

JAN 14 1983

REF. NO.: CPO-1126
FILE NO.: OA-7/30/82-1477
EXPIRATION DATE: 1/26/83

Dr. Michael J. Chun, Director
City and County of Honolulu
Department of Public Works
650 South King Street
Honolulu, Hawaii 96813

Dear Dr. Chun:

Conservation District Use Application for
Kalia Road Relief Drain Project
Waikiki, Honolulu, Oahu

We are pleased to inform you that the Board of Land and Natural Resources, at its meeting of December 3, 1982, approved your application subject to the following conditions:

1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and City and County governments, and applicable parts of Section 13-2-21 of Title 13, Chapter 2, Administrative Rules, as amended;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
3. Other terms and conditions as prescribed by the Chairman;
4. In that this approval is for use of conservation lands only, the applicant shall obtain appropriate authorization through the Division of Land Management, State Department of Land and Natural Resources for the occupancy of State lands;

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5. In the event any unanticipated sites or remains such as shell, bone or charred deposits, human burials, rock or coral alignments, pavings, or walls are encountered during construction, the applicant shall stop work and contact the Historic Preservation Office at 548-7460 or 548-6408;
6. That the applicant shall hire a qualified archaeologist to monitor the project, scientifically excavate any archaeological remains uncovered during construction of the project, and prepare a written report documenting, analyzing and discussing any archaeological remains found. This report shall be forwarded to the Historic Preservation office for review;
7. That the applicant take measures to prevent beach erosion of the adjacent shoreline areas during construction. Every effort should be taken to minimize detrimental impacts resulting from construction equipment, water turbidity and unsightliness;
8. That the applicant comply with all applicable Public Health Regulations;
9. A fire contingency plan, acceptable to the Division of Forestry and Wildlife shall be implemented during and after the construction of the dwelling;
10. Use of the area shall conform with the program of the appropriate Soil and Water Conservation District, or plan approved by and on file with the Department;
11. The construction, alteration, moving, demolition and repair of any building or other improvement on lands within the Conservation District, shall be subject to the building codes of the respective counties in which the lands are located; provided that prior to the commencement of any construction, alteration or repair of any building or other improvement, four (4) copies each of the final location map, plans and specifications shall be submitted to the Chairman, or his authorized representative, for approval;
12. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate such interference, nuisance, harm or hazard;
13. Upon approval of a particular use by the Board, any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and, all work and construction must be completed within three (3) years of the approval of such use;

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14. That the applicant submit a detailed description of all erosion control measures proposed to the Department of Land and Natural Resources for review and approval prior to commencement of construction. Four (4) complete sets of the information requested shall be provided;
15. The Department of Land and Natural Resources reserves the right to imposed additional erosion control measures, should such be found to be necessary, upon review of the proposed measures requested in Condition 14.

Although the Board did approve of your project the intent of the approval was also to retain the concrete structure that presently exists due to heavy usage by the public, and possible negative effects on beach erosion contour. As such, we would appreciate your incorporation of this aspect in your construction plans.

Should you have any question on any of these conditions, please contact Mr. Roger C. Evans of our Planning Office at 548-7837.

Very truly yours,

SUSUMU ONO

SUSUMU ONO, Chairman
Board of Land and Natural Resources

cc: Oahu Board Members
Oahu Land Agent
General Planning
DOH/OHA/OEQC/EQC/DPED

bcc: DAR
NARS
DOFAW
DOWALD
DOCARE
Land Management
State Parks/Historic Sites

SS:sta

DC



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

FILE NO.: OA-7/30/82-1477
180-Day Exp. Date: 1/26/83

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

December 3, 1982

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Conservation District Use Application for
Kalia Road Relief Drain Project
at Waikiki, Honolulu, Oahu

APPLICANT: City and County of Honolulu
Department of Public Works
650 South King Street
Honolulu, Hawaii 96813

LANDOWNERSHIP: State of Hawaii

LOCATION: Beach and nearshore area adjacent to
TMK: 2-6-05: 1

AREA OF PARCEL/USE: 71.794 acres/7000 square feet

SUBZONE: Resource

DESCRIPTION OF AREA:

The project site is located in Waikiki at the makai terminus of Saratoga Road. Access is via Saratoga Road or Kalia Road. The topography slopes gradually toward the ocean; the area is bare ground containing no vegetation. At the shoreline, a clean sand beach is found. Several hundred yards offshore, a shallow reef serves as a buffer from waves and currents. Beyond the reef, lie two popular surfing areas, "Number Threes" and "Number Fours".

CURRENT USE:

The nearshore waters within the Conservation District are used by swimmers, snorklers and by sailboats, and outrigger canoes. Surfing sites are located beyond the reef area.

The existing drain is a 5 foot by 4 foot concrete box drain extending approximately 270 feet from the shoreline into the ocean.

PROPOSED USE:

Within the Conservation District, the proposed project will consist of replacing the existing 5 foot by 4 foot box drain with a new 8-1/2 foot by 6 foot box drain and the construction of a new groin outfall. The outfall would end approximately 350 feet makai of the Fort DeRussy seawall.

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Within the Urban zoned area, mauka of the shoreline, the project will also include driveway improvements along Kalia Road between Saratoga Road and Lewers Street and will provide for the total storm runoff generated from the drainage area mauka of Kalia Road, and relieving the flooding problem on Kalia Road.

The applicant makes the following comment in the Environmental Impact Statement for the project:

"The proposed drainage improvements are primarily intended to reduce the flooding of Kalia Road and adjacent areas. Because of flat topography, during times of mean higher high water elevation (1.07 feet above mean sea level), the existing Kalia Relief Drain is unable to accommodate storm flow exceeding about 80 cubic feet per second (cfs) without flooding occurring. By comparison, the storm flow generated within Kalia Relief Drain's service area by the "fifty year storm" is estimated as 183 cfs. During even moderate storms, roads in the project area flood as a result of water overflowing from nearly every drainage intake structure that feeds Kalia Relief Drain. (Figure 4) At a minimum this causes great inconvenience in a densely populated area. Severe storms result in flooding of sidewalks on Kalia Road and occasionally property damage such as flooding of parking garages. Flooding is particularly severe on Kalia Road because it receives floodwaters flowing makai down Beach Walk and Lewers Street."

The applicant's Figure 4 is provided here as Exhibit E, as well as site plan for the area, photographs of the existing conditions and a drawing showing existing marine structures in the vicinity of the project. (Exhibits F through H)

Staff notes the following permits, presently under revision, a PODCO permit by the Army Corps of Engineers:

1. The Special Management Area Permit for construction of the relief drain project was granted by the City and County of Honolulu, City Council by Resolution No. 82-204, on August 17, 1982.
2. The Environmental Impact Statement for the project was accepted by the Governor of the State of Hawaii on May 27, 1982.
3. The State Department of Transportation has issued a Shorewater Construction Permit, No. 1701 for the project. This permit is effective until December 31, 1983.
4. The United States Department of the Army is presently processing an application for this activity under File No. PODCO-O 1674-S.

SUMMARY OF COMMENTS:

The application was sent out for review and comment to the following agencies: United States Army Corps of Engineers; City and County of Honolulu, Departments of General Planning, Land Utilization, Parks and Recreation, the Board of Water Supply; State Department

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of Health, Department of Transportation, Office of Environmental Quality Control, Environmental Quality Commission, Office of Hawaiian Affairs; and the following Department of Land and Natural Resources divisions, Aquatic Resources, Forestry and Wildlife, Water and Land Development, Land Management, State Parks/Historic Sites, Natural Area Reserves System and the Division of Conservation and Resources Enforcement.

Their comments follow:

United States Department of the Army, Corps of Engineers:

This is in response to your letter of 10 August 1982 concerning Conservation District Use Application OA-7/30/82-1477. The application is by the City and County of Honolulu for the replacement of the existing 5 foot by 4 foot box drain with a new 8-1/2 foot by 6 foot box drain and the construction of a new groin outfall at Waikiki, Honolulu, Hawaii.

The proposed project includes work in the navigable waters of the United States which requires a Department of the Army permit. We have received a permit application for this activity (File No. PODCO-O 1674-S) and it is presently being processed.

City and County of Honolulu, Department of General Planning:

We have no objections to the improvements proposed to the existing drain. Because of the minor nature of the improvements, no amendment to the Primary Urban Center Public Facility Map is necessary.

Department of Land Utilization:

The Special Management Area Use Permit for the above project is presently pending a City Council decision for approval or denial.

Note: A Special Management Area permit was issued to the applicant on August 17, 1982.

Department of Parks and Recreation:

The proposed action will not have any long-term detrimental impact on our recreation facilities in proximity to the project site.

Department of Public Works:

The Revised Environmental Impact Statement for the project was formally accepted by the Governor of the State of Hawaii on May 27, 1982. Further, a Special Management Area Use Permit for the construction of the Kalia Road Relief Drain project was granted to our Department by City Council Resolution No. 82-204, adopted August 17, 1982. Attached for your information and use is a copy of the acceptance letter from the Governor and a copy of the City Council Resolution. (Copy of each letter is appended to this submittal as Appendix A and B)

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Board of Water Supply:

We have no objections to the proposed project. The project will not have any adverse impacts to potable groundwater resources or our water system facilities located in that area.

State of Hawaii, Department of Health:

Our staff has reviewed this request and do not foresee any major adverse environmental effects arising from this project.

Please be informed that we have no objections to granting the permit.

State of Hawaii, Department of Transportation:

Thank you for the opportunity to review the subject application.

Kindly note that we have issued a Shorewaters Construction Permit No. 1701 for this project. The permit is effective until December 31, 1983.

We have no other substantive comments or information to offer to assist you in your review.

Office of Environmental Quality Control:

We have no objections to this Conservation District Use Application.

The environmental impact statement for this project was accepted by the Governor on May 27, 1982.

Department of Land and Natural Resources, Division of Aquatic Resources:

In our previous comments (dated March 25, 1981, and June 14 and June 28, 1982), we have expressed concerns regarding the proposed project. We have cited public records of similar concerns expressed by local residents and businessmen, by other scientists, and by the City and County's own planning agency. These concerns have been brought to the applicant's attention in a letter (CPO-2805) from the Chairman. We are aware of no response or other additional information to abate these concerns; we maintain belief that the applicant has failed to give adequate consideration to design alternatives which would improve the existing values of water quality, public health, aquatic resources, and shoreline recreation which are so important to Waikiki visitors and the State's economy.

Division of Water and Land Development:

The applicant should take measures to prevent beach erosion of the adjacent shoreline areas during construction of the subject drainage project. Every effort should be made to minimize detrimental impacts resulting from construction equipment, water turbidity and unsightliness.

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Division of Land Management:

The Oahu District Office has no objections to the subject request but recommends that a shoreline certification be obtained before any further action is taken on this application. (A copy of the Certified Shoreline Survey is attached as Exhibit D)

Division of State Parks/Historic Sites:

Recreation Concerns:

See attached previous response.

Previous Comment:

The impact of the existing storm drain on recreation interests is not known. Since the proposed storm drain is a replacement, there may not be any change in impact, but this can only be an assumption from the information provided.

Historic Sites Concerns:

The project area is part of the Waikiki archaeological district, State site no. 50-OA-2872. Numerous Hawaiian graves, old bottles, and other kinds of artifacts have been found immediately adjacent to the project area (just a few feet away at the Halekulani Hotel construction project). Therefore, we recommend an archaeologist be hired to monitor the project, and to scientifically excavate any archaeological remains uncovered during construction. A report should be written and forwarded to our office, documenting, analyzing and discussing what is found during construction.

In a previous communication, Department of Public Works has agreed to let us know when they come across something. In this case, the probability of disturbing significant archaeological deposits is so great, they need to plan on doing a salvage archaeology project right from the beginning.

(A copy of a Department of Land and Natural Resources letter to the Department of Public Works documenting nearby archaeological features is appended as Appendix C)

Division of Forestry and Wildlife:

To reiterate our comments of 6/24/82, the proposed project will have no affect on Division of Forestry and Wildlife's program or projects.

June 24, 1982 Comments:

The proposed project will consist of replacing an existing drain and the construction of a new outfall. The project also includes driveway improvements along Kalia Road. The project will have no affect on Division of Forestry and Wildlife's programs or projects.

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Natural Area Reserves System:

The proposed land use will have no effect on the existing natural area reserves program.

Division of Conservation and Resources Enforcement:

The area hasn't been disturbed by any type of construction between Ala Moana Boulevard and Lewers Street, mauka of Kalia Road. No photographs were taken because no construction had taken place.

ANALYSIS:

Following review and acceptance of the application, for processing, the applicant, by letter dated August 10, 1982, was notified that:

1. The proposed use is a conditional use in the Resource Subzone of the Conservation District according to Title 13, Chapter 2, Administrative Rules, as amended;
2. No public hearing pursuant to Chapter 183-41, Hawaii Revised Statutes, as amended will be required; and
3. An environmental impact statement in accordance with Section 1:31 of the EIS Regulations has been required for the proposed use and written clearance from the City and County of Honolulu regarding SMA requirements has been obtained.

The Environmental Impact Statement was accepted by the Governor on May 27, 1982.

The objective of the Resource Subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas.

Section 13-2-21(b)(1) relating to standards requires all applications be reviewed in such a manner that the objective of the subzone is given primary consideration.

In reviewing comments provided by various government agencies, we find that most have come to the conclusion that the project will have few if any adverse impacts.

However, our Division of Aquatic Resources has expressed considerable concern over the applicant's failure to give adequate consideration to design alternatives which would improve existing water quality, public health, aquatic resources and shoreline recreation. (see Appendix D, April 16, 1981 letter referred to in Division of Aquatic Resources review)

The Division maintains that the current proposal is inconsistent with the County's Development Plan objectives, in particular the "tourism" objective,

- to provide clean, sandy beaches with safe, clear, inshore waters for the benefit of the Waikiki tourism industry and beach going public.

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They suggest that dumping storm waters off Gray's Beach is perhaps the simplest engineering solution to the drainage problem, but in turn, subjects the Waikiki shoreline to increased fecal coliform bacteria, other contaminants, and debris, and decreased water clarity following storms. They state that these conditions will be augmented by the current proposal, and will ultimately impact recreational uses by tourist and resident beachgoers.

The Division maintains that other alternatives should have been considered, in particular, the "Ala Wai Canal" alternative - i.e., re-routing storm waters toward and discharging that water into Ala Wai Canal.

This alternative was added to the final or revised Environmental Impact Statement. The section covering that alternative is provided here as Appendix E.

The explanation presented there indicates the alternative would require use of pumps since the flood water level in the canal is higher than the water level to be drained from the Kalia Road area. A pump station, dry well, and one-half mile of force main to the canal required to implement this alternative would cost \$3.5 to \$4 million.

For comparison, construction, operation and maintenance of Drainage Outfall Alternative "Z", (the chosen alternative of the initial three alternatives, see Exhibit I) is estimated to cost one-fourth as much.

During peak storms, with an Ala Wai Alternative, much of the runoff, as stated in the EIS, would continue to reach the Kalia Relief Drain, since the runoff would substantially exceed the capacity of the existing Kalia Road box culvert.

Water quality offshore would not get any better, in fact, it is stated that during minor storms the effect would be more noticeable.

In reviewing, the proposed alternatives, including the current proposal, the Division of Aquatic Resources disagrees with statements made in the EIS; in particular those statements that claim that near-shore marine habitat will not be affected.

It appears that an assumption has been made, that since conditions are bad, any drainage improvements made will not make conditions much worse. They further indicate that erosion control measures would be implemented "if warranted".

Our Division of Aquatic Resources maintains such measures are indeed warranted; the need for erosion control measures is further emphasized by our Division of Water and Land Development's comments. Assuredly, if approval is given, conditions requiring erosion control will be essential. The Division of Aquatic Resources suggests the use of "silt curtains" plus any additional methods as may be found necessary.

Staff notes that all of the alternatives considered, except for the "Ala Wai Canal" alternative, discharge storm water into Waikiki near shore waters. The alternative selected, the Alternative "Z" shown on

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Exhibit I, utilizes an existing drainage outfall which will be enlarged to accommodate runoff presently flooding the Kalia Road area and structures during major storms.

The use, a flood control project is a permitted use of the Limited Subzone and in accordance with Section 13-2-13 of our Administrative Rules, all uses permitted in the Limited Subzone are also permitted in the Resource Subzone. The proposal therefore must be considered a permitted use of the Resource Subzone and consistent with the objective of the Resource Subzone.

As with similar proposals, Staff maintains that a permitted use may be denied if the proposal is found to be the wrong approach to solving the problem, or if serious environmental impacts are likely, or if alternatives to the proposed use have not been fully explored.

Review of the proposal, and the environmental impact statement, has shown that improvements to or creation of new storm water outfalls are the basic approaches available to us at this time. Of those alternatives presented, the use of an existing outfall, by enlarging its capacity and length will least disturb the existing shoreline. The Ala Wai Canal Alternative appears to be inordinately expensive. All other alternatives require new excavation and construction of new additional culverts and outfalls.

As such, Staff concludes that if the flooding is to be alleviated with the least environmental impact resulting, this proposal should be implemented. Although both short and long term impacts are anticipated, those individuals who work and live in Waikiki or visit the area will benefit significantly.

Staff finds in reviewing the State Conservation Lands Plan, that the proposed drainage improvements do not directly support any of the objectives, policies or implementing actions stated in that plan. The proposal simply serves to alleviate flooding in areas designated Urban.

Staff therefore maintains that if sustained use of the natural resources is to be achieved here, it will have to be accomplished by imposing effective erosion control measures as conditions for approval.

As such, Staff recommends as follows:

RECOMMENDATION:

That this application for the Kalia Road Relief Drain Project, Honolulu, Hawaii on property identified as TMK: 2-6-05: 01 be approved subject to the following conditions:

1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and City and County governments, and applicable parts of Section 13-2-21 of Title 13, Chapter 2, Administrative Rules, as amended;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage,


- personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
3. Other terms and conditions as prescribed by the Chairman;
 4. In that this approval is for use of conservation lands only, the applicant shall obtain appropriate authorization through the Division of Land Management, State Department of Land and Natural Resources for the occupancy of State lands;
 5. In the event any unanticipated sites or remains such as shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered during construction, the applicant shall stop work and contact the Historic Preservation Office at 548-7460 or 548-6408;
 6. That the applicant shall hire a qualified archaeologist to monitor the project, scientifically excavate any archaeological remains uncovered during construction of the project, and prepare a written report documenting, analyzing and discussing any archaeological remains found. This report shall be forwarded to the Historic Preservation office for review;
 7. That the applicant take measures to prevent beach erosion of the adjacent shoreline areas during construction. Every effort should be taken to minimize detrimental impacts resulting from construction equipment, water turbidity and unsightliness;
 8. That the applicant comply with all applicable Public Health Regulations;
 9. A fire contingency plan, acceptable to the Division of Forestry and Wildlife shall be implemented during and after the construction of the dwelling;
 10. Use of the area shall conform with the program of the appropriate Soil and Water Conservation District, or plan approved by and on file with the Department;
 11. The construction, alteration, moving, demolition and repair of any building or other improvement on lands within the Conservation District, shall be subject to the building codes of the respective counties in which the lands are located; provided that prior to the commencement of any construction, alteration or repair of any building or other improvement, four (4) copies each of the final location map, plans and specifications shall be submitted to the Chairman, or his authorized representative, for approval;
 12. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate such interference, nuisance, harm or hazard;

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13. Upon approval of a particular use by the Board, any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and, all work and construction must be completed within three (3) years of the approval of such use;
14. That the applicant submit a detailed description of all erosion control measures proposed to the Department of Land and Natural Resources for review and approval prior to commencement of construction. Four (4) complete sets of the information requested shall be provided;
15. The Department of Land and Natural Resources reserves the right to imposed additional erosion control measures, should such be found to be necessary, upon review of the proposed measures requested in Condition 14.

Respectfully submitted,


SHERRIE SAMUELS
Staff Planner

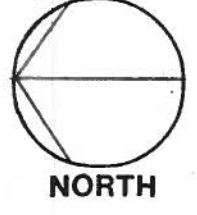
Attachments

APPROVAL FOR SUBMITTAL:


SUSUMU ONO, Chairman
Board of Land and Natural Resources



P A C I F I C O C C E A



NORTH

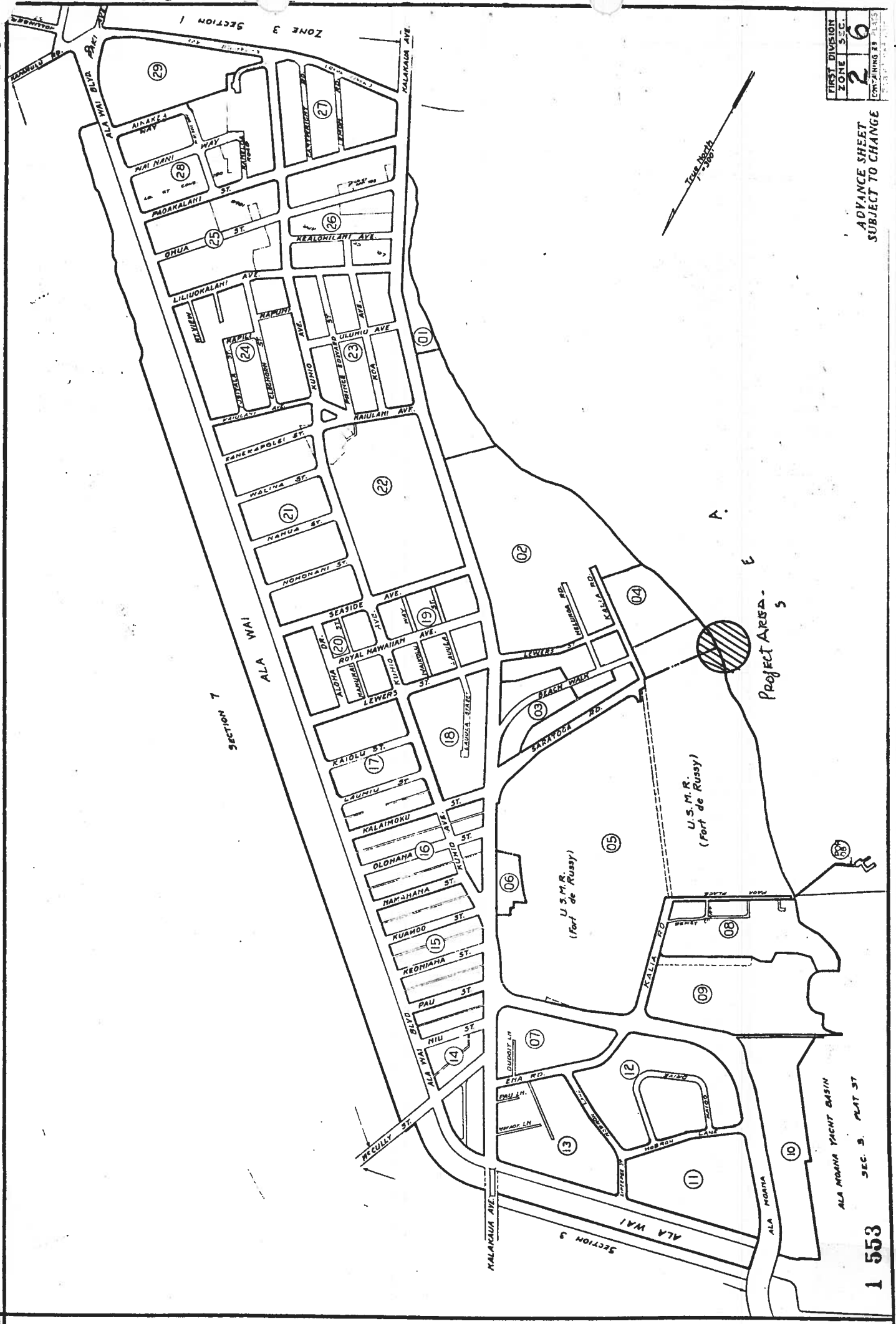
CDUA no. OA-1477, Exhibit A.
 APPLICANT City & County of Honolulu, Dept. of Public Works.
 TMK 2-C-05:01
 SCALE _____

SUBZONE PROTECTIVE
 RESOURCE LIMITED
 GENERAL PROJECT AREA

EXHIBIT A

FIRST DIVISION
 ZONE 2
 S.C. 6
 CONTAINING 28 PLATS

ADVANCE SHEET
 SUBJECT TO CHANGE



CDUA no. OA-1477 Exhibit B
 APPLICANT City & County of Honolulu
Dept. of Public Works
 TMK 2-6-05:1
 SCALE —

SUBZONE PROTECTIVE RESOURCE LIMITED GENERAL PROJECT AREA
 EXHIBIT B

1 553

SEC. 3. PLAT 37

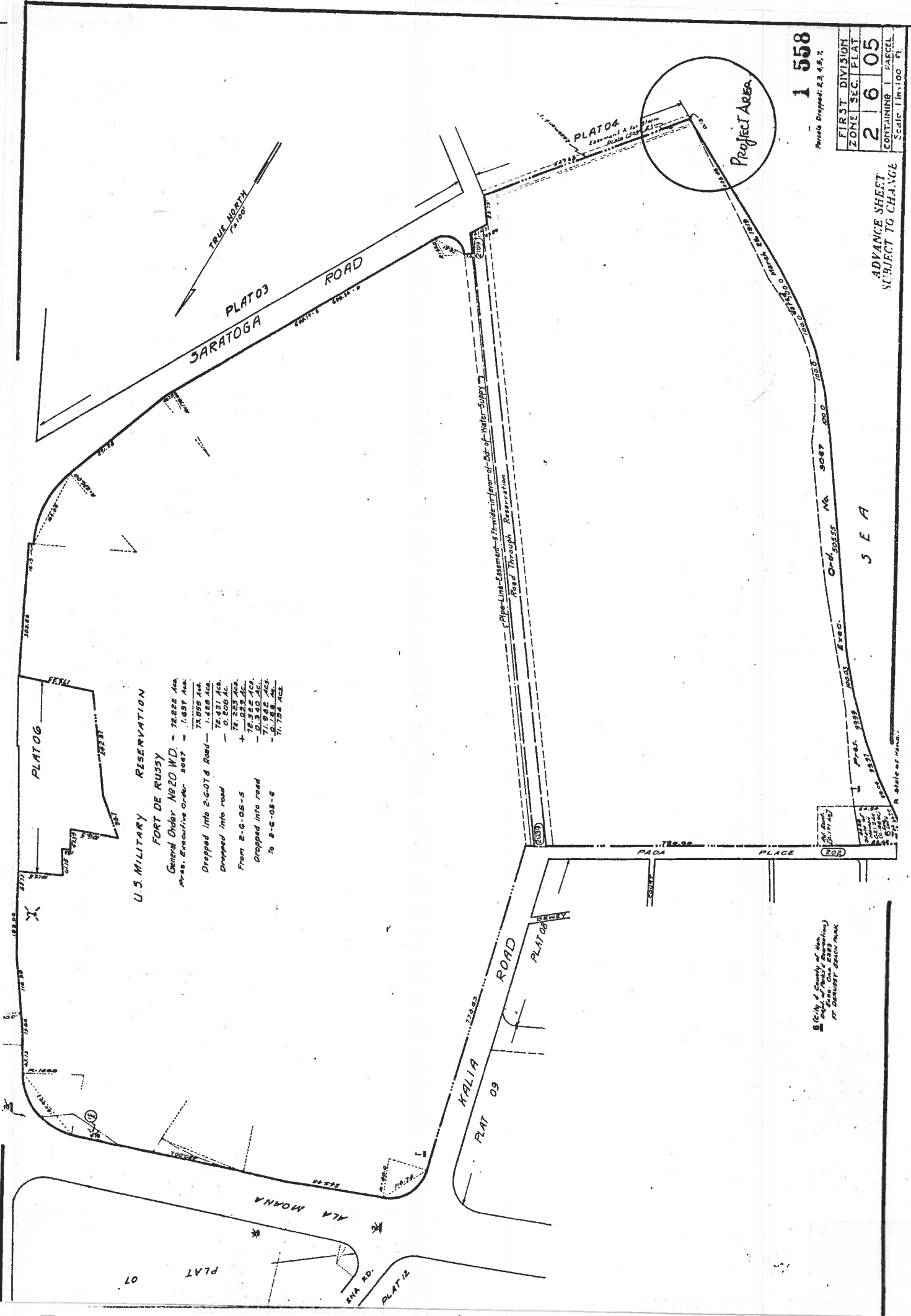
ALA MOANA YACHT BASIN

U.S.M.R. (Fort de Russy)

PROJECT AREA - 5

SECTION 7

SECTION 3



U.S. MILITARY RESERVATION
 FORT DE RUSSY
 General Order No 20 W.D. - 78,222 Acs.
 Exec. Order 3007 - 1,687 Acs.
 78,859 Acs.
 78,481 Acs.
 - 0,209 Acs.
 Dropped into road
 From E-G-08-5
 + 78,259 Acs.
 - 0,350 Acs.
 Dropped into road
 To E-G-08-6
 - 71,982 Acs.
 - 71,758 Acs.

1 558
 Plats Dropped: 2,3,4,5,7

FIRST DIVISION	ZONE	SEC.	PLAT
	2	6	05

CONTAINING 1 PARCEL
 Scale 1 in. = 100 ft.

ADVANCE SHEET
 SUBJECT TO CHANGE

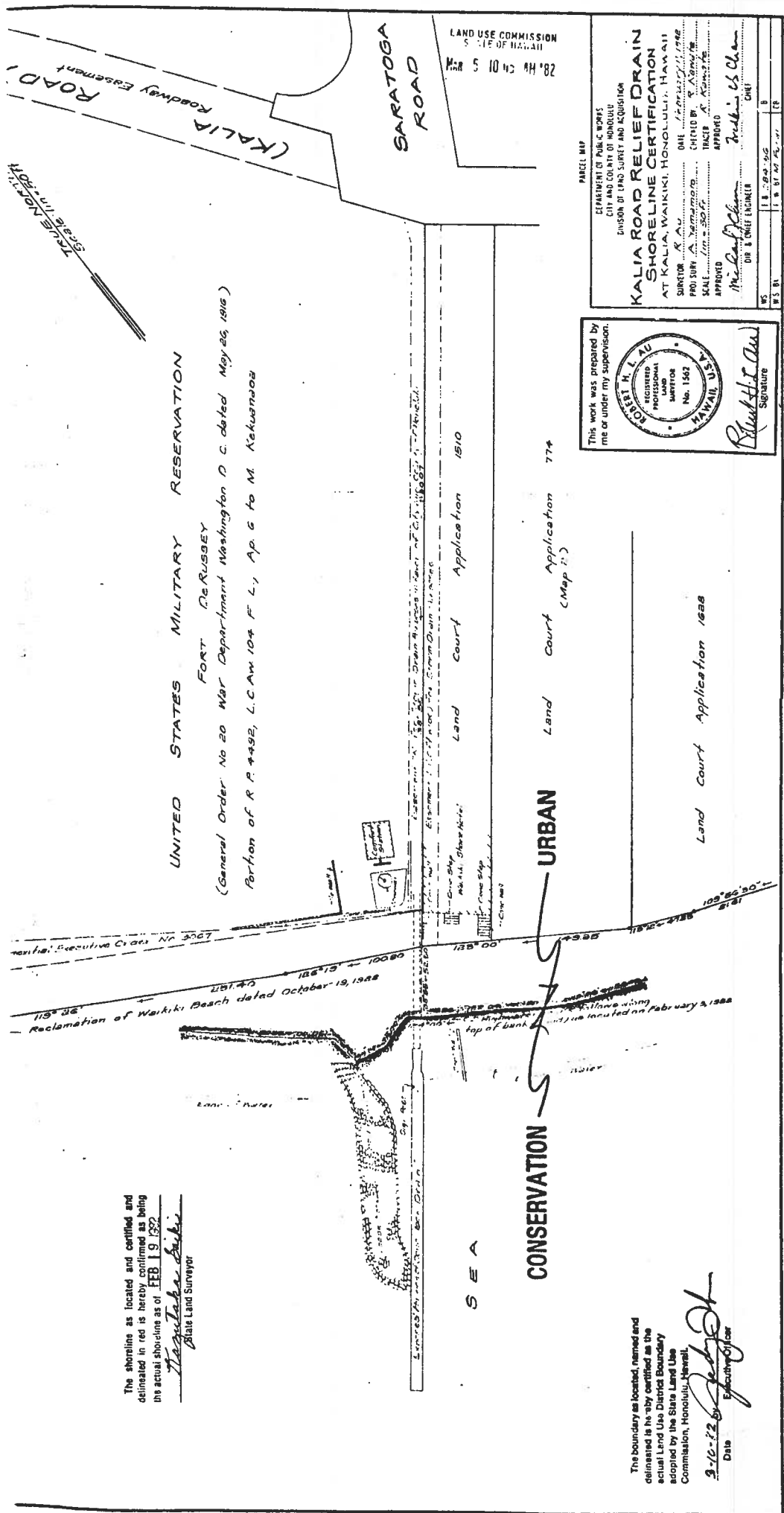
J E A

City of Honolulu
 Dept. of Public Works
 1500 Ala Moana Blvd.
 Honolulu, Hawaii



CDUA no. OA-1477 Exhibit C
 APPLICANT City and County of Honolulu
Dept. of Public Works.
 TMK 2-6-05:1
 SCALE -

SUBZONE PROTECTIVE
 RESOURCE
 LIMITED
 GENERAL
 PROJECT AREA
 EXHIBIT C



LAND USE COMMISSION
STATE OF HAWAII
MAR 5 10 4M '82

SARATOGA ROAD

(KALIA ROADWAY EASEMENT)

UNITED STATES MILITARY RESERVATION
FORT DE RUSSEY
(General Order No 20 War Department Washington D C dated May 26, 1916)
Portion of R.P. 4492, L.C. Am 104 F.L., Ap. 6 to M. Kakuwason

The shoreline as located and certified and delineated in red is hereby confirmed as being the actual shoreline as of FEB 19 1932
Hopulaka Siki
State Land Surveyor

PARCEL MAP
DEPARTMENT OF PUBLIC WORKS
OFFICE OF LAND AND NATURAL RESOURCES
DIVISION OF LAND SURVEY AND ACQUISITION

**KALIA ROAD RELIEF DRAIN
SHORELINE CERTIFICATION**
AT KALIA, WAIKIKI, HONOLULU, HAWAII

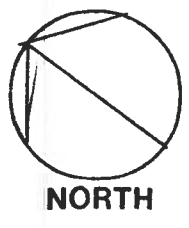
SURVEYOR: R. A. W. ONE / 12/28/2011/1788
PROJECT: A. KALIA ROAD RELIEF DRAIN
SCALE: 1" = 50 FT
APPROVED: [Signature] / 03/05/12
DIRECTOR: [Signature] / 03/05/12

This work was prepared by me or under my supervision.
[Professional Seal: ROBERT H. I. I. U. PROFESSIONAL LAND SURVEYOR No. 1562 HAWAII, U.S.A.]
[Signature: Robert H. I. I. U.]
Signature

Land Court Application 1910
Land Court Application 1928
Land Court Application 774 (Map 774)

The boundary as located, named and delineated is hereby certified as the actual Land Use District Boundary adopted by the State Land Use Commission, Honolulu, Hawaii.
9-10-82 by [Signature]
Date Executive Officer

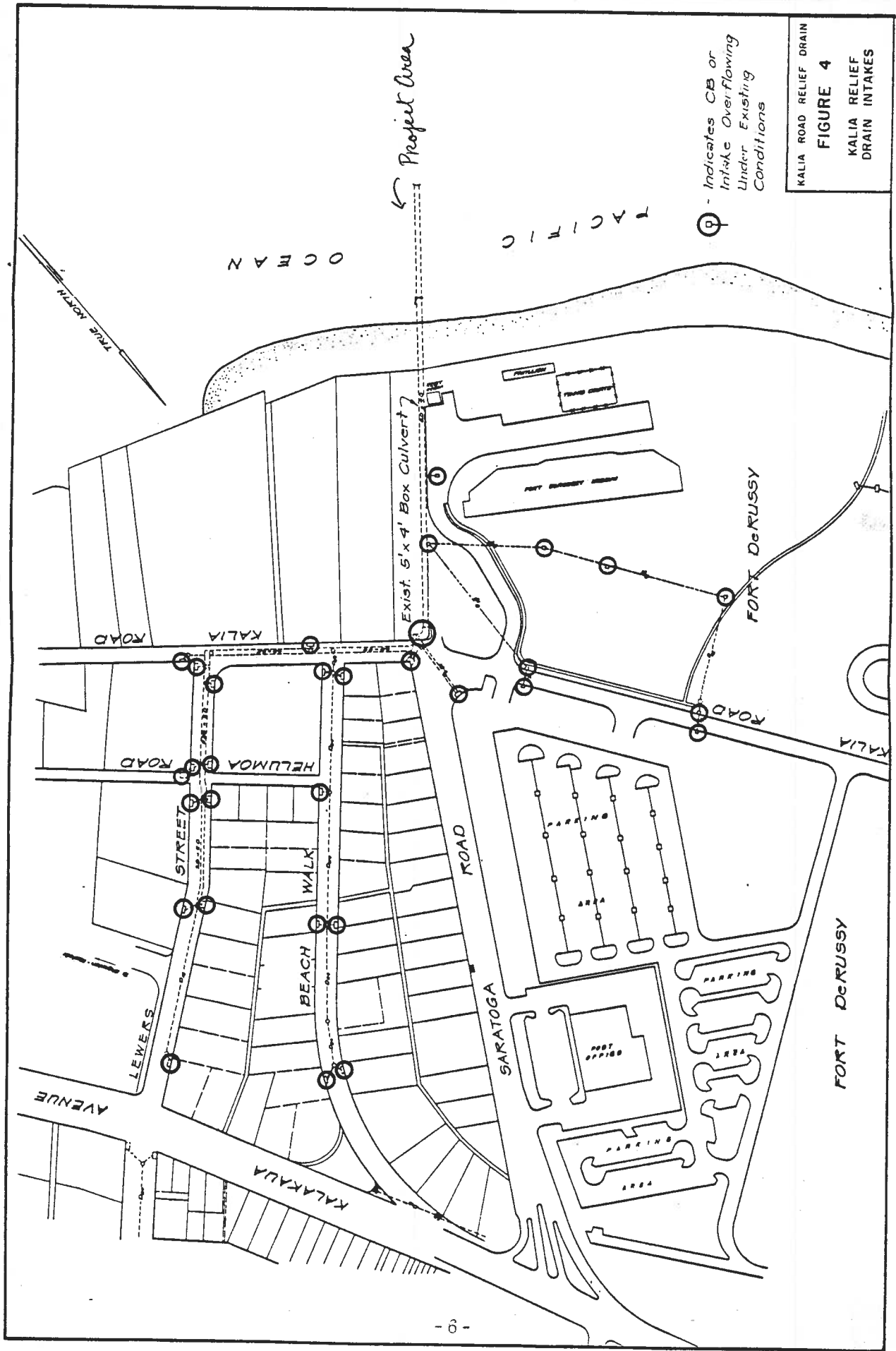
TAX MAP KEY 2-G-04 & 06



CDUA no. 0A-1477 Exhibit D
APPLICANT City and County of Honolulu,
Department of Public Works.
TMK 2-6-05:1
SCALE ---

SUBZONE PROTECTIVE
 RESOURCE
 LIMITED
 GENERAL
PROJECT AREA

EXHIBIT D

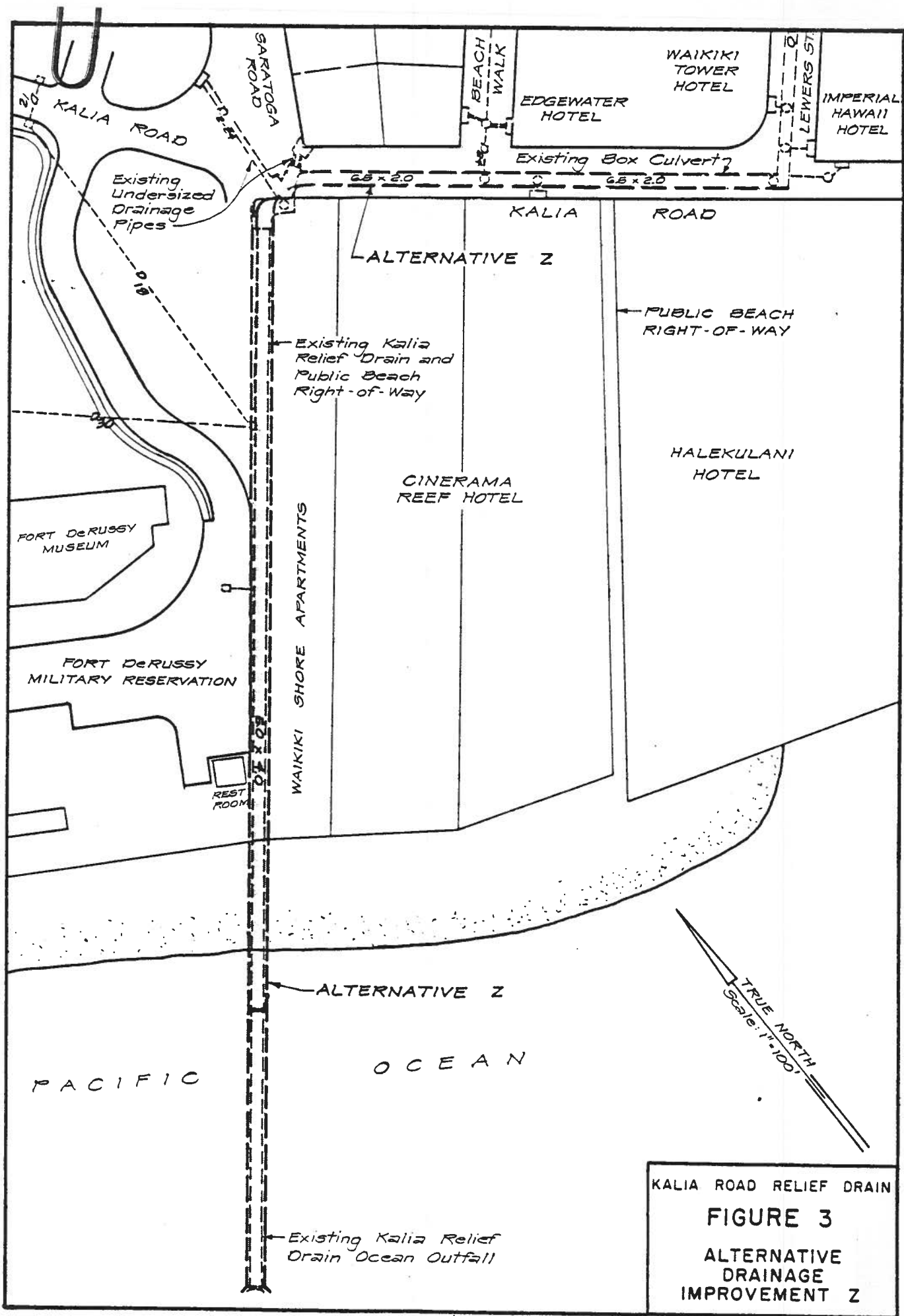


NORTH

CDUA no. OA-1477 Exhibit E.
 APPLICANT City and County of Honolulu
Department of Public Works
 TMK 2-6-05:01
 SCALE

SUBZONE		PROTECTIVE
		RESOURCE
		LIMITED
		GENERAL
		PROJECT AREA

EXHIBIT E



-4-



NORTH

CDUA no. OA-1477 Exhibit F
 APPLICANT City and County of Honolulu
Department of Public Works
 TMK 2-6-05:01
 SCALE -

SUBZONE		PROTECTIVE
		RESOURCE
		LIMITED
		GENERAL

 PROJECT AREA
 EXHIBIT F



PLATE 5
KALIA RELIEF DRAIN EASEMENT
ON FT. DERUSSY



PLATE 7
KALIA RELIEF DRAIN LOOKING MAUKA

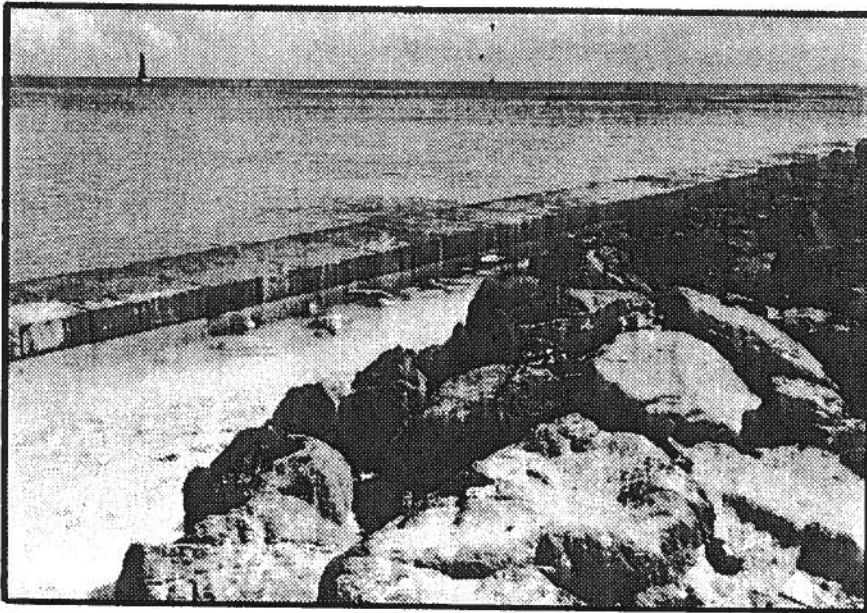
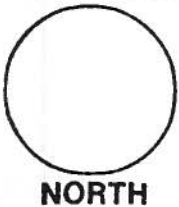


PLATE 8
KALIA RELIEF DRAIN LOOKING MAKAI



CDUA no. DA-1477 Exhibit G
 APPLICANT City and County of Honolulu
Department of Public Works
 TMK 2-6-05:01
 SCALE -

SUBZONE PROTECTIVE
 RESOURCE
 LIMITED
 GENERAL
 PROJECT AREA

EXHIBIT G

LEGEND

- (1) Fort DeRussy seawall built in 1916.
- (2) Pier and rubble groin built in 1918 and recently removed.
- (3) Rubble mound groin built in 1971.
- (4) Existing Kalia Relief Drain built in 1959 and extended in 1969.
(5, 6, 8, 10, 11, 12, 13, 15)
Experimental groins built in 1929 and 1930. Groin No. 5 is in good condition but others are mostly deteriorated.
- (7) Halekulani Hotel seawall built about 1904.
- (9) Deteriorated foundation of a 1928 experimental plant to pump sand ashore.
- (14) Sheraton Hotel ewa seawall built groin built prior to 1928.

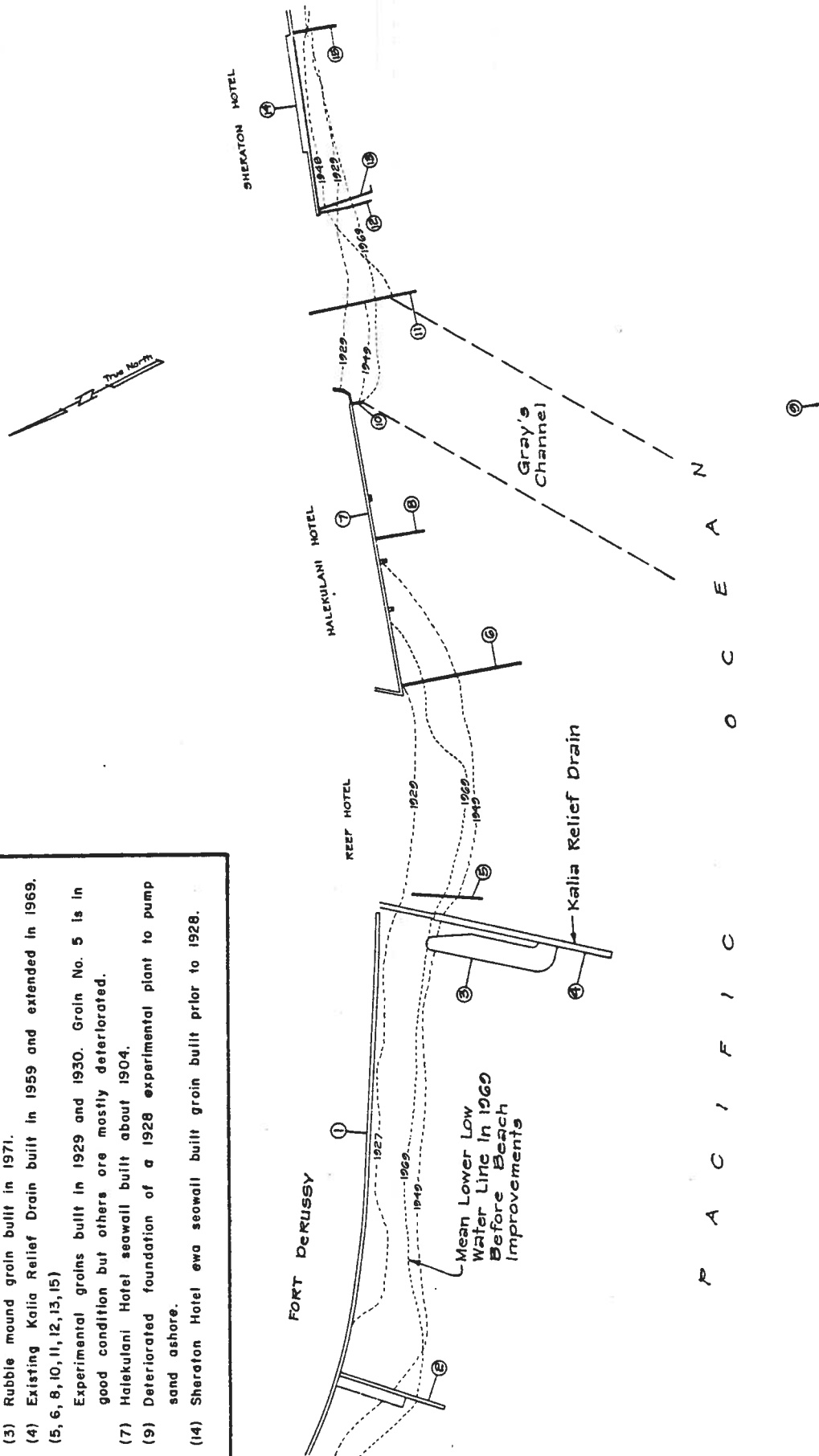
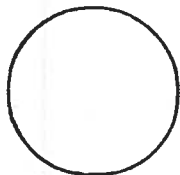


FIGURE 10
MARINE STRUCTURES IN PROJECT VICINITY

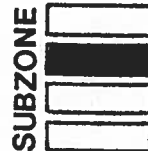
PREPARED BY JERALD CRANE
Scale: 1" = 200' Source: Ref. 5

P A C I F I C O C E A N



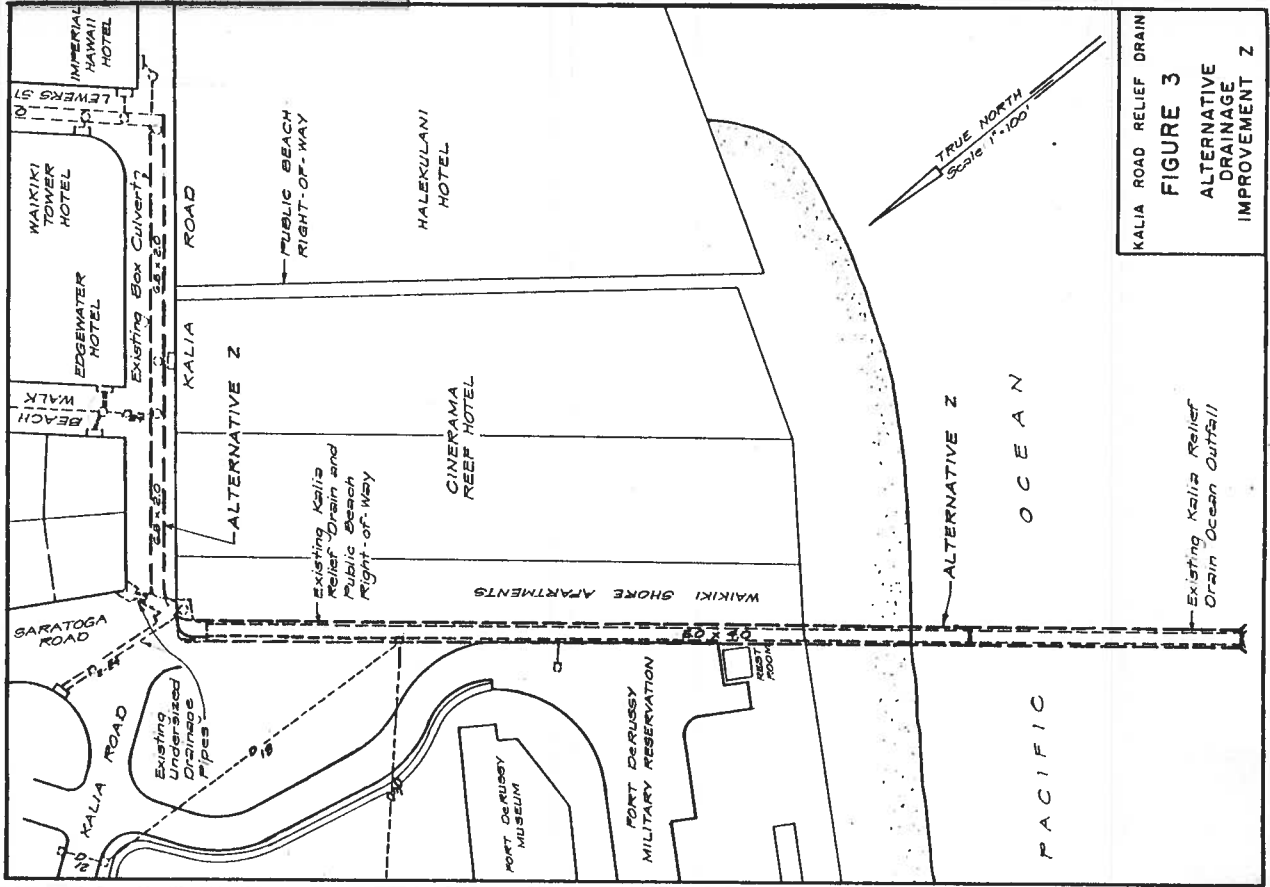
NORTH

CDUA no. OA-1477 Exhibit H
 APPLICANT City and County of Honolulu
Department of Public Works
 TMK 2-6-05:01
 SCALE ---

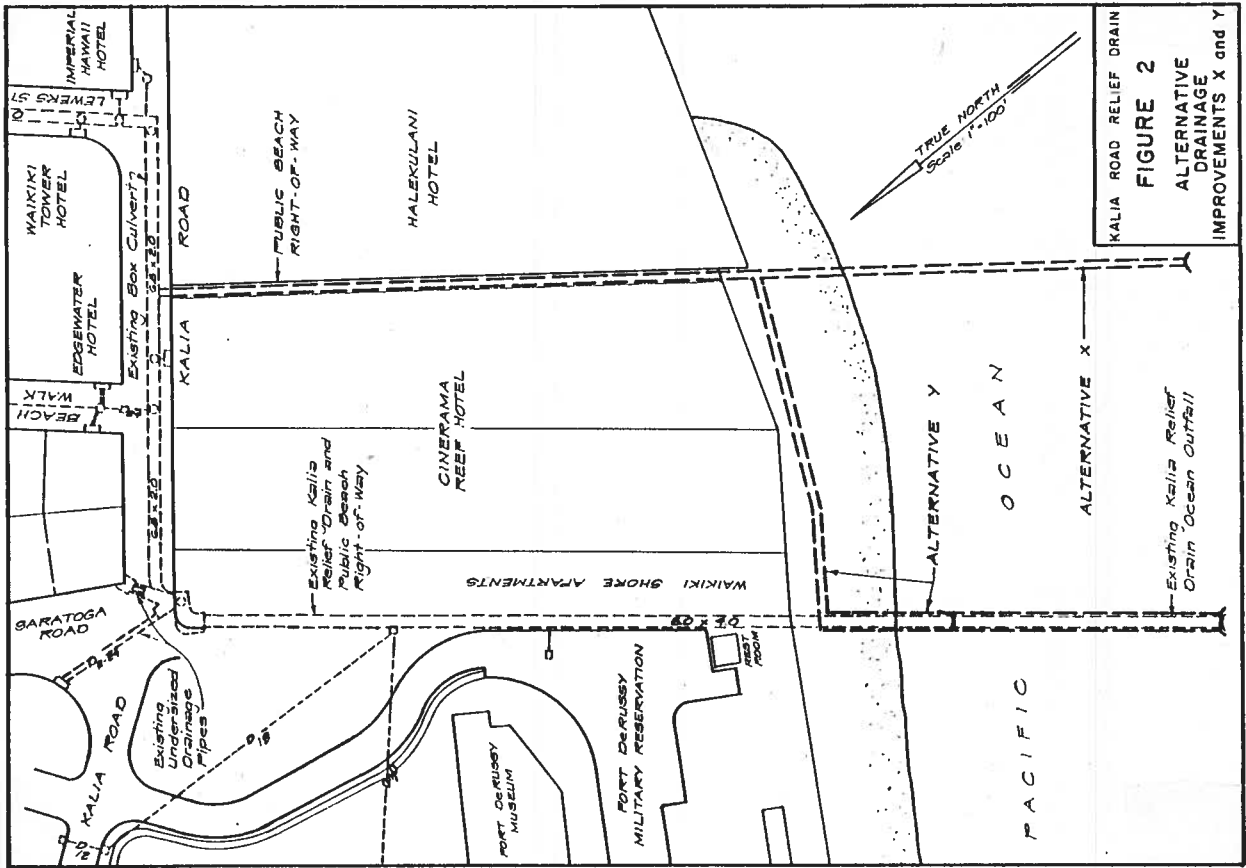


SUBZONE
 PROTECTIVE RESOURCE LIMITED
 GENERAL PROJECT AREA

EXHIBIT **H**



KALIA ROAD RELIEF DRAIN
FIGURE 3
 ALTERNATIVE DRAINAGE IMPROVEMENT Z



KALIA ROAD RELIEF DRAIN
FIGURE 2
 ALTERNATIVE DRAINAGE IMPROVEMENTS X and Y



CDUA no. 0A-1477, Exhibit I
 APPLICANT City and County of Honolulu
 AGENT Department of Public Works
 TMK 2-6-05:01
 SCALE _____

SUBZONE		PROTECTIVE
		RESOURCE
		LIMITED
		GENERAL
PROJECT AREA		
EXHIBIT 1		