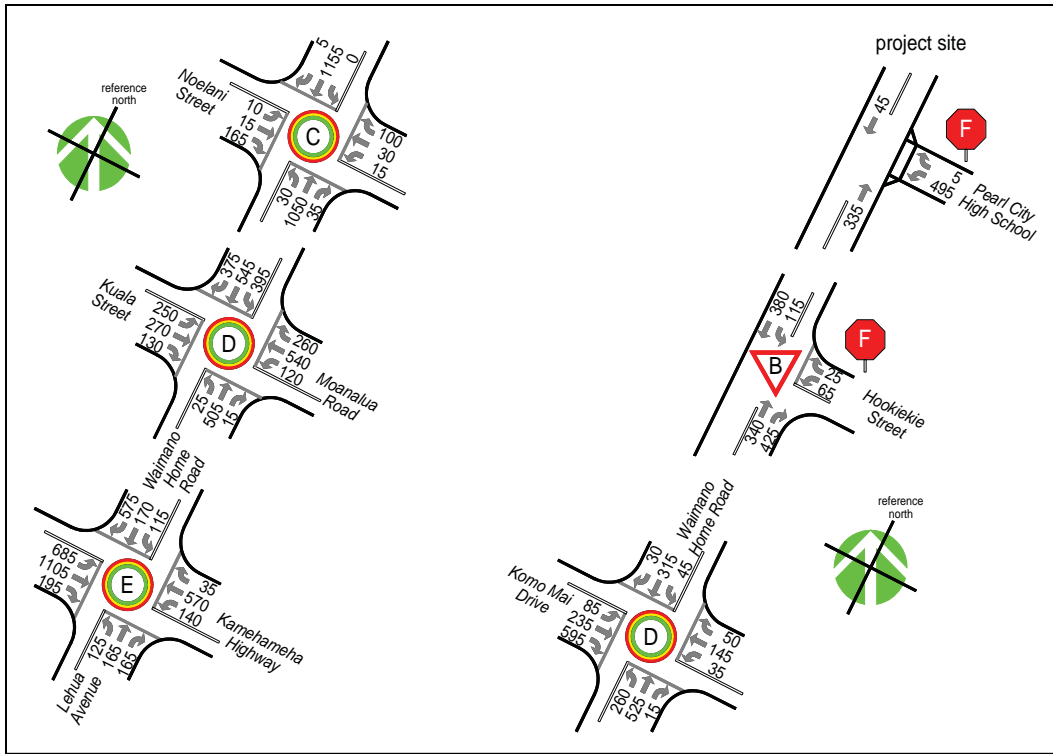


Figure 9 – Future with Project AM Peak Hour Traffic Assignments

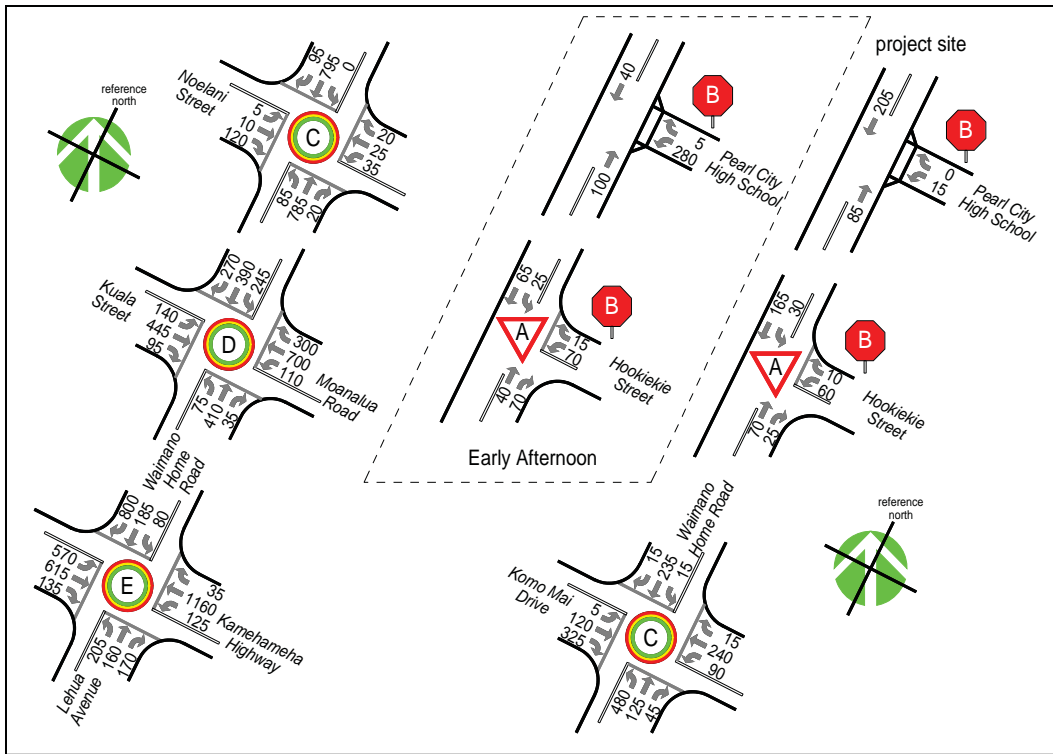


Figure 10 – Future with Project PM Peak Hour Traffic Assignments

Table 9 – Results of Level of Service Analyses – Future with Project

Signalized Intersection, Waimano Home Road and:	AM Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS
Komo Mai Drive	0.85	40.4	D	0.67	34.8	C
Eastbound left turn/through lane	0.94	70.5	E	0.26	33.7	C
Eastbound right turn only lane	0.69	20.1	C	0.28	8.0	A
Westbound approach	0.38	33.4	C	0.46	36.6	D
Northbound left turn lane	0.79	57.1	E	0.85	50.0	D
Other northbound lanes	0.79	32.5	C	0.21	16.8	B
Southbound left turn lane	0.50	68.5	E	0.12	53.8	D
Southbound through/right turn lane	0.79	48.5	D	0.65	49.4	D
Noelani Street	0.51	27.5	C	0.34	25.4	C
Eastbound left turn/through lane	0.12	54.0	D	0.05	48.7	D
Eastbound right turn lane	0.64	68.1	E	0.35	54.2	D
Westbound approach	0.66	71.1	E	0.28	53.3	D
Northbound left turn lane	0.07	37.8	D	0.17	39.5	D
Northbound through/right turn lanes	0.48	7.1	A	0.33	7.4	A
Southbound approach	0.63	34.6	C	0.46	33.9	C
Kuala Street / Moanalua Road	0.88	52.8	D	0.64	44.9	D
Eastbound left turn lane	0.89	91.3	F	0.49	62.6	E
Eastbound through/right turn lanes	0.40	39.5	D	0.47	39.0	D
Westbound left turn only lane	0.80	99.6	F	0.57	74.5	E
Westbound through/right turn lanes	0.67	54.6	D	0.70	50.5	D
Northbound left turn lane	0.71	61.5	E	0.66	52.9	D
Northbound through lane	0.19	45.4	D	0.40	51.1	D
Northbound right turn lane	0.60	51.0	D	0.49	48.4	D
Southbound left turn lane	0.99	70.9	E	0.62	36.5	C
Other southbound lanes	0.64	31.9	C	0.48	31.5	C
Kamehameha Highway	0.62	72.6	E	0.75	78.2	E
Eastbound left turn lanes	0.98	123.1	F	0.89	109.7	F
Eastbound through/right turn lanes	0.46	25.1	C	0.31	31.7	C
Westbound left turn only lane	0.92	161.2	F	0.73	126.7	F
Westbound through/right turn lanes	0.26	34.6	C	0.58	50.7	D
Northbound left turn lane	0.75	131.8	F	0.85	128.9	F
Northbound through lane	0.94	161.7	F	0.63	107.5	F
Northbound right turn lane	0.68	104.9	F	0.51	82.8	F
Southbound left turn lane	0.70	125.9	F	0.39	101.7	F
Southbound through/left turn lane	0.97	168.4	F	0.85	134.3	F
Southbound right turn lanes	0.69	76.8	E	0.94	97.7	F
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service						

Table 10 – Results of Level of Service Analyses – Future with Project

Unsignalized Intersection, Waimano Home Road and:	AM Peak Hour			AS Peak Hour			PM Peak Hour		
	X	AD	LOS	X	AD	LOS	X	AD	LOS
Pearl City High School driveway									
Southbound left turn	0.00	8.2	A	0.00	7.5	A	0.00	7.5	A
Westbound driveway, shared lane	1.06	80.9	F	0.44	13.0	B	0.03	11.4	B
Hookiekie Street									
Southbound left turn	0.21	11.5	B	0.02	7.6	A	0.03	7.6	A
Westbound approach, shared lane	0.82	98.2	F	0.16	10.8	B	0.14	13.1	B
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service									

The analyses show minor increases in average delays at the signalized intersections with no changes in the overall peak hour levels of service.

The increased traffic entering the project site will reduce the opportunities available for the high volume of left turns from the Pearl City High School driveway onto Waimano Home Road, changing the future AM Peak Hour level of service from “E” to “F” with demand exceeding capacity by 6%. The higher volumes also affect the delays to traffic on Hookiekie Street; while level of service does not change, the average delay for the stopped traffic on the westbound approach will increase.

Mitigation Measures

The estimates of future peak hour traffic volumes were based on trip factors and assumed that the peak hours for site-generated traffic and for existing traffic coincide. The 262-employee count was used to compute 142 vehicle trips entering the site in its morning peak hour, and this increase was assumed to be spread evenly over the peak hour. However, if the travel times for the new employees can be effectively managed to discourage arrivals between 7:30 AM and 7:45 AM (the peak 15-minute period for existing traffic), the increases in average peak hour delays can be reduced (the analyses show 69.7 seconds instead of 80.9 seconds at the driveway and 69.3 seconds instead of 98.2 seconds at Hookiekie Street).

At the driveway, the exiting volume would still exceed available capacity by 2%; however, in this situation, and especially considering that traffic on Waimano Home Road is stopped nearby at the security gate (and would therefore not be moving very fast), drivers with the right-of-way would often yield to the higher volumes of traffic on the stopped approach, simulating an all-way stop situation. The results of an analysis of an all-way stop with the AM Peak Hour with-project volumes at this location are shown in Table 11.

Table 11 – Results of Level of Service Analyses – Future with Project

All-way Stop Intersection, Waimano Home Road and:	AM Peak Hour		
	X	AD	LOS
Pearl City HS driveway (overall)		35.9	E
Southbound approach	0.10	10.4	B
Westbound driveway, shared lane	0.96	48.6	E
Northbound approach	0.65	19.3	C
X = utilization or volume/capacity ratio AD = average delay per vehicle (seconds) LOS = Level of Service			

Other Transportation Impacts of the Proposed Project

Public bus service provided by the City's TheBus system is available in the area. Route 73 (Pearl City Uplands) travels on Waimano Home Road with a bus terminus located near the security gate. Typical daytime service for Route 73 is one bus every 40 minutes. Other routes can be accessed via transfers.

However, because the distance between that bus stop and the most remote building is approximately 0.8 mile, measured along the existing access roadway, project impacts to bus use are not expected to be significant.

Parking demand generated by the proposed project will be provided on-site. If parking is not adequate, there are other areas within the site that could be used for parking. All new employees that will be driving to work should be provided with passes to enter the site to mitigate parking alongside Waimano Home Road outside of the security gate.

Impacts to parking and traffic during construction can be minimized by avoiding adding traffic during the AM Peak Hour, when traffic volumes along Waimano Home Road are the highest and conditions the worst. Construction vehicle movements should also avoid the hours when traffic due to the end of the school day is expected, or when events at the Pearl City Cultural Center are expected to generate substantial traffic.

Planned access for construction workers may include on-site parking or car pooling to the site from an off-site location (such as a contractor's baseyard). Traffic due to construction activities will include increased truck traffic for delivery of construction materials and removal of debris, movement of construction equipment, and employee traffic. The general contractor should be required to plan the work to minimize traffic impacts, and the movement of construction material should be planned to avoid peak traffic hours.

Traffic impacts during construction will be short-term and, managed properly, would occur primarily during non-peak traffic hours. The project contractor will apply for and obtain needed street use permits from the appropriate agencies.

Conclusions and Recommendations

The proposed project will not have significant traffic impacts. While the proposed project will result in increased traffic volumes on Waimano Home Road, significant impacts are not expected at the signalized intersections along Waimano Home Road, at Komo Mai Drive, Noelani Street, Kuala Street/Moanalua Road, and Kamehameha Highway. The overall level of service at each intersection will not change.

Closer to the project, however, the added traffic on Waimano Home Road could result in large increases in delays for traffic on the high school driveway and on Hookiekie Street wishing to turn onto Waimano Home Road. Because the peak conditions occur only during a portion of the peak hour, these increases can be mitigated if the arrival of the new employees were managed to avoid the peak 15-minute period (7:30 AM to 7:45 AM).

Traffic impacts during construction can be mitigated by managing construction-related traffic to not be on the road during the hours when school traffic is highest (7:00 AM to 8:00 AM, and depending of when the school day ends at the nearby schools, the hour that begins 15 minutes prior to the last bell).

Appendix A

Summary of Manual Count Data

(5 sheets follow)

Waimano Ridge Project, Manual Traffic Counts

	Waimano Home Rd. & Pearl City HS Driveway						Waimano Home Road & Hookiekie Street					
	AM: Tuesday, April 30, 2013						AM: Thursday, April 25, 2013					
	PM: Tuesday, April 30, 2013						PM: Tuesday, April 23, 2013					
	Westbound		Northbound		Southbound		Westbound		Northbound		Southbound	
	Left	Right	Thru	Right	Left	Thru	Left	Right	Thru	Right	Left	Thru
6:00 AM - 6:15 AM	0	0	15	0	0	2	0	3	14	10	1	3
6:15 AM - 6:30 AM	2	0	16	2	0	4	3	5	19	14	3	7
6:30 AM - 6:45 AM	6	0	14	5	0	2	3	2	17	16	3	4
6:45 AM - 7:00 AM	36	0	6	5	0	1	10	8	13	42	19	19
7:00 AM - 7:15 AM	93	0	8	16	0	3	15	3	36	84	38	55
7:15 AM - 7:30 AM	125	0	19	30	0	4	11	8	53	100	30	96
7:30 AM - 7:45 AM	142	0	20	54	0	15	22	4	78	146	24	119
7:45 AM - 8:00 AM	137	2	36	34	0	11	17	6	57	93	22	99
8:00 AM - 8:15 AM	10	0	12	2	0	7	14	9	17	14	6	18
8:15 AM - 8:30 AM	0	0	17	2	0	4	1	7	18	9	2	5
count totals	551	2	163	150	0	53	96	55	322	528	148	425
peak hour												
7:00 AM - 8:00 AM	497	2	83	134	0	33	65	21	224	423	114	369

1:00 PM - 1:15 PM	1	0	7	1	0	3	7	6	9	10	11	43
1:15 PM - 1:30 PM	1	0	8	1	0	2	5	4	7	9	7	18
1:30 PM - 1:45 PM	3	0	7	1	0	4	8	10	4	13	7	13
1:45 PM - 2:00 PM	6	0	2	5	0	6	12	6	3	16	3	12
2:00 PM - 2:15 PM	28	0	5	6	0	15	31	1	3	26	7	23
2:15 PM - 2:30 PM	112	2	5	25	9	16	20	2	2	14	15	18
2:30 PM - 2:45 PM	108	0	8	16	0	9	10	4	5	13	4	16
2:45 PM - 3:00 PM	33	0	5	5	0	10	9	3	7	17	1	12
3:00 PM - 3:15 PM	16	0	0	4	0	4	10	1	9	17	5	14
3:15 PM - 3:30 PM	12	0	4	3	1	10	17	5	3	10	10	20
3:30 PM - 3:45 PM	19	0	2	3	0	4	7	2	4	9	7	14
3:45 PM - 4:00 PM	11	0	0	0	0	4	12	4	2	5	3	12
4:00 PM - 4:15 PM	10	0	0	0	0	4	12	0	3	9	9	34
4:15 PM - 4:30 PM	9	0	1	1	0	10	8	1	1	5	7	16
4:30 PM - 4:45 PM	3	0	1	2	0	40	15	2	2	8	17	30
4:45 PM - 5:00 PM	3	0	1	1	0	10	13	0	2	9	2	7
5:00 PM - 5:15 PM	7	0	0	3	1	31	14	0	1	3	6	4
5:15 PM - 5:30 PM	4	2	1	11	0	12	19	1	3	5	6	13
5:30 PM - 5:45 PM	4	3	1	22	0	5	7	2	3	3	4	10
5:45 PM - 6:00 PM	6	1	1	9	0	5	9	0	4	7	1	8
count totals	94	2	10	28	2	129	127	16	30	80	72	164
peak hours												
1:30 PM - 2:30 PM							71	19	12	69	32	66
2:00 PM - 3:00 PM	281	2	23	52	9	50						
4:30 PM - 5:30 PM	17	2	3	17	1	93	61	3	8	25	31	54

Waimano Home Road & Komo Mai Drive												
AM: Tuesday, April 23, 2013												
PM: Thursday, April 25, 2013												
	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6:00 AM - 6:15 AM	0	61	124	1	6	1	51	44	4	4	24	0
6:15 AM - 6:30 AM	1	58	143	5	12	2	48	49	3	5	15	0
6:30 AM - 6:45 AM	1	53	160	5	10	1	45	42	5	3	18	1
6:45 AM - 7:00 AM	10	61	117	10	25	3	46	48	0	4	35	2
7:00 AM - 7:15 AM	15	52	161	9	28	1	64	93	5	7	54	9
7:15 AM - 7:30 AM	34	63	164	9	31	6	77	135	5	12	75	6
7:30 AM - 7:45 AM	26	62	172	14	48	28	80	143	4	16	96	10
7:45 AM - 8:00 AM	5	57	105	4	36	10	40	47	1	9	78	3
8:00 AM - 8:15 AM	0	32	35	20	8	4	36	22	1	17	54	5
8:15 AM - 8:30 AM	6	23	62	16	11	2	43	17	7	3	9	0
count totals	98	522	1,243	93	215	58	530	640	35	80	458	36
peak hour												
7:00 AM - 8:00 AM	80	234	602	36	143	45	261	418	15	44	303	28

3:00 PM - 3:15 PM	4	21	76	19	62	5	97	26	8	4	22	1
3:15 PM - 3:30 PM	2	19	63	9	55	1	112	30	7	1	40	4
3:30 PM - 3:45 PM	2	29	83	8	64	1	105	30	8	2	36	5
3:45 PM - 4:00 PM	0	30	71	25	62	2	88	30	6	4	35	5
4:00 PM - 4:15 PM	4	14	78	16	60	5	109	19	7	1	31	1
4:15 PM - 4:30 PM	1	34	94	16	54	2	130	17	8	1	40	1
4:30 PM - 4:45 PM	4	31	82	18	64	3	122	20	11	4	44	6
4:45 PM - 5:00 PM	1	22	72	29	63	2	116	19	16	2	26	3
5:00 PM - 5:15 PM	1	31	76	24	59	5	117	15	7	4	23	1
5:15 PM - 5:30 PM	1	20	61	18	70	4	120	21	6	2	24	2
5:30 PM - 5:45 PM	0	25	67	17	58	3	112	15	6	5	33	6
5:45 PM - 6:00 PM	6	28	73	20	62	5	105	30	10	2	27	2
count totals	26	304	896	219	733	38	1,333	272	100	32	381	37
peak hour												
4:15 PM - 5:15 PM	7	118	324	87	240	12	485	71	42	11	133	11

Waimano Home Road & Noelani Street												
AM: Thursday, April 18, 2013												
PM: Thursday, April 18, 2013												
	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6:00 AM - 6:15 AM	2	1	56	2	1	3	4	69	3	0	190	0
6:15 AM - 6:30 AM	2	3	46	1	1	5	7	92	1	0	196	2
6:30 AM - 6:45 AM	0	2	43	1	0	4	5	138	0	0	224	1
6:45 AM - 7:00 AM	2	1	55	4	1	5	5	141	3	0	235	0
7:00 AM - 7:15 AM	1	2	40	4	4	18	5	210	3	0	201	0
7:15 AM - 7:30 AM	2	4	44	5	7	21	7	282	10	0	340	0
7:30 AM - 7:45 AM	4	6	43	2	7	39	7	281	13	0	292	1
7:45 AM - 8:00 AM	1	3	40	3	10	19	13	154	10	1	316	2
8:00 AM - 8:15 AM	8	0	43	4	4	7	15	130	1	1	250	0
8:15 AM - 8:30 AM	2	2	37	3	2	4	6	86	0	0	152	1
count totals	24	24	447	29	37	125	74	1,583	44	2	2,396	7
peak hour												
7:00 AM - 8:00 AM	8	15	167	14	28	97	32	927	36	1	1,149	3

3:00 PM - 3:15 PM	1	2	30	13	5	3	25	176	3	0	177	35
3:15 PM - 3:30 PM	1	2	24	12	15	3	25	183	3	0	132	31
3:30 PM - 3:45 PM	2	2	31	18	8	5	22	162	5	0	151	32
3:45 PM - 4:00 PM	1	0	28	5	6	4	28	179	4	0	154	16
4:00 PM - 4:15 PM	0	0	34	4	7	4	21	168	4	0	177	25
4:15 PM - 4:30 PM	0	4	36	7	4	8	24	176	8	0	177	19
4:30 PM - 4:45 PM	1	4	28	14	9	4	19	186	4	0	181	28
4:45 PM - 5:00 PM	2	1	23	11	6	3	20	204	3	0	167	18
5:00 PM - 5:15 PM	2	0	21	7	4	2	22	168	2	0	159	18
5:15 PM - 5:30 PM	0	3	21	12	9	4	19	206	4	0	202	22
5:30 PM - 5:45 PM	2	1	38	11	7	4	21	172	4	0	190	18
5:45 PM - 6:00 PM	1	2	32	7	5	4	26	197	4	0	154	25
count totals	13	21	346	121	85	48	272	2,177	48	0	2,021	287
peak hour												
4:00 PM - 5:00 PM	3	9	121	36	26	19	84	734	19	0	702	90

Waimano Ridge Project, Manual Traffic Counts

Waimano Home Road & Moanalua Road												
AM: Wednesday, April 24, 2013												
PM: Wednesday, April 24, 2013												
	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6:00 AM - 6:15 AM	20	76	21	8	48	22	3	49	4	141	83	51
6:15 AM - 6:30 AM	21	69	21	15	89	43	6	62	0	136	80	57
6:30 AM - 6:45 AM	31	82	26	20	83	24	2	73	1	120	89	58
6:45 AM - 7:00 AM	35	62	15	31	97	27	4	102	3	123	89	54
7:00 AM - 7:15 AM	57	74	24	37	116	44	8	118	5	100	128	70
7:15 AM - 7:30 AM	54	64	36	24	113	64	5	133	2	104	148	98
7:30 AM - 7:45 AM	78	64	49	16	121	65	7	145	5	90	135	108
7:45 AM - 8:00 AM	34	60	20	43	178	60	6	59	4	100	130	101
8:00 AM - 8:15 AM	32	60	22	42	144	39	9	54	3	92	86	75
8:15 AM - 8:30 AM	29	73	19	21	135	35	8	56	6	83	76	55
count totals	391	684	253	257	1,124	423	58	851	33	1,089	1,044	727
peak hour												
7:00 AM - 8:00 AM	223	262	129	120	528	233	26	455	16	394	541	377

3:00 PM - 3:15 PM	22	119	27	20	152	57	16	96	10	64	92	68
3:15 PM - 3:30 PM	31	101	22	26	182	68	21	106	7	40	74	62
3:30 PM - 3:45 PM	38	113	27	28	183	53	16	80	5	52	99	63
3:45 PM - 4:00 PM	40	101	17	34	170	57	24	104	11	64	86	49
4:00 PM - 4:15 PM	48	94	25	24	139	49	16	73	13	55	89	70
4:15 PM - 4:30 PM	45	93	17	22	182	50	28	96	3	43	82	55
4:30 PM - 4:45 PM	44	69	16	17	157	58	28	103	4	43	92	67
4:45 PM - 5:00 PM	37	56	14	22	183	65	24	91	3	28	84	89
5:00 PM - 5:15 PM	47	84	17	19	180	59	33	86	5	36	77	65
5:15 PM - 5:30 PM	38	19	21	26	177	69	27	93	6	30	50	60
5:30 PM - 5:45 PM	41	124	19	18	201	49	26	105	2	45	68	83
5:45 PM - 6:00 PM	28	130	17	16	174	71	36	96	3	50	79	51
count totals	459	1,103	239	272	2,080	705	295	1,129	72	550	972	782
peak hour												
3:00 PM - 4:00 PM	131	434	93	108	687	235	77	386	33	220	351	242

Waimano Home Road & Kamehameha Highway												
AM: Wednesday, May 01, 2013												
PM: Wednesday, May 01, 2013												
	Eastbound			Westbound			Northbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6:00 AM - 6:15 AM	104	418	34	23	86	5	32	12	54	26	33	69
6:15 AM - 6:30 AM	117	402	35	25	96	7	19	16	41	34	32	92
6:30 AM - 6:45 AM	122	346	23	36	95	11	35	22	43	35	54	96
6:45 AM - 7:00 AM	141	346	33	38	143	15	26	22	34	18	47	99
7:00 AM - 7:15 AM	183	304	42	43	107	6	30	36	44	36	39	141
7:15 AM - 7:30 AM	148	222	57	22	142	5	40	50	42	36	42	164
7:30 AM - 7:45 AM	164	210	57	34	169	3	30	43	46	21	40	165
7:45 AM - 8:00 AM	123	168	37	50	165	6	32	18	31	37	62	228
8:00 AM - 8:15 AM	65	162	41	46	166	10	36	23	48	26	47	155
8:15 AM - 8:30 AM	100	161	25	31	155	12	28	36	41	22	38	107
count totals	1,267	2,739	384	348	1,324	80	308	278	424	291	434	1,316
peak hour												
6:45 AM - 7:45 AM	636	1,082	189	137	561	29	126	151	166	111	168	569

3:00 PM - 3:15 PM	102	129	23	35	349	6	66	31	39	14	33	167
3:15 PM - 3:30 PM	114	180	39	20	326	12	56	31	31	16	33	165
3:30 PM - 3:45 PM	149	150	46	42	238	4	52	40	51	14	50	204
3:45 PM - 4:00 PM	129	125	24	37	251	9	40	37	39	28	53	205
4:00 PM - 4:15 PM	148	147	28	30	321	8	60	44	45	17	34	185
4:15 PM - 4:30 PM	129	141	46	28	258	7	56	40	46	13	31	172
4:30 PM - 4:45 PM	119	144	30	21	242	6	75	51	46	22	32	202
4:45 PM - 5:00 PM	123	152	28	21	270	6	65	28	41	18	31	183
5:00 PM - 5:15 PM	105	161	31	26	301	4	46	25	41	9	42	161
5:15 PM - 5:30 PM	105	148	37	30	240	4	35	18	39	21	34	207
5:30 PM - 5:45 PM	124	116	31	36	266	10	35	23	36	8	46	180
5:45 PM - 6:00 PM	106	135	31	31	258	10	30	19	31	11	30	146
count totals	1,453	1,728	394	357	3,320	86	616	387	485	191	449	2,177
peak hour												
3:15 PM - 4:15 PM	540	602	137	129	1,136	33	208	152	166	75	170	759