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KIRK CALDWELL
MAYOR

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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

State of Hawai'i
ENVIRONMENTAL COUNCIL
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

KATHY K. SOKUGAWA
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DEPUTY DIRECTOR

December 4, 2018 2018/ED-8(WA)

Mr. Scott Glenn, Director
State of Hawaii
Department of Health
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Glenn:

SUBJECT:	Chapter 343, Hawaii Revised Statutes Draft Environmental Assessment (DEA)
Project:	Six-Unit Multi-Family Dwelling
Applicant/ Agent:	Atlantic Group LLC (Ken Xu)
Location:	432 Kalaimoku Street - Waikiki
Tax Map Key:	2-6-015: 055
Proposal:	Construction of a four-story, six-unit multi-family dwelling.

With this letter, the Department of Planning and Permitting hereby transmits the DEA and anticipated finding of no significant impact (DEA-AFONSI) for the Six-Unit Multi-Family Dwelling Project at 432 Kalaimoku Street in Waikiki, in the Honolulu District on the island of Oahu, for publication in the "The Environmental Notice" on **December 23, 2018**.

Enclosed are a completed Office of Environmental Quality Control (OEQC) Publication Form, a hard copy of the DEA, and a disc with a copy of the DEA-AFONSI. We have also sent an electronic copy via electronic mail to your office.

Should you have any questions, please contact William Ammons, at 768-8025 or via email at wammons@honolulu.gov.

Very truly yours,

Anthony X. Ching

FOR Kathy K. Sokugawa
Acting Director

Enclosure: DEA, one hard copy and one disk
One copy of OEQC Publication Form

APPLICANT
PUBLICATION FORM

Project Name:	Six-Unit Multi-Family Dwelling
Project Short Name:	Six-Unit Muti-Family Dwelling
HRS §343-5 Trigger(s):	(5) Propose any use within the Waikiki area of Oahu, the boundaries of which are delineated in the Land Use Ordinance as amended, establishing the "Waikiki Special District"
Island(s):	Oahu
Judicial District(s):	4 (Honolulu)
TMK(s):	2-6-015: 055
Permit(s)/Approval(s):	Special District (Major), Building Permit
Approving Agency:	Department of Planning and Permitting
Contact Name, Email, Telephone, Address	William Ammons, wammons@honolulu.gov, (808) 768-8025, 650 South King Street, 7th Floor Honolulu, Hawaii 96813
Applicant/Consultant:	Atlantic Group LLC
Contact Name, Email, Telephone, Address	Ken Xu, ken.xu168@gmail.com, (808) 391-8406, 3272 Pahoa Avenue, Honolulu, Hawaii 96816

Status (select one)	**Submittal Requirements**
___X_ DEA-AFNSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
____ FEA-FONSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the approving agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
___ FEIS Acceptance Determination	The approving agency simultaneously transmits to both the OEQC and the applicant a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
____ FEIS Statutory Acceptance	The approving agency simultaneously transmits to both the OEQC and the applicant a notice that it did not make a timely determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and therefore the applicant's FEIS is deemed accepted as a matter of law.
____ Supplemental EIS Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.

____ Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.

____ Other Contact the OEQC if your action is not one of the above items.

Project Summary

The Applicant, Atlantic Group LLC, proposes to construct a new 4-story, 6-unit multi-family dwelling located at 432 Kalimoku Street. The ground floor of the proposed building will be an open parking garage with residential units on the second through fourth floors. Each residential floor will have two units each and an elevator will service all floors of the building.

DRAFT ENVIRONMENTAL ASSESSMENT

A New 6-Unit Multi-Family Dwelling

Date of Submittal: September17th, 2018

Location:
432 Kalaimoku Street
Honolulu, Hawaii 96815
TAX MAP KEY: 2-6-016: 005

APPLICANT
Atlantic Group LLC
Ken Xu
ken.xu168@gmail.com
(808) 391-8406
3272 Pahoa Ave,
Honolulu, Hawaii 96816

Prepared by: Expo, LLC

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U.S. EPA's ENVIRONMENTAL JUSTICE SCREENING AND MAPPING IMAGE

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I. Project Description & Introduction

- The project site is currently a 4,500 square feet vacant lot in the Waikiki residential zoning area (Tax Map Key: 2-6-016: 005).
- There were residential structures at this project site before, and they were demolished in the 1990s.
- Building Proposing: A new 4-story multi-family, 6-unit dwelling at 432 Kalaimoku Street, Honolulu (Tax Map Key: 2-6-016: 005).
- Environmental Impact: The proposed new dwelling will not bring significant negative impacts to the district since it has similar use as the demolished residential structures.
- Due to this project proposing is located in the Waikiki Special District, as part of the application procedure for obtaining the Special District Permit-Major, this Draft Environmental Assessment for the new project is provided pursuant to the requirements of Chapter 343, Hawaii Revised Statutes (HRS), and Environmental Impact Statement(EIS) law. The design and building of the proposed new dwelling will be in compliance with and fulfill the Waikiki Special District guidelines and requirements.

II. Project Basics

A. Proposed Project:	A new 4-story multi-family, 6-unit dwelling
B. Tax Map Key:	2-6-016: 005
C. Location:	432 Kalaimoku Street Honolulu, Hawaii 96815 (Exhibit 3)
D. Lot Dimension/Size/Topo	50ft X 90ft = 4,500 square feet, nearly flat
E. Property Tax Class:	Residential
F. Zoning(LUO) Designation:	Apartment Precinct (Exhibit 3)
G. Land Use:	Urban District (Exhibit 4)
H. Special District & Neighborhood:	Waikiki Special District (Exhibit 3)
I. Proposed Development Plan:	Primary Urban Center (Exhibit 4)
J. Public Streets:	Nearby major streets: Ala Wai Boulevard, Kalakaua Avenue, Ala Moana Blvd., Kapahulu Ave.
K. Dept./Division Consulted:	Department of Planning & Permitting (Gerald Toyomura, Keith Tamura) / DPP-Waste Water Div. Fire Department Branch / Board of Water Supply Waikiki Neighborhood Board (Working with Chairman, Robert J. Finley, to schedule the

	presentation for this proposed project to Waikiki Neighborhood Board)
L. Approving Agency:	Department of Planning & Permitting City and County of Honolulu 650 South King Street, 7th Floor Honolulu, Hawaii 96813
M. FEMA Flood Designation:	AO
N. Tsunami Evacuation Zone:	No
O. Applicant:	Ken Xu ken.xu168@gmail.com (808) 391-8406 3272 Pahoa Ave Honolulu, Hawaii 96816
P. Owner:	Yong Xia Li workocean@yahoo.com 510-882-3288 & Jin Sheng Li Jensonli2000@yahoo.com 808-585-9998 P.O. BOX 240667 Honolulu, Hawaii 96824

III. Background

A. Project Site and Surrounding Area

This proposed new building is located at 432 Kalaimoku St Honolulu (Tax Map Key: 2-6-016: 005) in Waikiki Special District, a primary urban center. Please refer to the location map, (Exhibit 4). The subject site is a residential use, nearly flat vacant lot. This neighborhood is surrounded with existing and new urban mid to high density multi-unit residential structures; ranging from small to large, low-raise to high-raise hotels, condominiums, and apartment buildings.

To the left of the subject lot is a relatively new, approximately 30-floor high-rise multi-family residential building, separating that building and the subject side is a driveway for that high-rise building. Surrounding the back and right side of the subject lot is the open landscaping of that same high-rise property. Facing the project site across Kalaimoku Street, are either vacant lots or low-raise old apartment buildings. Please refer to photos taken for the project site and surrounding area (Appendix 5).

This district has many public amenities, parks, and public transportations, making it extremely convenient for residences to get around and enjoy living here.

In the past, there was residential structure on the subject lot. The structure was demolished in the 1990s. Since then, this project site has been seating there as a vacant lot.

B. Neighborhood Information

According to "Neighborhood Profile Waikiki" from Primary Urban Center Development Plan, here are the demographic data for the Waikiki neighborhood:

Total Population: 19,862	Total Housing Units: 18,412
White: 43%	Total Area in Acres: 579
Asian: 35%	Residential: 34%
Native Hawaiian/Pacific Islander: 3%	Commercial: 11%
Black: 3%	Resort: 23%
Hispanic/Latino: 7%	Open Space: 9%
Two or More Races: 8%	Housing Units Built After 2000: 5%
Population Under 18: 8%	Household Within ¼ Miles to Park: 88%
Population Over 65: 21%	

More information about Waikiki Special District are shown on EJSCREEN Report (Appendix 4).

IV. Project Description

A. Uses and Activities

This project site is located in Waikiki Special District with an Apartment Precinct zoning. This project site is classified for residential use. Currently, this project site is vacant, not existing structure on site. The proposing building will be a 4-story, 6-unit multi-family dwelling, still for residential use as the demolished structure existed before.

B. Proposed Project Description

The proposed project design, including the building design and landscaping design, will be in compliance with the requirements of Land Use Ordinance, Waikiki Special District Apartment Precinct zoning, and the Waikiki Special District Design Guidelines.

The first story of the building will be an open-parking garage. There are 6 parking spaces in total, which fulfills the parking requirement. Standing facing the project site, all 6 parking spaces will be on the left side of the lot, and a 22' wide driveway will be built on the right side of the lot to provide access for cars.

Per Waikiki Special District Apartment Precinct zoning requirements, a maximum height limit of 130 feet height is allowed. As for this proposed structure, the building height will only be 39'-10" tall. The first floor is 8'-6" height for parking; both the second and third floor are at 9'-4 3/4" height for residential, and the fourth floor is at 9'-0 1/2" height also for residential. Please refer to the conceptual drawings provided (Appendix 1).

An elevator is provided to service all 4 floors. There will be total of 6 residential units. Each floor will have 2 units from the 2nd floor through the 4th floor. There is stairway roof access to the roof open space for repair and maintenance purposes.

For this proposed building, the ground level has floor area of 198 sq. ft. mainly to provide access ways to the upper levels of the building. Residential use runs from the second floor for 2,800 sq. ft., the third floor for 2,524 sq. ft., and the fourth floor for 2,143 sq. ft. Total floor area is 7,665 sq. ft, which is in compliance to the Land Use Ordinance (LUO) per the FAR calculation for total floor area allowed. (Appendix 1-Proposed Floor Area).

Following the Waikiki Special District Apartment Precinct zoning requirements, the proposed building has a front setback of 15 feet, the left, right, and rear side each has a setback of 5 feet from the property line.

This project site is a nearly flat lot. Please see the Topographic Map (Appendix 2).

For landscaping design, please refer to the Landscape Plan from conceptual drawings (Appendix 1).

C. Demolition of Historic Structure Not Applicable

The subject site is currently vacant without any building structure on the site; therefore, demolition of a historic structure is not applicable.

V. List of Required Government Permits and Approvals

- Finding of No Significant Impact for the Final Environmental Assessment (FONSI)
- Waikiki Special District Permit - Major
- Building Permit

VI. Project Impacts Analysis

A. Infrastructure Requirements

1. Wastewater Disposal

Application for 8 units of multi-family dwelling for sewage was submitted to DPP Wastewater Division, and all 8 units were approved. The approved units are more than sufficient in fulfilling the sewage requirement for the proposed project of only 6 units.

2. Water Facilities

A set of drawing is being submitted to the Honolulu Board of Water Supply (BWS) to apply for 6 units of multi-family dwelling water usage.

3. Traffic, Parking and Loading

Based on Waikiki Special District Apartment Precinct zoning requirements, for each housing unit, one parking space needs be provided. The proposed development will be 6 units; therefore, 6 parking spaces are provided on the 1st floor open garage.

Loading space is not required for this small residential project proposed.

The subject project site is located at 432 Kalaimoku Street. Kalaimoku Street is bounded by two major streets of Waikiki, the two main streets are Kalakaua Avenue, a one way with four-lane roadway flowing toward Diamond Head direction and the other main street Ala Wai Boulevard, which is also a one way with four-lane roadway flowing toward Ala Moana Boulevard. Kalaimoku Street and Olohana Street, each is a one way street, together form a couplet, each way is directing flow onto the major streets.

As one parking space is provided for each unit of residence, vehicular traffic for this project is addressed and fulfilled. This 6 unit project creates a very minor increase to vehicular traffic, and the new project's drawings are being submitted to Traffic Review Branch.

However, versus the number of surrounding high-rise condos and large apartment buildings in this neighborhood, the vehicular traffic impact generated by this small project of only 6 units proposed, is relatively minimal or even almost negligible. Hence,

substantial traffic volume or traffic pattern change resulting from this proposed small project is rather unlikely.

B. Positive Economic Impacts

1. More Housing

Due to its recreation, shopping, food choice, convenience, the flourishing environment and joyful atmosphere, Waikiki attracts lots of people to live and stay in this neighborhood. This calls for more residential housing units for the area. However, there were only 5% housing units built in Waikiki since year 2000. This slow and extremely limited increase in housing unit supply is creating a struggle to meet the strong increasing demand. Due to the lack of housing unit availability, both rental and purchasing prices are becoming expensive in Waikiki.

The proposed project site is a vacant lot sitting in the Waikiki Special District, an area with extremely limited land resource, for over 15 years, awaiting for its revitalization and new development use.

This proposed project will create 6 comfortable new residential units to the residents in Waikiki. Developing the vacant lot will help to revitalize Kalaimoku Street and reduce waste in land resource use. The proposed project construction not only will create new jobs but will also create permanent State revenue and tax increases without generating significant negative impacts to the existing public infrastructures or the environment.

2. Economic Growth

The new construction of the proposed project will create new jobs and consumption of construction materials. Residents in the future units will general economic growth to the local businesses in Waikiki.

3. Governmental Tax Revenues

The City and County of Honolulu, the State of Hawaii, and our Federal government will all be benefited from the construction of the proposed project.

First of all, the labor and construction material demand for the project will increase sells revenue and worker's income taxes.

Secondly, the future residents to occupy the proposed 6 units will generate consumption, which will bring an increase to local business growth.

Furthermore, when the proposed project construction will be completed, the increase floor area will create a permanent and significant increase in property tax revenue to the State. Any future increase to the property values of these units will further benefit the government tax income in the long run.

VII. Other Impacts

A. Public Services

1. Refuse Collection

The solid waste generated by this proposed project construction will be collected by a private company, no impact to the municipal solid waste service. After this project development will be completed, the solid waste generated by residents will be collected by the City's municipal refuse service.

2. Fire Protection

There is a fire hydrant just approximately 30 feet from the right side of the proposed project site. There are 2 file stations closed by: The McCully Fire Station is only approximately 1.1 miles away, and the Waikiki Fire Station is approximately 1.5 miles from the project site. A substantial impact to the fire protection services is not anticipated as this project only has 6 residential units proposed.

The proposed structure is a small building with only 4 levels and a lot dimension of 90 feet deep. The structure will provide a sprinkler system. For the ground floor, Type II-B w/automatic fire sprinkler will be installed; from the second to the fourth floor, Type V-A w/automatic fire sprinkler will be installed. All of these will facilitate the Fire Depart access and fire protection to the building and its residents. In accordance with the building code, Fire walls will be provided in all required areas, such as surrounding walls for public staircase, separation walls between different units, etc.

Consultation with the fire marshal in the DPP-Fire Department Branch for this proposed project confirmed that the project is in compliance with all applicable requirements of the Fire Code.

3. Police Services

The Waikiki Police Substation is located at 2405 Kalakaua Avenue, which is only approximately 1.0 mile away from the project site. This project site is located within the Honolulu Police Department's District 6. The construction or future residential use of this proposed project will not expect to generate a significant impact to the local police services.

4. Schools

The proposed dwelling is located within the State Department of Education's Honolulu District with the following schools: Ala Wai Elementary School, Washington Middle School, and Kaimuki High School. With a minimal increase of only 6 residential units, there should be no significant impact to public educational services.

5. Electric and Telephone Utilities

As shown on the Topographic Map (Appendix 2), there is an electric junction box on the sidewalk from Hawaiian Electric Company (HECO), which is the electricity power provider for the project site.

A set of drawing for the proposed project is being submitted to HECO for review by the Applicant. Further communication and coordination will be taken place to ensure HECO will provide sufficient electrical power for the future residential use of this development.

For telephone lines, Hawaiian Telecom is the company serving this district. The project Applicant will work with Hawaiian Telecom for phone line provision and use. No significant impact is expected to the telecom service provider or local environment.

6. Drainage

Please refer to Topographic Map (Appendix 2). The topo map is showing that this lot is basically level. This project does not anticipate an increase to the existing drainage capacity; thus, should not general any significant impact on its current municipal drainage system.

7. Flood Plain Management

Please refer to Topographic Map (Appendix 2). The project site is approximately 5 feet above sea level. Per the Flood Hazard Assessment Report from the Hawaii Flood Insurance Program, the project site is located in flood Zone AO with a 2 feet flood depth (Exhibit 6).

To address this flood elevation issue, the first floor of the structure will be mainly used for the open parking garage and access only. Residential units runs from 2nd floor through the 4th floor.

In the event of a flood and water run into the elevator pit, the float switch will be activate for high water operation and the sump pump will pump out water in the elevator pit to support the continue smooth operation of the elevator.

B. Physical Environment

1. Geology, Natural Land Forms, Topography and Soils

In reference to the "Soils and Foundation Investigation", page 4, Geology of Waikiki, "The site is located between the Ali Wai Canal and the Pacific Ocean in the Waikiki Area of Honolulu. Waikiki was developed in the early 20th century by infilling of a marsh areas that drains the Kooloau Mountians behind Honolulu. The subsoils at the site reflect this history, with deposits of coralline gravel, lagoonal muck, and occasional cinders under shallow fill.

On the ISGS geologic map for the Island of Oahu, the Waikiki area is labeled Qf, Fill."

Per the Topographic Map (Appendix 2), this project site is 5 feet above sea level and is nearly flat. There are no noticeable slopes found, and erosion shall not be a concern for this nearly leveled site. As the subject site had been graded basically flat for the prior existed homes used for residence long before, other than the proposed project foundations, no substantial excavation or change to the topography is anticipated. Hence, there will be minimal to almost unnoticeable impact to the subject site and nearby topography and geology.

Surface Conditions

Please refer to "Soils and Foundation Investigation" (Appendix 3), page 6, section of Surface Conditions stated:

"The site is in a fully developed urban area and is bounded by mid-and high-rise residences. The ground is basically level and accessed by a driveway at grade from Kalaimoku Street. There is fencing along the sides and rear of the property. Ground over consists of low, scrubby grass and weeds or gravel.

At the time of our exploration, the ground was dry, with no standing ponds or pooling of water."

Based on the above statements, besides clearing out the lot for construction and a positive visual impact, the proposed project will not create substantial impact to its nearby surface conditions.

Subsurface Conditions

Please refer to "Soils and Foundation Investigation" (Appendix 3), page 6, section of Subsurface Conditions, stated:

"The surface fill is underlain by soft, lagoonal silt over loose to dense coralline gravel. Dense coralline gravel was encountered at about 35 feet below grade. A thick strata of dense, black cinders was encountered from 26 feet, and this would be the bearing level.

Ground water was encountered in all borings at a depth of four feet below the surface at the time of our investigation."

Per Meta Engineering's conclusion and recommendations, this site "is feasible to support the apartment building", and "The subsurface conditions provide excellent foundation support for the proposed structure."

Based on the above findings, the proposed small project will not create a substantial impact to its subsurface conditions.

2. Public Views

According to Waikiki Special District Design Guideline Urban Design Controls Map (Exhibit 7), this project site is not located within any major view corridors.

The proposed project is a low-rise of only 4 levels and less has a height of less than 40 feet. Adjacent to the left of the proposed site is the high-rise Lanikea luxury condominium building, which has a height of approximately 30 stories. Several other surrounding apartment and condominium buildings have similar height in comparison to the proposed project. Other than those, per the satellite image from Google (Exhibit 2), the subject site is surrounded by mid to high-rise buildings from all the streets raping it, those include the buildings on Ala Wai Blvd, Kuhio Ave, Launiu Street, and Olohana Street.

Based on the Waikiki Special District Apartment Precinct zoning, the height limit of this project site is 300 feet. The proposed height of this project is far less than the allowed maximum height limit. This 6-unit dwelling proposed fulfills the required setback per the LUO. The architectural design for the project's exteriors follows the "Waikiki Special District" guidelines and will be integrated to the surrounding environment.

Given its comparatively low building height and integrated exterior, besides bring a revitalized positive visual impact to Kalaimoku Street with the new structure replacing the currently vacant weedy lot with an abended look, this project will not create any imposing visual impact nor alter the view corridor or landscape of the nearby existing environment.

3. Natural Habitats

The subject site is a small lot of 4,500 square feet located in a fully developed urban area. This site was used for residential purposes before the old structures were demolished, and since then the lot has been vacant. Surrounding the site are low, mid, to high-rise mid to high density buildings. There are no special animal species or protected plant species at this site. The site is currently vacant with some weeds and scrubby grass only; there are no trees. The proposed building will not create any interference with any special or protected species' natural habitats. This proposed project will have no impact on special species' natural habitats.

4. Historical and Archaeological Resources

The proposed site is currently vacant; there isn't any existing building structure on this project site. Consideration for historical value of structures would not apply to this development site. In that sense, there is no impact on historical considerations.

For historical and archaeological resources, the adjacent building, Lanikea at Waikiki, a 30-floor high rise, built in year 2005, is the closest reference resource for the subject lot; therefore, Lanikea's finding is used here. Per the information provided by the previous owner and seller, "The following are excerpts from the 2003 Final Environmental Assessment and Finding of No Significant Impact for the A&B Waikiki Condominium (Lanikea at Waikiki which **surrounds the lot on 3 sides**) prepared by Wilson Okamoto & Associates:

- Archaeological Resources: No burials or dry Jaucus sand deposits were encountered. Burial finds in Waikiki have almost exclusively been associated with dry Jaucus sand deposits…Based on the wetland type of environment that characterized the project areas prior to the 1920's and the absence of dry Jaucus sand, burial finds within the project site are unlikely…no on-going cultural practices are likely…
- Environment site assessment: Based on historical review, a surficial site inspection, and current and former uses of the subject property, ETC does not believe that there are insuperable environmental problems existing at the subject property.
- Geotechnical: From a geotechnical engineering viewpoint, it is our opinion that the subject property is feasible for development of a high rise structure."

  The adjacent building Lanikea has a lot approximately 15 to 20 times larger than the subject lot. Per its final EA, the report concluded that the site was unlikely to contain "insuperable environmental problems". Comparing to the neighbor's big lot, the subject lot is only 1/15th to perhaps 1/20th the size, and except for the side facing the street, all 3 other sides of the subject lot are contained by the adjacent neighbor's lot with the above geotechnical standing; hence, making it unlikely for the subject lot to have environmental problem.

5. Exceptional Tree

There is no tree on this project site. The lot is essentially vacant of structures and trees; only some low and scrubby grass and weeds are found on the site.

6. Parks and Recreation

Waikiki has a number of parks and many recreation options, such as Ala Wai Canal, Ala Wai Golf Course, Ala Wai Community Park, Sans Souci State Recreational Park, the Waikiki Gateway Park, Fort DeRussy Beach Park, Waikiki Acqurium, Honolulu Zoo…etc. This proposed project, with only 6 units, such a small increase of residents will hardly have any impact on the existing demand for recreational resources.

7. Water Resources

Waikiki's water resource falls under Class A per our State Department of Health, which is protected water source.

This multi-family dwelling does not have water feature in its design, nor does it have any surface water resource. In that sense, the project would not have any impact to the water resources of Waikiki. Also, the project is approximately 0.5 miles away from Waikiki Beach, far enough to create a good physical separation making the subject site unlikely to have any impact to the water source.

8. Coastal Zone Management

This does not apply to the subject site. No Coastal Zone Management permit is required as the subject site is not located in the State's coastal zone Special Management Area.

9. Air Quality

The lot's left side is a driveway for the high-rise adjacent building, the back and right side are open spaces, and the front is Kalaimoku Street. These open areas provide a good separation between the subject site and the nearby residents. During construction, proper dust control will be in place to mitigate and control construction dust. Given such a small project, there will not be much dust created from construction.

The current carbon monoxide level is mainly due to vehicle and motor exhaust. The proposed project, given that it only has parking spaces to accommodate 6 vehicles, no significant change to the current air quality level to the nearby environment is anticipated.

10. Noise

Again, as this lot is wrapped around by a driveway for the high-rise adjacent building, open space in both the back and right side, and Kalaimoku Street in the front, these open areas provide a good separation between the subject site and the nearby residents. During construction, there will be typical construction noise. As for being such a small project, the noise level will not be out of range, such that excavation will be minimal for being such a flat lot to work with, other noise will be mainly from material delivery trucks, and power tools and equipment. Construction noise level will be mitigated to a minimum level. Noise produced by the project construction will only be temporary.

The State Department of Health (DOH) will issue a noise permit for the construction, and noise level will be mitigated to make sure the job site will stay in compliance with the State of Hawaii Community Noise Control Rules.

Upon full occupancy of the dwelling, noise produced by its future residents will be that of a typical dwelling. However, since this is only a 6-unit development with as few as 6 parking spaces, and given it is not a commercial building, the slight increase in living noise will be only that of a typical residence. But there will be no significant impact anticipated on the noise level. Comparing with the noise created by the many residential units from the adjacent approximately 30-story high-rise condominium, the noise produced by the proposed dwelling will be relatively trivial.

11. Flora

Since this site is located at a highly develop urban area and had been used for residential purpose for many years and is a vacant lot with only some weeds and shrubby grass, it is not a favorable or typical environment for the native Hawaiian endangered species to flourish in.

The proposed project's landscaping plan will use typical Hawaiian landscaping plants such as Areca palms and bougainvillea for hedge plant, etc., basically to be obtained from local nurseries. None of the landscaping plant is expected to create any threat to the native Hawaiian species.

12. Fauna

The proposed site is a small lot of only 4500 square feet located in a highly developed residential area and have been used for residential for many years before. Future use will be for residential purpose. This development is not expected to impact the native animal species or create change to Hawaii's current ecosystem.

VIII. Overall Scope of Impact & Contribution of the Development

To recap the proposed project features:

- Residential use – Project will not be disruptive to the nearby surroundings or bring much traffic as commercial buildings do.
- 6 units with 6 parking spaces – A small development limiting the possibilities of major impacts to air quality, noise level, public facility and infrastructure demand…etc.
- Maximum height allowed of 300 ft. vs. proposed height of less than 40 ft. – This means the development will not change the Waikiki horizon like a high-rise or large building would.
- The subject lot is being surrounded by the adjacent new high-rise building and its landscaping open areas, fronting this lot is Kalaimoku Street. That means all the surrounding lands enclosing this particular lot have already been redeveloped; taking out the possibilities for the subject lot to be combined with the adjacent small size lots for a larger redevelopment.
- From the perspective of scarcity land resource optimization, this vacant lot has been seating unutilized for over 15 years. It is now finally catching a chance to be in use and re-shine again in this special neighborhood. By optimizing the vacant lot's land use, this development can turn the vacant lot back to a new life to serve the needs of our community. Otherwise, the vacant lot will continue to stays asleep in the next 10 or perhaps 20 years bringing no value to Waikiki as it continues to pass through the hands of different owners undeveloped.
- Developing the lot will create new values. Besides the adjacent new building, the rest of Kalaimoku Street is currently dominated by badly maintained, old, and lack of Hawaiian characteristic plain apartments and condos, making the street appearing old, abandoned, and lost its vitality. As the new building codes and requirements from the most up-to-date LUO and Waikiki Special District Design Guidelines significantly raised the standards for Waikiki to plan the District for a more upscale environment and the dedication in promoting the Hawaiian culture so as to retain our local culture for future generations, by following and supporting these standards and requirements, the new development will definitely bring back more Hawaiian sense while improving the appearance of its surrounding area.

  Furthermore, developing this vacant lot will not only drive new consumptions for labor and material, generate higher income for local businesses, and as much as for the current or future owners, this will also be a good investment to consistently benefit and

contribute to the different governmental agencies' revenues through different types of tax collections for the many years yet to come.

After much analysis from the different perspectives of the above environmental considerations, overall, beside the positive economic changes and improved visual upgrade from the future new dwelling replacing the currently abandoned-looking site and positively contributing to the revitalization of Kalaimuku Street, the scope of negative impact created by the proposed project will not be anything substantial to its surrounding environment. The new project will be nicely integrated into its surroundings in harmony and contribute good values to Waikiki Special District.

IX. Waikiki Special District Guidelines

The following features in the proposed project design show how the project follows and complies with the Waikiki Special District Guidelines design elements.

A. District Objectives – Promote a Hawaiian Sense of Place

The design of the proposed project has an emphasis in various features that promote the unique Hawaiian culture and sense of place:

- Landscaping in this project mainly uses areca palms around the yards, bougainvillea for hedge plant in the frontage and other commonly used Hawaiian tropical local plants. Except for the driveway and walkway entrances, these tropical landscaping will cover up the site's frontage and wrap around the structure to provide cool, shady, relaxing and comfortable walkway and outside spaces to provide residents and pedestrians with a more natural environment to enjoy and interact in.
- The first floor of this project will be opened up to create a more spacious, walking friendly, and easier to use space to be shared by the residents.
- The exterior design will consider the use of colors, textures, and other symbolic elements that reflect a Hawaiian island theme.
- For interior will consider to use natural solid wood for parts of the floors and walls, metal materials, and tiles like mosaic wall art tiles to create sea turtles or Hawaiian plants symbols to bring in the luscious, rich Hawaiian nature.
- The fence and gate will use symbols for decoration which will present the elements of the unique Hawaiian island style of living for the pedestrians on Kalaimoku Street to see and experience the sense of Hawaiian culture.
- Each unit will feature a lanai, creating more outdoor space for the residents to enjoy an island outdoor living. Each unit will have its private open space to luxuriate in the fresh air, natural light, and the soft, heavenly ocean breeze generously offers by this Hawaiian island.

B. District Guidelines

1. Building Design

- **Orientation and Form**

This proposed 4-story multi-family dwelling is 39'-10" height, which is far less than the 300 feet maximum height limit for this street. Including the staircase roof top access, it will be 43'-8" height. The front setback is 15 ft. The front side of the building is straight up without any recessing in. The left, right and the rear sides will recess in based on the 1/4 ratio after 20 feet height to create the layering feature and

give the building a more interesting and unique character while fulfilling the different requirements. The gradations in the form of the structure design for the other 3 sides makes the exterior of the building more spacious visually.

- **Open Space**

Except for the parking spaces, all other open spaces will be landscaped generously and decorated with Hawaiian elements to promote a nice, comfortable, interactive and enjoyable outdoor experience for the residents and pedestrians. The proposed project is designed to fulfill all the open space requirements from the LUO and Waikiki Special District Apartment Precinct zoning.

- **Parking Facilities**

The first floor of the structure is dedicated to an open car garage. There are a total of 6 parking spaces for the 6 residential dwelling units, which is in compliance with the parking requirement for one parking space per unit.

- **Articulation, Scale, Material and Color**

The surface articulation of the building facades is shown on the conceptual plans (Appendix 1).

Note: The conceptual drawings do not fully reflect the details in the project's exteriors. The facades of the structure, the driveway gate, the fence, and lanai railings will incorporate a number of different materials including stucco, wood, stone, metal, and tiles. The combined use of these materials, together, will present Hawaiian motifs and island features to promote the unique Hawaiian sense. Due to the limitations in the functions of the architectural software, these details and materials are unable to be shown in these drawings.

All spaces of the building are designed for a human-scale, to be friendly use and easy access at its ground level.

Materials to be used in the articulation are intended to present and promote the Hawaiian nature and culture. As stated in the Note above, the combined use of a variety of building materials and colors through stucco, wood, stone, metal, tiles, and others, united and balanced, will present Hawaiian motifs and island features to promote the unique Hawaiian sense.

Colors, materials, and textures for the surfaces will nicely blend this building into the Waikiki district and elevate the nearby environment.

- **Ground Level Features**

Entries, Lobbies and Arcades, and Visual Links

Given this project site is rather small in size, only 4,500 square feet in lot size. Due to this limitation, only 6 residential units are proposed. As small as the site is, it still feature a driveway entrance, an elevator entrance, a stairway entrance, and a small walkway on the ground level. Except for the access entrances, the entire ground floor is dedicated to parking and open space to promote a more interactive and enjoyable atmosphere for the residents. Materials and building details will bring in more surface textures and contracts to make the opens spaces on the ground level more inviting and more enjoyable.

This proposed project is not located between a public space, shoreline, mountain view, open space or landmark.

- **Features in Required Yards**

Front Yard Averaging

This proposed project is a small 6-unit residence; front yard is not required in this project. Therefore, front yard average does not apply to the project design.

Porte Cochere

This project does not have a Porte Cochere proposed; it is not a required feature for the small-scale project.

Walls and Fences

Except for the front side, this project site is currently surrounded by fences from the adjacent property on the 3 other sides along the property line. The left and the right sides are iron fences, and the rear side is a brick fence.

To provide more privacy and security for the residents, the front side will be enclosed by a transparent metal fence with a 24-inch set back from the front property line. The fence will be screened with landscaping plants.

Shading Devices

Shading device is not proposed in this project.

- **Roof Design and Equipment Screening**

This proposed project's building height is 39'-10", which does not exceed the height limit, 300 feet in height. The roof top is planned for a roof open space, to place the rooftop machinery and equipment necessary to support the functionality of the structure, which will not be visible from prominent view corridors, Punchbowl, Diamond Head, the shoreline, major streets and open spaces, screening should not be necessary. The rooftop open space will be also used to place possible future solar panels to generate solar energy to the building.

2. Landscaping

As mentioned in prior sections and paragraphs, landscaping in this project mainly uses areca palms around the yards, bougainvillea for hedge plant in the frontage, grass or local ground covering plants for part of the open spaces and other commonly used Hawaiian tropical plants. Except for keeping clear of the driveway and walkway entrances for safety reasons, these tropical landscaping, when matured, will well cover the site's frontage and wrap around the structure to provide cool, shady, relaxing and comfortable walkway and outside spaces for residents and pedestrians to have a more natural environment to enjoy and interact in. Landscaping from the project will help in bringing back the Hawaiian island and tropical senses to Kalaimoku Street.

- **Water Features and Artwork**

There is currently no water feature proposed in this new project's landscaping.

- **Sidewalks and Paving**

A new open garage and driveway will be built with concrete to satisfy the requirement for weathered surface for vehicles to safely drive in and out of the dwelling. Distance from the parking spaces to the setbacks also satisfy the LUO building codes and are spacious enough for cars to backup, maneuver around to properly drive front-in and front-out of the dwelling.

Paving for the property's ground open space and landscaping area will follow the requirements of the LUO at less than 50% of paving, intended to use landscaping rocks, to maintain a good balance of comfort and nature. Grass or commonly used local ground covering plant will also be used for a tropical and natural effect.

There will be a walkway entering from the street sidewalk into the building. This walkway will be decently paved with a selection of natural stones, rocks, or tiles that will give the dwelling a Hawaiian sense and a sense of home.

3. **Signage**

Signage in Waikiki is strictly regulated to control the over use and avoid distraction to the Hawaiian theme promoted by the Waikiki Special District. For this small residential structure, signage will be kept at a minimum mainly for location identifying, directing, safety, and security purposes only. Signage will be conformed to the Waikiki Special District's guidelines with an appearance that elevates the island visual impact of the building.

4. Lighting

Per the Waikiki Special District Guidelines, lighting installed in the exterior spaces will be provided for public safety and enhance the nighttime ambiance for the outdoor open spaces. These lights will not be dominating; instead, they will give the building and its open spaces a soft, peaceful, and comfortable atmosphere. Flicker or flash lights will not be used. Lighting to be provided will conform to the requirements of the Waikiki Special District Design Guidelines.

5. **Urban Design Controls**

- **Waikiki Gateways**

This project site is located in the Waikiki district area as shown on the Urban Design Controls Map (Exhibit 7). To support and contribute to the Waikiki Gateways plan, landscaping in this project contains areca palm and other local tropical plants in the open spaces. Commonly used local hedge plants will be used for screening to elevate the project site's frontage and enhance the pedestrians' sense of place in this tropical environment.

- **Fort DeRussy**

This proposed project provides lush tropical landscaping to support and contribute to the setting achieved by Fort DeRussy.

- **Major Streets**

The project site is located at Kalaimoku Street, not one of the major streets of Waikiki. However, this project site is near or connected to the major streets. The

designs and landscaping of this project will closely follow the Waikiki Special District Guildlines to uphold the District's value and mission.

- **Waikiki Promenade**

  This proposed project is not facing the Ala Wai Canal nor Ala Wai Blvd. that leads to Waikiki Promenade. Therefore, the project will not have a direct visual impact to the promenade.

- **Coastal Height Setback**

  This site is not a waterfront lot, nor does not locate by the shoreline. There is no coastal height setback required.

- **Mini Parks**

  Waikiki Gateway Park, which serves as a recreational space for the public, is the nearest mini park on Kuhio Avenue, 1.5 blocks away from the project. The project creates no impact on the park.

- **Significant Public Views**

  This project is not located within any major view corridors according to the Waikiki Special District Design Guideline Urban Design Controls Map (Exhibit 7). This proposed structure is only 39'-10" height. And it will not interfere with any of the significant views per Section 9.80-3(a) of the LUO.

- **Public Pedestrian Access**

  The project site is not located on one of the major streets of Waikiki nor does it locate on any major pedestrian corridors. However, this small street connects Kuhio Ave to Ala Wai Blvd. As a consideration of this, tropical landscaping in the frontage and wrapping around the structure is used to complement and enhance the Hawaiian sense of place per the landscaping design requirements of the Waikiki Special District Guideline, making this segment of Kalaimoku Street more enjoyable to pedestrians.

C. Historic Structures, Significant Sites and Landmarks

This project site is vacant now. There is no building on this vacant lot. So the site does not contain any historic structures, significant sites, or landmarks.

X. Significance Criteria

1. **Irrevocably commit a natural, cultural, or historical resource**

   The project site is an empty lot, vacant of structure and trees. It does not contain any historical, cultural, or protected natural living things and resource. Therefore, the development of the new project will not irrevocably commit any of the above mentioned resources.

2. **Curtail the range of beneficial use of the environment**

   This project site is located at Waikiki Special District, Apartment Precinct zoning area. This area is a medium to higher-density residential area. Any development must build a minimum of 3 residential units per the requirement of the zoning. As small as this lot is, we

propose to optimize land use to build 6 residential housing units while satisfying all the LUO and Waikiki Special District requirements. Which will result in more housing units for Waikiki.

The vacant lot has been seating in Waikiki for over 15 years, not uplifting or contributing to the District. Developing the site will bring many aspects of enhancements to Waikiki as pointed out in the prior pages.

This project will not curtail the current resources or its environment; instead, it will elevate and revitalize Kalaimoku Street and benefits the Waikiki residents and local businesses.

3. Conflict with the State's environmental policies or long-term environmental goals established by law

The State's environmental policies and long-term environmental goals established by law have the objectives to conserve Hawaii's natural resources, and to optimize the usage of such valuable and unique resources to better its people.

The construction of the project will bring mild negative temporary impacts such audible noise and dusts to the nearby environment per the analysis in the previous pages mentioned. However, such adverse impacts are rather small, limited, and only short-term. These impacts will be managed and mitigated to a minimum. Dust screen will be used and noise from construction will comply with State of Hawaii Community Noise Control Rules from the State Department of Health (DOH). The long-term benefits and contributions of this development will outnumber these small short-term impacts by far as also discussed in the prior pages.

The project will not conflict with the state's environmental policies or long-term environmental goals established by law. This project will satisfy the current strict requirements from the LUO, the Waikiki Special District Apartment Precinct rules, and also the Waikiki Special District Guidelines. This new project will improve the appearance in the surrounding environment, enhance a Hawaiian sense of place, positively contribute to the Waikiki tourist industry, Federal, State and local economic growth and housing supply.

4. Have a substantial adverse effect on the economic welfare, social welfare, or cultural practice of the community of state

The development and construction of the project will drive demand for construction materials and labor by creating new jobs. The construction will contribute to economic growth of local businesses. The City and County will see an increase in revenue through different fees associated with the reviewing, permitting, and park dedication of the project. Utility, telecom and power supply companies will be benefited from the new connections and installations established for the site.

Upon completion, County, State, and Federal will be permanently benefited from the different tax collections generated by the new dwelling units as mentioned in the last section above. More housing units will be available for Waikiki residents. These residents will further drive consumptions to local businesses, which in turn, will drive up retail tax revenues for the City. The newly built dwelling satisfying all building codes, zoning requirements and special district guidelines will raise and complement the standard of the Waikiki Special District and will also help to improve the values of the nearby properties.

5. Have a substantial adverse effect on public health

Small impacts to air and noise will be caused by the construction of the project, but these drawbacks are rather limited and will be mitigated to a minimum level. These small adverse impacts are expected to disappear upon the project's completion. Therefore, the project will not have a substantial adverse effect on public health.

The short-lasting small inconvenience associated with the project construction will be far surpassed by the permanent gains to be harvested from the positive contributions crystalized by the project. The long-term benefits to be brought by the new project will be far more rewarding and enjoyable. The 6 new units, built in accordance with the most modern codes and guidelines, will provide well-constructed, well-designed, and decently landscaped spaces for families. These units will be safe, energy efficient, bright, airy, spacious and comfortable to live in. Instead of an unused vacant lot full of weeds, with the luscious landscaping provided, the new project will surely uplift public health instead of impairing it.

6. Involve adverse secondary impacts, such as population changes or effects on public facilities

This proposed project will build only 6 housing units for residential use; this complies with the requirements from the Apartment Precinct zoning in the Waikiki Special District. With higher efficiency use for the land and better built standards, the lot basically will revive and extend the same function and use of the previously demolished residential structures. The change in residence is rather trivial, which will not create adverse secondary impacts, such as population changes or effects on public facilities.

7. Involve a substantial degradation of environmental quality

As previously described in above, construction work for this project will bring short-lasting environmental impacts such as noise, traffic, and air quality, but these short-term impacts are expected to disappear upon the completion of the project and will be mitigated to a minimum level during construction. A noise permit from the State Department of Health (DOH) will be issued and construction activities on the job site will comply with State of Hawaii Community Noise Control Rules. The ground will be watered before excavation to reduce dust. Dust screens will be used to minimize nearby environment exposure to construction dust spread. Parking permits will be obtained for necessary use and loading for construction materials on Kalaimoku Street. The short-term construction associated impacts caused by this small project will not involve a substantial degradation of environmental quality.

After project completion, this development will provide 6 units of safe, energy efficient, bright, airy, spacious and comfortable dwellings to live in. The luscious tropical landscaping offered by the new development will surely uplift the environmental quality nearby.

8. If individually limited but cumulatively has substantial adverse effect upon the environment or involves a commitment for larger actions

While satisfying the building code requirements and restrictions in the various guidelines, to the extent of best use of space design and financial feasibility, the proposed project has essentially optimized the use of land and space in this small lot. The different impacts have been analyzed, elaborated, and mitigation measures have also explained in this EA. No cumulative effect on the environment and no commitment for larger action are expected in the future.

9. Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.

There were residential structures in this lot before and were demolished in the 1990s. Since then, the lot has been vacant, essentially vacant of structures and trees. Only some commonly found shrubby grass and weeds are in the lot. There is no endangering or protected special species of animals or plant found in the site. This proposed project will not have impact on any rare, threatened, or endangered species, or its natural habitats.

10. Have a substantial adverse effect on air or water quality or ambient noise levels

Unlike a commercial large structure, the proposed building will not result in substantial adverse effect on air or water quality or ambient noise levels as the building is proposed for only 6 units for residential use. The construction process for the proposed building, however, will create short-termed, small level of impact to air quality, water quality and ambience noise level. Since these impacts are essentially construction-related, mitigation measures will be implemented through adopting Best Management Practices (BMP's) to manage these impacts to a minimal level during construction for environmental protection.

For air quality and dust control, frequent watering and dust screens will be established on the construction site. Since this is a vacant lot, there will not be dust created by demolition. Cement for paving and structure will be premixed before bringing onto the site. Before and during excavation for foundation and utility trenching, soils will be watered frequently to reduce pollutant spreading to the air. Job site dust from everyday work will be swept, vacuumed, and washed appropriately to keep a clean job site.

For water quality, silt fence and barriers will be used where necessary for sediment control and prevention of runoffs to the nearby storm drainage. Other devices and materials will also be utilized to protect water quality where needed.

As for noise control, the project construction team will abide by The State Department of Heath's regulation. The construction team will manage construction activities to take place within the appropriate hours according to such regulations. Construction activity exceeding the regulated noise level is not expected. Noise from construction will comply with State of Hawaii Community Noise Control Rules.

After project construction is completed, the construction negative impacts described in above are expected to end as well. In the long run, substantial adverse impacts to air and water quality and noise level, are not expected.

In terms of water quality long-term impact, as mentioned before, the proposed project does not include any water features in its exteriors, so it will not create any impact to the water sources, which are protected by the State Department of Health.

In terms of air quality long-term impact, the new dwelling will only have 6 units of residence to accommodate as few as 6 vehicles; the few vehicles will not create substantial change to the existing carbon monoxide level. And the low number of future resident will not substantially detriment Waikiki's air quality. Instead, the luscious landscaping to be provided by the new project will improve the nearby air quality and contribute to Waikiki's environment.

In terms of noise level long-run impact, new residents and their vehicles will create small change, mainly to that short segment of the street. But living-related noise are expected to be kept at a reasonable and relatively low level. In that sense, the new building will

slightly increase the noise level in the surrounding area, however, no significant impact is anticipated on the overall existing noise level. Comparing with the noise created by the many residential units from the adjacent approximately 30-story high-rise condo building, the noise from these 6 units of residence will be relatively minor.

11. Have a substantial adverse effect on or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters

As explained in previous pages, the project site is located in a flood zone and is approximately 5ft above sea level. Based on the Flood Hazard Assessment Report from the Hawaii Flood Insurance Program, the project site is categorized as Zone AO (Exhibit 6). According to the 2016 FEMA "Guidance for Flood Risk Analysis and Mapping -Shallow Flooding Analysis and Mapping" (Guidance Document 84, Page 2), an AO Zone was defined as an "Area of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) ft. In other words, Zone AO corresponds to the areas of the 1-percent-annualchance flooding (usually sheet flow on undulating terrain) where average depths are between 1.0 and 3.0 feet." (Exhibit 1)

The site's Topographic Map (Appendix 1), shows that this lot is rather even and flat in its nature. Since water flow in an AO zone usually forms sheet flow on sloped terrain, the impact shall not be significant in mild floods due to the site's flat topo. For more severe floods, precaution will be taken to alleviate the adverse impact the floods cause.

To address the flood elevation issue, the first floor of the structure is designed to be used as an open parking garage. Residential units start from the 2nd floor through the 4th floor. Higher levels in the building can be utilized for lower area evacuations and storage transfer and electric system transfer. The elevator pit design will include a sump pump and float switch will be activated in high water operation. Appliances and electrical equipment/system will be elevated to the proper height to satisfy requirements for the AO flood zone.

According to the Department of Planning & Permitting property information, per the Zoning and Flood Information section stated, the subject lot is not in a tsunami evacuation zone.

This project site is not in an erosion-prone area or in geologically hazardous land.

12. Have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in county or state or studies

According to Waikiki Special District Design Guideline Urban Design Controls Map (Exhibit 7), this project site is not located within any major view corridors. In Section 21-9.80-3 of the Land Use Ordinance (LUO), it shows this proposed project does not impact any significant public views. Per the 1987 Department of Land Utilization Coastal View Study, it also shows that the proposed project does not have any substantial impact on important coastal views.

Based on the Waikiki Special District Apartment Precinct zoning, the height limit of this project site is 300 feet. This proposed structure is only 39'-10" height, far less than the allowed maximum height limit. This 6-unit dwelling proposed fulfills the height and setback

requirements in the LUO. The architectural design for the project's exteriors follows the "Waikiki Special District" guidelines and will be integrated to the surrounding environment. Given its comparatively low building height and integrated exterior, with moderate lighting for the outdoor space, this project will not create a substantial adverse effect on scenic vistas and view planes, during day or night, as identified in county or state plans or studies.

13. Require substantial energy consumption or emit substantial greenhouse gases

The Topographic Map (Appendix 2) it shows that there is an existing electric junction box on the sidewalk from Hawaiian Electric Company (HECO), which is the electricity power provider for the project site. Communication and coordination will be taken place to ensure HECO will provide sufficient electrical power for the future residential use of this development.

Energy efficient electrical appliances and light fixtures will be used. Part of the illumination will be solar energy. Also, a solar system for the dwelling will be an option being considered to further reduce energy consumption. The proposed project will not require substantial energy consumption or emit substantial greenhouse gases.

XI. Environmental Assessment Perspective

After going through the analyses looking from the many aspects in this Draft Environmental Assessment, these analyses support the perspective of a Finding of No Significant Impact (FONSI) is anticipated in the development of the proposed 6-unit multi-family dwelling at 432 Kalaimoku Street, Honolulu.

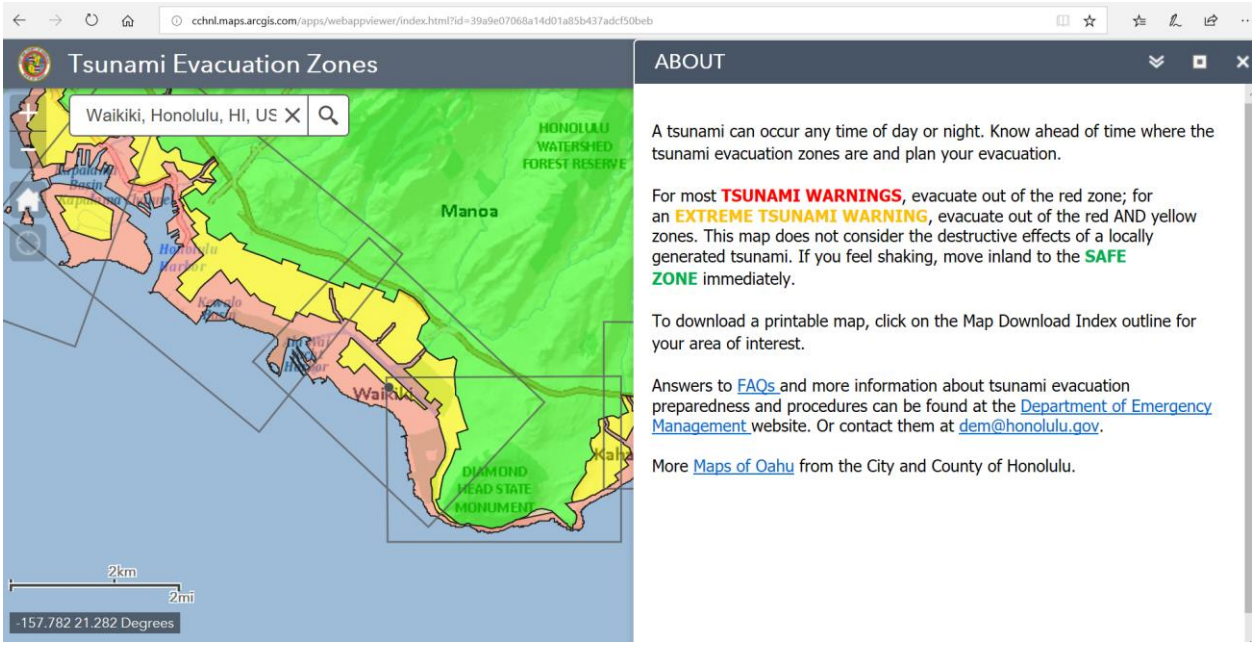
Exhibits

Exhibit 1 - Flood Hazard Zone Guidance

Flood Hazard Zone	Shallow Flooding Description
Zone AO	Area of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) ft.[1] In other words, Zone AO corresponds to the areas of the 1-percent-annual-chance flooding (usually sheet flow on undulating terrain) where average depths are between 1.0 and 3.0 feet. Average whole-foot depths derived from the hydraulic analysis are shown within this zone on the FIRM.

FEMA 2016
Guidance for Flood Risk Analysis and Mapping
Shallow Flooding Analysis and Mapping
Guidance Document 84, Page 2

Exhibit 2 - City and County of Honolulu Tsunami Evacuation Zones Map



City and County of Honolulu Tsunami Evacuation Zones Map
URL:http://cchnl.maps.arcgis.com/apps/webappviewer/index.html?id=39a9e07068a14d01a85b437adcf50beb

EXHIBIT 3 – LOCATION AND ZONING MAP

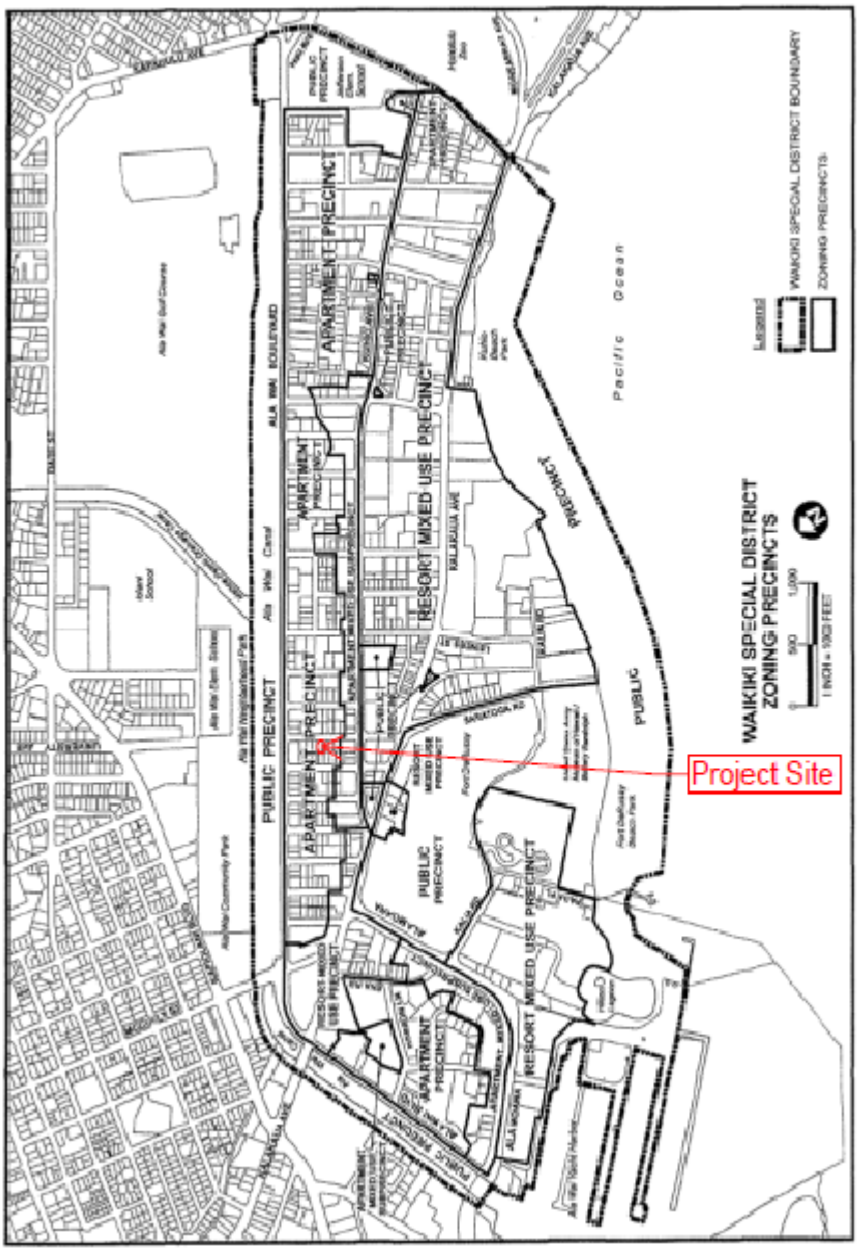


EXHIBIT 4 – PRIMARY URBAN CENTER DEVELOPMENT PLAN

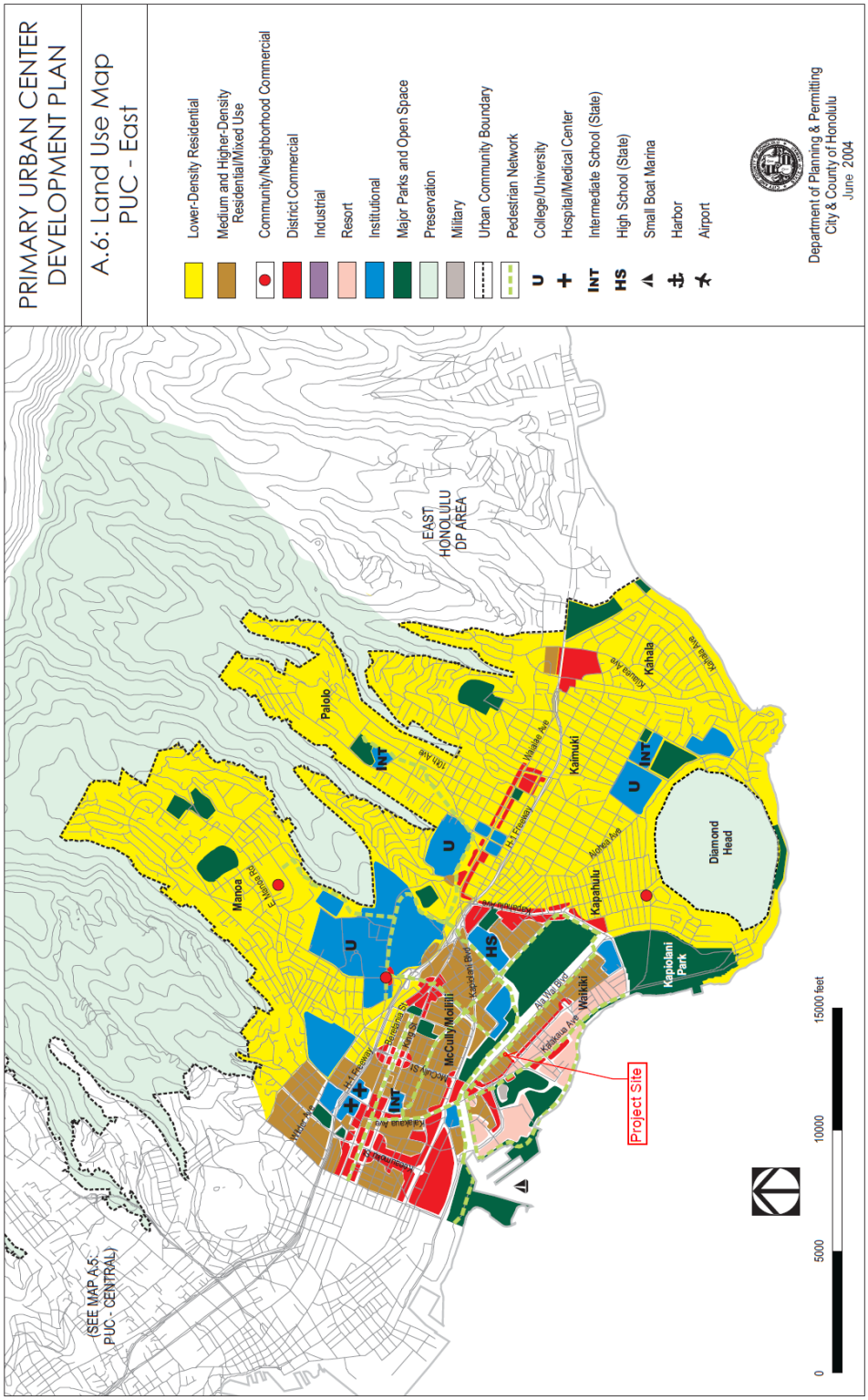


EXHIBIT 4

EXHIBIT 5 – PUBLIC INFRASTRUCTURE MAP

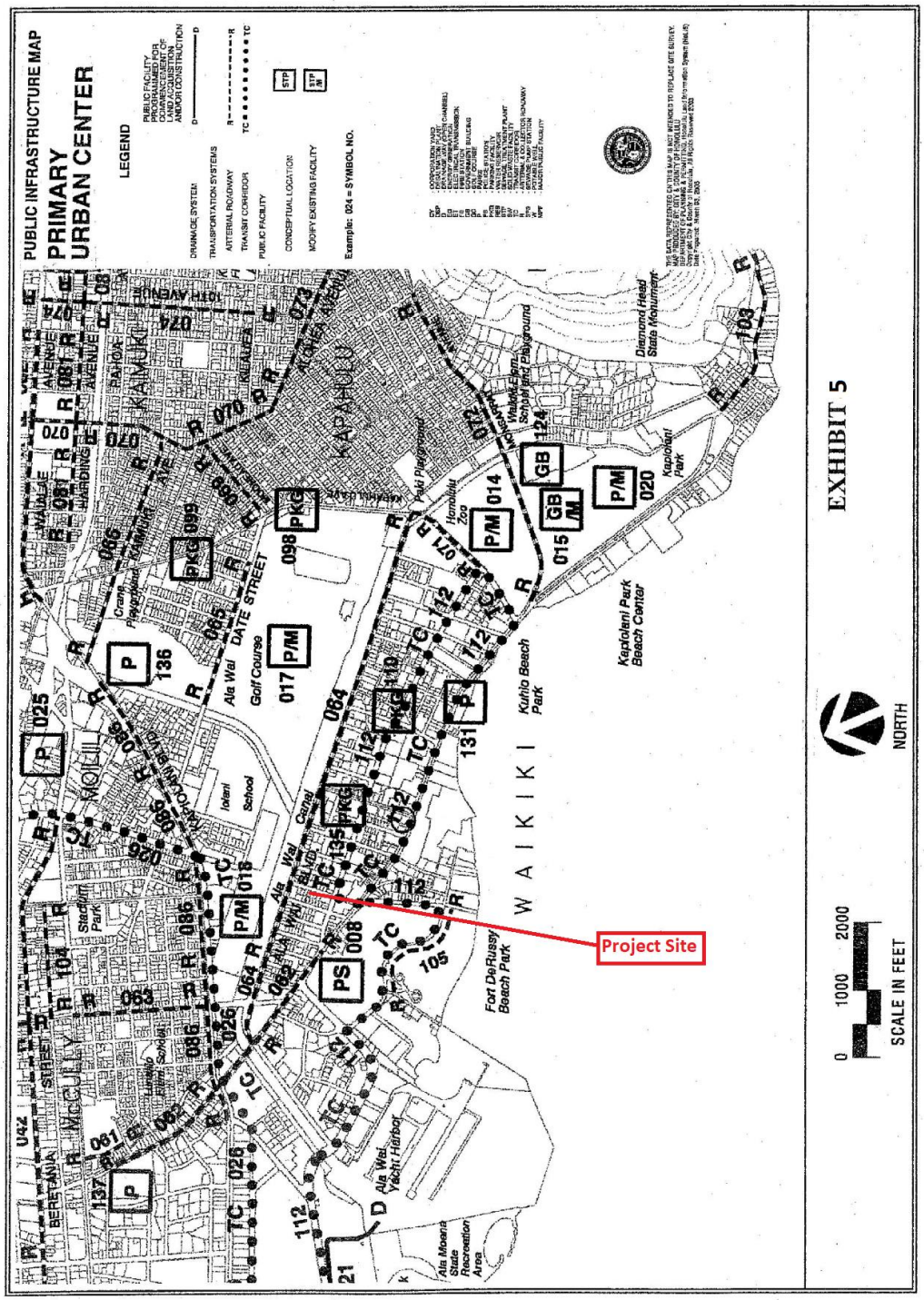


EXHIBIT 6 – FLOOD HAZARD ASSESSMENT REPORT

Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 2-6-016:005
WATERSHED:	ALA WAI
PARCEL ADDRESS:	432 KALAIMOKU ST HONOLULU, HI 96815

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0366G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 400 800 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- Zone A: No BFE determined.
- Zone AE: BFE determined.
- Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

EXHIBIT 6

EXHIBIT 7 – URBAN DESIGN CONTROLS MAP

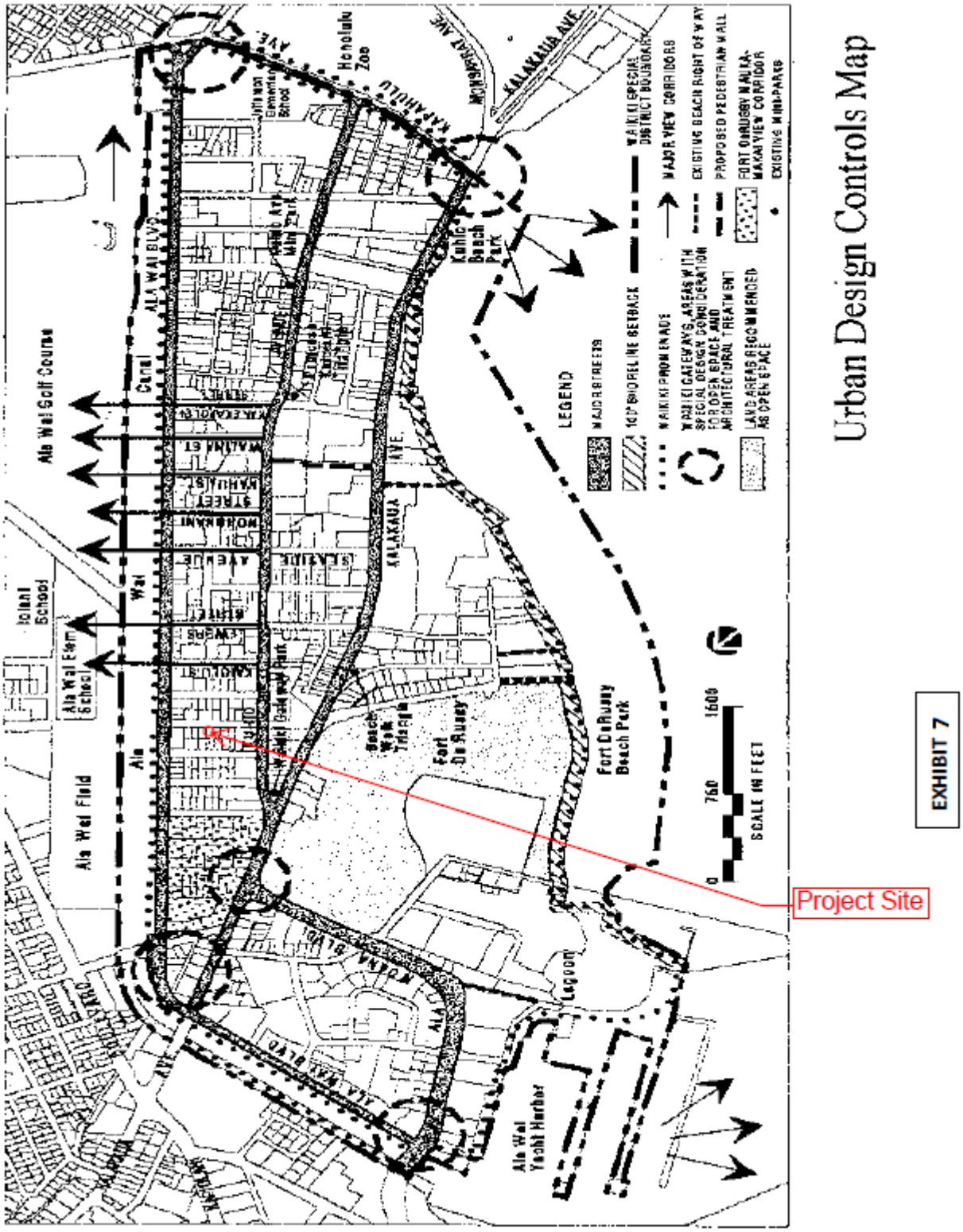


EXHIBIT 8 – U.S. EPA's ENVIRONMENTAL JUSTICE SCREENING AND MAPPING IMAGE

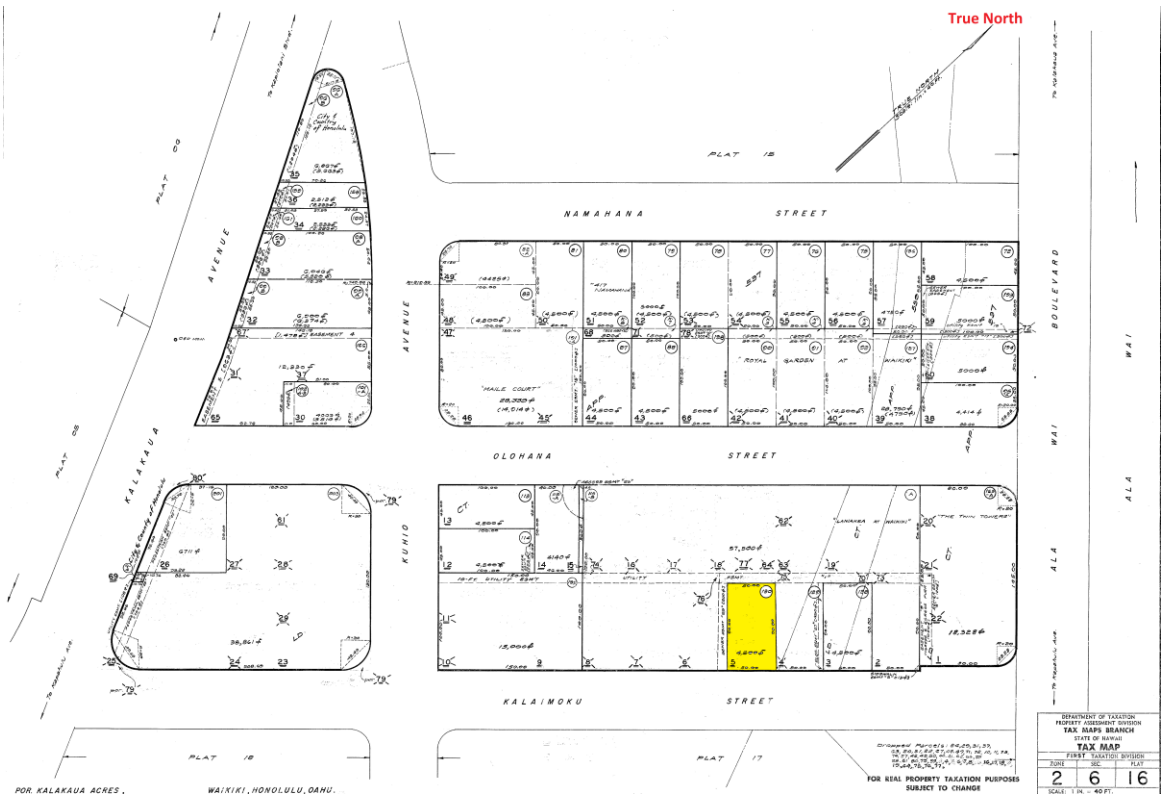
EXHIBIT 8

APPENDIX 1: CONCEPTUAL DRAWINGS

Note: Conceptual drawings are not final until after building department review

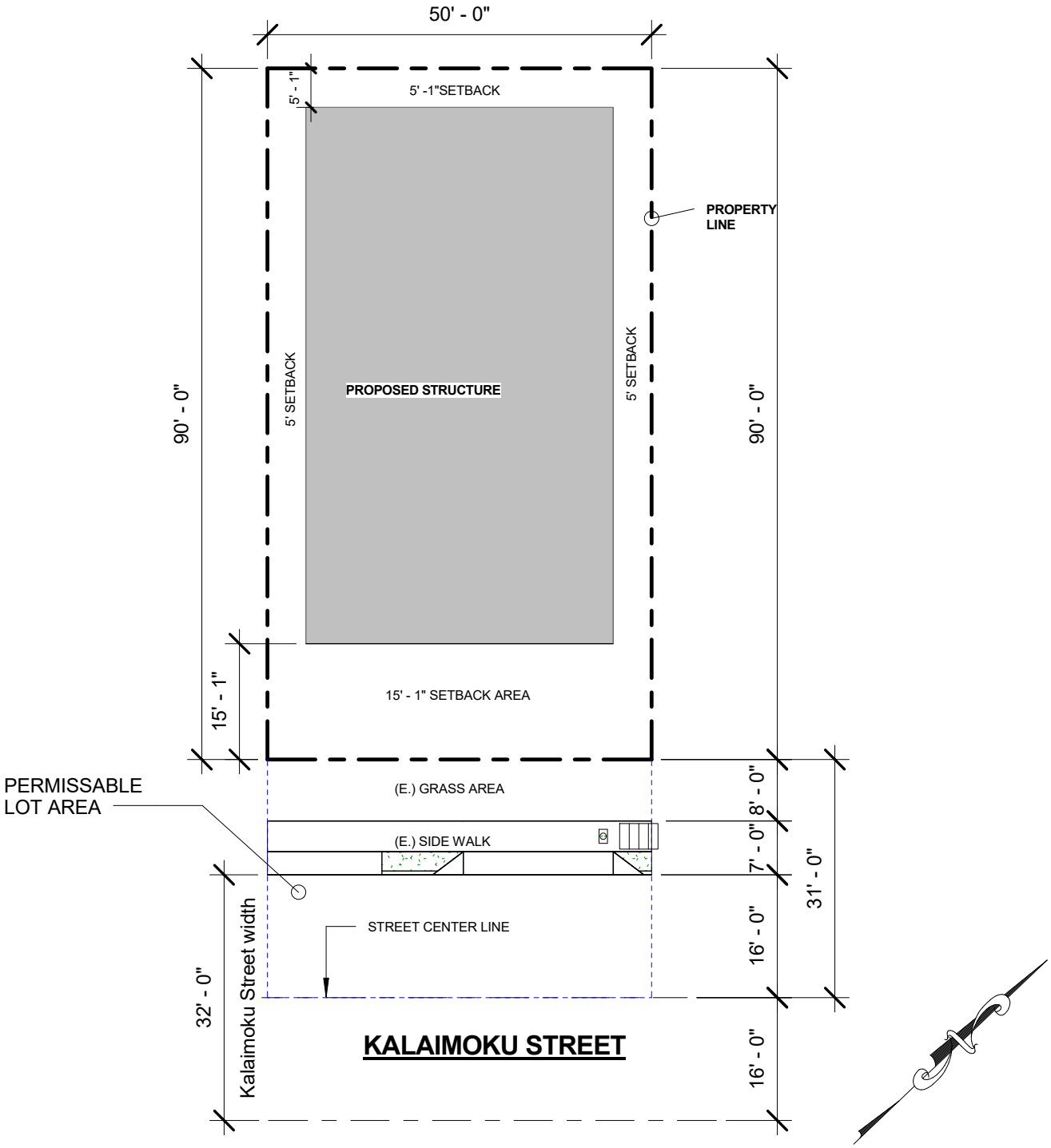
SITE INFORMATION
Location: 432 Kalaimoku Street

O'ahu
Waikiki



Zoning information:

T.M.K.: 2-6-016:005
Lot Area: 4,500 sq. ft.
Special District: Waikiki Special District
State Land Use: Urban District
Zoning: Apartment Precinct
Height Limit: 300 feet



1 SITE CALCULATION PLAN
1" = 20'-0"

Project Site Calculation:

Max. Allowable Building Height: 300 ft.

Proposed Building Height:
4 stories, 39'-10" (43'-8" height roof access)

Parking:
6 parking spaces provided (including one accessible), 1 per dwelling unit x 6 units = 6 parking spaces required.

Loading:
No loading spaces required, since Number of dwelling units are less than 20 units.

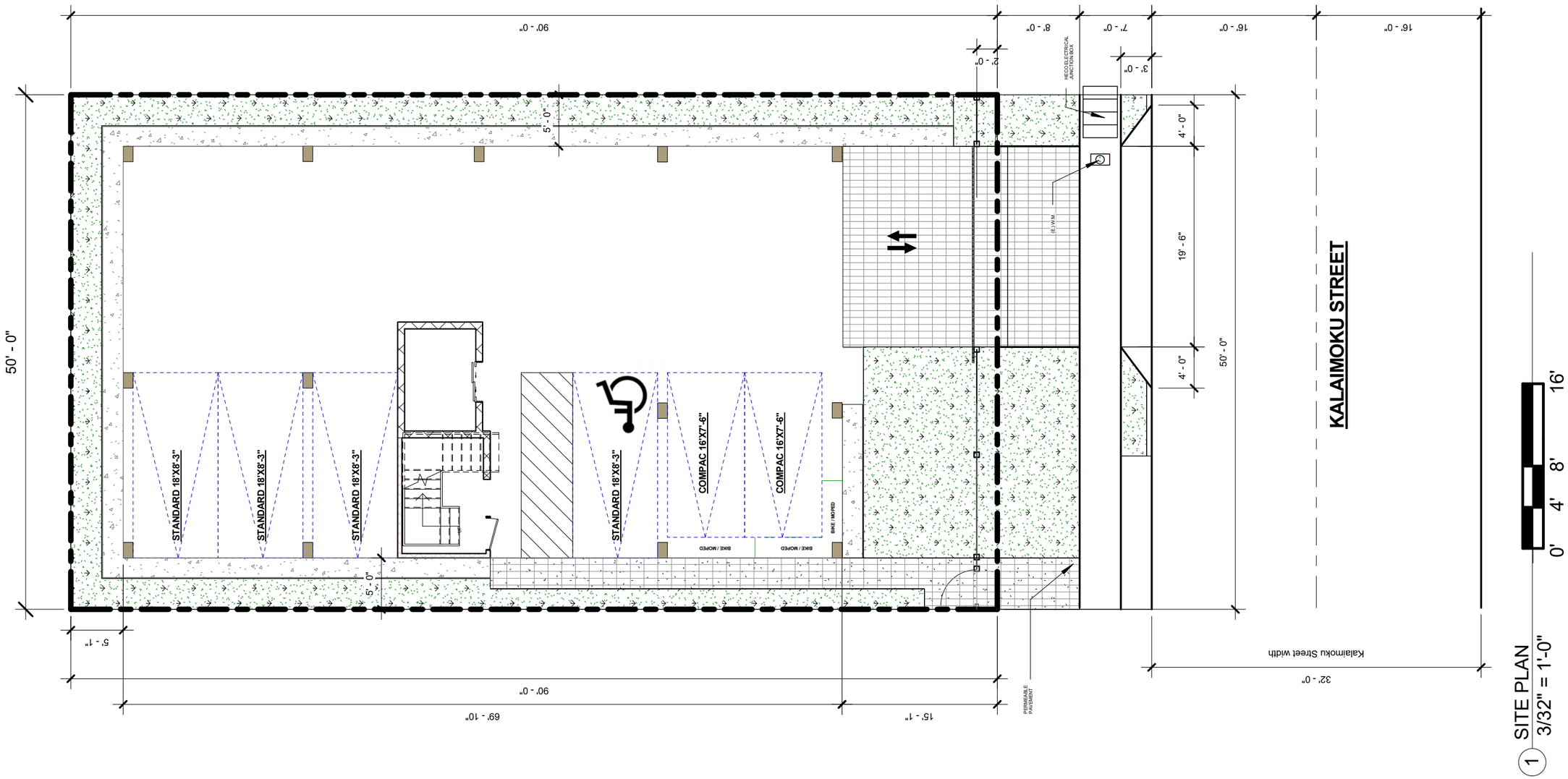
LOT AREA:
= 4,500 sq. ft. + 1,550 sq. ft. (1/2 of abutting right-of-way: 50 ft. X 31 ft.) = 6,050 sq. ft.

MAX FAR (<20,000 sf lot): = (0.00003 x 4,500) + 1.3 = 1.435

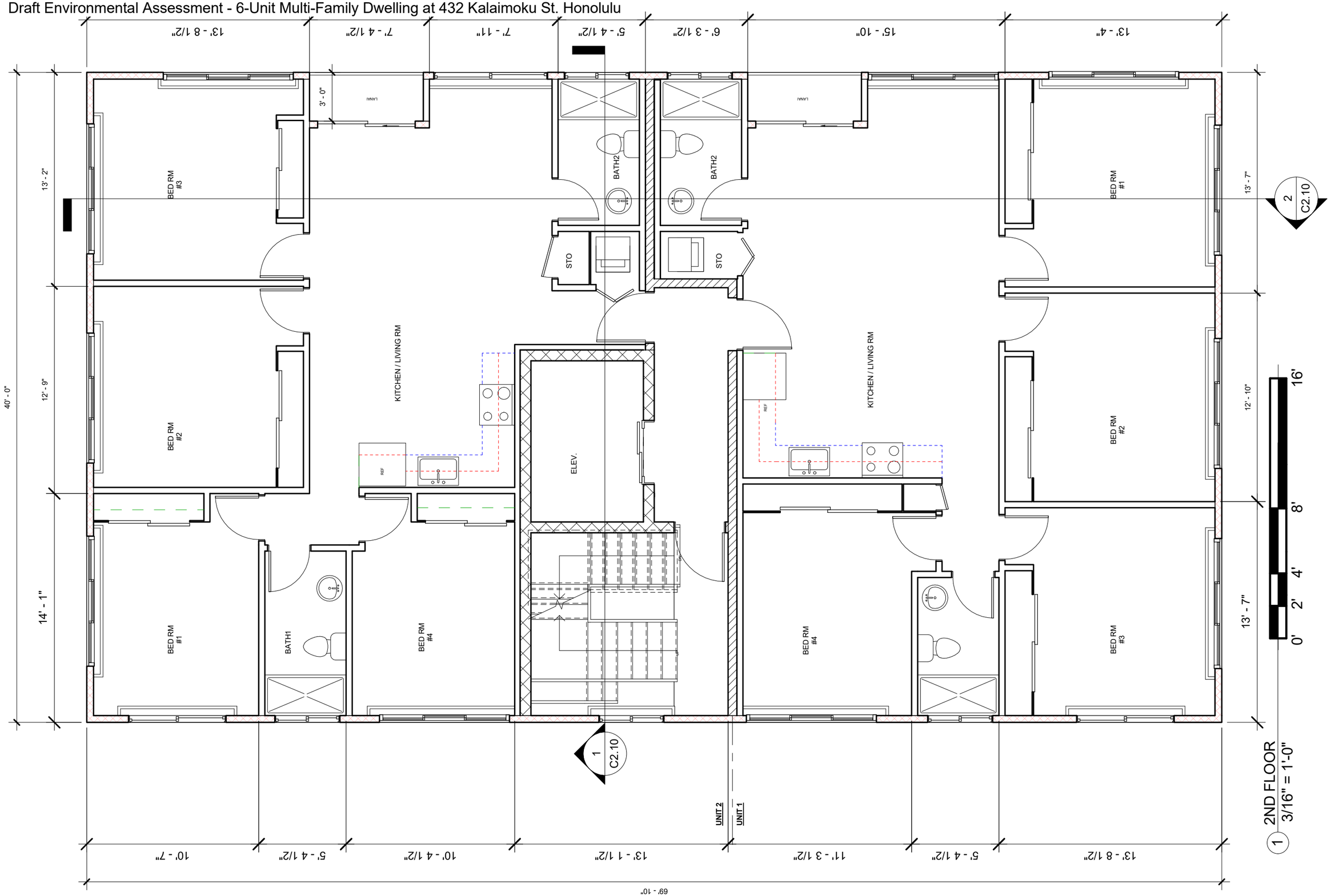
Allowable Floor Area (FAR): = 1.435 x 6,050 = 8,681.75 sq. ft.

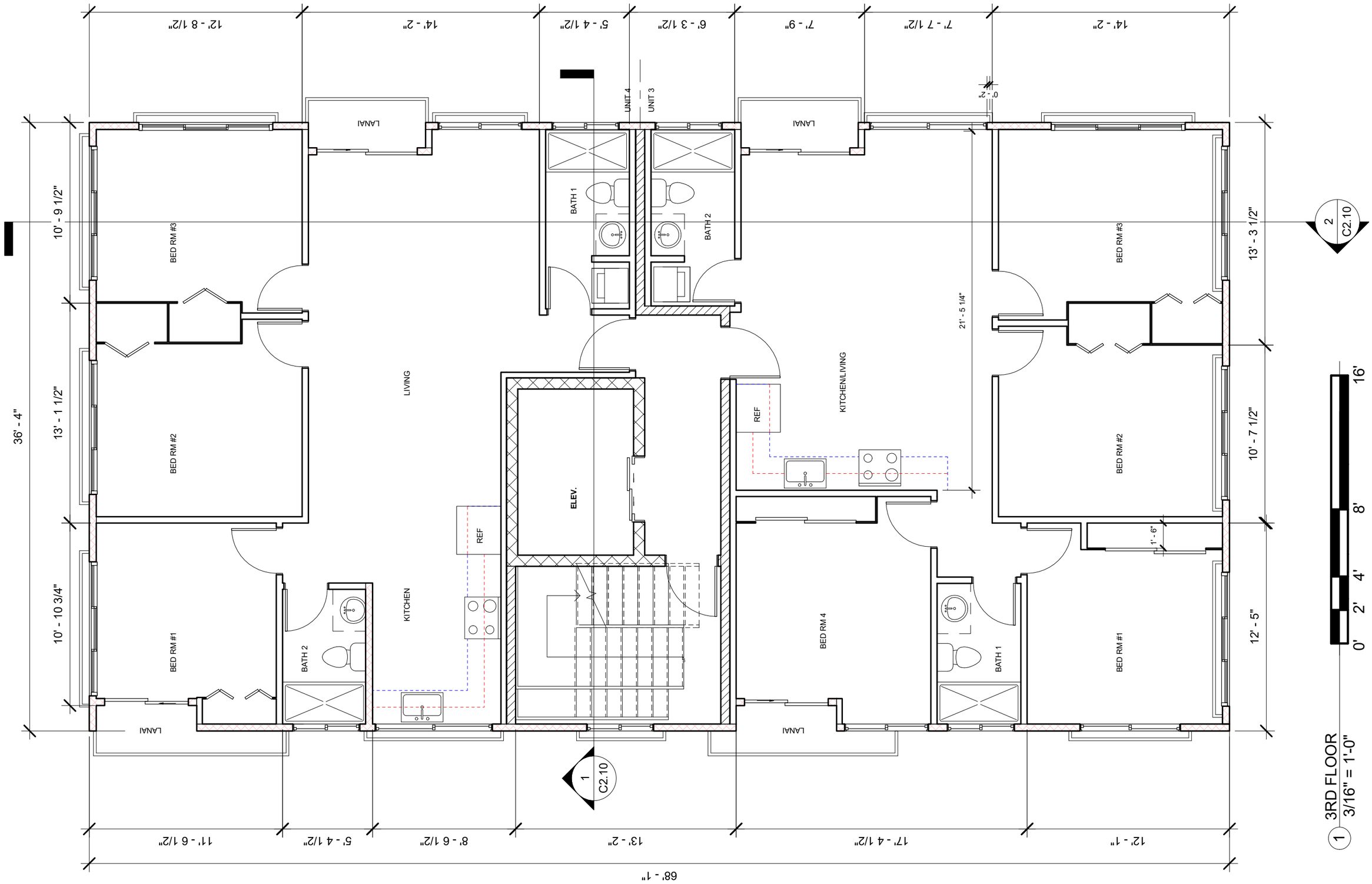
Proposed Floor Area:
Total = (Ground Floor): 198 sq. ft. + (2nd Floor): 2,800 sq. ft. + (3rd Floor): 2,524 sq. ft. + (4th Floor): 2,143 sq. ft.
= **7,665 sq. ft.** < 8,681.75 sq. ft.

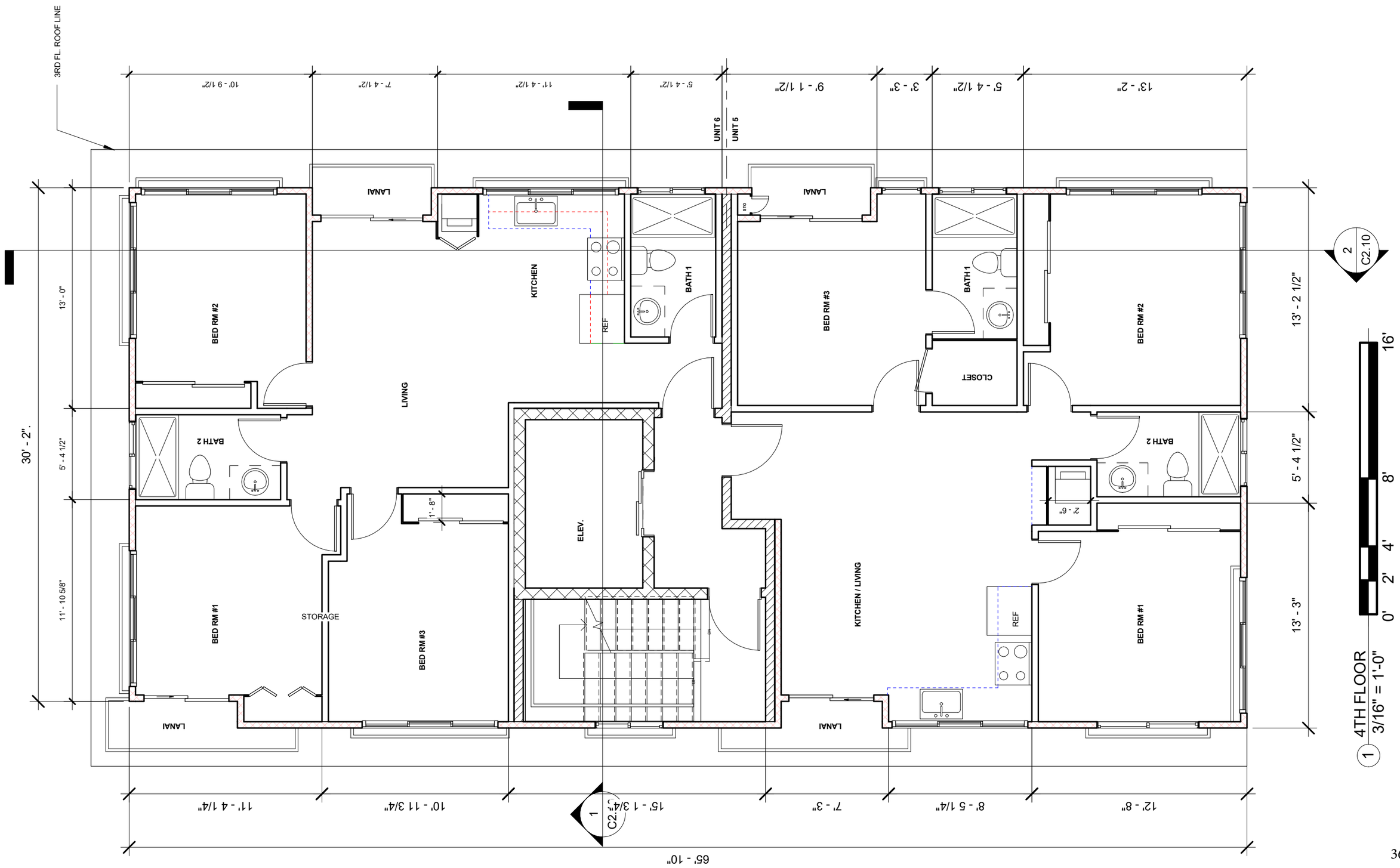
Setbacks:
Front side setback: 15 ft.
Two side setbacks: 5 ft.
Rear side setback: 5 ft.



1 SITE PLAN
3/32" = 1'-0"


BED RM #1
BED RM #2
BED RM #3
BATH1
BED RM #4
KITCHEN / LIVING RM
ELEV.
STO
BATH2
LANAI
REF
UNIT 2
UNIT 1
C2.10
40' - 0"
14' - 1"
12' - 9"
13' - 2"
3' - 0"
13' - 7"
12' - 10"
13' - 7"
16'
8'
4'
2'
0'
2ND FLOOR
3/16" = 1'-0"


68' - 1"
12' - 1"
17' - 4 1/2"
13' - 2"
8' - 6 1/2"
5' - 4 1/2"
11' - 6 1/2"
14' - 2"
7' - 7 1/2"
7' - 9"
6' - 3 1/2"
5' - 4 1/2"
14' - 2"
12' - 8 1/2"
0' - 2"
36' - 4"
10' - 9 1/2"
13' - 1 1/2"
10' - 10 3/4"
13' - 3 1/2"
10' - 7 1/2"
12' - 5"
21' - 5 1/4"
1' - 6"
BED RM #3
BED RM #2
BED RM #1
BED RM 4
BATH 1
BATH 2
LANAI
LIVING
KITCHEN
KITCHEN/LIVING
REF
ELEV.
UNIT 4
UNIT 3
1
C2.10
2
C2.10
0'
2'
4'
8'
16'
1 3RD FLOOR
3/16" = 1'-0"


3RD FL. ROOF LINE
UNIT 6
UNIT 5
LANAI
BED RM #2
BED RM #1
BED RM #3
BATH 1
BATH 2
KITCHEN
REF
LIVING
ELEV.
STORAGE
KITCHEN / LIVING
CLOSET
STO
DN
2' - 6"
1' - 8"
10' - 9 1/2"
7' - 4 1/2"
11' - 4 1/2"
5' - 4 1/2"
9' - 1 1/2"
3' - 3"
5' - 4 1/2"
13' - 2"
13' - 0"
5' - 4 1/2"
11' - 10 5/8"
30' - 2"
13' - 2 1/2"
5' - 4 1/2"
13' - 3"
11' - 4 1/4"
10' - 11 3/4"
15' - 1 3/4"
7' - 3"
8' - 5 1/4"
12' - 8"
65' - 10"
2
C2.10
1
C2.10
16'
8'
4'
2'
0'
1
4TH FLOOR
3/16" = 1'-0"

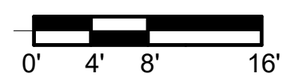
2 North
1/8" = 1'-0"

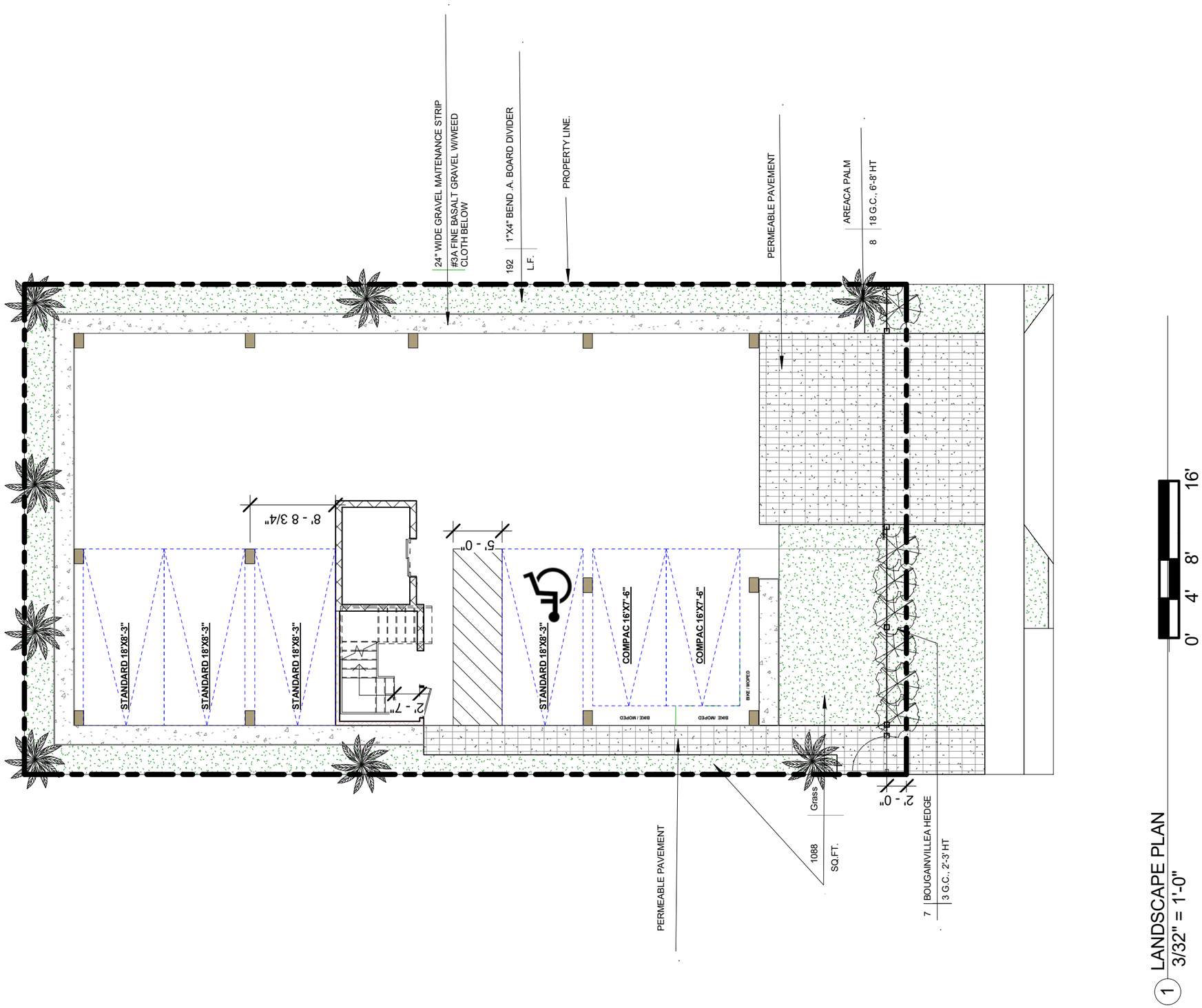
1 East
1/8" = 1'-0"

0' 4' 8' 16' 24'

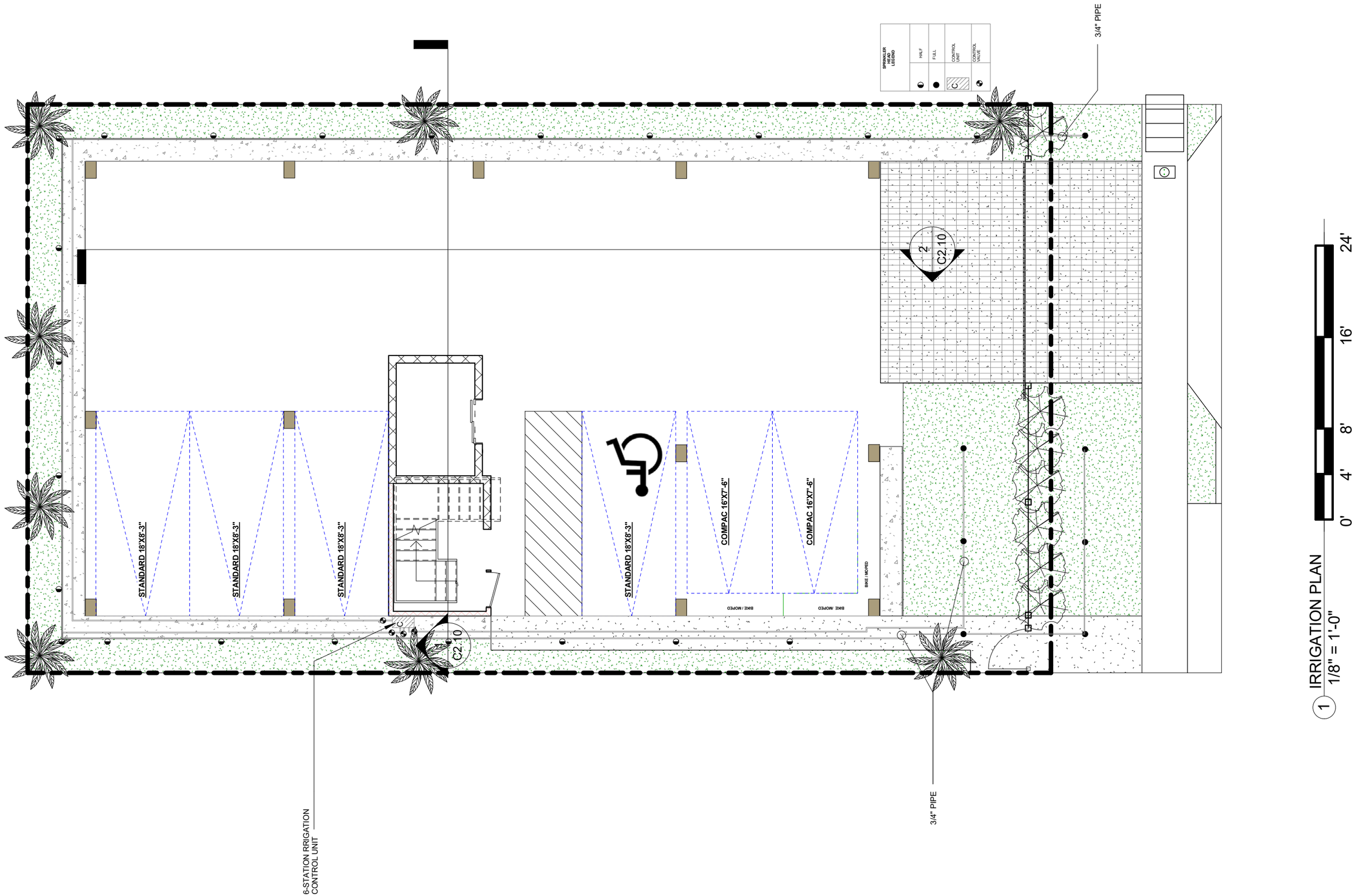
1 South
3/32" = 1'-0"

2 West
3/32" = 1'-0"

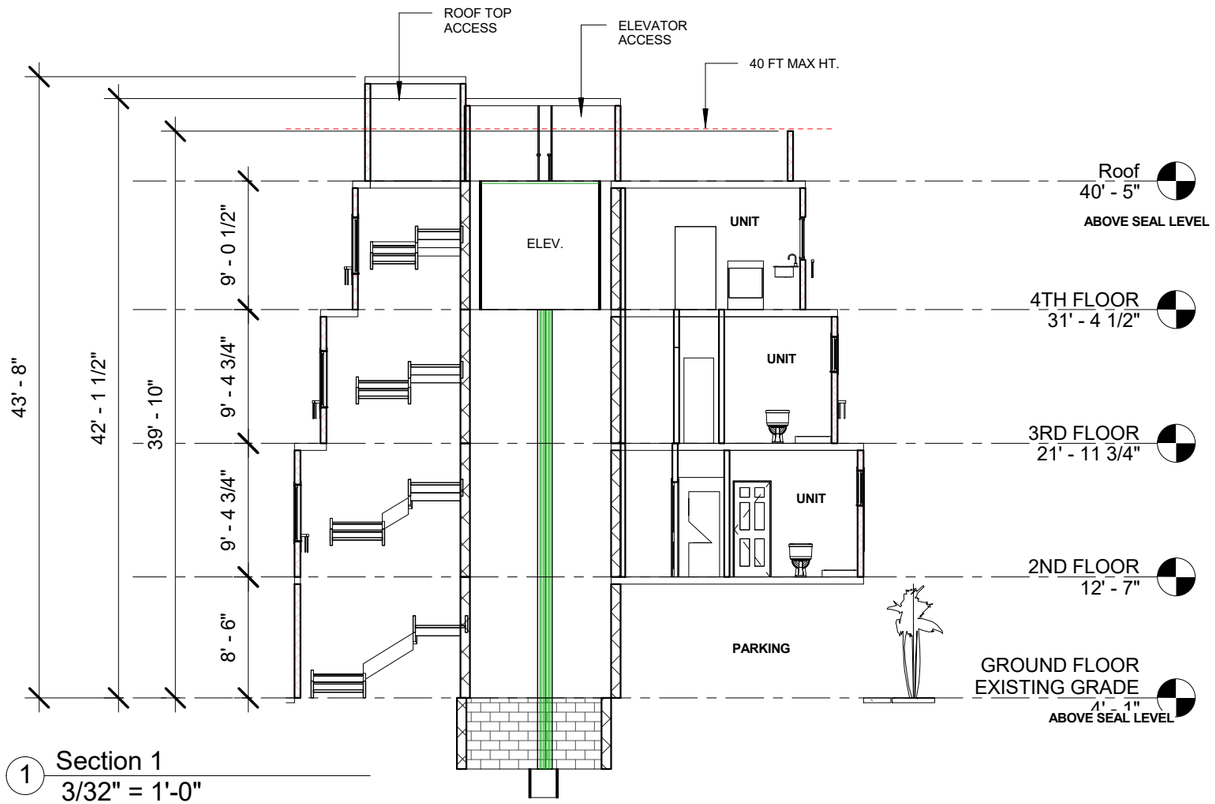




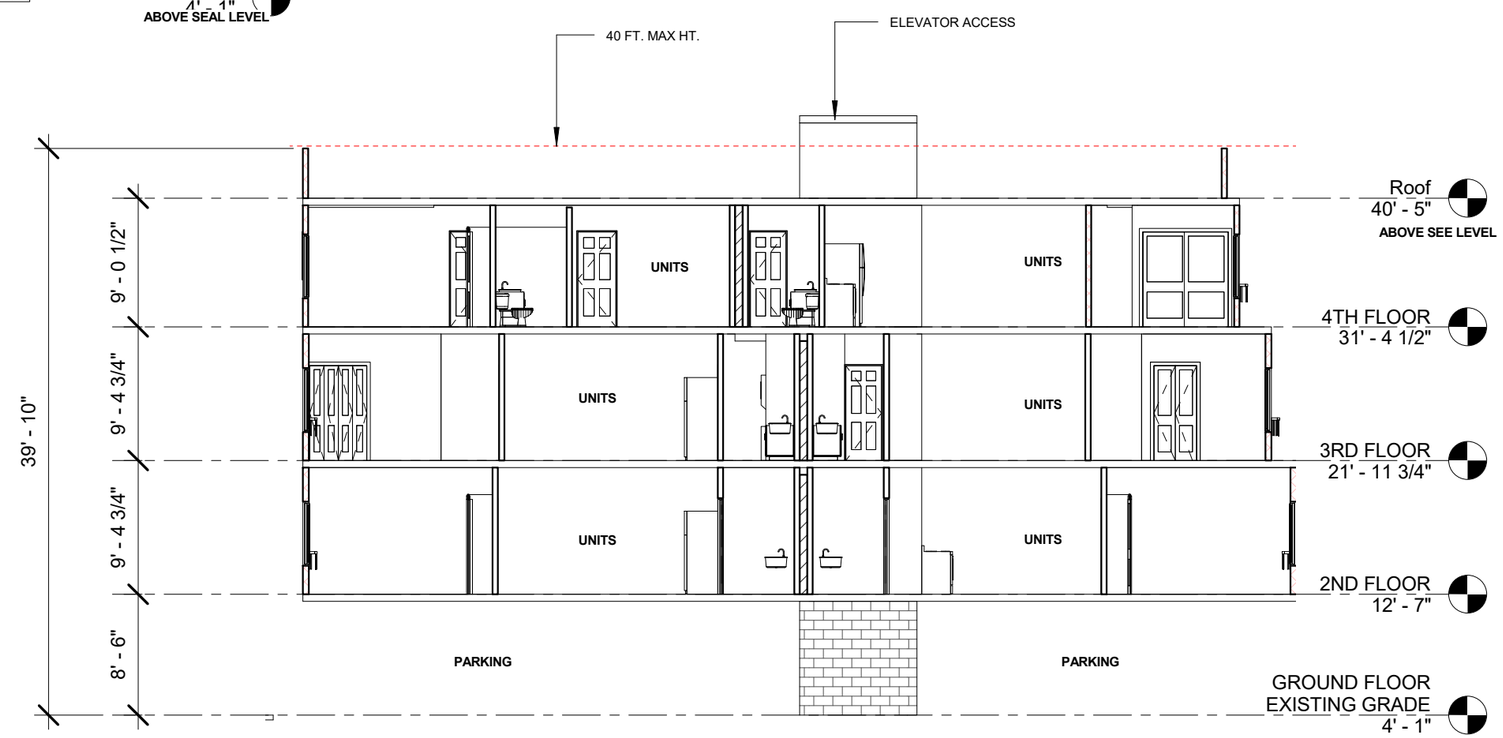
1 LANDSCAPE PLAN
3/32" = 1'-0"



1 IRRIGATION PLAN
1/8" = 1'-0"



1 Section 1
3/32" = 1'-0"

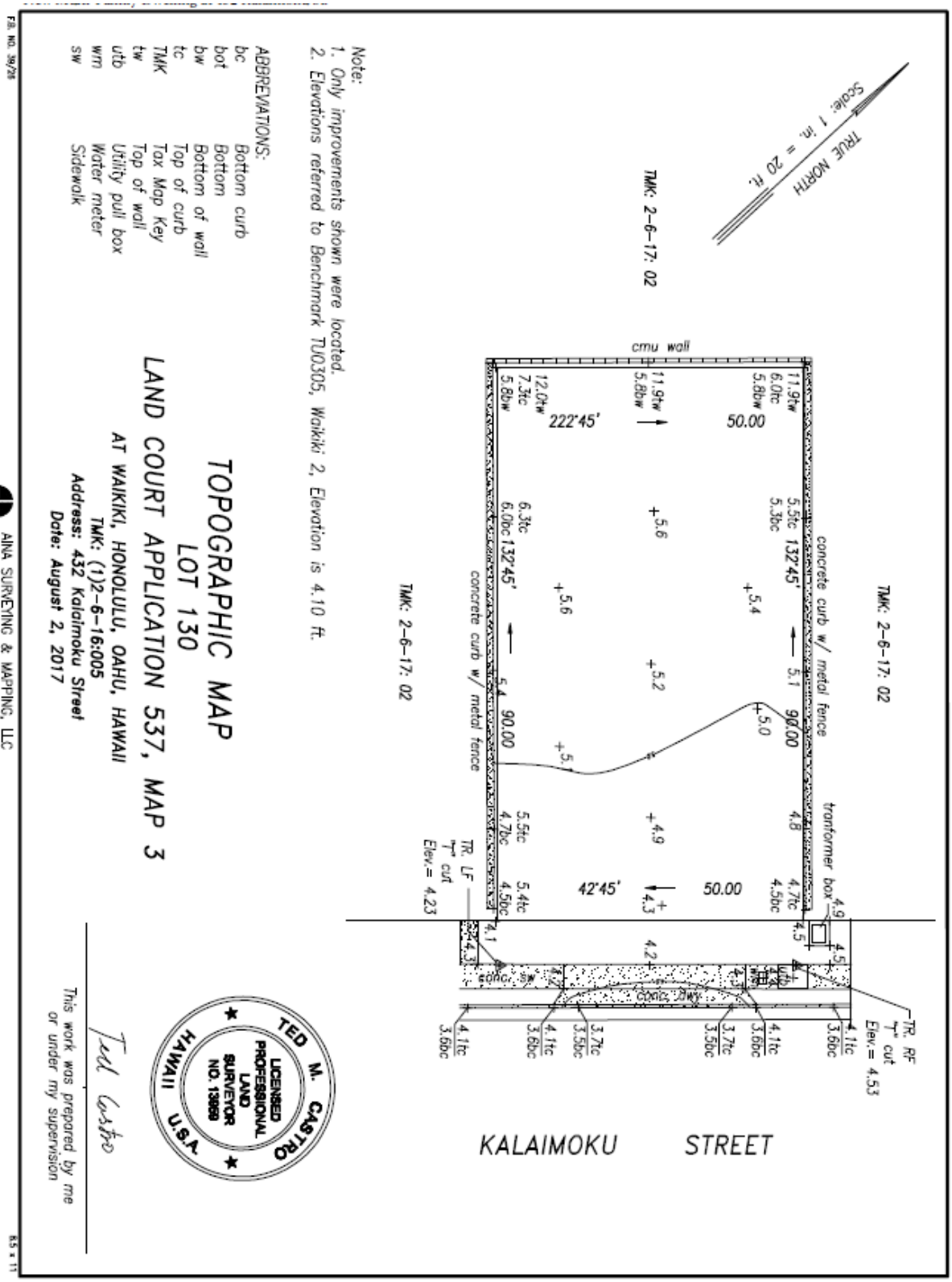


2 Section 2
3/32" = 1'-0"

0' 4' 8' 16'

1 {3D}

APPENDIX 2: TOPOGRAPHIC MAP


TRUE NORTH
Scale: 1 in. = 20 ft.
TMK: 2-6-17: 02
TMK: 2-6-17: 02
TMK: 2-6-17: 02
cmu wall
concrete curb w/ metal fence
concrete curb w/ metal fence
transformer box
222°45'
132°45'
132°45'
90.00
90.00
50.00
50.00
42°45'
TR. RF "T" cut Elev.= 4.53
TR. LF "T" cut Elev.= 4.23
KALAIMOKU STREET
Note:
1. Only improvements shown were located.
2. Elevations referred to Benchmark TU0305, Waikiki 2, Elevation is 4.10 ft.
ABBREVIATIONS:
bc Bottom curb
bot Bottom
bw Bottom of wall
tc Top of curb
TMK Tax Map Key
tw Top of wall
utb Utility pull box
wm Water meter
sw Sidewalk
TOPOGRAPHIC MAP
LOT 130
LAND COURT APPLICATION 537, MAP 3
AT WAIKIKI, HONOLULU, OAHU, HAWAII
TMK: (1)2-6-16:005
Address: 432 Kalaimoku Street
Date: August 2, 2017
TED M. CASTRO
LICENSED PROFESSIONAL LAND SURVEYOR NO. 13959
HAWAII U.S.A.
This work was prepared by me or under my supervision
AINA SURVEYING & MAPPING, LLC
2313 PALI HIGHWAY, HONOLULU, HI 96819
Phone: (808) 842-3882
F.B. NO. 39/28
8.5 x 11

APPENDIX 3: SOILS AND FOUNDATION INVESTIGATION

SOILS AND FOUNDATION INVESTIGATION

432 Kalaimoku Street
Honolulu, HI 96815

August, 2017

For
Jin Sheng Li
Yong Xia Li
Kalaimoku Street Trust

Meta Engineering
P.O. Box 4606
Honolulu, HI 96812

EXPIRES 4-30-18
This work was prepared by me or under my supervision and construction of this project will be under my observation.

META ENGINEERING

PO Box 4606 Honolulu, HI 96812
Tel: 808-941-1107 E-mail: metaeng@gmail.com

August 23, 2017

Jin Sheng Li
Kalaimoku Street Trust
Via Email: gilbarden@gmail.com
Honolulu, HI 96813

RE: Report of Soils and Foundation Investigation
TMK 2-6-016:005

Dear Jin Sheng Li:

Following the completion of field and laboratory work, this presents our report of the soils and foundation conditions for the planned residential building in Waikiki on Oahu. Three test borings were completed on July 31st of 2017 and our recommendations have been prepared.

The subsoils at the site generally consist of silty sand and gravel over lagoonal deposits over coralline gravel. Groundwater was encountered at four feet below the ground surface.

The scope of our work was defined in our proposal dated July 17, 2017 and this soils foundation investigation has generally conformed to the scope described therein.

Selected soil samples were used in the laboratory testing. The remaining samples will be discarded three months from the date of this report.

It has been a pleasure to perform this assignment for you. If you have any questions, please feel free to contact us for clarification.

Respectfully submitted,

Paul R. Weber, P.E.
Meta Engineering

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INTRODUCTION 1
PROJECT DESCRIPTION 1
SCOPE OF WORK 1
FIELD EXPLORATION 1
LABORATORY TESTING 1
NATURAL HISTORY OF THE HAWAIIAN ISLANDS 2
GEOLOGY OF WAIKIKI 4
CULTURAL HISTORY OF HAWAII 5
CULTURAL HISTORY OF WAIKIKI 5
SURFACE CONDITIONS 6
SUBSURFACE CONDITIONS 6
DISCUSSIONS AND RECOMMENDATIONS 6
FOUNDATIONS 6
EARTHWORK 7
PARKING 8
SEISMIC DESIGN 8
REVIEW OF PLANS AND SERVICES DURING CONSTRUCTION 8
LIMITATIONS 9

APPENDIX A

INTRODUCTION

This presents the results of our soils and foundation investigation for the proposed residential building in Waikiki. The site is on level ground near the Ala Wai canal. It appears a residence formerly occupied the site and the lot is surrounded by mid- and high-rise residential development.

The general location of the site is shown on the Vicinity Map, Figure 1.

PROJECT DESCRIPTION

We understand the project consists of the construction of a 5-level apartment building with an open garage below. An elevator is planned at about the middle left of the structure. The garage level will be concrete construction and the remainder metal frame construction.

SCOPE OF WORK

The scope of work for this project included subsurface investigations and laboratory testing to prepare recommendations for site development, foundations, and utility trenches.

FIELD EXPLORATION

To obtain the subsurface information, three exploratory borings, B-1 through B-3, were located and drilled as shown on the Site Plan, Figure 2. All borings were drilled on July 31st. Borings were drilled to depths ranging from 40 to 50 feet by truck-mounted, hollow stem auger. Samples were collected at regular intervals of depth and transported to our laboratory for further examination and testing. Standard Penetration Testing (STP) was performed.

A more detailed description of the field exploration program and the Logs of Borings are presented in the appendix.

LABORATORY TESTING

A laboratory testing program was performed to verify visual field classifications and to determine appropriate soil engineering properties of the earth materials encountered in the borings. The tests performed included in-situ moisture, plasticity, and sieve analyses. A more detailed description of the laboratory testing program and results of laboratory testing are presented in the appendix.

NATURAL HISTORY OF THE HAWAIIAN ISLANDS

General Geology

The Hawaiian chain of islands stretches back in time on a line toward the Aleutian Islands of Alaska; starting with the most recent outflow of Kilauea. This 40 million year march is the result of the movement of one of the earth's crustal plates over a stationary magma hot spot. The Mid-Pacific hot spot is but one of several places around the earth where magma is close to the surface, Yellowstone being another.

An addition to Hawaii (Loihi Seamount) appears to be forming in the sea south of the Big Island.

The Hawaiian Islands are shield volcanoes. That is, they are formed by molten lava surging out and flowing over the adjacent terrain. Successive flows build up a high shield that resembles a cone shaped layer cake. This quiet and ponderous building process is interrupted from time to time by explosive lava fountains, cinder, ash, and tuff cones. A high ash cloud was ejected in 1924. Kilauea started its recent continuous activity with lava fountain explosions in 1983.

As soon as the new lava hardens, a process of weathering and decomposition begins that also can be traced back in time over the 40 million year span. The oldest islands are barely discernable, being but submerged mounds in the Pacific waters. On an oceanic map one sees a straight line of islands stretching back from the present to a kink at about 24 million years ago. Another straight line of remnant islands makes a bee line for the Aleutians. This engineer detected a new kink at Maui starting about one million years ago. The new kink, whose portent is totally unknown to science, was confirmed by geologists at UH Manoa.

The inhabited islands, starting with Kaua'i and progressing to Oahu, Maui, and the Big Island, show decreasing weathering, until on the Big Island there is fresh, intact lava for all to see. Kaua'i was formed roughly five million years ago, Oahu about three million years ago, and Maui about one million years ago.

Subsequent to volcanic deposition, in-place weathering has produced residual soils on the surface of older islands overlying a gradation zone of highly to completely weathered lava (saprolite). The weathering characteristics of the lava rock are primarily controlled by the physical composition of the parent rock, rainfall, groundwater flow, and topography. This weathering process has produced the gradation zone between a competent, intact lava and the overlying residual and saprolitic soils. Weathering processes typically proceed at higher rates in less competent lava and along fractures. Weathering along fractures can produce large boulders surrounded by a residual soil matrix.

The weathering process is of great interest to engineers who have to design building projects in the islands. Curiously, volcanic rocks – the newest "earth" on earth – weather quickly. Lava rock cracks, crumbles, and then rusts as the iron minerals are oxidized in the warm, humid, tropical atmosphere. Weathering varies greatly in areal distribution and with depth below the ground surface making it quite interesting for builders. As with the laterite soils in all tropical zones, the Hawaiian red dirt weathers in another way by varying from highly plastic expansive to almost inert low plastic soil. The difference cannot be detected by the eye; soil lab tests are required to determine just how plastic and expansive a particular local deposit might be.

Tectonic Plates

As noted above, the islands are formed as the crustal plate rides over a Mid-Pacific hot spot. The crustal plates have a life cycle; the plates spread apart in mid ocean and this allows magma to well up from below the crust. The pressure pushes against the continents forming coastal mountains. The continents are more rigid than the plates, so the plates bend downward and are forced back into the molten rock where they melt.

The pressure of the plates grinding at the continental boundaries causes earthquakes and the chain of volcanoes that in the Pacific are called the "Ring of Fire". Hawaii is not at a plate boundary and none of this activity occurs here.

Hawaii seismic activity can be related to the movement of magma under the Big Island. As a result, seismic activity is highest on the Big Island and lowest on Kaua'i.

Water

Hawaii is located in the middle of the Pacific in an area of low rainfall. Trade winds blow across the islands and what moisture there is gets pushed up to the higher elevations near the tops of the volcanoes. It is cooler up there, the moisture precipitates, and rain falls on the windward sides of the islands. The leeward sides stay dry and would be termed 'desert' if not for our irrigation systems.

Water is stored on the islands in two ways. Volcanic rocks are fractured and full of holes. Subsequent underground magma flows have inserted hard barriers into the fractured rock called dykes. These dykes act like dams and hold the water in storage in the volcanic rocks. When a waterfall is seen issuing from a point below the crest of the mountain, it is overflow above a dyke.

Fresh water floats on salt water. This allows the rainfall to build up on top of the seawater. Groundwater wells that tap this fresh water lens are a major source of island water.

Flora

There is an abundance of tropical plants in Hawaii – especially on the windward side and higher in the mountains. Before Polynesian voyagers brought their familiar crops, the plants evolved in isolation; many are found here and nowhere else on earth. Those introduced crops (many quintessentially Hawaiian) include coconut, mango, breadfruit, bananas, yams, taro, and sugarcane.

Fauna
Similarly to the plants that evolved in the Hawaiian Islands, many unusual and endemic animal species make their home here. Certain species of snails, birds, and sea life – including coral – are unique to these islands. Before human settlement, there were no land mammals except the Hawaiian Hoary bat.

The Polynesians brought with them useful domesticates such as dogs, pigs, and the red jungle fowl, some of which have established wild populations. Other, less useful creatures have entered Hawaii on incoming boats and planes, including the mongoose and centipede. Great efforts are made, though not always successfully, to protect this delicate ecosystem from other invasive snakes, rodents, and insects, as trade and travel increase in Hawaii.

GEOLOGY OF WAIKIKI

The site is located between the Ala Wai Canal and the Pacific Ocean in the Waikiki area of Honolulu. Waikiki was developed in the early 20th century by infilling of a marsh area that drains the Kooloau Mountains behind Honolulu. The subsoils at the site reflect this history, with deposits of coralline gravel, lagoonal muck, and occasional cinders under shallow fill.

On the USGS geologic map for the Island of Oahu, the Waikiki area is labeled Qf, Fill.

Climate and Topography
The Waikiki district is coastal and subject to rainfall of about 20 to 30 inches per year. Temperatures are moderate.

Hurricanes and other Pacific storms can produce high winds in Honolulu.

The elevation of the site is at about 5 feet above sea level.

Geologic Hazards
Waikiki is in a zone of moderate earthquake hazard. Seismic activity from magma movements are the typical experience.

Seasonal storm runoff and occasional flooding can be experienced here. The site is within FEMA flood zone AO and is subject to two feet of inundation during a 100-year storm event.

The site is within an Extreme Tsunami Hazard Zone. Pacific Disaster Center recommends evacuation from this zone for an Extreme Tsunami Warning.

Rockfall and landslide are not hazards at this property.

CULTURAL HISTORY OF HAWAII

Meta Engineering holds that we operate in a field of endeavor (the built environment) that includes both the past and the future. The past entails the cultural heritage; the future involves the efforts to house, feed, move, and entertain in new and better ways. Consideration of both is essential to developing a balanced and prosperous arrangement.

Expounding cultural heritage is more complex in some places in the world than in others. Areas of Europe have experienced massive interchange of types and behaviors dating back to (Neanderthal) 200,000 years ago, while Hawaii has seen the impact of people for less than 2,000 years.

Hawaii is one of the most isolated places on the planet. One has to go to the Himalayas or the Gobi desert to find similar isolation, and in those places there are no swaying palms or stately hula dancers (or is it the other way around?).

The results of the isolation are twofold. Firstly, peoples only arrived here recently. Secondly, there are only two cultures to describe; the Polynesians who immigrated from the south, and the explorers (whites) who arrived from the east.

The first wave of Polynesians came to Hawaii about 1,500 years ago. Whether these peoples stayed awhile and left or they later assimilated with the second wave of Polynesians is not known. In any case, more Polynesians came from the south about 1,000 years ago and stayed.

Resources are limited in Hawaii, but the newcomers made do with palm and other wood, rocks, bird feathers, swordfish bills, and woven or thatched vegetation. Kapa was a kind of cloth made by pounding leaves into fibrous nets. There was no metal, no cloth, no weapons except spear and crude club. Like all primitive peoples in tropical zones, clothing was minimal. A girdle around the waist with leaves was about it.

Captain Cook landed in the islands in 1778, the first recorded arrival from western civilization. Subsequently, the following transpired.

CULTURAL HISTORY OF WAIKIKI

Waikiki is a former marsh area, bounded by a sandy beach now called Waikiki. The beach area was utilized by Hawaiian royalty for recreation. Subsequently, expansion of the Honolulu town involved the filling of the marsh, the excavation of the Ala Wai Canal, and development of the famous Waikiki Beach recreation area.

SURFACE CONDITIONS

The site is in a fully developed urban area and is bounded by mid- and high-rise residences. The ground is basically level and accessed by a driveway at grade from Kalaimoku Street. There is fencing along the sides and rear of the property. Ground cover consists of low, scrubby grass and weeds or gravel.

At the time of our exploration, the ground was dry, with no standing ponds or pooling of water.

SUBSURFACE CONDITIONS

The surface fill is underlain by soft, lagoonal silt over loose to dense coralline gravel. Dense coralline gravel was encountered at about 35 feet below grade. A thick strata of dense, black cinders was encountered from 26 feet, and this would be the bearing level.

Groundwater was encountered in all borings at a depth of four feet below the surface at the time of our investigation.

DISCUSSIONS AND RECOMMENDATIONS

Based on our investigations, we conclude from a geotechnical engineering standpoint that it is feasible to support the apartment building on shallow micropiles, provided the recommendations presented in this report are fully incorporated into the design and implemented during the construction. The subsurface conditions provide excellent foundation support for the proposed structure.

FOUNDATIONS

The column loads for the proposed shall be supported on grout-injection micropiles. Such micropiles are available in loads ranging from 30 kips to 100 kips, with the selection being proportional to the individual column loads. Grout-injection micropiles can obtain their capacity within three to five feet of penetration into the black cinders.

Settlement of the building designed with this system will be negligible. Micropile capacities may be increased by one-third when adding transient loads such as wind or seismic.

For resistance to lateral loads, the micropiles can be battered to add the lateral component of force. The passive resistance on pile cap surfaces can be taken as 300 pcf.

The only structure that is known to be penetrating the site is the elevator core. This shall be supported on grout injection micropiles. The design of the sub-level concrete walls will provide for an active pressure of 55 pcf.

A pile load test shall be performed on one of the production piles prior to the installation of the remaining piles. A vertical load test shall be accomplished in accordance with ASTM 1143. Further details of the micropile load test will be transmitted when the structural design is more advanced.

Seismic class is S_D.

EARTHWORK

Site development will include minimal grading.

Clearing, Grubbing, and Stripping
Site preparation for the new buildings will include clearing, grubbing, and stripping. The site should be cleared of abandoned utility lines, topsoil, and other miscellaneous debris.
Utility lines may cross the project site. Should any be encountered, the existing lines beneath the proposed construction areas may need to be relocated prior to site development.

Site Grading
A select structural fill shall be used for backfill. Select structural fill material should be free of expansive soils, debris, rock fragments greater than three inches in largest dimension, or organic matter, and should satisfy the select borrow requirements for the City and County of Honolulu's Standard Specification for Public Works Construction. On site fill soils are suitable for select fill.

Fill shall be moisture conditioned to within two percent of the optimum moisture content and placed in horizontal lifts not to exceed eight inches. Structural fill shall be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D1557 method.

Temporary Excavations
The near surface onsite soils can be excavated with conventional earth moving equipment, although occasional buried debris may be encountered. All excavations shall be set back 12 inches from adjoining property lines.

All excavations shall comply with Federal and local OSHA requirements. All excavations greater than four feet in depth shall be sloped or shored. Excavations deeper than four feet shall be sheeted and shored.

Utilities
Trenching and bedding for utilities shall meet County standards. All backfill shall be compacted to 95 percent of the maximum dry density as determined by the ASTM D1557 method. Some utility excavations may encounter soft, lagoonal soils.

PARKING

For parking areas, we recommend AC pavement with section dimensions of two inches AC, four inches of base, and eight inches of subbase. Select material shall be compacted to 95% maximum density in accordance with ASTM D 1557.

For all paving, we find pervious pavement to be acceptable.

SEISMIC DESIGN

Most of Hawaii's earthquakes are directly related to volcanic activity and are caused by magma moving beneath the earth's surface. For this reason, the earthquake hazard on the Big Island of Hawaii is high, becomes progressively less on Maui and Oahu, then minimal on Kauai. A few earthquakes are less related to volcanic activity but originate deep in crustal weakness.

Examples of seismic activity in Hawaii include a 6.3 earthquake near Honomu on April 26, 1973, a 7.2 earthquake in Papaikou on November 29, 1975 which killed two people, and a 6.2 earthquake at mile point 26 on Highway 19 on Big Island on June 26, 1989 which destroyed five buildings.

Honolulu is in a moderate earthquake hazard zone and seismic design will be in accordance with International Building Code seismic criteria. Seismic site class shall be S_D.

REVIEW OF PLANS AND SERVICES DURING CONSTRUCTION

The project site development and foundation plans and specifications shall be reviewed by Meta Engineering prior to finalization to confirm that the intent of these recommendations and design considerations are properly reflected in the project design.

During construction, Meta Engineering shall be retained to provide the following construction monitoring services:

- during micropile installation,
- during pile load test, and
- when any unusual conditions are encountered.

LIMITATIONS

This report has been prepared for Pacific Island Investments and their designated professionals for the purpose of designing apartments on Oahu, Hawaii. Recommendations have been prepared in accordance with generally accepted foundation engineering practices. No other warranty, expressed or implied, is made as to the professional advice contained in this report. This report has not been prepared for other parties and may not contain sufficient information for their purposes or other uses.

This report is written based on subsurface information obtained from borings drilled for the subject property. It does not reflect variations that may occur in the subsurface conditions between borings. The nature and extent of the variations of the subsurface conditions may not become evident until construction. Should subsurface conditions differ materially from those encountered during this study, Meta Engineering shall be notified immediately so that the appropriate construction modifications can be developed and implemented, if necessary.

The following figures and appendix are attached to complete this report:

Figure 1	Vicinity Map
Figure 2	Site Plan
Appendix A	Field Exploration and Laboratory Testing

Respectfully Submitted,

Paul R. Weber, P.E.
Meta Engineering

Distribution:
Jenson Li (1)
File (1)

PAUL R. WEBER
LICENSED PROFESSIONAL ENGINEER
NO. 9668-C
HAWAII, U.S.A.

EXP

This work was prepared by me or under my supervision and construction of this project will be under my observation.

APPENDIX A

FIELD INVESTIGATION AND LABORATORY TEST RESULTS

FIELD INVESTIGATION

To obtain the subsurface information, a total of three borings, B-1 through B-3, were drilled on July 31, 2017. The borings were drilled to depths of up to 50 feet below the existing ground surface. All borings reached practical refusal in dense coralline gravel. The boring locations are shown on the Site Plan, Figure 2.

The exploratory borings were drilled by Valley Well Drilling using truck-mounted, hollow stem auger. Samples were collected and SPT soundings made at about five foot intervals of depth. This engineer observed the drilling operation and logged each boring. The retrieved soil samples were packaged and returned to our Honolulu laboratory for testing.

The Logs of Borings are presented in the appendix on Figures A-1 through A-3. The soils encountered were classified according to the Unified Soil Classification System, Figure a-2.

LABORATORY TEST RESULTS

Selected soil samples were tested to evaluate pertinent classification and engineering properties. The tests performed included in-situ moisture, plasticity, and sieve analyses. All testing procedures were performed in accordance to the American Society for Testing Materials (ASTM) standards, unless otherwise noted. The results of the laboratory tests are presented in the following sections.

Moisture Content
Moisture content determinations (ASTM D 2216) were performed on selected soil samples. The results of these tests are presented on the Logs of Borings, Figures A-1 through A-3.

Plasticity Tests
The plasticity of selected clay soils was tested for liquid and plastic limit using ASTM D423 and D424. The results of these tests are presented on the appropriate Logs of Borings.

Sieve Analyses
Sieve analyses (ASTM C117 and C136) were performed on selected samples to evaluate grain size characteristics of the soil and aid in soil classification. The test results are presented in graphic form on Figures A-4 through A-8.

The following Figures and Exhibits are attached to complete this appendix:

Figures A-4 through A-8	Particle Size Distribution
Figure a-2	Unified Soils Classification Chart

APPENDIX 4: EJSCREEN REPORT

Note: Please refer to Exhibit 8 - U.S. EPA's ENVIRONMENTAL JUSTICE SCREENING AND MAPPING IMAGE.

EJSCREEN Report (Version 2018)

1 mile Ring Centered at 21.283707,-167.828622, HAWAII, EPA Region 9

Approximate Population: 54,229
Input Area (sq. miles): 3.14

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2018)

1 mile Ring Centered at 21.283707,-157.829622, HAWAII, EPA Region 9

Approximate Population: 54,229

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	10.1	N/A	9.53	N/A
Ozone (ppb)	N/A	N/A	N/A	48.3	N/A	42.5	N/A
NATA* Diesel PM (µg/m³)	0.312	0.15	90	0.978	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	50	34	93	43	70-80th	40	80-90th
NATA* Respiratory Hazard Index	2	1	93	2	50-60th	1.8	60-70th
Traffic Proximity and Volume (daily traffic count/distance to road)	2300	1000	87	1100	86	600	94
Lead Paint Indicator (% Pre-1960 Housing)	0.15	0.16	57	0.24	51	0.29	44
Superfund Proximity (site count/km distance)	0.05	0.096	47	0.14	43	0.12	50
RMP Proximity (facility count/km distance)	0.68	0.37	85	0.97	59	0.72	67
Hazardous Waste Proximity (facility count/km distance)	2.8	1.4	81	2.8	68	4.3	62
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0	0.04	N/A	12	59	30	40
Demographic Indicators							
Demographic Index	54%	51%	59	47%	61	36%	76
Minority Population	75%	78%	34	59%	64	38%	82
Low Income Population	32%	25%	72	35%	50	34%	52
Linguistically Isolated Population	15%	6%	89	8%	79	4%	90
Population With Less Than High School Education	9%	9%	66	17%	41	13%	48
Population Under 5 years of age	3%	6%	21	6%	22	6%	24
Population over 64 years of age	18%	16%	62	13%	77	14%	72

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

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

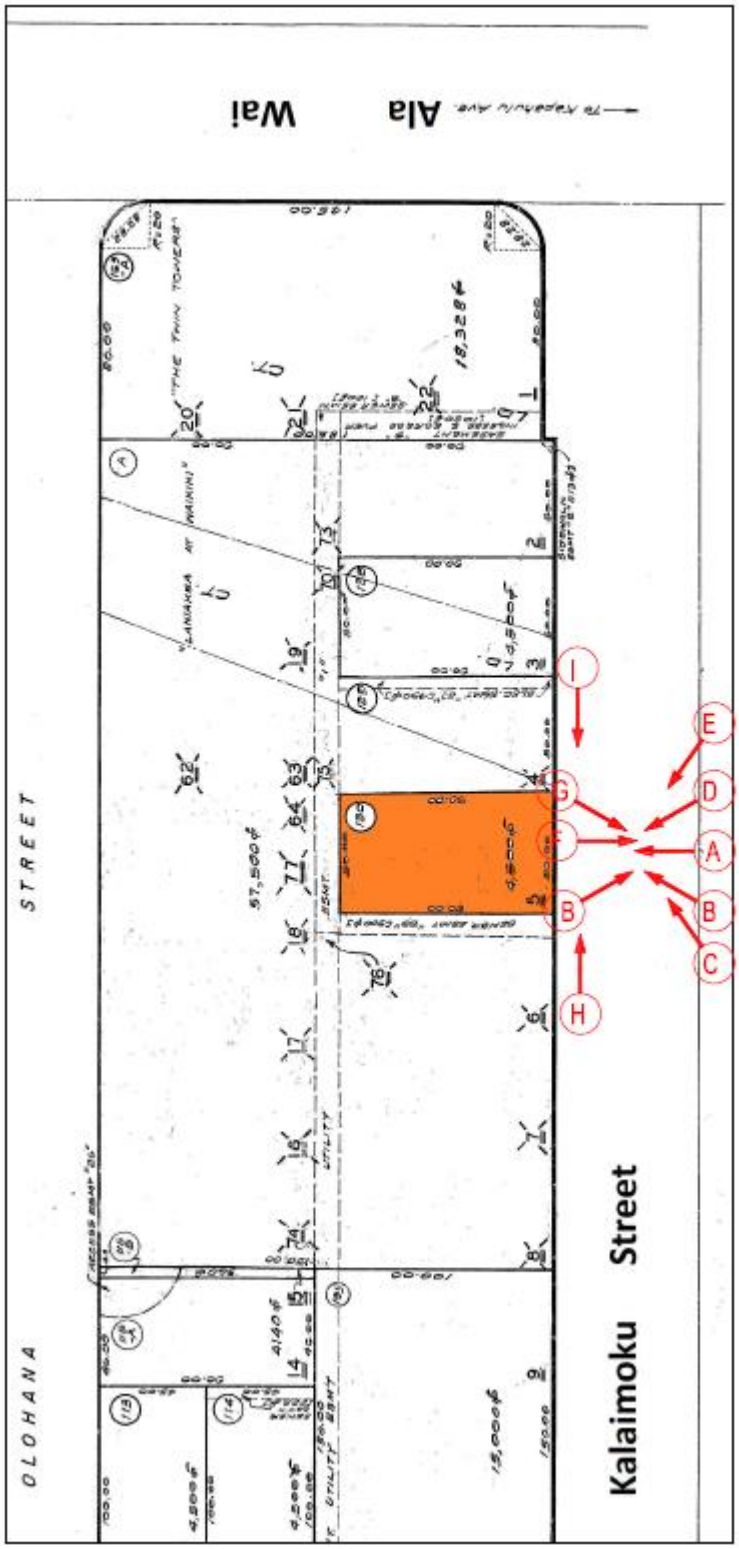
EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

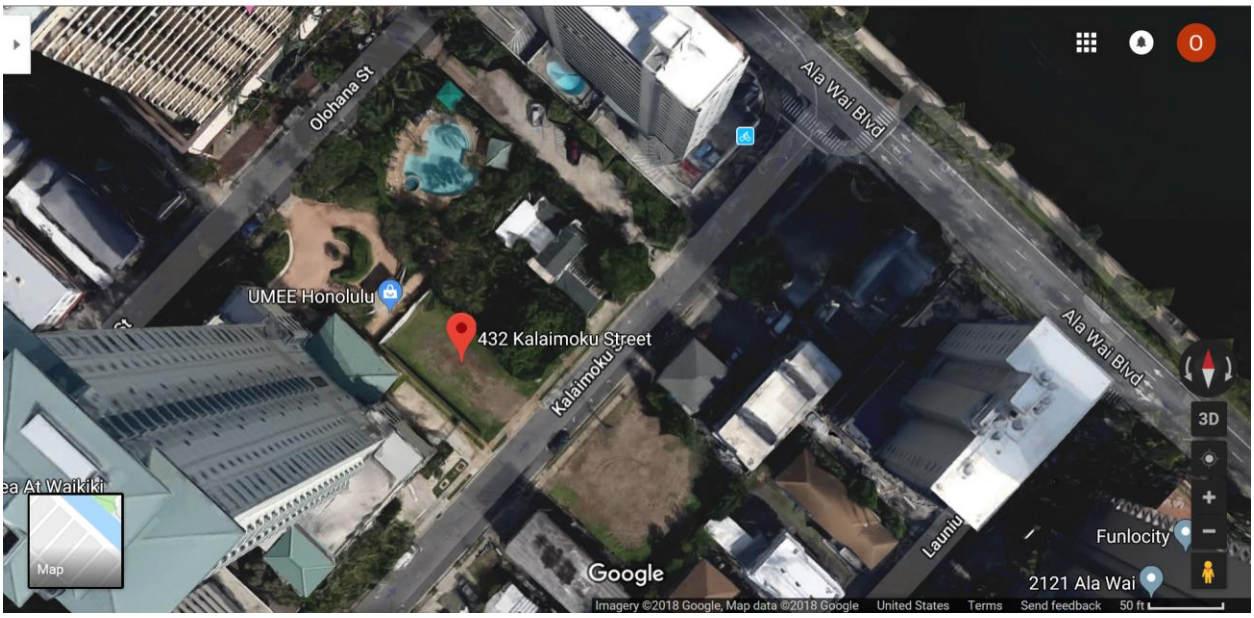
August 23, 2018 3/3

APPENDIX 5: PHOTOS

PHOTO PLAN

PHOTO PLAN





Satellite Image Depicting Existing Sounding Structures and Streets – By Google

Photograph A: Existing vacant project site

Photograph B: Existing project site and right adjacent neighboring open space

Photograph C: Right adjacent neighboring open space and 20-story high-rise Condo

Photograph D: Existing project site and left adjacent neighboring 30-story high-rise Condo

Photograph E: Left adjacent neighboring high-rise Condos

Photograph E: Vacant lot across the street from the project site

Photograph F: Vacant lot and left adjacent apartments across the street from the project site

Photograph G: Right adjacent apartments across the street from the project site

Photograph H: View down Kalaimoku St. toward Ala Wai St. Direction

Photograph I: View down Kalaimoku St. toward Kalakaua Ave. direction