

Final Report

**HHA Feasibility Study
for
Kuhio Park Terrace**

Prepared for:

State of Hawaii
Department of Human Services
Hawaii Housing Authority

1 April 1997



**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

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SECTION I - INTRODUCTION

PART 1 - ASSIGNMENT

1.1 FEASIBILITY REPORT

A. Group 70 International, Architects, Planners, Interior Designers were asked to provide facility and building systems evaluation of the Kuhio Park Terrace project. The team members were:

1. Architect
Group 70 International, Inc. - Roy H. Nihei, AIA
2. Civil Engineer
M & E Pacific, Inc. - Robin Matsunaga PE
3. Environmental Engineer
M & E Pacific, Inc. - Vernon Hoo MPH, CIH, CSP
4. Structural Engineer
M & E Pacific, Inc. - Allen Chiu PE
5. Mechanical Engineer
Cedric D.O. Chong and Associates, Inc. - Joel Yuen PE
6. Electrical Engineer
Cedric D.O. Chong and Associates, Inc. - Judd Sakomoto PE
7. Cost Estimator
Rider Hunt, Ltd. - Tony Smith
8. ADA Consultant
Friendly Access Company, Inc. - Paul Sheriff
9. Soils Engineer
Dames & Moore - Mike Yamasaki PE

1.2 SCOPE OF WORK

A. The work included a qualitative analysis of the buildings, site, infrastructure and systems. The objectives of the evaluations were to identify obvious and manifest shortcomings related to each discipline, and recommend corrective actions respectively in both renovation and replacement options. Record and code searches, resident manager interviews, and site visits were the basis of the qualitative assessments herein. Calculations, field measurements, lab tests, field cuts or design services were not performed. The scope included the following:

1. Field investigation of the Kuhio Park Terrace project which consist of 2 sixteen story concrete high rise towers "A" and "B" with a total of 572 one, two, three and four bedroom units and a community center building.
 - a. Based on visual examination of non concealed conditions and noting code deficiencies, repairs and replacement items. Approximately 5% to 10% of the units were surveyed.
 - b. Geo-technical investigation is based on visual examination and review of existing reports and data. Soil borings were not performed.
 2. Environmental survey to verify existing hazardous materials.
 - a. Based on visual examination and limited testing to confirm findings noted in past reports for asbestos and lead base paint.
 3. Preparation of construction estimates to renovate and replace the project.
 - a. Estimates are based on the original design and assumptions established by the findings.
 4. Review existing codes and regulations regarding renovating of and demolishing and replacing of housing structures. The following codes were reviewed:
 - a. Uniform Building Code UBC 1991
 - b. Land Use Ordinance LUO 1995 Amended 1996
 - c. Americans with Disabilities Act ADAAG
 - d. HUD Public Housing Minimum Property Standards 4910.1
 - e. HUD Energy and Life - Cycle Cost Effective Standards 7418
 5. Submission of a report detailing the findings, comparisons and recommendations.
- B. The Scope of Work is based on the following assumptions and agreements:
1. Existing conditions are "grandfathered" unless there are life safety issues or required by law to be changed.
 2. Major items and problems requiring further study are noted as such. Detailed investigation, engineering and design are not included.
 3. Reports and studies completed in the past are assumed to be valid and the data has been used in the report.
- C. Work not included:
1. Termite and Pest Inspection

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PART 2 - HISTORICAL

2.1 GENERAL

- A. The Kuhio Park Terrace project for the Hawaii Housing Authority, was designed in 1962 by Belt, Lemmon & Lo and was constructed (1962) by Hawaiian Dredging and Construction Company, a subsidiary of the Dillingham Corporation.
- B. The original building permit and occupancy permits were found in the Building Department records. Construction documents for a Door and Window Modernization project in 1980 was found in the HHA archives, however the Building Permit for this work was not found. The following are the original permits, the larger modernization/improvement projects on record at the Building Department and the permit dates:
1. Original Building Permits
 - a. Bldg. "A", "B" 3/27/63
 - b. New Community Center Facilities 3/27/63
 2. Original Occupancy Permits
 - a. Bldg. "A" 4/23/65
 - b. Bldg. "B" 12/29/64
 - c. Community Center 12/2/64
 3. Freight Elevator Addition to Bldg. "A" & "B" 4/23/80
 4. Community Center Renovation 6/5/81
 5. Lobby & Laundry Renovation Bldg. "A" & "B" 3/11/82
 6. Community Center Addition 8/4/83
 7. Freight & Passenger Elev. Renovation Bldg. "A" & "B" 10/31/94
 8. Renovate Passenger Elev., Repainting, Repairs for Bldg. "A" & "B" Exteriors 9/11/95
- C. The original building permit was issued prior to the effective date of Honolulu's zoning code: The City and County of Honolulu's Comprehensive Zoning Code, January 1969, as subsequently amended and the current Land Use Ordinance (LUO).
1. The residential use is a conforming use under current A-2 zoning.
 2. Although conforming to applicable zoning codes at the time of its construction, it now has non-conforming off-street parking and loading counts.
 3. Please refer to Section III, Part I, for additional detail.

PART 3 - EXISTING CONDITIONS

3.1 DESCRIPTION

A. The project has several components:

1. A one story concrete community center building.
2. Two 16 story tower buildings "A" and "B" for a total of 572 one (48) , two (318) and three (206) bedroom units. There are two building types as follows:
 - a. Building A -
 - (1) Upper floors: 15 stories of housing units with 180 two bedroom and 94 three bedroom units.
 - (2) Ground floor : Offices, maintenance, resident stores, housing units
 - b. Building B -
 - (1) Upper floors: 15 stories of housing units with 48 one bedroom, 138 two bedroom and 112 three bedroom units.
 - (2) Ground floor : Offices, maintenance, housing units
3. The parking is non-conforming with a total of 433 parking stalls. The current LUO off-street parking requirement is 937 stalls (see Section III, Part I, 1.6 - Parking Calculations).
4. The buildings are essentially poured in place concrete structures utilizing concrete masonry unit walls. The buildings appears to be structurally sound except for concrete spalling at the stairs, canopies and roof edges, especially at Building "B".
 - a. The Community Center is a combination of cast in place concrete, masonry and precast concrete.
5. The buildings finishes and systems have experienced accelerated deterioration, all of which are repairable.

B. The site is described below:

1. The project site that consists of Building A, Building B, and the grounds of each respective building is situated on two portions of TMK parcel 1-3-39:1 that extend South (makai) of Linapuni Street. The TMK parcel of 1-3-39:7 that is located between these two portions of parcel 1-3-39:1 South of Linapuni Street consists of the CCH municipal Kuhio Park Terrace (KPT) Playground. The Building A portion of parcel 1-3-39:1, which also includes the community center, is bordered by plat 1-3-09 to the West and plat 1-3-13 to the Northwest. Both the Building B portion of the parcel and the KPT Playground are bordered to the South (makai) by a portion of Kalihi Stream that is within plat 1-3-15. An

additional 12 low-rise townhouses comprise both the remainder of this HHA housing complex and the remainder of TMK parcel 1-3-39:1 is situated North (mauka) of Linapuni Street, but is not included in the scope of this study.

2. The boundary of both the Building A and Building B parcel portions are surrounded by a 4 foot high fence covered with crawling vines. Individual facilities within the KPT Playground such as the swimming pool are fenced, but there is no fencing between these parcel portions and the adjoining KPT Playground. Nor is there any fencing between these parcel portions and Linapuni Street. It is presumed that there is a fence to the North (mauka) of the remainder of this housing complex North (mauka) of Linapuni Street that is outside the scope of this study. Access to the entire housing complex and the KPT Playground is through two guarded gates at both ends of Linapuni Street.
3. The pavement at the Building A site is in reasonable condition. The pavement in the parking lots closest to Building B have had severe uplift due to tree roots and some delamination has occurred. There are 203 parking stalls at the Building A site and 230 stalls at the Building B site. The sidewalks vary greatly in width from 3 feet to 6 feet, following the relative spacing of curb and building configurations. The walkway from the Community Center within the Building A site to the Building B is 8 feet in width. There are major cracks in the walkways adjacent to the Community Center, but no major changes in grade.
4. The terrain is relatively flat. The Building A site varies in elevation from approximately 87 feet above MSL along Linapuni Street to 80 feet at the South, a grade of approximately 3 percent. The Building B site varies from an elevation of 98 feet at the far eastern end of the parking lot to approximately 89 feet in the vicinity of the structure itself. The site is turfed with lawn grass. There are catch basins along Linapuni Street and inlet structures within the parking lots. The western half of the complex, including the Building A site, drains off site through KPT Playground into Kalihi Stream. The eastern drainage system that serves the Building B site receives off site flow from higher elevations to the North and also discharges into Kalihi Stream. The drainage inlet for the parking lot at the front or North (mauka) side of Building B was reported to require periodic debris removal.
5. Sewage from KPT Playground, Building A, and all areas North (mauka) of Linapuni Street flows through the Building B site before discharging to the off site CCH municipal system along Kalihi Stream to the South (makai). Sewage overflows were reported from all 4 manholes on the Building A site. The segment that connects the lateral servicing the western Wing A-II under the central lobby to the backside of eastern Wing A-III was inspected by HHA Central Maintenance via remote sled-mounted television cameras. Joint separation and differential settlement of pipe segments were recorded by the cameras. Sewage problems at the Building B site were generally more severe. The manhole upstream of the lateral serving the western Wing B-II was reported to have overflowed. The last 2 ground floor units at the northeastern upstream

end of Wing B-III were reported to have flooded with an excess of 1 foot of raw sewage and were immediately abandoned due to unsanitary conditions. The last 2 ground floor units at the South (makai) end of Wing B-1 was reported to have sewage backups as well. Sewer lines are cleaned at a frequency of approximately once every 3 months. Tree roots were reported to have intruded up into toilets on the ground floor at unspecified locations in Building B.

6. Onsite water service is provided through a separate 8 inch branch from a water meter connection on Linapuni Street for each building site. The CCH BWS 250 foot hose lay length criterion is met at the Building A site by an onsite hydrant at the front and rear. Two onsite hydrants at the rear and two off site hydrants off the Linapuni Street CCH BWS 12 inch main provides fire service at the Building B site. Although no field measurements were made, empirical observations indicate relatively high delivery pressures in excess of 100 psi and sufficient flow through the 8 inch branch mains. The water distribution system off the 8 inch branch mains consists of galvanized steel lines that are believed to be corroded. There are insufficient isolation valves on the water distribution system. The entire building must be shut down when repairs are necessary. Given their critical nature, these valves are inspected monthly.
7. Periodic leaks of unspecified frequency have been reported for gas yard piping. The specific condition was not well known because repairs are executed by the supplying utility at cost to HHA.

SECTION II - SUMMARY - KUHIO PARK TERRACE

PART 1 - OVERVIEW

1.1 GENERAL

A. Background

1. This project was designed in 1961 and constructed in 1962. The anticipated average life expectancy of many components and systems would be around 20 years. Major replacement with possible concurrent upgrade should be anticipated. Because of exposure, design, construction, and/or maintenance, the systems require replacement and/or major overhaul now.
2. Due to the adoption of the current Land Use Ordinance (LUO) subsequent to the design and construction of the project, there are existing zoning non-conformities such as the parking and loading requirements. These are deemed to be existing non-conformities which may be continued under the renovation option. The replacement option will have to conform to the current LUO and zoning requirements except for the parking which will need parking count waivers from the current LUO requirements to achieve similar densities.
3. Since the original buildings were designed and constructed prior to current Building codes, there are a number of non-conforming conditions. Although they might be "grandfathered" as existing non-conforming conditions, a number of these involve life safety issues and/or operational efficiencies which should be brought into conformity immediately or during future renovations.

B. Methodology

1. All available record drawings for the construction and modification of the project were obtained from the archive files of the Hawaii Housing Authority (HHA). Original construction drawings and documents were available. However these were not complete. It is uncertain whether all modernization projects and modifications were archived and were recorded. Resident managers reported making emergency repairs with no documentation.
2. Questionnaires for all disciplines were jointly submitted to the resident managers on November 18, 1996 and verbal responses were received on November 26-27, 1996. Site walk-through field surveys were conducted during December 1996 under the guidance of the resident managers.
3. The study compares changes in past and current design codes and standards. If past codes or standards are less stringent, additional study may be necessary to ascertain compliance with current codes.

C. Renovation vs. Replacement

1. The items and issues described below pertain to the existing conditions that need repair, replacement or refinishing for the renovation option. The replacement option assumes that the project will be completely demolished and rebuilt to the same design and scope of work

1.2 LAND USE / ZONING

A. ZONING AND NON-CONFORMING CONDITIONS

1. Current zoning is A-2. The existing project, built prior to adoption of CZC and the current LUO is a conforming use under the current A-2 zoning.
 - a. Due to the above changes in zoning ordinances, non-conforming conditions currently exist. The parking and loading stall counts do not meet current LUO standards and are discussed in each respective section.

B. SPECIAL ZONING/PLANNING CONSTRAINTS

1. The subject parcel is not located within a Special Design District or a Special Management Area (SMA). There are currently no designated public road-widening projects affecting the site.

C. YARD SETBACKS

1. The buildings comply with current LUO required 10 ft. front and 5 ft. side yard setbacks.

D. FLOOR AREA

1. The buildings do not exceed the maximum floor area permitted in A-2 zoning under the current LUO. The approximate total floor area is 600,000 sq. ft. The original Building Permits indicate a floor area of 596,728 s.f. The maximum floor area permitted under A-2 zoning is 985,250 sq. ft.

E. HEIGHT LIMITATIONS

1. The buildings are within the maximum overall height limitation of 150 feet for A-2 zoning.

F. OFF-STREET PARKING

1. The off-street parking is non-conforming with 433 stalls provided and 937 stalls required.
2. The off-street guest parking is non-conforming with 0 stalls provided and 57 stalls required.

G. OFF-STREET LOADING

1. Based on residential use, a total of 4 loading stalls are required. There are no conforming loading stalls provided, therefore, does not meet LUO requirements.

1.3 GEOTECHNICAL

A. The existing high rise building has no major structural problems. We anticipate that the building was founded on the weathered basalt below the site. There has been previously problems with the roadway pavement. Dames & Moore performed an investigation in January 1981 regarding the roadways and the pavement had been overlaid. Currently, Parking Lot A pavement has areas that the overlay has delaminated from the lower layer. In Parking Lot B there are tree roots lifting up the pavement and the entrance concrete driveway is broken up.

B. Renovation Recommendations

1. Renovation would consist of removing the tree roots and overlaying the pavement again in the parking lots and roadway. The concrete sidewalk entrance to Parking Lot B requires reconstruction with 18 inches of subbase fill and a 5-inch thick concrete slab.

C. Replacement Recommendations

1. If demolishing the existing high-rise building, additional geotechnical study should be done for the new construction.
2. For any new buildings in this area, excavating the soil beneath the building to a maximum of 4 feet below the proposed footings is required. The existing footings should be replaced with compacted, granular, non-expansive soil. Conventional spread foundation design for a bearing pressure of 2,000 pounds per square foot should be used.
3. The new roadways should consist of 3 inches of asphaltic concrete over 6 inches of base course material. An additional 12 inches of subbase material should be placed below the base course. A geofabric should be placed between the subgrade soil and the subbase course. Areas where the dumpsters are located should be paved with a 6-inch concrete slab underlain by 12 inches of subbase course material across the entire width of the roadway where the trucks stop and load.

1.4 ROADWAYS AND UTILITIES

1. Parking lots, sidewalks, and non-electrical utilities have not been significantly modified since the original construction and need repair and/or replacement. The replacement of the sewer collection system requires immediate action for both the renovation and replacement options. Ongoing sewage line breaks may

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potentially expose residents to contact with untreated sewage, thus is a potential health liability. Sewer line replacement beneath the existing structures in the renovation option should utilize trenchless technologies such as pipe bursting to minimize construction cost.

B. Renovation Recommendations

Repave 1/2 acre. Remove 2 trees in parking lot.

Replace approximately 2,700 sf of sidewalk.

Replace sewerage system.

Replace water distribution system.

Replace or eliminate gas distribution system.

C. Replacement Recommendations

Replace all pavement and sidewalks. 937 parking stalls are needed with current density.

Provide grading to use existing inlets.

Replace sewerage system.

Replace water distribution system.

Replace or eliminate gas distribution system.

1.5 ARCHITECTURAL

A. The structures appears to be in fair to good condition however, the exterior finish condition for Building "A" is much better than Building "B". Building "A" was recently modernized with concrete spall repairs, repainting, re-roofing and general upgrading of the exterior.

B. The following are Building/Life Safety Code violations which should be corrected immediately for the renovation option:

1. Remove all temporary wood stud and plywood offices and storage enclosures at the maintenance area and replace with non-combustible Type I Construction.
2. Remove and replace wood framed roof shed at resident's store with noncombustible construction.
3. Remove and replace wood stud paint storage room with non-combustible construction meeting hazardous area fire requirements.

4. Remove plywood closing at a pair of exit doors at the South facade of the Community Center and repair doors.

C. Renovation Recommendations

General

1. The exterior of Building "B" requires concrete spall repairs, repainting, re-roofing, elevator upgrades, replacement of custom building joint covers, removal of the steel security fences and gates at the lobby, and general upgrades.
2. Tear off existing built up roof and install new modified bituminous roof, insulation, flashing and roof scuttles and add gutters as required. Replace pitch pockets at the supports for the existing roof equipment with new flashing details.
3. Remove and replace all flooring (see Environmental section for asbestos tile).
4. Repair steel corrosion and spalling concrete at lanais, walls, stairs, canopy areas and roof edges primarily at Building "B" (see Structural section).
5. Repair steel stair rail and guardrail corrosion as required.
6. Repair or replace corrosion at miscellaneous equipment supports and finish hardware.
7. Remove and replace all doors, frames and screen doors (lead based paint). Add new metal doors and frames.
8. Remove jalousie windows at the towers. HHA reported that the jalousie slats have periodically come loose and fallen to the public area below creating a very hazardous situation. Add new sliding windows at the housing units.
9. Replace stained suspended ceiling tiles and T-grid at the Community Center and Offices.
10. Replace the acoustic folding partitions at the Community Center meeting area.
11. Refinish the kitchen cabinets at the Community Center. Replace the countertops and finish hardware.
12. Remove and replace all restroom fixtures, accessories, partitions and ceramic tile surrounds.
13. Add security fence and gates at the ground floor trash enclosure area for safety.
14. Repair trash chutes as required.

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Housing Units

1. Repair damaged CMU walls and concrete floor slab in a few ground floor units which are experiencing minor soil movement problems.
2. Modify designated bathrooms and add various improvements for ADA as required (see ADA section).
3. Remove and replace all kitchen cabinets and countertops.
4. Remove all interior doors (lead base paint) and replace with metal doors and frames.
5. Remove and replace the aluminum sliding lanai doors.
6. Remove and replace all flooring (see Environmental section for asbestos tile).
7. Remove and replace all bathroom fixtures and ceramic tile tub surrounds.
8. Repaint all interior surfaces.
9. Repair concrete floor slab cracks.
10. Repair damaged gypsum board soffits and pipe chase walls.
11. Add new gypsum board soffits to conceal new piping and plumbing.
12. Repair cracks in the CMU block walls as required.

D. Replacement Recommendations

1. The items and issues described below pertain to the existing conditions that need repair, replacement or refinishing in the renovation option. The replacement option assumes that the project will be completely demolished and rebuilt to the same design and scope of work.

1.6 STRUCTURAL SYSTEMS

A. The twin towers and the Community Center are all in good condition externally. Most damage is confined to lanai areas. The settled ground floor slab on grade was caused by sewage leakage, which seeped into the ground and weakened subgrade support. The towers should be studied further to verify its lateral-loads resisting capacity.

1. Based on our survey, the small spalls in the lanai floors and the lanai rail connections should be repaired first. Cracked interior CMU partitions should be patched and sealed. The spall repairs will require the removal of spalled concrete to exposed the portion of rusted rebars, clean rebars and coat them with

epoxy, then patch back with epoxy mortar to the original sizes and shapes. The patch and seal of CMU will require routing cracks, patch and fill with filler materials, backup tapes, and caulk with sealant.

2. The seismic forces required by the 1994 UBC are 12% less than those of the 1943 code. However, the transversal and longitudinal forces are 230% and 174% greater than those of the 1959 code. Therefore, the twin towers may or may not be meet the 1994 UBC depending upon which code the designer(s) followed at the time. Without an in-depth study with calculations for the true lateral-resisting capacity, one can not determine if the existing towers are capable of resisting a Zone - 2a earthquake as required by the present code.

B. Renovation Recommendations

1. Repair spalls in the lanai floors and concrete handrails, repair spall at roof canopy.
2. Patch and seal cracks and joints in the interior partitions.

1.7 MECHANICAL SYSTEMS

A. The mechanical systems are in poor condition and are maintained as well as can be expected. The systems, however, are deficient or are reaching the end of normal life expectancy and will require replacement or repair. The following are mechanical conditions requiring repairs or corrective actions:

B. Renovation Recommendations

Common Areas

1. The window air conditioning units serving the administration should be replaced with either more efficient units or be air conditioned by a central system.
2. The exhaust for the public bathrooms located on the ground floor should be ducted and discharged on the side of the building away from any openings, such as windows or doors.
3. The Community Center's exhaust fans should be replaced with a central air conditioning system.
4. The carpenters shop should be provided with a dust collection system.
5. The generator exhaust discharge needs to be relocated away from any openings such as doors and windows.
6. All missing solar panels should be re-installed. All panels with condensation or scaling should be checked for leaks or signs of rain infiltration, and repaired.

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7. Consideration should be given to provide building B with solar panels as the primary source of hot water and converting the boilers into the back-up source of hot water. With proper maintenance, the solar panels should reduced KPT's energy bill.
8. Most of the solar piping insulation was removed when the roof was resurfaced. All of the solar piping insulation should be re-installed.
9. The paints in the storage area should be kept in UL listed fire cabinets or housed in a liquid storeroom if they exceed the quantities listed in the UFC.

Housing Area

1. All residential bathrooms are naturally ventilated. The existing window area appear to be adequate to ventilate the bathroom.
2. A range hood exhaust should be incorporated in the kitchen of each unit.
3. The majority of the water piping throughout the complex is corroded and should be replaced with new copper tubing.
4. The waste lines throughout the complex show extensive corrosion. All waste lines and vents should be replaced.
5. New exterior cleanouts should be provided for each building.
6. A percentage of the dwelling units should be remodeled to accommodate for ADA requirements. The shower stall will be replaced with a standard five foot tub.
7. Individual shut off valves should be installed in each unit. The existing valves are designed to shut off the water in an entire wing at on time, which makes it inconvenient for tenants when repairs are performed.
8. Consideration should be given to provide building B with solar panels as the primary source of hot water and converting the boilers into the back-up source of hot water. With proper maintenance, the solar panels should reduced KPT's energy bill.
9. The entire ground floor of Building B, Wing III, has been abandoned due to recurring problems with the sanitary lines. This problem may be due to suds, undersized lines, or other unforeseen conditions.
10. Both towers should be fire sprinklered, according to the Uniform Building Code.
11. Consideration should be given to replace the existing gas stoves with electric stoves due to ongoing problems with the gas piping and leaking meters. The use

of electric stoves will eliminate the risk of igniting gas leaks. If new gas ranges are installed, the existing gas piping needs to be replaced.

C. Replacement Recommendations

1. The items and issues described above pertain to the existing conditions that need repair, replacement or refinishing for the renovation option. The replacement option assumes that the project will be completely demolished and rebuilt to the same design and scope of work.

1.8 ELECTRICAL SYSTEMS

A. The electrical systems are also in poor condition and maintained as well as can be expected. Similar to the mechanical systems, the systems are deficient, reaching the end of their normal life expectancy, or are outdated. The following is a summary of the electrical recommendations and items requiring repairs or corrective actions:

B. Renovation Recommendations

Common Areas

1. The exterior tenant meters are in bad condition showing severe corrosion and should be replaced.
2. The exposed exterior branch circuit conduit systems show signs of corrosion and abuse. Several locations require immediate attention where the conduit has rusted through, or has broken away, and the wiring is exposed. The exposed conduit systems are not expected to last beyond 10 years and should be replaced.
3. The exterior building perimeter lighting levels, immediately adjacent to the building, appear to be inadequate. Additional luminaires should be installed to provide sufficient lighting levels for security purposes.
4. The elevator lobby areas and ground floor lobby luminaires appear to be in bad condition and should be replaced.
5. The service telephone cabinets are in bad condition, showing severe corrosion and should be replaced.
 - a. The cables and outlets do not appear to be in adequate condition and are not expected to last beyond 10 years. The tenant unit service feeders should be replaced.
6. The cable television service feeders and tenant cables appear to be in good condition, however, the PVC tubing system is not suited for the high abuse environment. The PVC tubing in some areas has been pulled off its supports, pulled out of the junction boxes and conduit fittings. The cable television unit

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feeders are not expected to last beyond 10 years and should be replaced with a galvanized steel conduit system.

7. The exterior notification devices, manual pull stations, and fire fighter microphone jacks have been abused and many were broken.

Housing Area

1. Receptacles throughout the units do not appear to be in good condition and should be replaced.
2. Several code violations that require corrective action are as follows:
 - a. Kitchen counter top and bathroom receptacles do not have ground circuit interrupt provisions. The 1996 National Electrical Code (NEC) requires ground fault circuit interrupt provisions for all kitchen counter top receptacles. Replace the receptacles with ground fault sensing capabilities.
 - b. Roof top receptacles for maintaining equipment were not provided, violating the NEC. Provide ground fault interrupt roof top receptacles.
 - c. The roof tops of the buildings do not have fire alarm notification devices. Provide fire alarm notification horn.
3. The majority of the interior luminaires were showing signs of corrosion and had missing or damaged lenses. The existing fixtures should be replaced and illumination levels increased.
4. The smoke detectors are only located in the hallways of all units and appear to be in bad condition. New fire codes require that all dwelling bedrooms, living areas, and hallways contain smoke detectors that operate on both 120 volt and battery back up power.
5. The following items are necessary for ADA compliance:
 - a. Receptacles mounted at 14 inches above the floor do not meet wheel chair reach guidelines and should be heightened to 18 inches.
 - b. Panelboards mounted at 60 inches above the floor should be lowered so the maximum height of the highest circuit breaker is below 48 inches.
 - c. The light switch that operates the lanai light is obstructed by the washing machine. The light switch should be relocated to the lanai side of the wall to meet wheel chair reach guidelines.
 - d. All smoke detectors should be replaced with both visual and audible notification features.

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- e. Telephone and door knocker visual notification devices should be provided in living areas and master bedrooms, as suggested by ADA guidelines.
- f. All fire alarm manual pull stations are mounted at 64 inches above the floor and do not comply with ADA guidelines. The pull stations should be relocated to 48 inches above the floor.

Community Center

1. The lighting fixtures, power and signal devices have been in operation since 1969 and are not expected to last beyond 10 years. The fixtures, power and signal devices, wiring and exposed conduit should be replaced.
 2. The exterior security lights are worn, are not expected to last beyond 10 years, and should be replaced.
- C. Replacement Recommendations
1. The items and issues described above pertain to the existing conditions that need repair, replacement or refinishing for the renovation option. The replacement option assumes that the project will be completely demolished and rebuilt to the same design and scope of work.

1.9 AMERICANS WITH DIABILITIES ACT - ADAAG

- A. Kuhio Park Terrace appears to have many areas of non-compliance. However, the barriers are relatively minor and can be easily removed or modified.
- B. Renovation Recommendations
1. Residential units: moving walls and providing door maneuvering clearances.
 2. Recommend adding accessible entries to 29 units.
 3. Renovate all elevators to provide complying features.
 4. Replace exit door hardware (knobs) with complying lever type hardware.
 5. Add Tactile/Braille signage throughout facility.
 6. Relocate and lower fire alarm pull stations which are not within reach, or install another pull station in an accessible location in close proximity.
 7. Recommend re-grading and sidewalks to provide an accessible route from public sidewalk and bus stop.
 8. Recommend installation of three curb ramps at entry area.

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9. Recommend removal of existing non-complying ramp at Tower A entrance, and installation of complying ramp.
 10. Recommend installation of complying entry ramp at Tower B.
 11. Recommend reconfiguration of loading zone area at Tower A.
 12. Modify six ground floor entrances to public areas which are not accessible due to steps.
 13. Relocate and lower telephones are not within accessible reach ranges.
 14. Recommend providing an accessible laundry facility.
 15. Recommend providing accessible route to basketball court.
- C. Replacement Recommendations
1. Provide ADA accommodations as noted above in the new project design.

1.10 ENVIRONMENTAL

- A. In general, asbestos containing material ACM was found in the original vinyl floor tile and lead based paint LBP was found on the doors and window frames. LBP findings were inconclusive for the interior and exterior paint but appears not to be in the paint finishes.
- B. The scope of work was limited to review of existing historical documentation and previously commissioned reports for the Hawaii Housing Authority to determine the presence or absence of asbestos-containing building material and lead-based paint within the structures and a limited amount of confirmation site sampling. Asbestos containing material (ACM) data was sufficient to provide extensive cost information, however, the inconclusive nature of the lead-based paint (LBP) data resulted in the need to extrapolate the cost information. As a result, testing of each area is recommended for painted surfaces to be disturbed prior to planned renovation or demolition.
 1. Based on current City and County Municipal Landfill requirements, asbestos containing material (ACM) must be removed from the construction debris prior to deposition in the landfill. Therefore, removal of the ACM is recommended for both the renovation and the replacement alternatives. Landfill disposal has become a time-limited option, which will greatly increase in cost in the near future. Recommend removal and disposal of ACM at this time.
 2. Based on current HUD, EPA, and OSHA guidance, if the method of renovation performed does not disrupt the integrity of the lead-based paint (LBP), other less expensive alternative abatement methods can be employed for the amelioration of the LBP hazards. However, disruption of the LBP on the interior walls, will

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increase the cost. As with ACM debris, LBP debris disposal cost is expected to increase as the option for landfill acceptance becomes less available. Therefore, removal of the LBP is recommended now, rather than using alternative abatement technologies which would delay the removal until a later date.

3. The increasingly stringent disposal restrictions imposed by the EPA will result in increased abatement cost due to the need for leachate potential testing of the LBP debris. Alternative methods of calculating the leachate potential of the debris may be used, if they are acceptable to the receiving authorities.

C. Renovation Recommendations

1. Review planned activities with HHA hazardous materials coordinator.
2. Remove all ACM primarily in the vinyl asbestos tile flooring during early phases of planned renovation or pre-demolition.
3. Doors and windows frames appear to have LBP and should be removed intact if possible. They should be tested to confirm the presence of LBP prior to renovation or pre-demolition.
4. Due to the sporadic nature of the data provided, prior to renovation or demolition of interior walls and ceilings test painted surface for LBP. If LBP is present, coordinate activities with HHA Hazmat coordinator.
5. If demolition of a structure is planned, pre-construction subsurface preparation should include site soil examination for UST product in-migration and persistent pesticides.

D. Replacement Recommendations

1. The scope of the replacement will be similar to the renovation except that the hazardous material removal must be completed prior to demolition.

PART 2 - PROBABLE COST SUMMARY

1.1 GENERAL

A. Issues and assumptions

1. The probable cost is based on as-built drawings, site visits, and discussions with the HHA housing managers.
2. Optional items such as solar water systems are noted in the cost estimate but has not been included in the probable cost noted in the summary.
3. A 5% to 10% contingency has not been included in the cost but should be considered for project budgeting.
4. Escalation has been excluded. Construction midpoint has not been determined.
5. Tenant relocation cost is based on information and cost data provided by HHA on past projects.
6. Phasing cost is not included.

1.2 PROBABLE COST

A. Renovation Option

1. The cost to retain the basic structure and refinish and replace all exterior and interior systems will be approximately \$33,770,000 (see attached cost breakdown).
2. This cost is approximately \$56.00 / s.f. which averages to \$59,000.00 per unit.

B. Replacement Option

1. The cost to demolish the existing project and rebuild with the same design and program will cost approximately \$65,902,000 (see attached cost breakdown).
2. This cost is approximately \$110.00 / s.f. which averages to \$115,000.00 per unit and reflects the additional structural and site cost.

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|--|----------------|-------------|---------------------|
| A SITE WORK | | | 516,470 |
| B TOWER A | | | |
| B1 ARCHITECTURAL - GROUND FLOOR | 21,870 | 16 | 354,782 |
| B2 ARCHITECTURAL - 2ND - 16TH FL | 270,510 | 21 | 5,596,995 |
| B3 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 9 | 13,042 |
| B4 MECHANICAL | | | 3,654,395 |
| B5 ELECTRICAL | | | 2,710,004 |
| | 293,914 | \$42 | \$12,329,218 |
| C TOWER B | | | |
| C1 ARCHITECTURAL - GROUND FLOOR | 21,820 | 22 | 478,251 |
| C2 ARCHITECTURAL - 2ND - 16TH FL | 277,215 | 21 | 5,913,645 |
| C3 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 116 | 177,803 |
| C4 MECHANICAL | | | 3,614,000 |
| C5 ELECTRICAL | | | 2,845,800 |
| | 300,569 | \$43 | \$13,029,499 |
| D COMMUNITY BUILDING | 5,453 | 45 | 244,724 |
| E STRUCTURAL REPAIR WORK | | | 71,282 |
| F CODE COMPLIANCE - ELECTRICAL | | | 2,072 |
| G ADA COMPLIANCE | | | |
| G1 COMMON ELEMENTS | | | 286,000 |
| G2 TOWER A - 2 BEDROOM | | | 124,000 |
| G3 TOWER A - 3 BEDROOM | | | 81,625 |
| G4 TOWER B - 1 BEDROOM | | | 19,600 |
| G5 TOWER B - 2 BEDROOM | | | 108,500 |
| G6 TOWER B - 3 BEDROOM | | | 114,275 |
| G7 MECHANICAL | | | 87,000 |
| G8 ELECTRICAL | | | 183,130 |
| | | | \$1,004,130 |
| H HAZARDOUS MATERIALS REMEDIATION | | | |
| H1 ASBESTOS ABATEMENT | | | 1,073,500 |
| H2 LEAD BASED PAINT REMOVAL | | | 51,900 |
| | | | \$1,125,400 |
| I PHASING AND RELOCATION COST | | | 930,000 |
| Net Cost carried forward | 599,936 | \$49 | \$29,252,795 |

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|---------------------------------|----------------|-------------|---------------------|
| Net Cost brought forward | 599,936 | \$49 | \$29,252,795 |
| Margin & Adjustments | | | |
| GENERAL CONDITIONS | 8.0% | | 2,340,224 |
| CONTRACTORS MARGIN | 5.0% | | 1,579,651 |
| GENERAL EXCISE TAX | 1.8% | | 597,330 |
| Grand Totals | 599,936 | \$56 | \$33,770,000 |

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|--|----------------|--------------|---------------------|
| A SITE WORK | | | 4,341,869 |
| B TOWER A | | | 10,269,274 |
| B1 STRUCTURAL | | | 452,083 |
| B2 ARCHITECTURAL - GROUND FLOOR | 21,870 | 21 | 6,702,630 |
| B3 ARCHITECTURAL - 2ND - 16TH FL | 270,510 | 25 | 165,607 |
| B4 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 108 | 515,000 |
| B5 CONVEYING SYSTEMS | | | 3,769,260 |
| B6 MECHANICAL | | | 2,657,678 |
| B7 ELECTRICAL | | | |
| | 293,914 | \$83 | \$24,531,532 |
| C TOWER B | | | 10,556,162 |
| C1 STRUCTURAL | | | 522,468 |
| C2 ARCHITECTURAL - GROUND FLOOR | 21,820 | 24 | 7,008,990 |
| C3 ARCHITECTURAL - 2ND - 16TH FL | 277,215 | 25 | 167,451 |
| C4 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 109 | 515,000 |
| C5 CONVEYING SYSTEMS | | | 3,345,065 |
| C6 MECHANICAL | | | 2,640,899 |
| C7 ELECTRICAL | | | |
| | 300,569 | \$82 | \$24,756,035 |
| D COMMUNITY BUILDING | 5,453 | 82 | 447,783 |
| E ADA COMPLIANCE | | | 954,800 |
| F HAZARDOUS MATERIALS REMEDIATION | | | 1,073,500 |
| F1 ASBESTOS ABATEMENT | | | 51,900 |
| F2 LEAD BASED PAINT REMOVAL | | | |
| | | | \$1,125,400 |
| G PHASING AND RELOCATION COST | | | 930,000 |
| Total Net Cost | 599,936 | \$95 | \$57,087,419 |
| Margin & Adjustments | | | |
| GENERAL CONDITIONS | 8.0% | | 4,566,994 |
| CONTRACTORS MARGIN | 5.0% | | 3,082,721 |
| GENERAL EXCISE TAX | 1.8% | | 1,164,866 |
| Grand Totals | 599,936 | \$110 | \$65,902,000 |

PART 3 - RECOMMENDATIONS

1.1 GENERAL

A. Renovation Option

1. This project was designed in 1961 and constructed in 1962 which makes the project approximately 35 years old. The investigation revealed that the concrete structures are in good condition and can be retained. All other finishes, materials and systems are in poor condition and should be replaced. The site required minor repairs and replacement of road ways, sidewalks and utilities. Despite its age, renovation of the project will significantly increase its life.

B. Replacement Option

1. Total demolition and replacement of this project does not appear to be reasonable given the fairly good condition of the concrete structures and the high anticipated cost.

1.2 RECOMMENDATION

A. This study and probable cost estimates indicate that the renovation option is a more reasonable option to pursue. This is due primarily to the fact that the building concrete structures are in relatively good condition and appears to be re-useable.

B. Renovation of this project appears to be the most reasonable option for the following reasons:

1. The basic concrete structures appear to be sound and reusable with some minor repairs.
2. The site appears to be repairable without removal of the buildings.
3. There does not appear to be a major environmental problem that would prohibit renovation.
4. The construction schedule would be significantly less than the replacement option.
5. The project would be easier to phase with less disruption to the remaining tenants during construction.
6. The renovation option is approximately \$32,000,000 less than replacement option. Total demolition and replacement of this project appears to be cost prohibitive.

C. Although the renovation option appears to be preferable, the following issues will remain:

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1. High rise public housing in Hawaii and nationwide has proved to be problematic.
 2. The public housing image will not change.
- D. Further study into a third option to re-conceptualize the project design utilizing a combination of renovation and/or replacement with low-rise housing may be warranted. This option may present a new image for public housing projects in Hawaii.
1. ADAAG improvements will be integrated into the design.
 2. Public and community areas could be focused and improved. More amenities could be provided to the tenants.

SECTION III - EVALUATION

PART 1 - LAND USE / ZONING

1.1 ZONING AND NON-CONFORMING CONDITIONS

- A. Current zoning is A-2. The existing project, built prior to adoption of CZC and the current LUO is a conforming use under the current A-2 zoning.
- B. Due to the above changes in zoning ordinances, non-conforming conditions currently exist. These include parking and loading and are discussed in each respective section. Under the LUO (Section 3.120) these non-conformities may continue subject to the following provisions:
 1. "Constraints are placed on nonconformities to facilitate eventual conformity with the provisions of this chapter. In other than criminal proceedings, the owner, occupant or user shall bear the burden to prove that a lot, a structure, a use, a dwelling unit, or parking or loading was legally established as it now exists. Nonconforming lots, structures, uses, dwelling, units, commercial use density, and parking and loading may be continued, subject to the following provisions:"
 2. "Nonconforming parking and loading may be continued, subject to the following provisions:"
 - a. "If there is a change in use to a use with a higher parking or loading standard, the new use shall meet the off-street parking and loading requirements established in Section 21-3.70, et seq."
 - b. "Except for expansion of individual dwelling units, any use that adds floor area shall provide off-street parking and loading for the addition as required by Section 21-3.70, et seq. Expansion of an individual dwelling unit that results in a total floor area of no more than 2,500 square feet shall be exempt from this requirement."
 - c. "When nonconforming parking or loading is reconfigured, the reconfiguration shall meet current requirements for arrangement of parking spaces, dimensions, aisles, and if applicable, ratio of compact to standard stalls, except as provided in paragraph (B). If, as a result of the reconfiguration, the number of spaces is increased by five or more, landscaping shall be provided as required in Section 21-3.80 based on the number of added stalls, not on the entire parking area."
 - d. "Parking lots and other uses and structures with an approved parking plan on file with the department of land utilization or building department prior to the effective date of this ordinance, and which include compact parking

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spaces as approved in the plan, may retain up to the existing number of compact spaces when parking is reconfigured.”

1.2 SPECIAL ZONING/PLANNING CONSTRAINTS

A. The subject parcel is not located within a Special Design District or a Special Management Area (SMA). There are currently no designated public road-widening projects affecting the site.

1.3 YARD SETBACKS

A. The building does comply with current LUO required 10 ft. front and 5 ft. side yard setbacks.

1.4 FLOOR AREA

A. The buildings do not exceed the maximum floor area permitted in A-2 zoning under the current LUO. The approximate floor area of the buildings is 600,000 sq. ft. The original certificate of occupancy was not found to confirm the floor area. The maximum floor area permitted under A-2 zoning is 985,250 sq. ft.

1.5 HEIGHT LIMITATIONS

A. The buildings are within the maximum overall height limitation of 150 feet for A-2 zoning.

1.6 OFF-STREET PARKING

A. The off-street parking is non-conforming with 433 stalls provided and 994 stalls required.

| Floor Area | Multiplier | Units | Req Spaces |
|-------------------|-------------------------------|-------|------------|
| < 600 sf | 1 | 48 | 48 |
| > 600 sf < 800 sf | 1.5 | 318 | 477 |
| > 800 sf | 2 | 206 | 412 |
| | Subtotal | 572 | 937 |
| | Guest Stalls (1 per 10 units) | | 57 |
| | Total | | 994 |

1.7 OFF-STREET LOADING

A. Based on residential use, a total of 4 loading stalls is required. There are no conforming loading stalls provided, therefore, does meet LUO requirements.

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1.8 FLOOR AREA CALCULATIONS

| | | |
|----------------------------|--------------------|---------------|
| A. Community Center | | 5,450 |
| C. Building "A" - 16 flrs. | Typ. flr. 18,000 = | 293,910 |
| D. Building "B" - 16 flrs. | Typ. flr. 18,500 = | 300,570 |
| TOTAL | | <hr/> 599,930 |
| Round Off | | 600,000 |

PART 2 - GEO-TECHNICAL ISSUES

2.1 GENERAL

- A. The Kuhio Park Terrace consists of two high rise buildings along Linipuni Street in Kalihi. The site is shown on the Map of Area Plate 2.1 and the buildings are shown on the Site Plan, Plate 2.2. Geologically, the buildings are located over a lava flow from the Honolulu series volcanics. During the Honolulu series volcanics, thin layers of lava flowed over this area. A layer of recent alluvium covers the lava flow. This recent alluvium consists of expansive clays locally known as adobe mixed with basalt, sands and gravels, and cobbles.
- B. The basaltic lava formation has undergone chemical weathering and the rocks are in different stages of decomposition to soil. Twenty-two borings were done by Nat Whitton in 1962 and the boring logs are shown on Sheet C-2 and the location are shown on Sheet C-3 contained in the Appendix.
- C. The existing high rise building has no major structural problems. We anticipate that the building was founded on the weathered basalt below the site. There have been previous problems with roadway pavement. Dames & Moore performed an investigation in January 1981 regarding the roadways and the pavement had been overlaid. Currently, Parking Lot A pavement has areas where the overlay has delaminated from the lower layer. In Parking Lot B tree roots lifting up the pavement and the entrance concrete driveway is broken up.

2.2 RECOMMENDATIONS

A. Renovation Option

- 1. Renovation would consist of removing the tree roots and overlaying the pavement again in the parking lots and roadway. The concrete sidewalk entrance to Parking Lot B requires reconstruction with 18 inches of subbase fill and a 5-inch thick concrete slab.

B. Replacement Option

- 1. If the existing high-rise buildings are demolished, additional geotechnical study should be done for the new construction.
- 2. For any new buildings in this area, excavating the soil beneath the building to a maximum of 4 feet below the proposed footings is required (see Plate 1.7). The existing soils should be replaced with compacted, granular, non-expansive soil. Conventional spread foundation design for a bearing pressure of 2,000 pounds per square foot should be used.

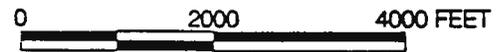
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3. The new roadways should consist of 3 inches of asphaltic concrete over 6 inches of base course material. An additional 12 inches of subbase material should be placed below the base course. A geofabric should be placed between the subgrade soil and the subbase course (see Plate 1.5). Areas where the dumpsters are located should be paved with a 6-inch concrete slab underlain by 12 inches of subbase course material across the entire width of the roadway where the trucks stop and load.

General Location of Site as Shown on Plot Plan



Reference:
 U.S.G.S. Topographic Map (1983)
 Honolulu Quadrangle
 Honolulu, Oahu, Hawaii

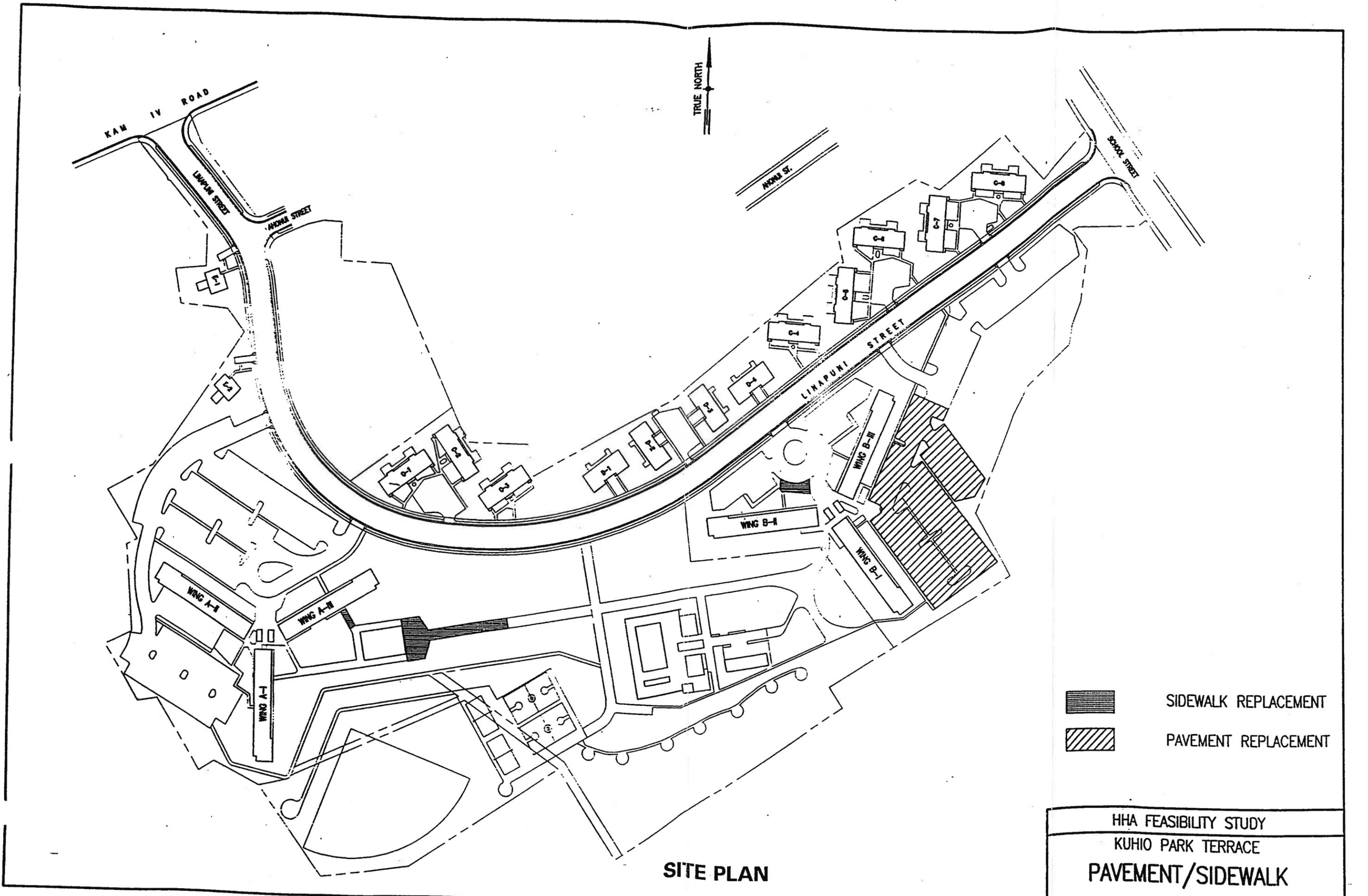


MAP OF AREA



DAMES & MOORE

A DAMES & MOORE GROUP COMPANY



TRUE NORTH

KAM IV ROAD

LINAPUNI STREET

ANAHAN STREET

MOAI ST.

SCHOOL STREET

LINAPUNI STREET

WING A-I

WING A-II

WING A-III

WING A-IV

WING B-I

WING B-II

WING B-III



SIDEWALK REPLACEMENT



PAVEMENT REPLACEMENT

SITE PLAN

HHA FEASIBILITY STUDY
KUHIO PARK TERRACE
PAVEMENT/SIDEWALK

PART 3 - ROADWAYS AND UTILITIES

3.1 GENERAL

A. Scope of Work

1. Civil site evaluations include only infrastructure related to the structures defined in the general scope of work. The work herein includes roadway pavement, sidewalks, fencing, retaining walls, drainage, sewerage, and water distribution. Utilities are assumed to have been in compliance with applicable codes or standards of practice at the time of construction. Additional study has been recommended where there has been significant changes in code requirements, except where there are obvious and manifest shortcomings per current codes.
2. The stricter of either Housing and Urban Development (HUD) design standards or City & County of Honolulu (CCH) municipal ordinances and standards were used for current code requirements. HUD design standards for site work, however, have typically deferred to local jurisdiction and continue to do so. Most CCH ordinances and standards that are currently applicable did not exist at the time of construction. Nationally recognized regional codes and common engineering standards of practice were primarily utilized in the 1950's.
3. The physical limits of the site work are at the property boundaries or point of connection to municipal utility systems. Demarcations of water and sewer utilities in this report section extend to within 5 feet of structures. Water and sewer systems within 5 feet of the building is described in Part 6, Mechanical Systems. Recommendations for re-grading of terrain or the replacement of pavement or sidewalks within this subsection are not inclusive of American Disabilities Act (ADA) requirements. The sufficiency of handicapped-designated parking is also not included in this section. ADA-related work is described in Part 8, ADA Issues. With the renovation option, reuse of existing turf grass is presumed for trenched utilities. When minor site grading is required due to the correction of topographic irregularities, costs of returfing have been included in the civil section.

B. Renovation Versus Replacement

1. New roadways, sidewalks, and retaining walls have been presumed as necessary for the replacement option because of the need to establish stable slope terrain conditions. Roadway, sidewalk, and retaining wall replacement has been more selective in the renovation option and are described herein.
2. Metallic water distribution, and non-ceramic sewerage utilities are typically of limited service life duration. Such systems would require replacement in both renovation and replacement alternatives. The exception would be for necessary repairs of pipelines that cross under existing structures in the repair option.

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3. The repair of utilities beneath existing structures in the repair option would require slightly more expensive trenchless pipe repair construction techniques. The latter could be a potential additional cost factor in the replacement option. Therefore, a replacement percentage is factored for such situations.

C. Methodology

1. All available record drawings for the construction and modification of roadways, sidewalks, retaining walls, and utilities were obtained from the archive files of the Hawaii Housing Authority (HHA). Original construction utilities drawings were available. It is uncertain whether all modifications have been recorded, particularly for underground utilities. Resident manager reported having emergency repairs with no documentation.
2. The following table compares changes in past and current design codes and standards. If past codes or standards are less stringent, additional study may be necessary to ascertain compliance with current codes.

| Utility | Past Code or Standard | Current Code or Standard |
|-------------------|---|--|
| Parking | CCH ordinance 1955, none prior: Regulated stall size only. Typically < 1 space per 2 units, without guest stalls. | CCH LUO 1986, 1996 amend: 1 per unit < 600 SF floor area. 1.5 per unit >600 & < 800 SF. 2 per unit > 800 SF. guest stall 1 per 10 units. loading stalls: 150-300 units=2 loading stall @ 200 addl units=1 |
| Drainage | CCH Storm Drainage Stds 1959, none prior: Rational formula, Q ₁₀ . | CCH Storm Drainage Stds March 1986: Rational formula, Q ₁₀ . |
| Water (Fire flow) | BWS ISO internal stds, no date: gpm @ 20 psi, 350' hydrant spacing, unspecified duration. gpm @ 20 psi, 250' hydrant spacing, unspecified duration. | Hawaii Water System Stds 1985: gpm/1 hr @ 20 psi MF 250' hydrant accessible hose lay length |
| Sewerage | Uniform Plumbing Code 1944: Minimum 6" MF bldg. lateral | HUD 4940.3 1994: Minimum 8" MF bldg. lateral |

3. There has been a significant difference between past standards of practice and current code requirements for minimum off street parking. There has been no significant change in past methods of practice and current drainage standards, although variables have been codified to limit the use of more liberal coefficients. Past City & County of Honolulu (CCH) Board of Water Supply (BWS) internal design standards established two risk categories for Insurance Service Office actuarial usage. The very conservative existing 250 foot hydrant spacing distances infers that the more conservative respective flow criterion of 3,000 gpm could have been imposed on the project site. If this assumption is correct, it is likely that all sites probably have the capacity to meet current fire flow protection criteria. The only notable change in sewerage design criteria is a larger minimum building lateral size.
4. Prioritization of repair items would be based on the logistics for any planned development. If only a portion of the site were to be modified, site work for that respective section should be commensurately developed. If the entire site is to be developed in total, subsurface utilities should be implemented first, followed by retaining walls and grading, with sidewalks and pavement last.
5. The planning-level cost estimates herein use linear, areal, or volumetric unit costs. A range of multiple conditions is modeled by a singular typical representative model for cost estimation purposes.

D. Historical

1. Parking lots, sidewalks, and non-electrical utilities have not been significantly modified since the original construction.

E. Existing Conditions

1. The project site that consists of Building A, Building B, and the grounds of each respective building is situated on two portions of TMK parcel 1-3-39:1 that extend South (makai) of Linapuni Street. The TMK parcel of 1-3-39:7 that is located between these two portions of parcel 1-3-39:1 south of Linapuni Street consists of the CCH municipal Kuhio Park Terrace (KPT) Playground. The Building A portion of parcel 1-3-39:1, which also includes the community center, is bordered by plat 1-3-09 to the West and plat 1-3-13 to the northwest. Both the Building B portion of the parcel and the KPT Playground are bordered to the South (makai) by a portion of Kalihi Stream that is within plat 1-3-15. An additional 12 low-rise townhouses comprise both the remainder of this HHA housing complex and the remainder of TMK parcel 1-3-39:1 is situated North (mauka) of Linapuni Street, but is not included in the scope of this study.
2. The boundary of both the Building A and Building B parcel portions are surrounded by a 4 foot high fence covered with crawling vines. Individual facilities within the KPT Playground such as the swimming pool are fenced, but there is no fencing between these parcel portions and the adjoining KPT

Playground. Nor is there any fencing between these parcel portions and Linapuni Street. It is presumed that there is a fence to the North (mauka) of the remainder of this housing complex North (mauka) of Linapuni Street that is outside the scope of this study. Access to the entire housing complex and the KPT Playground is through two guarded gates at both ends of Linapuni Street.

3. The pavement at the Building A site is in reasonable condition. The pavement in the parking lots closest to Building B has had severe uplift due to tree roots and some delamination has occurred. There are 203 parking stalls at the Building A site and 230 stalls at the Building B site. The sidewalks vary greatly in width from 3 feet to 6 feet, following the relative spacing of curb and building configurations. The walkway from the Community Center within the Building A site to the Building B is 8 feet in width. There are major cracks in the walkways adjacent to the Community Center, but no major changes in grade.
4. The terrain is relatively flat. The Building A site varies in elevation from approximately 87 feet above MSL along Linapuni Street to 80 feet at the South, a grade of approximately 3 percent. The Building B site varies from an elevation of 98 feet at the far eastern end of the parking lot to approximately 89 feet in the vicinity of the structure itself. The site is turfed with lawn grass. There are catch basins along Linapuni Street and inlet structures within the parking lots. The western half of the complex, including the Building A site, drains off site through KPT Playground into Kalihi Stream. The eastern drainage system that serves the Building B site receives off site flow from higher elevations to the north and also discharges into Kalihi Stream. The drainage inlet for the parking lot at the front or North (mauka) side of Building B was reported to require periodic debris removal.
5. Sewage from KPT Playground, Building A, and all areas North (mauka) of Linapuni Street flows through the Building B site before discharging to the off site CCH municipal system along Kalihi Stream to the South (makai). Sewage overflows were reported from all 4 manholes on the Building A site. The segment that connects the lateral servicing the western Wing A-II under the central lobby to the backside of eastern Wing A-III was inspected by HHA Central Maintenance via remote sled-mounted television cameras. Joint separation and differential settlement of pipe segments were recorded by the cameras. Sewage problems at the Building B site were generally more severe. The manhole upstream of the lateral serving the western Wing B-II was reported to have overflowed. The last 2 ground floor units at the northeastern upstream end of Wing B-III were reported to have flooded with an excess of 1 foot of raw sewage and were immediately abandoned due to unsanitary conditions. The last 2 ground floor units at the South (makai) end of Wing B-1 was reported to have sewage backups as well. Sewer lines are cleaned at a frequency of approximately once every 3 months. Tree roots were reported to have intruded up into toilets on the ground floor at unspecified locations in Building B.

6. Onsite water service is provided through a separate 8 inch branch from a water meter connection on Linapuni Street for each building site. The CCH BWS 250 foot hose lay length criterion is met at the Building A site by an onsite hydrant at the front and rear. Two onsite hydrants at the rear and two off site hydrants off the Linapuni Street CCH BWS 12 inch main provides fire service at the Building B site. Although no proper field measurements were made, empirical observations indicate relatively high delivery pressures in excess of 100 psi and sufficient flow through the 8 inch branch mains. The water distribution system off the 8 inch branch mains consists of galvanized steel lines that are believed to be corroded. There are insufficient isolation valves on the water distribution system such that the entire building must be shut down when repairs are necessary. Given the critical nature, these valves are inspected monthly.
7. Periodic leaks of unspecified frequency have been reported for gas yard piping. The specific condition was not well known because repairs are executed by the supplying utility at cost to HHA.

3.2 FENCING

- A. The fencing for the two building sites does not appear to require replacement. Moisture trapped by the crawling vines could increase the rate of corrosion of the chain link material. No change is recommended for either the renovation or replacement option.

3.3 ROADWAYS AND SIDEWALKS

A. Renovation Option

1. Approximately 1/2 acre of the parking areas adjacent to the east side of Building B should be repaved. The two trees that have caused uplifting of the pavement should be removed. Approximately 2,700 square feet of sidewalk adjacent to the Community Center at the Building A site and fronting Building B should be replaced.

B. Replacement Option

1. Complete pavement and sidewalk replacement would be required. The future parking layout needs to provide a total of 994 parking spaces, or about 6 acres for an equivalent number of housing units.

3.4 DRAINAGE AND GRADING

- A. No action is required for either renovation or replacement option, other than the continued maintenance of debris removal from affected drainage inlets. It is expected that regrading for the replacement option should be able to utilize the existing subsurface drainage infrastructure without modification.

3.5 SEWERAGE

A. Renovation Option

1. Given the reported frequent overflows and backups caused by clogging; the videoed pipe separation and differential settlement; and non-compliance with HUD 4940.3 requirements for minimum multi-family dwelling building laterals of 8 inches diameter, the entire sewerage system should be replaced in kind. The laterals crossing beneath the lobbies of both buildings should be repaired with trenchless technologies such as pipe bursting to minimize construction cost. This recommendation is categorized as immediate priority because of the potential health-related liabilities from exposure of residents to untreated sewage and non-compliance with State of Hawaii Department of Health (DOH) Hawaii Administrative Rule (HAR) subparagraph 11-62-06 (g).

B. Replacement Option

1. For the same reasons as the renovation option the entire onsite sewer system should be replaced.

3.6 WATER SYSTEM

A. Renovation Option

1. The combination of onsite and off site CCH BWS fire hydrant locations are adequate to comply with current standards for a maximum hose length of 250 feet. Given the size of the 8 inch onsite branches and the 12 inch off site mains, however, fire flow is expected to be sufficient. Given system age and periodic emergency repairs, the entire onsite distribution system needs to be replaced. It is not expected to involve fire flow life safety. The reported need to shut down flow to the entire building with yard piping isolation valves needs to be supplemented with additional isolation valves within the building wings and is addressed in Part 6, Mechanical Systems.

B. Replacement Option

1. Because of the need for periodic repairs in the domestic distribution system, the entire onsite water distribution system should be replaced.

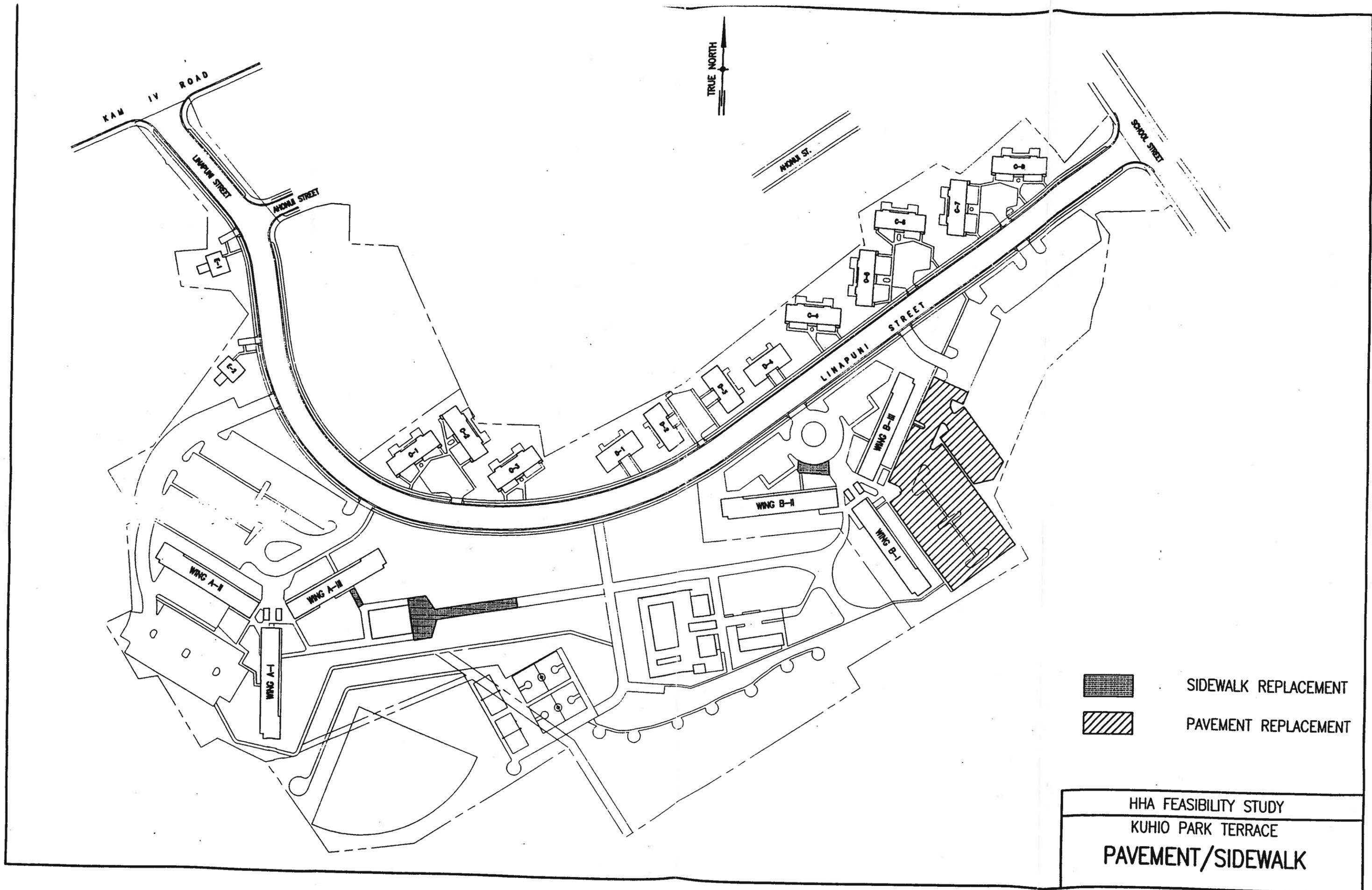
3.7 GAS SYSTEM

A. Renovation Option

1. Periodic leaks from the gas lines have been reported. Given the extent of its past service life, this system should be replaced in its entirety. It is not evident that yard piping gas leaks have occurred in quantities significant enough to be hazardous. As an alternative, renovation options that replace gas service with electricity could allow this system to simply be abandoned in place.

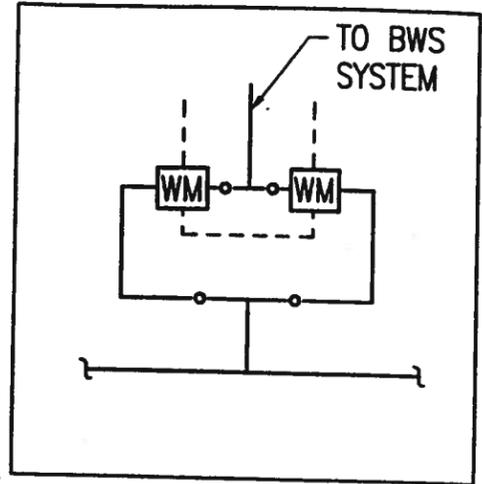
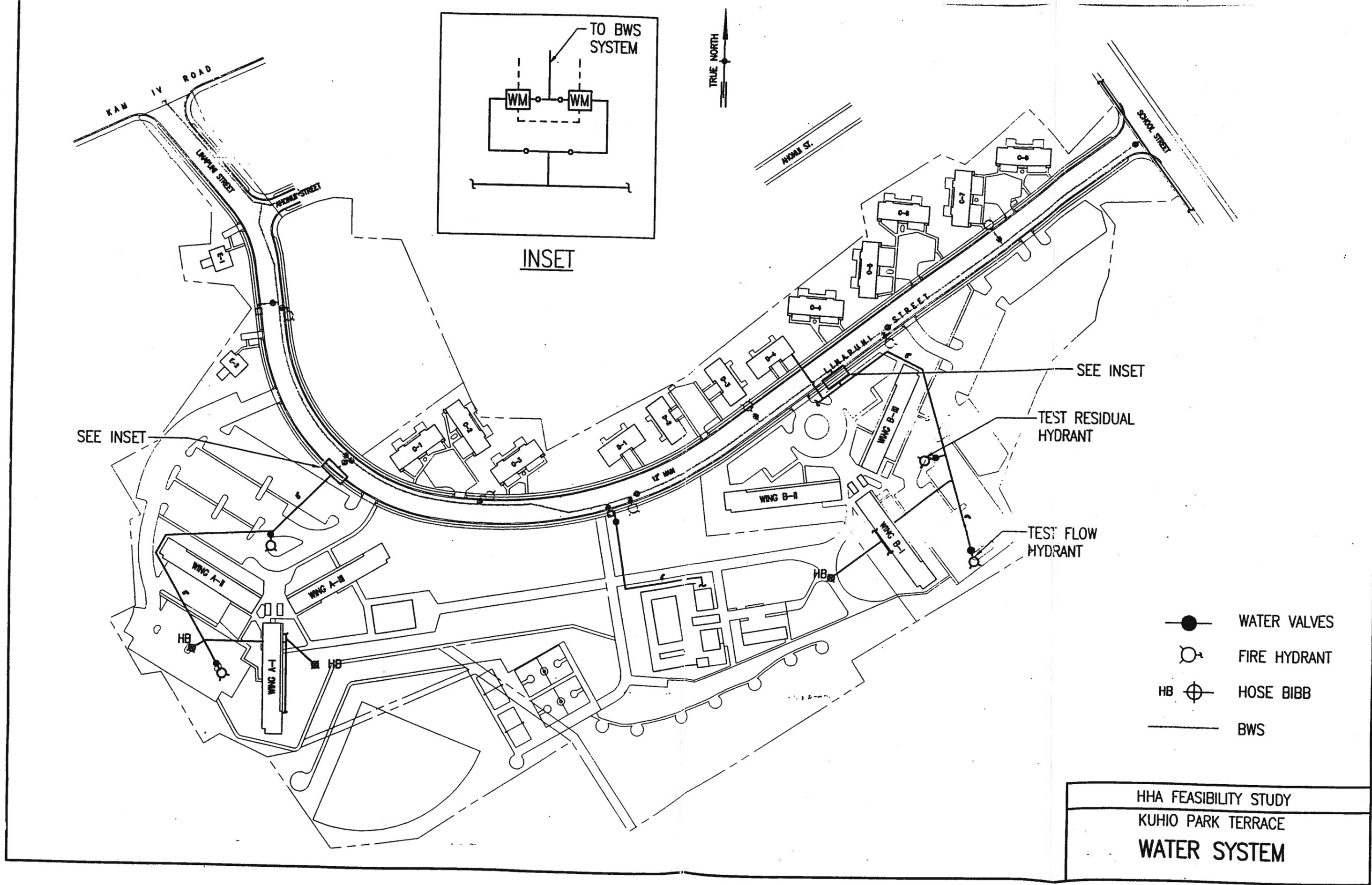
B. Replacement Option

1. For the same reasons as the renovation option the entire onsite gas distribution system should be replaced. Likewise, all electric service could eliminate the need to replace this utility.



-  SIDEWALK REPLACEMENT
-  PAVEMENT REPLACEMENT

HHA FEASIBILITY STUDY
KUHIO PARK TERRACE
PAVEMENT/SIDEWALK



INSET

SEE INSET

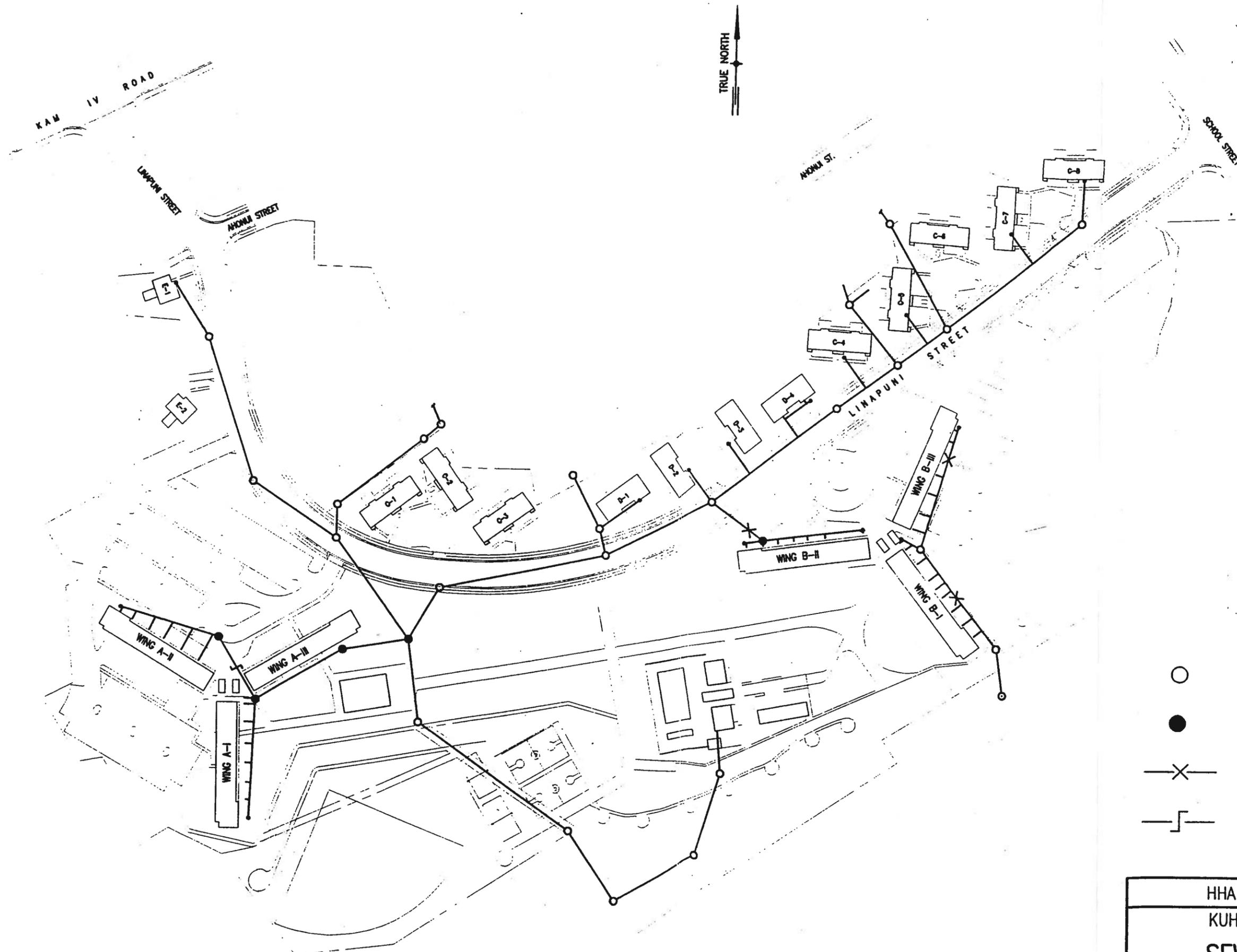
SEE INSET

TEST RESIDUAL HYDRANT

TEST FLOW HYDRANT

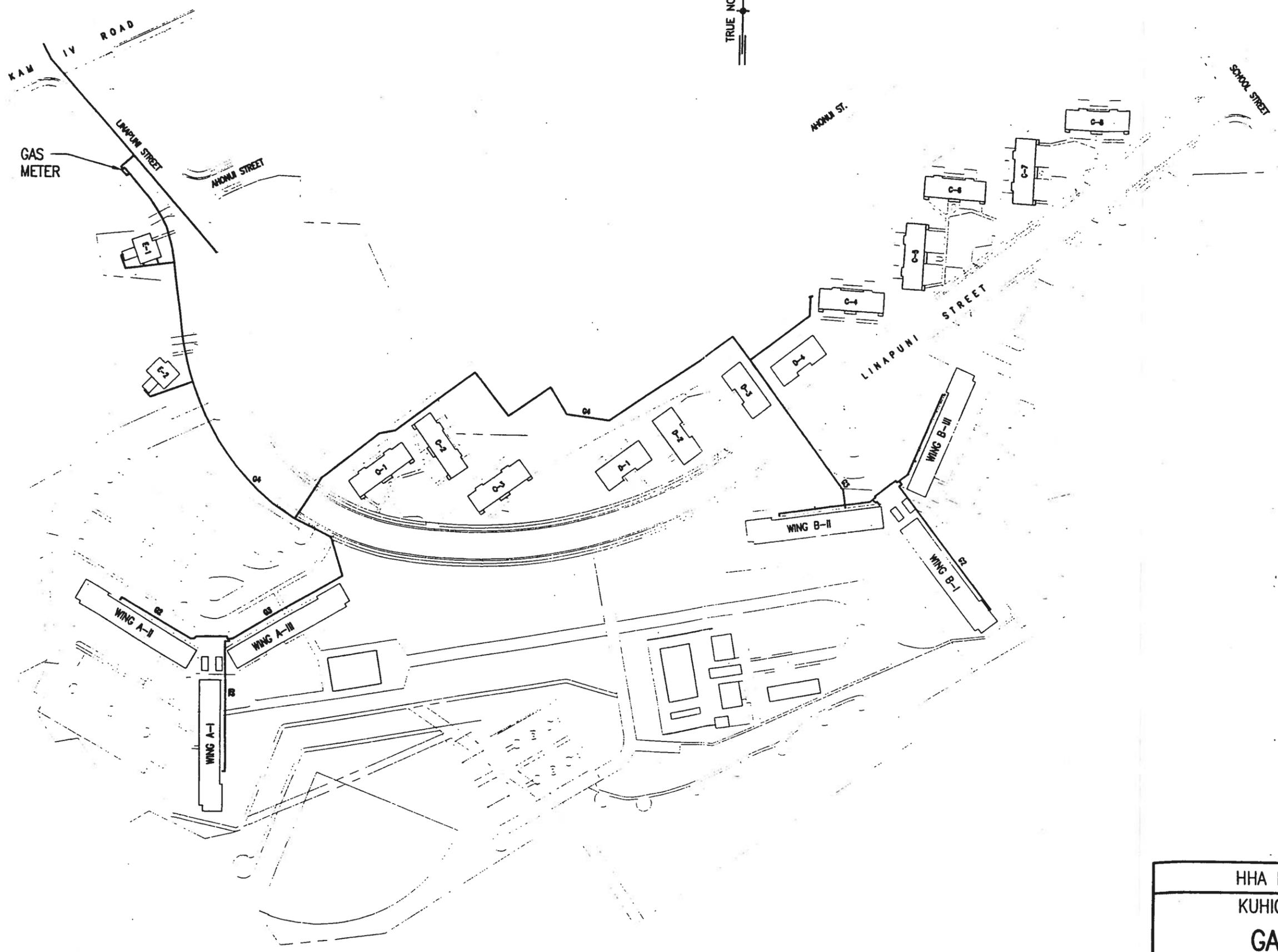
- WATER VALVES
- ⊕ FIRE HYDRANT
- HB ⊕ HOSE BIBB
- BWS

HHA FEASIBILITY STUDY
 KUHIO PARK TERRACE
 WATER SYSTEM



- SMH
- SMH, SURCHARGED TO SURFACE
- X— REPORTED CLOG LOCATION
- ┌— TV RECORDED JOINT OFFSET

| |
|-----------------------|
| HHA FEASIBILITY STUDY |
| KUHIO PARK TERRACE |
| SEWER SYSTEM |



HHA FEASIBILITY STUDY
KUHIO PARK TERRACE
GAS SYSTEM

PART 4 - ARCHITECTURAL SYSTEMS

4.1 GENERAL

- A. The original 572 unit housing project was built in 1964 which makes the buildings approximately 33 years old. The project consisted of 2 sixteen story buildings (Buildings "A" & "B") with 1, 2 and 3 bedroom units. There are 48 one bedroom, 318 two bedroom and 206 three bedroom units. Many of the materials and systems are deteriorated and need replacement.
- B. The 1996 modernization project repaired and repainted the exterior of Building "A". HHA has requested that the exterior repair and repainting of the second tower (Building B) be included in this study. The modernization project also included the following:
 - 1. Replacement of custom stainless steel expansion joint floor covers at each floor.
 - 2. Re-roofing the towers. The freight elevator machine room and the port cochere roofs were not re-roofed due to limited funds.
 - 3. Elevator improvements. Partial elevator improvements were completed for Building "B".
- C. The Community Center was built in 1964 and is included in this study.
- D. The low rise housing buildings and the various other buildings on the site are not included in the study.

4.2 BUILDING CODE ITEMS

- A. The following conditions do not meet requirements of the building code (UBC). Some of these represent life safety issues and should be addressed immediately. Others are conditions which do not need to be corrected unless substantial work is undertaken on the building or the component. Many of these items can be allowed to remain as existing non-conformities.
 - 1. Conditions which should be corrected:
 - a. Wood roof sheds and other wood construction attached to the building are not allowed in Type 1 Construction and need to be removed.
 - b. Office & Maintenance Area:
 - (1) Offices were added at the maintenance area which do not have the required fire resistive construction.
 - (2) Paint storage area needs to be verified for fire separation requirements. Wood walls are not allowed in Type I construction.

c. Community Center:

- (1) One pair of exit doors on the South facade are closed off with plywood. The plywood should be removed and the doors returned to their proper operation.
2. Conditions which are non-conforming, but are probably "grandfathered" and may be continued based on further study:
 - a. The exit stairs throughout the facility (which probably conformed to the codes at the time of construction), are now non-conforming in various aspects.

4.3 BUILDING ENVELOPE & SYSTEMS

A. General

1. Structure: In general, the concrete structures appear to be in fair to good condition. There does not appear to be any significant soil or settlement problems. The following areas need repair or replacement:
 - a. Minor settlement is occurring in a few ground floor units which has caused cracking and separations in the concrete block walls and concrete slab. The slab movement may be caused by the sewer overflow problem that periodically occurs in these units.
 - b. There is corrosion and spalling concrete at the lanai steel side guard railing and aluminum enclosure connections to the concrete walls.
 - c. There are exposed rebars and spalling concrete at the lanai slabs. There appears to be some coating or paint on the lanai floor which has failed.
 - d. There is concrete spalling at the plumbing penetrations through the concrete slab due to corrosion and rusting of the pipes.
 - e. Extensive repairs for concrete spalling (including the guest room lanai railings), re-roofing and repairs to the Building "A" were substantially completed in 1996. In general, the repairs appear to have substantially corrected the problem. However, we did observe a few areas of concrete spalling and corrosion.
 - f. Concrete spalling is apparent throughout Building "B", primarily at the stairs, railings, walls, roof and lanais.
 - (1) HHA has indicated that the Building "B" repair and repainting project is planned for the very near future.

2. Mechanical

- a. The ground floor units have been vacated due to sewage overflows into the units at various times. The clean outs are often in the units. Some clean outs have been relocated to the building exterior.
- b. Plumbing pipes poured into the concrete structure need to be chipped out, replaced, and relocated below the slab.
- c. Plumbing pipes located in CMU chase walls should be relocated for better access if possible. The present location requires removing kitchen cabinets to access the pipes.
- d. Gas lines should be separated from plumbing and electrical lines.

3. Electrical

- a. The electrical lights below the port cochere roof fill with water during heavy rains and is a hazardous condition.

B. Roofing and Waterproofing Systems:

1. The bituminous built up roofing on Building "A" was redone as part of the 1996 repair project and is in good condition. The roof of Building "B" and the Community Center are in very poor condition and need replacement.
2. The older built up roof membranes and related flashing are at various stages of deterioration. The roofs appears to be coated with an aluminized material, indicating attempts have been made to extend its service life. The bituminous roof and surrounding flashing is worn, stained, deteriorated and has outlived its useful life. In general, Building "B" and the Community Center need a complete tear-off and re-roofing project.
3. The following are typical observations of the existing older roofs:
 - a. There are obvious tears in the roof at various areas.
 - b. The aluminized coating has worn off exposing the fiberglass mesh and felts in many areas.
 - c. Extensive alligatoring of asphalt was apparent throughout the roof.
 - d. Pitch pockets for the equipment are retaining water and are not properly constructed.
 - e. Steel supports for the equipment are severely corroded and need to be redone.
 - f. There is severe corrosion of the flashing. The flashing has broken off from the edging in many areas.

- g. Fiberglass mesh at edges have become exposed and is separating from the layers The felts appear to be saturated at the perimeter of the roof.
- h. There is ponding water throughout the roof.
- i. The roof scuttles need to be replaced because they are badly corroded and damaged
- j. Roof leaks are apparent at various areas.

C. Exterior Closure Systems:

- 1. Minor corrosion and spalling were observed at various areas (see Structural Section).
- 2. Railings: The aluminum railings appear to be secure, however, minor corrosion and oxidation were observed. Corrosion at support connections was apparent.
- 3. Doors and Frames: Exterior metal doors and frames are in poor condition and needs repair or replacement. Wood doors and frames (exterior and interior) are in various states of damage and disrepair and needs replacement.
 - a. Lead base paint should be verified.
- 4. Aluminum Doors and Windows: Original aluminum doors and windows are in poor condition and are binding. Aluminum sliding and jalousie windows installed in the 1980 modernization appear to have moderate corrosion. Jalousie windows throughout the building should be replaced with sliding or awning windows.
 - a. HHA indicated that the jalousie glass slats periodically fall out of the clips. This causes a very dangerous situation when the slat falls to the ground below. There is also a security problem with jalousies on the corridor. Many of the jalousie windows at the corridor have been closed off.
 - (1) Window screens are in poor condition and need replacement.
 - (2) The Community Center building has jalousie windows which are in poor condition. The windows should be replaced with new awning windows.
 - b. HHA indicated that the aluminum sliding door assemblies are obsolete and parts are not available. Many of the doors are corroded, binding and all should be replaced.
 - (1) The lanai aluminum sliding doors were often off the track and not operable. Most doors had damaged hardware and could not be locked.
 - (2) Aluminum screen doors are in poor condition and needs replacement.
 - (3) The glass appears to be severely etched in some cases.

D. Painting and Coating:

1. Building "A" exterior coatings are in very good condition due to the recent 1996 Repainting & Repair project (Building "A" only). The Building "B" and the Community Center exterior coatings are in very poor condition and requires repainting of all exterior surfaces.
 - a. Paint is flaking off the exterior sills and walls.
 - b. Thorough preparation of all previously coated surfaces prior to application should be undertaken to prevent further deterioration.
2. We observed deterioration in the form of corroded metals and damaged surfaces at the following exterior architectural elements. Some of these items are severely deteriorated and portions or sections of these elements will require replacement or treatment and refinishing.:
 - a. Exterior steel equipment supports.
 - b. Exterior steel doors and frames.
 - c. Lanai railing connections.

E. Lobby and Corridor Areas:

1. The building public areas for Building "A" were renovated in 1996 and are in relatively good condition. Building "B" requires repairs and improvements.
2. The upper elevator lobbies and the adjacent trash chute areas are in generally poor and unsanitary condition.
 - a. The trash chute is a constant problem. HHA said that large quantities of trash and garbage are piled at the upper floor lobby trash areas on Mondays which requires HHA crews to clear the area.
 - (1) Fires have been started in the trash piles at the upper floor lobbies.
 - (2) Large objects are thrown in which clogs the chute and causes large back ups.
 - (3) The trash compactor on the ground floor is also very unsanitary and in very poor condition.
 - b. The trash chute problem appears to be a management issue and therefore is not addressed in this study.
 - c. There are exposed main feeder lines in open conduit boxes that should be covered.

3. Cable TV equipment was recently installed in a room opposite the upper elevator lobby.
 - a. HHA indicated that there is a chasewall in back of the equipment that often needs repair work. The equipment may need to be relocated.

4. Upper Open Exit Corridors

- a. Concrete spalling at the edge of the lanai slabs. There is also spalling at the expansion control joints between the tower wings and the core.
- b. Spalling of concrete railings as well as walls was also observed.

F. Miscellaneous:

1. Concrete lanais and walks around the building are cracked in many locations.

4.4 INTERIOR ARCHITECTURAL SYSTEMS:

A. General

1. Paint is flaking from the ceilings, window sills and walls in various units. The units require repainting of all interior walls and ceilings.
 - a. Lead base paint testing should be completed before renovation to confirm abatement requirement (see Environmental Section).
 - b. HHA stated that the units are repainted when there is a vacancy before a new tenant moves in. Some units appear to have the original paint because the units are passed on through several generations of tenants.
 - c. Paint is also separating and bubbling due to water infiltration and plumbing leaks.
2. Wood shelves, doors and frames are original and are in various states of damage and disrepair.
 - a. Wood shelves, doors and frames are in poor condition and need replacement.
 - b. Overhead roll up doors in the maintenance shop are in poor condition and needs replacement.
 - c. Many doors and frames have termite infestation.
 - d. Lead base paint has been identified and requires abatement (see Environmental Section).

B. Housing Units:

1. Housing units are in fair to poor condition. In general, the condition of the units vary widely depending on the tenants care of the units. Some units have been renovated during vacant periods and others are severely deteriorated with pest infestation problems.
2. General
 - a. The ground floor units have been vacated due to sewage overflows into the units at various times. The clean outs are often in the units. Some clean outs have been relocated to the building exterior.
3. Lanai
 - a. There is corrosion and spalling concrete at the lanai steel side guard railing and aluminum bar enclosure connections to the concrete walls.
 - b. There are exposed rebars and spalling concrete at the lanai slabs. There appears to be some coating or paint on the lanai floor which has failed.
4. Living room
 - a. Floors are exposed concrete with some floor cracks.
 - b. Adjacent storage room walls need to be painted in some instances.
 - c. Lighting appeared to be inadequate.
5. Kitchen
 - a. Kitchen counters and cabinets
 - (1) The kitchen cabinets appear to be original. Many cabinet drawers and doors are out of alignment, damaged or missing. They are in very poor condition and should be replaced.
 - (2) The stainless steel countertops are in fair condition and should be repaired and retained if possible.
 - (3) Some units had the counters replaced with a white plastic laminate particle board countertop.
 - (4) There appeared to be some termite damage at the cabinet base.
 - b. Flooring is 12 X 12 vinyl tile. HHA indicated that the original flooring are replaced when the units are refurbished.
 - c. Grease build-up is apparent at ceiling above the range due to the absence of a range hood. Range hood should be added in the renovation.

6. Bathroom

- a. Bathroom fixtures are in very poor condition and should be replaced.
 - (1) Lavatory, water closets and shower tub are for the most part original and are stained, chipped and corroded.
- b. Bathroom exposed concrete ceiling has the plumbing from the water closet above poured within the concrete floor slab. The plumbing line is apparently leaking in many units and has rusted and caused the concrete to spall. The plumbing line needs to be replaced and relocated below the concrete slab.
- c. Flooring is 12 X 12 vinyl tile. HHA indicated that the original flooring is replaced when the units are refurbished.
- d. Chase walls appear to have pipe leaks within the chase space.
- e. Tile surround at the bathtub is stained and needs to be replaced.
 - (1) Gypsum board chase wall has water damage in many units which has caused the ceramic tile to de-laminate from the wall.

7. Bedroom

- a. Cracks in the concrete block walls were apparent in some units.
- b. Floors are exposed concrete. Cracks in the floor were apparent in some units.

C. Common & Maintenance Areas

1. General

- a. These spaces are located on the ground floor of each tower.
- b. Interiors requires re-painting.
- c. Jalousie windows are in poor condition and need replacement.
- d. Doors and frames are in fair to poor condition.
 - (1) Metal doors and frames should be replaced.
 - (2) Wood doors and frames should be replaced.
 - (3) Overhead roll up doors in the maintenance shop should be replaced.

2. Community Stores and Offices

- a. There is an active roof leak in the office area.
- b. The community store and offices are in fair condition.

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

- (1) The vinyl flooring is worn and needs replacement.
- c. The restrooms are worn and should be refurbished.
 - (1) Toilet partitions were loose and need replacement.
 - (2) Ceramic tile is dated and should be replaced.
- d. Wood roof covering at the rear of the store is not allowed in Type 1 Construction and should be removed.
- 3. Offices
 - a. The vinyl flooring is worn and needs replacement.
- 4. Laundry Room
 - a. The amount of washers and dryers appears inadequate to serve the needs of the residents.
- 5. Maintenance Area
 - a. Restrooms are in poor condition and should be redone.
 - b. The vinyl flooring is worn and needs replacement.
- 6. Mechanical Areas
 - a. Metal doors and louvers are in very poor condition and should be replaced.
 - b. Exposed plumbing below the first floor slab is badly corroded and has caused some spalling of the concrete.
- D. Community Center Building
 - 1. General
 - a. The original one story building was built in 1964 and expanded in 1984.
 - b. Doors and Windows
 - (1) Jalousie windows are in fair to poor condition.
 - (2) Doors and frames are in fair to poor condition.
 - (a) Metal doors and frames should be replaced.
 - (b) Wood doors and frames should be replaced.

- c. Exterior of Building
 - (1) Exterior and interior coatings are in poor condition and requires re-painting. Coatings show cracks and peeling paint. The wall mural is peeling off.
 - d. Roof
 - (1) HHA indicated that this building was last re-roofed about 20 years ago at the same time with Building B. The roof is in very poor condition and needs replacement.
 - (2) Copper gutters at the perimeter of the roof appears to be in fair condition. However, the roof flashing is corroded and needs replacement.
 - (3) The aggregate surfacing on the upper roof is missing in many areas exposing the roof felts. Alligatoring of the asphalt is apparent and the aluminized roof coating is very worn.
 - e. Concrete Walk Canopy
 - (1) Some concrete spalling and extensive signs of water infiltration at the concrete canopy roof and beams from Building A to the Community Center.
2. Code and Life Safety Issues
- a. A pair of exit doors on the South facade appear to be closed off with plywood. The plywood should be removed and the doors returned to their proper operation.
3. Main Meeting Area
- a. Suspended ceilings appear to be sagging and in poor condition.
 - b. There are apparent leaks in the ceiling from the roof above.
 - c. The steel double exit doors have paint peeling from the surfaces revealing the substrate. Caulking and grouting around the door jambs have cracked off.
 - d. The folding acoustic door panels are in very poor condition with broken hinges. The acoustic door system needs to be replaced.
 - e. There are signs of some concrete spalling at the exterior hallway.
 - f. The concrete floor slab appears to be in fair condition.
4. Office
- a. Doors are in poor condition and needs replacement.

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

- b. Jalousies are wood and appear to be in fair condition.
 - c. There is some water infiltration from the walls as evidenced by paint bubbling and peeling off the surface.
 - d. The vinyl flooring is worn and needs replacement.
5. Kitchen
- a. Stainless steel sinks and counters appear in fair condition.
 - b. There is some peeling of paint and cracking in the walls and ceilings.
 - c. The ceramic tile floor and wainscot appears to be in fair to poor condition.
6. Lunch Room Area
- a. The acoustic 12 x 12 ceiling panels are apparently glued to the slab and shows signs of water damage.
 - b. Jalousie windows are in poor condition with missing slats.
 - c. The flooring appears to be in poor condition and should be replaced.
7. Women's Restroom
- a. There are signs of water infiltration at the ceiling.
 - b. One water closet was out of order.
 - c. Toilet partitions are damaged and need to be replaced.
 - d. The door and frame has corrosion and should be replaced.
 - e. Ceramic tile is in fair to poor condition.
8. Men's Restroom
- a. The tile floor and walls are in fair to poor condition.
 - b. Cracking of the wall tiles is visible.
 - c. Plastic laminate toilet enclosures are in poor condition and need to be replaced.
 - d. Steel doors and frames are in poor condition.

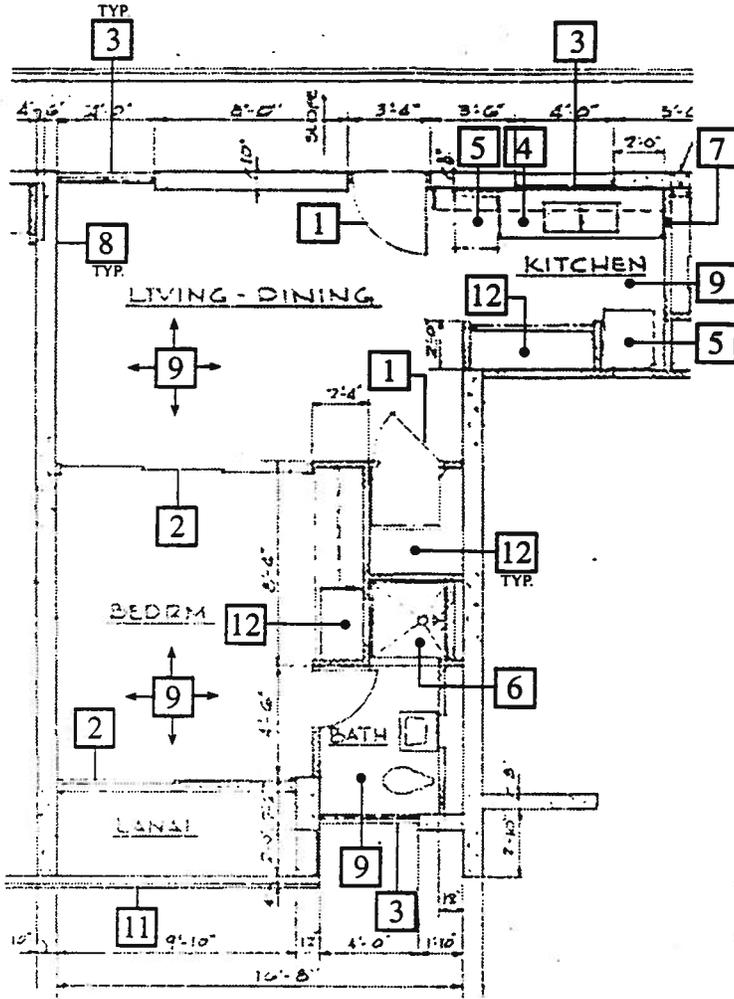
4.5 RECOMMENDATIONS (Bldg. "A", "B", Community Center)

- A. Renovation Option: In general, the following are renovation recommendations:

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

1. The site will require repairs, re-grading, new pavement, sidewalks and concrete slabs. Site utilities will also need replacement.
 2. The concrete structures will require some spall and crack repairs but overall appear to be in fair condition for re-use.
 3. The exterior of Building "B" and the Community Center require spall repairs, re-roofing and re-painting.
 4. The interior of the buildings will require gutting and replacing of finishes, doors, windows, cabinets, fixtures, plumbing and electrical systems.
- B. Replacement Option: The replacement option is to demolish the existing project and completely rebuild the present design with an identical program and scope of work.

KEYNOTES DESCRIPTION OF WORK

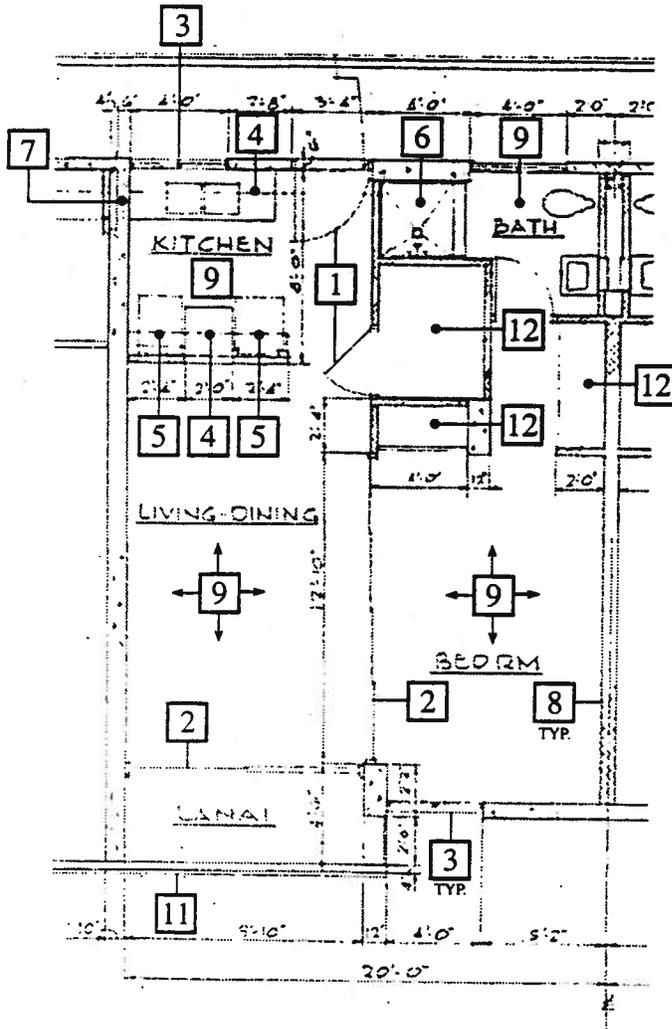


TYPICAL 1 - BEDROOM UNIT
UNIT TYPE 1 - A

HHA FEASIBILITY STUDY - Kuhio Park Terrace
96061-11

| KEYNOTES | | DESCRIPTION OF WORK |
|----------|---|--|
| | | TYPICAL CONDITIONS |
| 1 | | Remove all existing doors, frames, thresholds, hardware and provide new hollow metal doors, frames, thresholds and hardware. |
| 2 | | Remove existing sliding doors and provide new sliding door. Provide aluminum doors at exterior and wood doors at interior. |
| 3 | | Remove all existing windows and provide new aluminum sliding windows. |
| 4 | | Remove all existing kitchen counters and cabinets and provide new laminate counter and cabinets. |
| 5 | | Remove all existing appliance and fixtures and provide new appliance and fixture. |
| 6 | | Remove all existing ceramic tile in restrooms and provide new ceramic tile. |
| 7 | | Patch wall and provide access panel at chase wall for kitchen. |
| 8 | | Paint throughout. |
| 9 | | Remove all existing resilient tile and base and provide new resilient tile and base. |
| 10 | | Repair and refinish stair handrails and replace abrasive strips at stair threads. |
| 11 | | Repair and refinish metal railings at lanai. |
| 12 | | Remove and replace wood shelves. |
| | | SPECIAL CONDITIONS |
| | • | Add new gypsum board soffits to conceal new piping and plumbing. |
| | • | Repair cracks in the CMU walls as required. |
| | • | Repair concrete floor slab cracks. |
| | • | Repair termite damaged wood frames. |
| | • | Repair concrete spalling at lanais. |
| | • | Repair damaged pipe chase walls. |
| | • | Reuse existing stainless steel kitchen sinks. |
| | • | Remove all existing built-up roof to substrate and metal flashing, patch all roof leaks, and provide new built-up roof and metal flashing (at bldg. B only). |
| | • | ADA improvements for designated units. |

KEYNOTES DESCRIPTION OF WORK

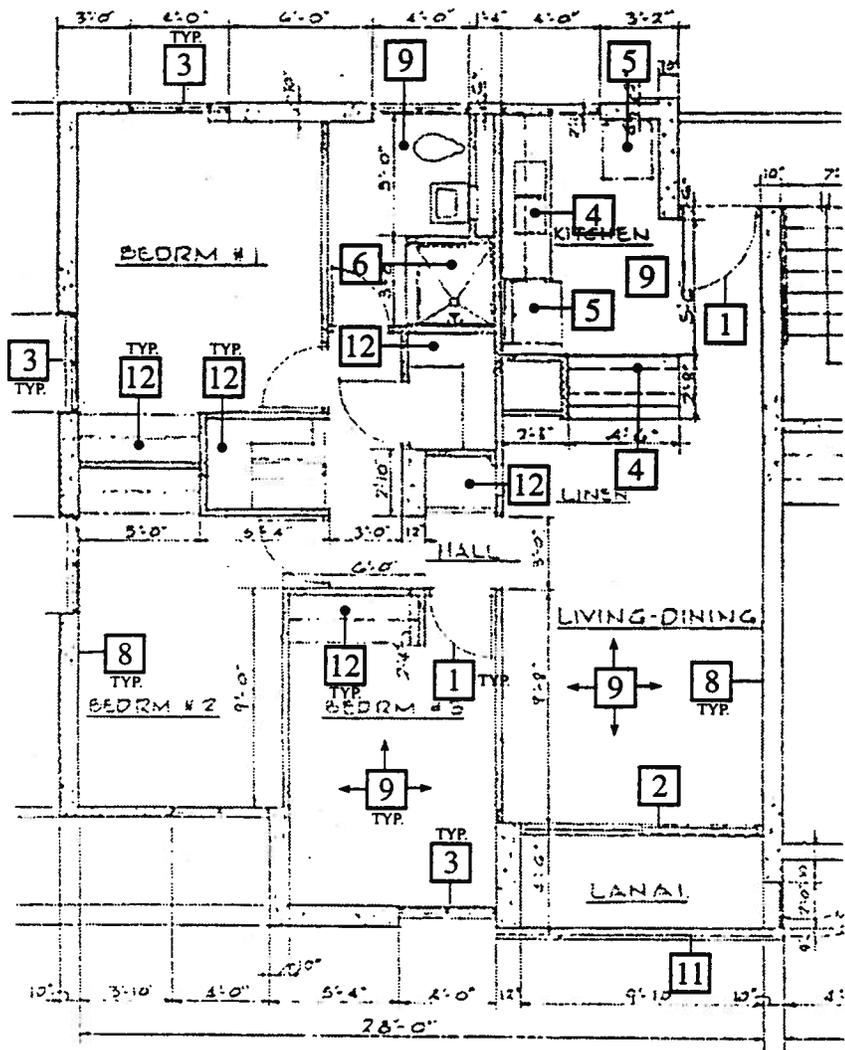


TYPICAL 1 - BEDROOM UNIT
UNIT TYPE 1 - B

HHA FEASIBILITY STUDY - Kuhio Park Terrace
96061-11

| | TYPICAL CONDITIONS |
|---------------------------|--|
| 1 | Remove all existing doors, frames, thresholds, hardware and provide new hollow metal doors, frames, thresholds and hardware. |
| 2 | Remove existing sliding doors and provide new sliding door. Provide aluminum doors at exterior and wood doors at interior. |
| 3 | Remove all existing windows and provide new aluminum sliding windows. |
| 4 | Remove all existing kitchen counters and cabinets and provide new laminate counter and cabinets. |
| 5 | Remove all existing appliance and fixtures and provide new appliance and fixture. |
| 6 | Remove all existing ceramic tile in restrooms and provide new ceramic tile. |
| 7 | Patch wall and provide access panel at chase wall for kitchen. |
| 8 | Paint throughout. |
| 9 | Remove all existing resilient tile and base and provide new resilient tile and base. |
| 10 | Repair and refinish stair handrails and replace abrasive strips at stair threads. |
| 11 | Repair and refinish metal railings at lanai. |
| 12 | Remove and replace wood shelves. |
| SPECIAL CONDITIONS | |
| | <ul style="list-style-type: none"> Add new gypsum board soffits to conceal new piping and plumbing. Repair cracks in the CMU walls as required. Repair concrete floor slab cracks. Repair termite damaged wood frames. Repair concrete spalling at lanais. Repair damaged pipe chase walls. Reuse existing stainless steel kitchen sinks. |
| | <ul style="list-style-type: none"> Remove all existing built-up roof to substrate and metal flashing, patch all roof leaks, and provide new built-up roof and metal flashing (at bldg. B only). |
| | <ul style="list-style-type: none"> ADA improvements for designated units. |

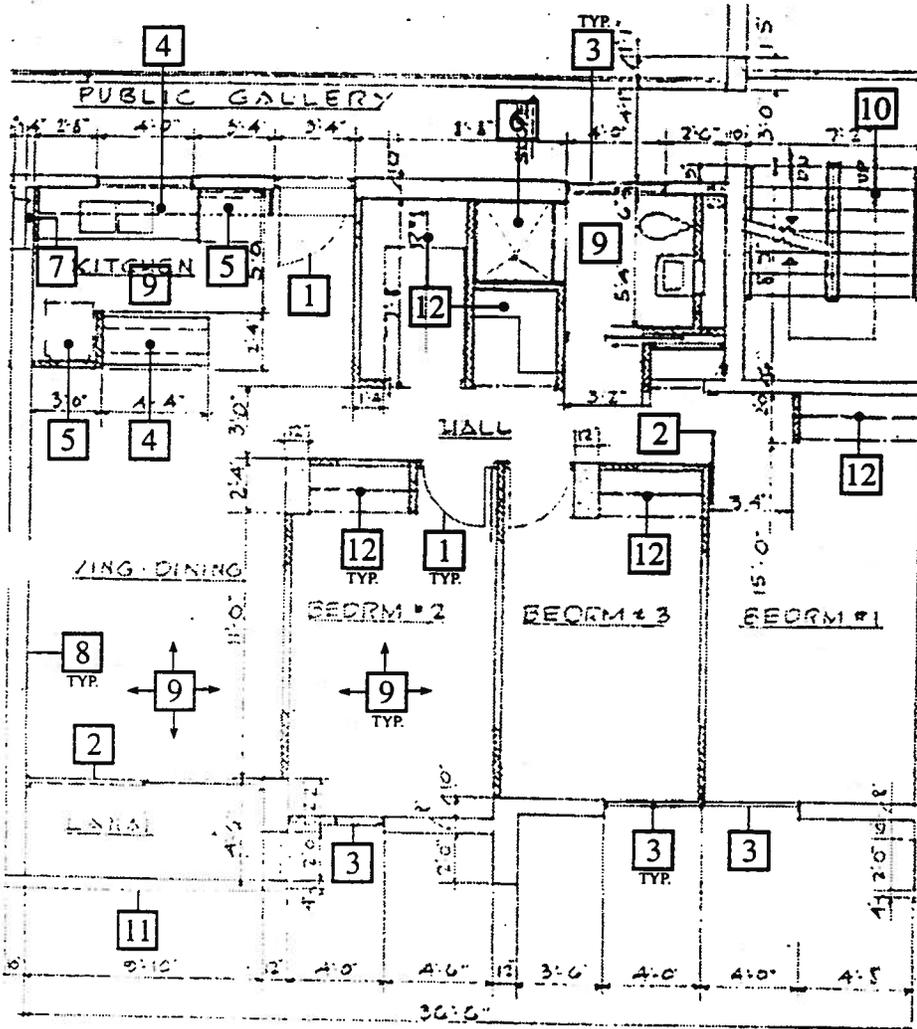
KEYNOTES DESCRIPTION OF WORK



| KEYNOTES DESCRIPTION OF WORK | |
|------------------------------|--|
| TYPICAL CONDITIONS | |
| 1 | Remove all existing doors, frames, thresholds, hardware and provide new hollow metal doors, frames, thresholds and hardware. |
| 2 | Remove existing sliding doors and provide new sliding door. Provide aluminum doors at exterior and wood doors at interior. |
| 3 | Remove all existing windows and provide new aluminum sliding windows. |
| 4 | Remove all existing kitchen counters and cabinets and provide new laminate counter and cabinets. |
| 5 | Remove all existing appliance and fixtures and provide new appliance and fixture. |
| 6 | Remove all existing ceramic tile in restrooms and provide new ceramic tile. |
| 7 | Patch wall and provide access panel at chase wall for kitchen. |
| 8 | Paint throughout. |
| 9 | Remove all existing resilient tile and base and provide new resilient tile and base. |
| 10 | Repair and refinish stair handrails and replace abrasive strips at stair threads. |
| 11 | Repair and refinish metal railings at lanai. |
| 12 | Remove and replace wood shelves. |
| SPECIAL CONDITIONS | |
| • | Add new gypsum board soffits to conceal new piping and plumbing. |
| • | Repair cracks in the CMU walls as required. |
| • | Repair concrete floor slab cracks. |
| • | Repair termite damaged wood frames. |
| • | Repair concrete spalling at lanais. |
| • | Repair damaged pipe chase walls. |
| • | Reuse existing stainless steel kitchen sinks. |
| • | Remove all existing built-up roof to substrate and metal flashing, patch all roof leaks, and provide new built-up roof and metal flashing (at bldg. B only). |
| • | ADA improvements for designated units. |

TYPICAL 3 - BEDROOM UNIT
UNIT TYPE 3 - A

KEYNOTES DESCRIPTION OF WORK



| KEYNOTES DESCRIPTION OF WORK | |
|------------------------------|--|
| TYPICAL CONDITIONS | |
| 1 | Remove all existing doors, frames, thresholds, hardware and provide new hollow metal doors, frames, thresholds and hardware. |
| 2 | Remove existing sliding doors and provide new sliding door. Provide aluminum doors at exterior and wood doors at interior. |
| 3 | Remove all existing windows and provide new aluminum sliding windows. |
| 4 | Remove all existing kitchen counters and cabinets and provide new laminate counter and cabinets. |
| 5 | Remove all existing appliance and fixtures and provide new appliance and fixture. |
| 6 | Remove all existing ceramic tile in restrooms and provide new ceramic tile. |
| 7 | Patch wall and provide access panel at chase wall for kitchen. |
| 8 | Paint throughout. |
| 9 | Remove all existing resilient tile and base and provide new resilient tile and base. |
| 10 | Repair and refinish stair handrails and replace abrasive strips at stair threads. |
| 11 | Repair and refinish metal railings at lanai. |
| 12 | Remove and replace wood shelves. |
| SPECIAL CONDITIONS | |
| • | Add new gypsum board soffits to conceal new piping and plumbing. |
| • | Repair cracks in the CMU walls as required. |
| • | Repair concrete floor slab cracks. |
| • | Repair termite damaged wood frames. |
| • | Repair concrete spalling at lanais. |
| • | Repair damaged pipe chase walls. |
| • | Reuse existing stainless steel kitchen sinks. |
| • | Remove all existing built-up roof to substrate and metal flashing, patch all roof leaks, and provide new built-up roof and metal flashing (at bldg. B only). |
| • | ADA improvements for designated units. |

MODIFIED 3 - BEDROOM UNIT
UNIT TYPE 3 - C1

PART 5 - STRUCTURAL SYSTEMS

5.1 GENERAL

A. Scope of Work

1. Structural evaluations are limited to the structural survey and the qualitative investigation of code compliance. The construction costs, exclusive of those for the work to be done by the ongoing HHA maintenance projects, were prepared and presented herein. The replacement option is not discussed here but described in Part 4, Architectural Systems.
2. The extent of the structural survey covered approximately one third of the total exterior building surfaces. Each resident manager identified known defects and damages during interviews and site walk-through. Visible damage, such as cracks, rebar corrosion, extreme sag, and deformations were documented, but no samples of in-situ materials were taken. Damage inside the units was generally not assessed during the survey, except where noted herein. Other programmed changes or replacement that would alleviate existing damage are also excluded from the scope of work.

B. Renovation Versus Replacement

1. Structural defects such as spalls at the floor overhangs and walkways, cracks in stairwell slabs and walls are considered the major items for the renovation option. Those that pose safety hazard to the tenants should be given the immediate priority in the renovation option. The discussion of the replacement option is included in part 4, Architectural Systems since structural replacement is an integral part of architectural planning and design.

C. Methodology

1. Available record drawings for the construction and structural modifications of each housing project were obtained from the HHA archive files. Documents relevant to the original structural design analysis or calculations were not found. Record drawings were qualitatively compared to building seismic codes that were in effect at the time of construction. The applicable building codes are discussed in respective sections. Analytical structural assessments are limited to the methods described herein.
2. In addition to the record research, questionnaires were submitted to the resident managers on November 18, 1996 and verbal responses were received on November 26-27, 1996. Site walk-through field surveys were conducted on December 4-6, 1996 under the guidance of the resident manager. Exterior damage observed on the randomly selected areas of each tower. Survey records and representative photographs are attached (See Appendix).

D. Historical

1. The two (2) sixteen-story high rise towers at Kuhio Park Terrace (KPT) were designed in 1962 based on the record drawings. These towers (A and B) have a total of 572 one-, two-, three-, and four-bedroom units. KPT also has a one-story CMU structure Community Center with exterior load bearing walls.
2. The two high-rise towers are structurally identical. They both have three rectangular wings arranged at 120 degree apart around a central elevator core. Each wing is 182' long and 34' wide. Typical ceiling height for the units is 8'-6", except it is 11'-6" at the first floor entrance and service areas.
3. The basic framing system for the towers is a cast-in-place concrete moment frame with concrete shear walls. This system consists of one-way concrete slabs spanning in the transversal direction of the rectangular wings. The slabs are supported at the center of each wing by: 1) a continuous longitudinal frame of concrete beams and rectangular columns, 2) longitudinal concrete beams, and 3) columns and walls at each side of the buildings. In addition, transversal concrete bearing walls for the partitions, core walls and end walls also provide supports for the slabs. Spread footings, tie beams and grade beams provide supports for the towers. The footings were designed to bear on decomposed rock with a safe bearing capacity of 6000 psf.

E. Existing Condition

1. No visible cracks or spalls were not found on the exterior surfaces of the twin towers or other structures such as the Community Center, except for the large spall at the corner of roof canopy adjacent to the first floor trash room at Wing-B.
2. Structural defects extrapolated from the architectural survey include: 1) 3"x4" spalls in the lanai floor for approximately 30 percent of all units, 2) spalls from rusted metal posts of the enclosing metal screens for about 50 percent of the concrete handrails in the lanais, and 3) separated interior partitions due to settled floors in an end unit on the first floor of Wing-B.

5.2 STRUCTURAL SYSTEMS

- A. The buildings were designed 35 years ago. The original structural calculations with the original designed lateral-forces, especially the seismic forces, could not be found. However, according to General Note-1 shown on sheet S120 of the original design drawings, the structures were designed for a Zone -1 earthquake in accordance with the 1958 edition building code.
- B. The seismic design code used in 1958 was the 1943 Los Angeles City Code, with modifications for buildings that are 13 story or higher. If the 1943 LA City Code and the modification were adapted, the design seismic base shear formula for the tower would be $V = CW$, and $C = 4.6S/[N+0.9(S-8)]100$, with S be the total number of story

in the building, and N be the number of stories above the floor under consideration. Using 17 for both S and N in the KPT case, the corresponding C value is 0.031 and the seismic base shear V value is $0.031W$.

- C. The drawings also indicated that the design was completed in the spring of 1962, a time which the new SEOAC 1959 had replaced the 1943 LA City Code. The 1959 code was the first code to formulate a different earthquake zones for design purpose. As a result, the building design might had adapted the newer code. Evidence is shown in the adoption of a Zone -1 earthquake design requirement stated in the General Note - 1 on Sheet S120. If the 1959 code was used, the seismic base shear formula would be $V=ZKCW$. With $Z = 3/16$ for Zone -1 earthquake; $K = 1.33$ for bearing wall system; $C = .05/ T^{0.333}$ and $T = 0.05H/D^{0.5}$; building height $H = 137.5'$; width $D = 34'$ and length $D=182'$; the base shear in the transversal and longitudinal directions would be $0.0118W$ and $0.0156W$, respectively.
- D. According to UBC 1994, the seismic base shear formula is $V = ZICW/R_w$. Buildings on Oahu are designed for a Zone - 2a earthquake. Using $Z = 0.15$; $I = 1.0$ for ordinary buildings; $R_w = 8$ for building frame system with concrete shear walls; $S=1.0$ for footings on decomposed rock; $H_n = 137.5'$; $C_t = .02$; $C = 1.25S/T^{0.67}$; and $T = C_t(H_n^{0.75})$, the T , C and V values for the KPT twin towers are 0.80 second, 1.448 and $0.0272W$, respectively.
- E. The seismic forces required by the 1994 UBC are 12% less than those of the 1943 code. However, the transversal and longitudinal forces are 230% and 174% greater than those of the 1959 code. Therefore, the twin towers may or may not meet the 1994 UBC depending upon which code the designer(s) followed at the time. Without an in-depth study with calculations for the true lateral-resisting capacity, one can not determine if the existing towers are capable of resisting a Zone - 2a earthquake as required by the present code.

5.3 RECOMMENDATIONS

A. Renovation Recommendations

1. The twin towers and the Community Center are all in good condition. Most damage is confined to the lanai areas. The settled ground floor slab on grade was caused by sewage leakage, which seeped into the ground and weakened subgrade support.
2. The towers should be studied further to verify its lateral-loads resisting capacity.
3. Based on our survey, approximately 182 small spalls in the lanai floors, and 270 feet of lanai handrail with spalls from the rusted screen posts should be repaired first. Approximately 100 feet of cracked interior CMU partitions should be patched and sealed. The spall repairs will require the removal of spalled concrete to exposed the portion of rusted rebars, clean rebar and coat them with epoxy, then patch back with epoxy mortar to the original sizes and shapes. The

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patch and seal of CMU cracks will require routing cracks to 3/4" wide by 3/4" deep, patched and fill with filler materials, backup tapes, and caulk with sealant.

PART 6 - MECHANICAL SYSTEM

6.1 GENERAL

- A. This report assesses the condition of the existing mechanical systems which serve Kuhio Park Terrace based on the existing as-builts, and our field investigations conducted from December 16 through 20, 1996. The 572 unit complex consists of two 17 story towers (Buildings A and B). Each building contains a mix of 1, 2, and 3 bedroom apartments. The administration offices are located on the ground floor of Building A.

6.2 AIR CONDITIONING AND VENTILATION

A. Common Areas

1. General Description

- a. Air conditioning for the administration offices in both towers are provided by various window units of different makes and models.
- b. Exhaust ventilation in the community center complex bathrooms is ducted up to exhaust fans which discharge through the roof.
- c. The shop area and paint storage are located in Building A, Wing II. Wood work and painting areas are naturally ventilated by windows and bay doors.

2. Historical Repair Information

- a. All of the window units are maintained by the building maintenance personnel. The general exhaust fans and duct work are maintained by the building maintenance.
- b. The ground floor public bathrooms in Buildings A and B are mechanically ventilated by exhaust fans.

3. System Evaluation

- a. Many of the window units appear to be in satisfactory condition, but seem to be very inefficient and should be replaced with new efficient units or be air conditioned by central systems. The jalousie windows should be replaced by glazed and shaded windows.
- b. Public restrooms located on the ground floor are ventilated by an exhaust fan which is ducted through a side wall vent. The exhaust discharge is less than 10 feet from the nearest door opening, which is in violation to the Uniform Building Code. The exhaust should be ducted and discharged on the side of the building away from any window or door.

- c. The community center is ventilated by exhaust fans which are ducted up through the roof. According to the maintenance manager, the exhaust fans create excessive amounts of noise. When assemblies are held, the fans are not used because of the noise problem, which causes the room to become very hot. Exhaust fans in the community center should be replaced with larger and quieter fans or an air conditioning system should be installed.
- d. The carpenters shop appear to be adequately ventilated by the bay doors. The Uniform Building Code, however, requires that the debris from table saws and sanders should be captured and exhausted by a ventilation system. If the number of woodworking equipment is three or less, it is acceptable to have each piece of equipment provided with its own self-contained collection system in lieu of a central system.
- e. The exhaust system for the generator room located in the mechanical/ electrical room in Building A violates the Uniform Building Code. The generator exhaust discharge needs to be relocated a minimum of 12 feet away from any openings such as doors and windows.

B. Housing Area

1. General Description

- a. The residential bathrooms are naturally ventilated by window openings above the water closet. The residential kitchen areas are also naturally ventilated and do not have a range hood.

2. Historical Repair Information

- a. No history of maintenance or repair for residential ventilation.

3. System Evaluation

- a. All residential bathrooms are naturally ventilated. The existing window area appear to be adequate to ventilate the bathroom.
- b. Currently the ranges are not equipped with an exhaust hood. Many of the cabinets near the ranges exhibit grease build up. A range hood exhaust should be incorporated in the kitchen area.

6.3 PLUMBING SYSTEMS

A. Common Areas

1. General Description

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a. Water Distribution System

- (1) Cold water is supplied to the units via water meters located on Linapuni Street. City water pressure appears adequate to feed Buildings A and B. Building A's hot water is supplied from a central solar panel heating system located on the roof, which serves all of the units. Several hot water storage tanks are located in the mechanical room on the ground floor. Back-up heating is provided by two gas water heaters also located in the mechanical room. Building B's hot water is provided by gas heaters located on the ground floor in the boiler room.

b. Sanitary Drainage System

- (1) Sanitary waste is collected by several main drain lines which connect to separate sewer manholes. The drain waste and vents appear to be cast iron. The sanitary drainage system appears to be gravity drained to manholes on Linapuni Street.

c. Storm Drainage System

- (1) Roof drains are directed to storm gutters located on Linapuni Street. The lanais have scupper drains at the base of the lanai wall for drainage.

d. Plumbing Fixtures

- (1) The fixtures have not been replaced with water conserving fixtures which will be required by January 1, 1998 to comply with the Board of Water Supply Ordinance 94-28 for water conservation. None of the existing bathrooms appear to have been made handicap accessible.

e. Gas Distribution

- (1) The main gas meter is located on Linapuni Street. The gas lines on the property are the property and responsibility of HHA.

2. Historical Repair Information

- a. Several improvement and repair projects were done on Buildings A and B. In 1982, the laundry rooms in both buildings were renovated. In 1983, solar panels were installed on building A. In 1995, the gas water heating system in Building B was replaced. According to the maintenance personnel, there have been many problems with water, sanitary and gas leaks due to deteriorating pipes.

3. System Evaluation

- a. The water piping appears to be copper tubing with lead-tin solder joints. The piping appears to be the original pipes from 1965 and exhibits extensive corrosion. All water piping should be replaced due to its condition and age.
- b. The plumbing fixtures in the common areas should be replaced with low flow fixtures to comply with Board of Water Supply Ordinance 94-28 which mandates that all plumbing fixtures in commercial properties need to meet the water conservation standards by January 1, 1998. The fixtures should also be replaced due to their age.
- c. Two rows of 6 solar panels are missing on the roof of building A, wing I. These panels should be installed to satisfy the hot water demand. Approximately 50 out of 228 panels are covered with a residue film on the inside part of the glass or show signs of condensation. A local solar distributor suspects two possibilities; the pipes within the panels are leaking or rain water is leaking into the panels. Both of these scenarios will cause the water to condensate and dry onto the glass leaving a white residue film. These panels should be checked for either rain infiltration or leaking pipes within the panels.
- d. Consideration should be given to provide building B with solar panels as the primary source of hot water and converting the boilers into the back-up source of hot water. With proper maintenance, the solar panels should help to reduce KPT's energy bill.
- e. Most of the solar piping insulation was removed when the roof was resurfaced. All of the solar piping insulation should be re-installed.

B. Housing Area

1. General Description

a. Water Distribution System

- (1) Cold and hot water piping is a mix of copper piping for the smaller lines and galvanized steel piping on the larger mains.

b. Sanitary Drainage System

- (1) Sanitary waste is collected by several sanitary and vent risers which appear to be of cast iron construction.

c. Plumbing Fixtures

- (1) All of the residential units have a single full bathroom. A majority of the fixtures in these dwelling units have not been replaced with water conserving fixtures which will be required by January 1, 1998 to comply

with the Board of Water Supply Ordinance 94-28 for water conservation. None of the existing bathrooms appear to have been made handicap accessible.

d. Gas Distribution

- (1) The gas distribution risers which supply each individual tenant with gas for cooking are of threaded black steel construction.

2. Historical Repair Information

- a. According to the maintenance personnel, there have been many problems with water, sanitary and gas leaks due to deteriorating pipes.

3. System Evaluation

- a. The water piping appears to be copper tubing with lead-tin solder joints. The piping appears to be the original pipes from 1965 and exhibits extensive corrosion. All water piping should be replaced due to its condition and age.
- b. The plumbing fixtures in the housing area should be replaced with low flow fixtures to comply with Board of Water Supply Ordinance 94-28 which mandates that all plumbing fixtures in commercial properties need to meet the water conservation standards by January 1, 1998. The fixtures should also be replaced due to their age.
- c. The waste lines throughout the housing area seem to be undersized and show extreme corrosion. All of the waste lines should be replaced and redesigned. Many tenants on the ground floor complain about soap suds baking up into their kitchen sinks. Many of the drain elbows below the water closets are corroded and need to be replaced. Currently the drain elbows are buried within the concrete slab. The new replacement elbows should extend out of the concrete slab and be concealed by a soffit.
- d. Floor cleanouts are currently located on all ground floor units. These cleanouts should be relocate to the outside of the building. The Uniform Plumbing Code does not allow floor cleanouts inside residential occupancies. Currently the ground floor units are flooded when these cleanouts are opened. All interior cleanouts should be relocated outside the building.
- e. Approximately 29 of the dwelling units should be modified to accommodate ADA requirements. The lavatories and water closets should be relocated according to the ADA requirements. The shower stall will be replaced with a standard five foot tub.

- f. Individual shut off valves should be installed in each unit. The existing valves are design to shut off the water in an entire wing at on time, which make it inconvenient for tenants when repairs are done.
- g. The entire ground floor of Building B, Wing III, has been abandoned due to recurring problems with the sanitary lines. This problem may be due to suds, undersized lines, or other unforeseen conditions. All plumbing in this area should be redesigned to solve this problem.
- h. Consideration should be given to replace the existing gas stoves with electric stoves due to the ongoing problems with the gas piping and leaking meters. The use of electric stoves will eliminate the risk of igniting unsuspected gas leaks. If new gas ranges are installed, the existing gas piping needs to be replaced.

6.4 LIFE SAFETY / FIRE PROTECTION SYSTEMS

A. Common Areas

1. General Description

- a. A paint storage room is located on the ground floor of Building A, Wing II, within the shop area. The storage room is approximately 200 square feet and the partitions are constructed of single layer of gypsum board.

2. Historical Repair Information

3. System Evaluation

- a. According to the Uniform Fire Code and Uniform Building Code, liquid storage rooms cannot exceed the following total capacities without being considered a hazardous occupancy:

| | |
|----------------------|---------|
| Class I-A | 60 gal |
| Class I-B | 120 gal |
| Class I-C | 180 gal |
| Class II | 240 gal |
| Class III-A | 660 gal |
| Class I and Class II | 240 gal |

- (1) The paints should be stored in UL-listed fire cabinets, and the amount of paints stored kept below these limits. If the amount of paint storage exceeds these limits, the paint storage room needs to be classified as a hazardous occupancy which must be separated from other occupancies with two hour or greater fire resistant construction if it exceeds 150 square feet in area. In addition, according to the Uniform Building Code, an exhaust ventilation system should be provided to have at least six air

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changes per hour, and a drainage system should be incorporated to direct the flow of liquids to an approved location or to an area that will be designed to provide secondary containment.

B. Housing Area

1. General Description

- a. Each dwelling unit is provided with a 5 lb. fire extinguisher.

2. Historical Repair Information

- a. According to the maintenance manager, the fire extinguishers are checked periodically.

3. System Evaluation

- a. In accordance with the Uniform Building Code, all residential buildings higher than 2 stories or consisting of 16 dwelling units or more must be sprinklered. In order for the buildings to be brought up to current codes, fire sprinklers should be provided in both buildings. Fire pumps will need to be installed to supply both towers.

6.5 RECOMMENDATIONS FOR REPAIR/RENOVATION

A. Recommendation for repair are based on complying with HUD Handbook 4910.1, Minimum Property Standards for Housing, 1994, ed., and with HUD Handbook 7418.1, Life-Cycle Cost Analysis for Utility Combinations. In accordance with these standards, installation of a solar water heating system is recommended as an option for Bldg. B since the total savings is projected in 15 years will exceed or equal the cost of the system. Additional tax credits and Hawaiian Electric rebates which are not included in this analysis will further reduce the payback period to less than 7 years. In addition, life cycle analysis indicates that the use of gas for cooking in lieu of electricity will save \$30 per year per unit, or \$17,500/year for the entire project, and an additional savings of \$143,000/year in initial construction costs. (See attached life-cycle cost analysis for cooking.) Although the savings for using gas for cooking are significant, consideration should be given to installing electric ranges in lieu of gas ranges because they are safer to operate and maintain than gas appliances.

B. **Mandatory Items:** The following items should be undertaken as part of the renovation.

1. Common Areas:

- a. Replace all plumbing fixtures.

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- b. Replace all sanitary and vent piping.
- c. Replace all domestic water piping.
- d. Install fire sprinklers in all administration areas in the two towers.
- e. Install ventilation system for paint and shop area.
- f. Relocate generator exhaust.
- g. Repair solar system for Building A.

2. Housing Areas:

- a. Provide ducted kitchen exhaust hood.
- b. Replace all plumbing fixtures.
- c. Replace all water lines.
- d. Replace all waste and vent lines.
- e. Modify units to comply with ADA requirements.
- f. Replace shut-off valves.
- g. Replace all gas piping.
- h. Install fire sprinklers in all apartments.

C. Optional Items: The following additional items are not required by code but consideration should be given to incorporating these features into the renovation.

1. Common Areas:

- a. Provide central A/C for administration floor.
- b. Provide A/C in community center.
- c. Install fire sprinklers in community center.
- d. Provide new solar heating system for Building B.

2. Housing Areas:

- a. No other optional improvements are recommended.

6.6 RECOMMENDATIONS FOR REPLACEMENT

- A. Recommendations for replacement are based on complying with HUD Handbook 4910.1, Minimum Property Standards for Housing, 1994 ed., and with HUD Handbook 7418.1, Life-Cycle Cost Analysis for Utility Combinations. In accordance with these standards, installation of a solar water heating system is recommended since the total savings is projected in 15 years will exceed or equal the cost of the system. Additional tax credits and Hawaiian Electric rebates which are not included in this analysis will further reduce the payback period to less than 7 years. In addition, life cycle analysis indicates that the use of gas for cooking in lieu of electricity will save approximately \$30 per year per unit, or \$17,500/year for the entire project, and an additional savings of \$143,000 in initial construction costs. (See attached life-cycle cost analysis for cooking.) Although the savings for using gas for cooking are significant, consideration should be given to installing electric ranges in lieu of gas ranges because they are safer to operate and maintain than gas appliances.
- B. Mandatory Items: The following items should be included at minimum for replacement of the entire complex:
1. Common Areas:
 - a. Provide new plumbing for restrooms to meet current codes and standards.
 - b. Provide new ventilation system for paint and shop area.
 - c. Provide new ventilation support for emergency generators.
 - d. Provide new solar heating system to match existing system serving Building A.
 2. Housing Areas:
 - a. Provide ducted kitchen exhaust hood.
 - b. Provide all new plumbing fixtures, including new water lines, waste and vent lines.
 - c. Provide new roof drain piping.
 - d. Modify units to comply with ADA requirements.
 - e. Provide new shut-off valves.
 - f. Replace all gas piping.
 - g. Install fire sprinklers in all units.

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C. Optional Items: The following additional items are not required by code but consideration should be given to incorporating these features into the replacement project.

1. Common Areas:

- a. Provide central A/C for administration floor.
- b. Provide A/C in community center.
- c. Install fire sprinklers in the community center.
- d. Provide new solar heating system for Building B.

2. Housing Areas:

- a. No other optional improvements are recommended.

**Life-Cycle Cost Analysis
of Utility Combinations
Part A—Summary For Water Heating**

U.S. Department of Housing
and Urban Development
Office of Public
and Indian Housing



OMB No 2577-0024 (Exp 10-31-86)

| | | | | | | | | | |
|---|--|--------------------|--------------------|--------------------|-----------------|--------|--------------|--------|--------------|
| 1. Public Housing Housing Agency Kuhio Park Terrace | | 2. Project Number | | 3. Date | | | | | |
| 4. By (Name and Title) | | 5. Prepared By | | | | | | | |
| Utility Combinations | | Comb. No. <u>1</u> | Comb. No. <u>2</u> | Comb. No. <u>3</u> | Comb. No. _____ | | | | |
| 6. Domestic Hot Water Installation | | Elec | Gas | Solar | | | | | |
| 7a. Space Heating Installation | | N/A | N/A | N/A | | | | | |
| b. Space Heating System | | N/A | N/A | N/A | | | | | |
| 8. Space Air Conditioning Installation | | N/A | N/A | N/A | | | | | |
| Fuel and Energy Types and Purchasing Methods | | Tenant | Master-meter | Tenant | Master-meter | Tenant | Master-meter | Tenant | Master-meter |
| 9. Lighting and Refrigeration | | X | | X | | X | | | |
| 10. Cooking | | X | | X | | X | | | |
| 11. Domestic Hot Water | | | X | | X | | X | | |
| 12. Space Heating | | --- | N/A | --- | --- | --- | | | |
| 13. Space Air Conditioning | | --- | N/A | --- | --- | --- | | | |
| Initial Cost of Utility Installation | | | | | | | | | |
| 14. Per Dwelling Unit | | \$ 800 | \$ 1,000 | \$ 2,800 | \$ | | | | |
| 15. Total | | \$ | \$ | \$ | \$ | | | | |
| Estimated Cost Per Unit Per Month | | | | | | | | | |
| 16. Electricity *(assuming 60% solar fraction) | | \$ 18.92 | \$ | \$ | \$ | | | | |
| 17. Gas ** (assuming 60% solar fraction) | | \$ | \$ 11.40 | \$ | \$ | | | | |
| 18. Fuel and Heating/Cooling Supplies | | \$ | \$ | \$ | \$ | | | | |
| 19. Heating/Cooling Labor | | \$ | \$ | \$ | \$ | | | | |
| 20. Repairs, Maintenance and Replacements (20 year average) | | \$ 3.58 | \$ 5.60 | \$ 6.61 | \$ | | | | |
| 21. Interest | | \$ | \$ | \$ | \$ | | | | |
| 22. Total Monthly Cost | | \$ 22.50 | \$ 17.00 | \$ 6.61 | \$ | | | | |

23. Recommended: Combination No. 3***

24. Justification of Recommendation:

- * Includes 1.3435 escalation factor for 20 year life, 3% annual energy escalation rate, 60% solar fraction for 1 panel system per home, 235 Kwh/m electrical use per HUD standards, and current average cost for electricity of \$0.10 per Kwh. Maintenance based on 4% of initial cost.
- ** Includes 1.3435 escalation factor for 20 year life, 3% annual energy escalation rate, 60% solar fraction for 1 panel per unit, 12.3 therms/h gas use per HUD standards, and current average cost for gas of 1.15/therm. Maintenance based on 5% of initial cost.
- *** Solar System Maintenance = gas system maintenance + 0.5% on solar system components of \$1,800/month. The least expensive option for HW heating other than solar is gas. The unit cost increase for solar is 2800-1000=1800/unit. The simple payback will be $\frac{1,800}{17.00 - 6.61} = 14.4$ years.

Replaces HUD-51004-A, 51004-B, 51004-C, 51004-D, 51004-E pg. 2
Which Are Obsolete

HUD-51004 (12/83)
MS 7418 1

Life-Cycle Cost Analysis of Utility Combinations

Part A—Summary For Cooking

U.S. Department of Housing
and Urban Development
Office of Public
and Indian Housing



OMB No 2577-0024 (Exp 10-31-86)

| | | | | |
|---|--------------------|--------------------|----------------------|--------------------|
| 1 Public/Indian Housing Agency Kuhio Park Terrace | 2 Project Number | | 3 Date | |
| 4 By Name and Title | 5 Prepared By | | | |
| Utility Combinations P | Comb. No. <u>1</u> | Comb. No. <u>2</u> | Comb. No. <u> </u> | Comb No <u> </u> |
| 6. Domestic Hot Water Installation | N/A | N/A | | |
| 7a. Space Heating Installation | N/A | N/A | | |
| b. Space Heating System | N/A | N/A | | |
| 8. Space Air Conditioning Installation | N/A | N/A | | |
| Fuel and Energy Types and Purchasing Methods | Tenant | Master-meter | Tenant | Master-meter |
| 9. Lighting and Refrigeration | N/A | | N/A | |
| 10. Cooking | Elec | | Gas | |
| 11. Domestic Hot Water | N/A | | N/A | |
| 12. Space Heating | N/A | | N/A | |
| 13. Space Air Conditioning | N/A | | N/A | |
| Initial Cost of Utility Installation | | | | |
| 14. Per Dwelling Unit | \$ 1,250 | \$ 1,000 | \$ | \$ |
| 15. Total | \$ | \$ | \$ | \$ |
| Estimated Cost Per Unit Per Month | | | | |
| 16. Electricity 75 kwh/month | \$ 8.60 | \$ | \$ | \$ |
| 17. Gas 6.50 therms/month | \$ | \$ 8.20 | \$ | \$ |
| 18. Fuel and Heating/Cooling Supplies | \$ | \$ | \$ | \$ |
| 19. Heating/Cooling Labor | \$ | \$ | \$ | \$ |
| 20. Repairs, Maintenance and Replacements (20 year average) | \$ 8.12 | \$ 5.97 | \$ | \$ |
| 21. Interest | \$ | \$ | \$ | \$ |
| 22. Total Monthly Cost | \$ 16.72 | \$ 14.17 | \$ | \$ |
| 23. Recommended: Combination No. <u>1***</u> | | | | |

24. Justification of Recommendation:

- * Includes 1.1464 escalation factor for 10 year life, 3% annual energy escalation rate, 75 Kwh/m electrical consumption for cooking per HUD standards, and current average cost for electricity of \$0.10 per Kwh. Maintenance based on 3% of \$1000 for electrical distribution plus 11% of \$500 for electric range.
- ** Includes 1.1464 escalation factor for 10 year life, 3% annual energy escalation rate, 6.5 therms/month gas consumption for cooking per HUD standards, and current average cost for gas of 1.15/therm. Maintenance based on 2% of \$500 for gas distribution maintenance + 10.5% of \$500 for gas range.
- *** Based on this analysis, the use of gas cooking saves 16.72 - 14.17 = \$2.55/month or \$30.60/ per unit, or approximately 572 units = 17,503 in annual operating costs for the entire project, and an additional 1250 - 1000 = \$250/unit = 143,000 x 572 savings per initial construction costs. While these savings are significant, the use of electric ranges is recommended since they are safer to use, maintain, and operate than gas appliances.

PART 7 - ELECTRICAL SYSTEM

7.1 GENERAL

- A. This report assesses the condition of the existing electrical systems which serve Kuhio Park Terrace based on the existing as-builts, and our field investigations conducted from December 16 through 20, 1996. The 572 unit complex consists of two 16 story high rises (Buildings A and B). Each building contains a mix of 1, 2, and 3 bedroom units. The administration offices are located on the ground floor of building A.

7.2 POWER SYSTEM

A. Common Areas

1. General Description

- a. The electrical services for the Kuhio Park Terrace Tower complexes are owned and maintained by Hawaiian Electric Company (HECO). The service is tapped from a 12.47 KV, three phase, primary circuit off North School Street and extended underground into the housing complex. A 300 KVA pad mounted transformer, at each tower provide 208Y/120 volt, three phase, power to each tower.
- b. Each tower has a ground floor electrical service room that contains the tower's main electrical service disconnect switch, main service metering equipment, distribution panelboards, emergency power transfer switch equipment, and the house electrical panelboard. The electrical power is distributed to each wing from the electrical room. Feeder risers are routed up the tower and supply power to each tenant, separately metered on every floor.
- c. Each tenant's electrical service is routed from the respective meters to the unit electrical loadcenters. The individual loadcenters provide power and lighting circuits within the units.
- d. Each tower contains a 125 KW emergency, diesel engine, electrical generator. The generator supplies emergency power during HECO power outages to egress lighting, fire alarm systems, and an emergency designated elevator.
- e. Oahu Wireless Communications owns and maintains equipment located in dedicated rooms on the 17th floors. Roof top antenna arrays and transmitting equipment are also owned by Oahu Wireless Communications.

2. Historical Repair Information

- a. HECO's 12.47 KV underground primary distribution feeder and the 300 KVA

pad mounted transformers have been in service since 1991.

- b. The elevator systems for the towers were upgraded in 1994 and a common laundry room was constructed on the ground floors in 1982. The present solar water heating system replaced a boiler system in 1986.

3. System Evaluation

- a. The exterior tenant meters are in bad condition showing severe corrosion and should be replaced.
- b. The exposed exterior branch circuit conduit systems show signs of corrosion and abuse. Several locations require immediate attention where the conduit has rusted through, or has broken away, and the wiring is exposed. The exposed conduit systems are not expected to last beyond 10 years and should be replaced.
- c. The tenant electrical service feeder wiring appears to be in good condition.
- d. Roof top receptacles for maintaining equipment were not provided, violating the NEC. Provide ground fault interrupt roof top receptacles to comply with code.
- e. The receptacles in the wood-working shop were not protected from dust and particle accumulation. The receptacles should be replaced with gasketed covers.
- f. If consideration is given to replace the existing gas ranges with electric ranges, the building transformers, main electrical service equipment, and tenant service risers will require upgrade.

B. Housing Units

1. General Description

- a. Electrical feeder risers are routed up the tower to separate tenant meters located on the exterior walkways on each floor. Each tenant's service is routed from the respective meters to the unit electrical loadcenters. The individual loadcenters provide power and lighting circuits within the units.

2. System Evaluation

- a. The interior surface metal raceways show signs of corrosion. Several locations require immediate attention where the conduit or raceway has rusted through and the wiring is exposed. Concealed conduit systems appear to be in adequate condition, however, the conduit systems serving kitchen counter-top devices and refrigerator outlets are severely rusted due

to the wind blown rain through the kitchen window. The surface raceways and kitchen conduits should be replaced.

- b. Receptacles throughout the units do not appear to be in good condition and should be replaced.
- c. Kitchen counter-top receptacles do not have ground circuit interrupt provisions. The 1996 National Electrical Code (NEC) requires ground fault circuit interrupt provisions for all kitchen counter-top receptacles. Replace the receptacles with ground fault sensing receptacles to comply with code.

7.3 LIGHTING SYSTEMS

A. Common Areas

1. General Description

- a. The exterior parking areas are illuminated with 250 watt, high intensity discharge (HID), high pressure sodium (HPS) pole-top luminaires.
- b. Common area egress lighting comprise of single lamp, 40 watt, T12 luminaires, with vandal resistant features.

2. Historical Data

- a. Building B lobby area lighting were replaced in 1991. Building A lobby area lighting were replaced in 1981.
- b. Common area egress lighting were replaced in 1979.

3. System Evaluation

- a. The exterior parking and roadway lighting levels appear to be adequate. The existing light poles appear to be in adequate condition and should last beyond 10 years.
- b. The exterior building perimeter lighting levels, immediately adjacent to the building, appear to be inadequate. Additional luminaires should be installed to provide sufficient lighting levels for security purposes.
- c. The exterior common area egress luminaires appear to be in adequate condition and should last beyond 10 years. Some fixture lenses were cracked or painted and should be replaced.
- d. The elevator lobby areas and ground floor lobby luminaires appear to be in bad condition and should be replaced.

- e. The light fixtures were not protected from dust and particle accumulation. The light fixtures should be replaced with gasketed, sealed fixtures.

B. Housing Units

1. General Description

- a. Interior unit luminaires are comprised as follows, all fixtures are surface mounted:

Kitchen: One incandescent, with two 60 watt lamps.

Dining: One incandescent, with two 60 watt lamps.

Living: One incandescent, with two 60 watt lamps.

Bedrooms: One incandescent, with two 60 watt lamps.

Bath: One incandescent, with one 60 watt lamp.

Pantry/Hall/Storage: One incandescent, with one 60 watt lamp.

Lanai: One incandescent, with one 60 watt lamp.

2. System Evaluation

- a. The majority of the interior luminaires were showing signs of corrosion and had missing or damaged lenses. The existing fixtures should be replaced and illumination levels increased in above suggested rooms.
- b. The majority of the light fixtures and switches were showing signs of corrosion and missing or damaged lenses. The existing fixtures and switches should be replaced and illumination levels increased in above suggested rooms.
- c. New fixtures should possess energy efficient compact fluorescent and T8 lamps, and electronic ballasts. This will provide savings on energy usage and principle payback is assisted through HECO's demand side management rebate program. In evidence of the damage to the existing luminaires, the new fixtures should also possess vandal resistant features to increase its longevity.

7.4 TELEPHONE SYSTEM

A. Common areas

1. General Description

- a. The telephone service is owned and maintained by GTE Hawaiian Telephone Company (HTCO). The overhead service is extended from HTCO's main circuits off North School Street and extended, underground, into the housing complex.

- b. Every other floor of each wing contains a telephone cabinet which provides telephone service, in concealed conduit systems, to the individual unit telephone devices.

2. Historical Repair Information

- a. HTCO's overhead primary distribution has been in service since 1965.

3. System Evaluation

- a. The service telephone cabinets and feeders do not appear to be in adequate condition and are not expected to last beyond 10 years. The service cabinets and cables should be replaced.
- b. The overhead telephone service wiring appears to be in good condition.

B. Housing Units

1. General Description

- a. Every other floor of each wing contains a telephone cabinet which provides telephone service, in concealed conduit systems, to the individual unit telephone devices.

2. System Evaluation

- a. The cables and outlets do not appear to be in adequate condition and are not expected to last beyond 10 years. The tenant unit cables and outlets should be replaced.

7.5 CABLE TELEVISION SYSTEM

A. Common Areas

1. General Description

- a. The cable television service is owned and maintained by Oceanic Cablevision. The underground service is extended from Oceanic's main circuits off North King Street and extended into the housing complex.
- b. The service is routed to the building main distribution cabinets located on the roof top penthouse and the ground floor electrical room.
- c. Vertical risers and horizontal distribution of exposed PVC tubing provide branch service to the individual tenants. An exposed cable is penetrated into each unit and is then routed to the living area for future tenant connection.

2. System Evaluation

- a. The cable television service feeders and tenant cables appear to be in good condition, however, the PVC tubing system is not suited for the high abuse environment. The PVC tubing in some areas have been pulled off its supports, pulled out of the junction boxes and conduit fittings. The cable television unit feeders are not expected to last beyond 10 years and should be replaced with a galvanized steel conduit system.

B. Housing Units

1. General Description

- a. Each tenant's cable television cables are routed in conduit, exposed cable is penetrated into each unit and is then routed to the living area for future tenant connection.

2. System Evaluation

- a. The tenant cables appear to be in adequate condition but are not expected to last beyond 10 years and should be replaced.

7.6 FIRE ALARM SYSTEMS

A. Common Areas

1. General Description

- a. The supervised fire alarm systems consist of the following components:
 - (1) Main fire alarm control panels located in the security booths on the ground floor lobbies.
 - (2) Manual pull stations at every stairwell and elevator lobby.
 - (3) Combination horn and strobe devices at the common area egresses on every floor.
 - (4) Smoke detectors at every elevator lobby.
 - (5) Fire fighter microphone jacks at every other floor and ground level elevator lobby.
 - (6) Elevator recall and fire sprinkler pre-action system controls.

2. Historical Repair Information

- a. The entire fire alarm system was upgraded in 1994 for both towers.

3. System Evaluation

- a. The exterior notification devices, manual pull stations, and fire fighter microphone jacks have been abused and many were broken.
- b. There have been consistent and frequent false alarm tripping of the fire alarm systems. Pull stations are activated usually during hours when children are present after school, holidays, and weekends. The constant false alarms place an extraordinary burden on the local fire station and compromises life safety concerns.

- B. Housing Units

1. General Description

- a. Individual unit smoke detectors, installed in unit living rooms, provide tenant alarm notification. The unit smoke detectors are not connected to the main fire alarm control panel, which is not required. The smoke detectors are 120 volt operated without battery back up capability.

2. System Evaluation

- a. The smoke detectors are only located in the hallways of all units and appear to be in bad condition. Although yearly maintenance inspections test the detectors for functionality, the sensitivity calibration and reliability of the units are questionable.
- b. New fire codes require that all dwelling bedrooms, living areas, and hallways contain smoke detectors that operate on both 120 volt and battery back up power.
- c. New smoke detectors should be provided in the appropriate rooms and should be specified for both 120 volt and battery back up power sources.
- d. The roof tops of the buildings do not have fire alarm notification devices. Provide fire alarm notification horn.

7.7 AMERICAN'S WITH DISABILITIES ACT (ADA) COMPLIANCE

- A. Unit Housing

1. General Description

- a. None of the buildings comply with ADA guidelines.

2. ADA Evaluation

- a. Receptacles mounted at 14 inches above the floor do not meet wheel chair reach guidelines and should be heightened to 18 inches.
- b. Loadcenters mounted at 60 inches above the floor should be lowered so the maximum height of the highest circuit breaker is below 48 inches.
- c. All fire alarm manual pull stations are mounted at 64 inches above the floor and do not comply with ADA guidelines. The pull stations should be relocated to 48 inches above the floor.
- d. All smoke detectors should be replaced with both visual and audible notification features.
- e. Telephone and door knocker visual notification devices should be provided in living areas and master bedrooms, as suggested by ADA guidelines.

7.8 COMMUNITY CENTER

A. Historical Data

1. The community center was renovated in 1980. Additional receptacles were provided, and lighting circuits and luminaires were replaced.

B. Building Evaluation

1. The lighting fixtures, power and signal devices appear to be in adequate condition, however, the lighting fixtures are not expected to last beyond 10 years. The light fixtures and wiring should be replaced.
2. The exterior security luminaires are worn and is also not expected to last beyond 10 years and should be replaced.

7.9 RECOMMENDATIONS FOR REPAIR/RENOVATION

A. Recommendations for repair are based on complying with HUD Handbook 4910.1, Minimum Property Standards for Housing, 1994, ed., and with HUD Handbook 7418.1, Life-Cycle Cost Analysis for Utility Combinations.

B. Mandatory Items: The following items should be undertaken as part of the renovation.

1. Common Areas:

- a. Replace all electrical tenant service check meters.

- b. Provide additional building perimeter security lights.
 - c. The elevator lobby areas and ground floor lobby luminaires appear to be in bad condition and should be replaced.
 - d. Replace all exposed telephone cabinets and cables.
 - e. Replace all exposed cable television PVC tubing with rigid galvanized steel type. Replace cables.
 - f. Provide roof-top ground fault receptacles to comply with code.
 - g. Replace receptacles, light switches, and fixtures in the community center.
 - h. Replace the exterior fire alarm notification devices, manual pull stations, and fire fighter microphone jacks.
 - i. Lower all fire alarm manual pull stations, mounted at 64 inches above the floor, to 48 inches.
 - j. Provide covered receptacles and sealed light fixtures for wood-working shop.
2. Housing Areas:
- a. Replace all receptacles, light switches, conduit and surface metal raceways systems.
 - b. Replace all kitchen counter top receptacles with ground fault sensing receptacles to comply with code.
 - c. Replace all tenant light fixtures with vandal resistant, energy efficient types, and increase foot candle levels.
 - d. Replace tenant smoke detectors with 120 volt and battery back-up power to comply with code.
 - e. The following items are necessary for ADA compliance:
 - (1) Heighten receptacles mounted at 14 inches above the floor to 18 inches.
 - (2) Lower panelboards mounted at 60 inches above the floor so the maximum height of the highest circuit breaker is below 48 inches.
 - (3) Relocate lanai light switch to the lanai side of the wall to meet wheel chair reach guidelines.

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

- (4) Replace smoke detectors should be replaced with both visual and audible notification features which operate on both 120 volt and battery back-up power.
 - (5) Provide telephone and door knocker visual notification devices in living areas and master bedrooms.
- C. Optional Items: The following additional items are not required by code but consideration should be given to incorporate these features into the renovation.
1. Provide telephone and television outlets on the second floors of units.
 2. Replace building transformers, electrical service equipment and tenant service risers for optional replacement of gas ranges with electric ranges.

7.10 RECOMMENDATIONS FOR REPLACEMENT

- A. Recommendations for replacement are based on complying with HUD Handbook 4910.1, Minimum Property Standards for Housing, 1994 ed., and with HUD Handbook 7418.1, Life-Cycle Cost Analysis for Utility Combinations.
- B. Mandatory Items: The following items should be included at minimum for replacement of the entire complex:
1. Common Areas:
 - a. Conceal all conduits.
 - b. Provide energy efficient, high pressure sodium, site and egress lighting.
 - c. Provide roof-top ground fault receptacles.
 - d. Comply with ADA requirements.
 - e. Provide fire alarm, telephone and cable television systems.
 - f. Provide standby diesel generator power system.
 - g. Provide primary pad-mounted transformer substation.
 - h. Provide covered receptacles and sealed light fixtures for wood-working shop.
 2. Housing Areas:
 - a. Provide tenant loadcenters, general receptacles, and light switches.

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

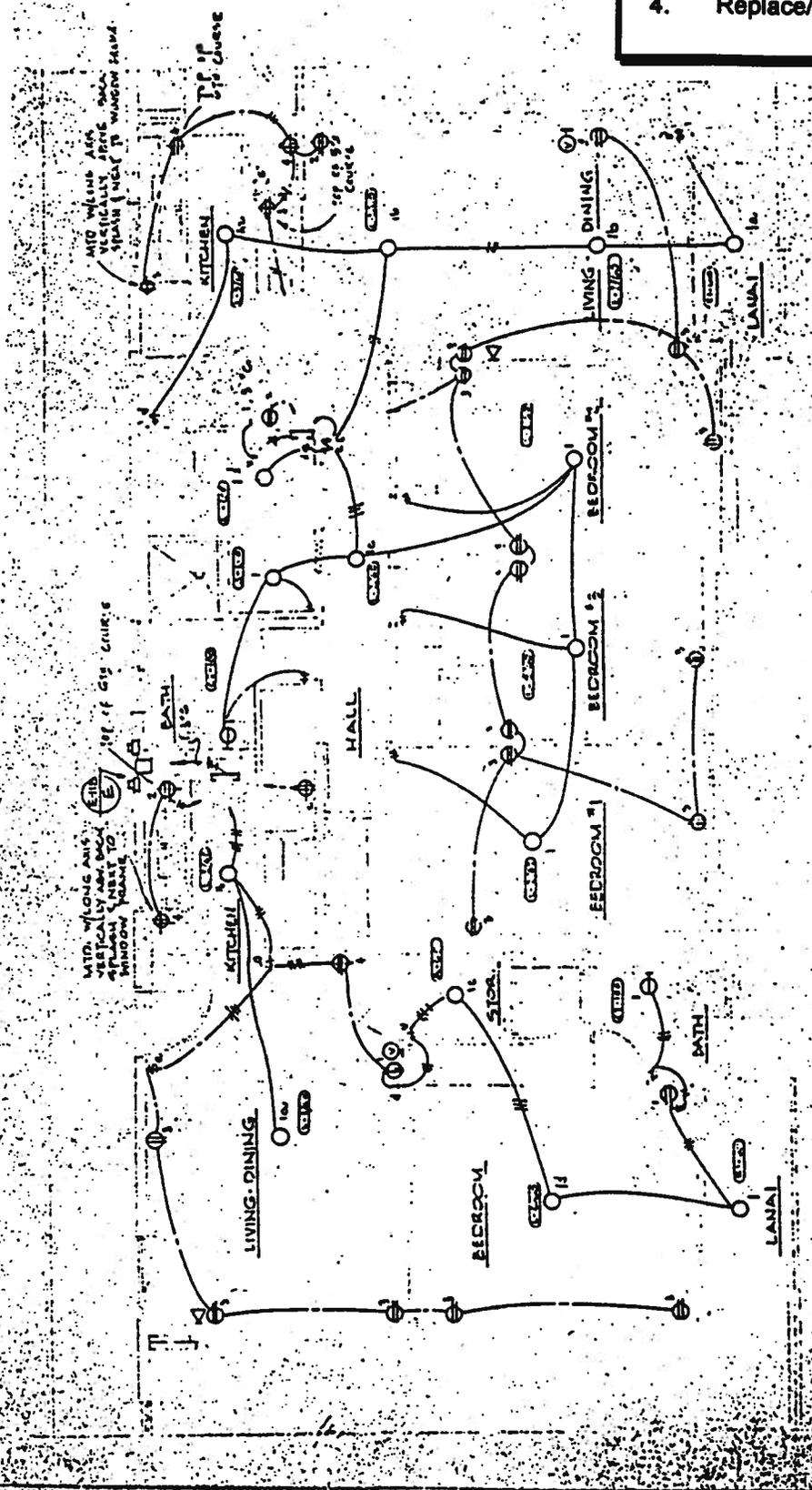
- b. Provide ground fault receptacles for kitchen counter-tops, lanais, and bathrooms.
- c. Provide vandal resistant, energy efficient, fluorescent light fixtures.
- d. Provide television and telephone outlets on first and second floors.
- e. Provide 120 volt and battery back-up powered smoke detectors in living rooms, bedrooms; and hallways.
- f. Conceal all conduits.
- g. Comply with ADA requirements.

**ELECTRICAL ILLUSTRATIVE RECOMMENDATIONS
KUHIO PARK TERRACE**

Electrical Symbols for Kuhio Park Terrace

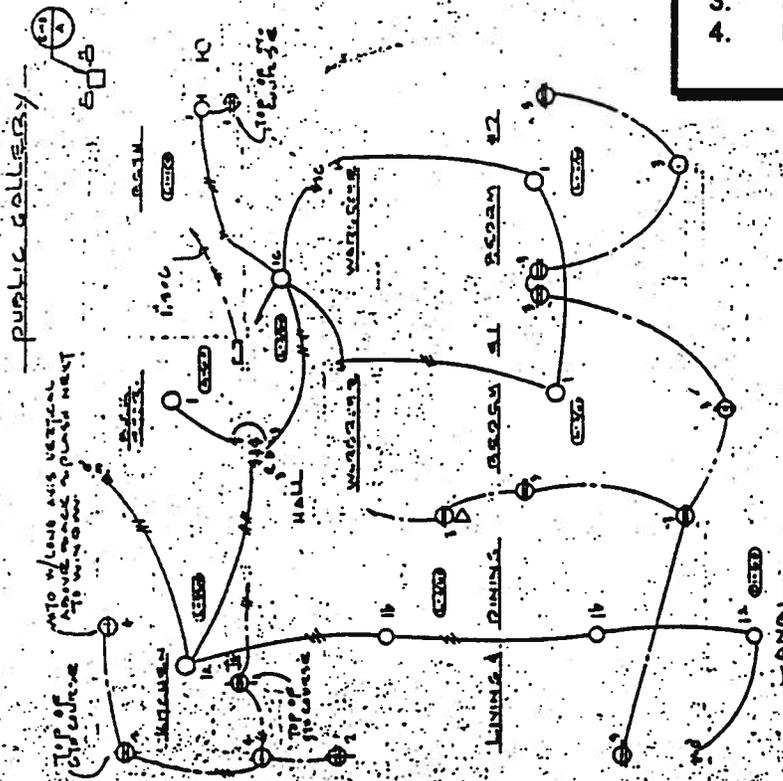
| INTERIOR ELECTRICAL SYMBOLS | |
|-----------------------------|---|
| | FLOOR LIGHT, CEIL. |
| | FLOOR LIGHT, WALL |
| | FLOOR LIGHT, CEIL. SQUARE UNIT |
| | RECESSED LIGHT W/ CONCRETE POLE HOUSING |
| | SURFACE LIGHT, CEIL. INCANDESCENT |
| | WALL LIGHT, INCANDESCENT |
| | NIGHT LIGHT, INCANDESCENT |
| | NIGHT LIGHT, WALL INCANDESCENT |
| | CURFEW LIGHT, WALL, INCANDESCENT |
| | SWIMMING POOL UNDER-WATER LIGHTS |
| | EXIT LIGHT, WALL, 2-FACE ARROWS |
| | EXIT LIGHT, FLUSH |
| | WALL LIGHT, INCAND. W/ KECP |
| | CECP. DUPLEX. 15A. 120V. 2-FEED. 3-WIRE. GROUNDING TYPE |
| | CECP. 15A. 120V. CECP & TEL OUTLET FLOOR MOUNT |
| | CECP. DUPLEX. 15A. 120V. 2-WIRE |
| | CECP DUPLEX. 15A. 120V. 3-WIRE GROUNDING TYPE |
| | FLOOR CECP. |
| | CLOCK OUTLET |
| | TEL OUTLET |
| | T.V. ANTENNA OUTLET |
| | MOTOR CONNECTION |
| | TIME SWITCH |
| | RELAY |
| | ELECTRIC PANEL |
| | FIRE ALARM CABINET |
| | F.A. STATION |
| | F.A. GONG |
| | LIGHT SWITCH. 1-POLE. CONTROLLING OUTLET(S) 2" |
| | 3-WAY SW. |
| | CONDUIT CONCEALED ABOVE FLOOR, 2 WIRES |
| | CONDUIT BELOW FLOOR, 3 WIRES INDICATED |
| | CONDUIT EXPOSED. W/WIRES |
| | CONCEALED CONDUIT FOR TELEPHONE RUNS |
| | TYPE "A" FIXTURE, TWO 48" LAMPS |
| | PLOT LIGHT |
| | ANNUNCIATOR PANEL, FIRE ALARM |
| | HEATER OUTLET |
| | PANEL LIGHT, CEIL., RECESSED |
| | FLEXIBLE CONDUIT |
| | NIGHT LIGHT, INCANDESCENT, RECESSED. |
| | CURFEW LIGHT, INCANDESCENT, RECESSED |
| | AREA LIGHT AND FOLD. SEE DETAIL SHEET: E-9 |
| | INCAND. LIGHT, CEIL., RECESSED. |

- RECOMMENDATIONS: (Typical Unit Layout)**
1. Replace kitchen receptacles with GFI type.
 2. Replace lighting, switches, and receptacles.
 3. Replace wiring.
 4. Replace/Provide additional smoke detectors.

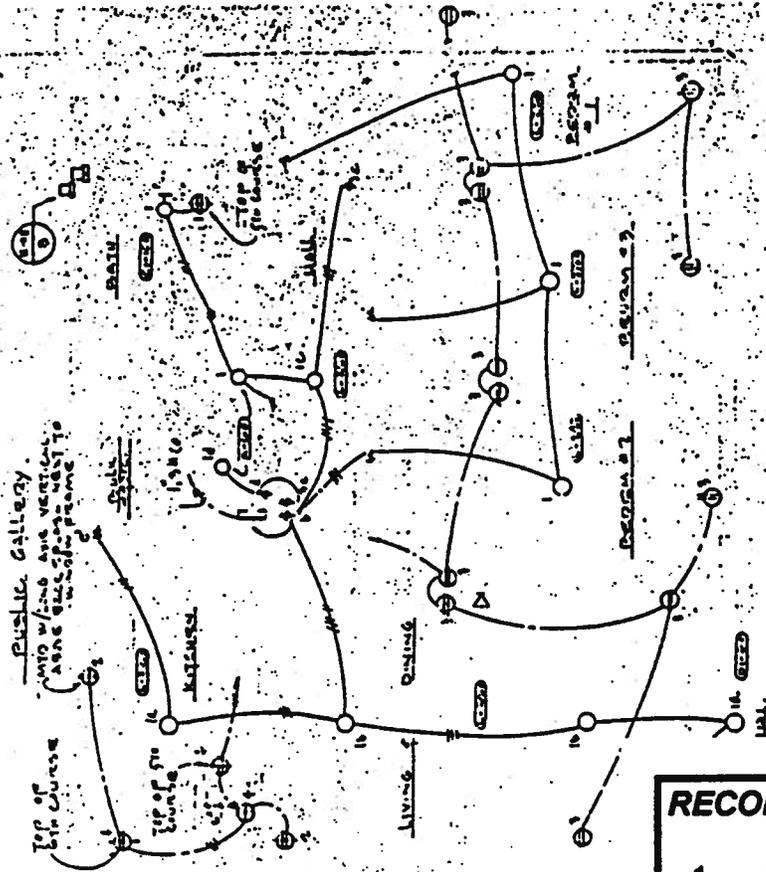


UNIT TYPE '1-A'
Scale: 1/4" = 1'-0"

UNIT TYPE '3-E'
Scale: 1/4" = 1'-0"



UNIT TYPE 2-A
 - scales 1/8" = 1'-0"

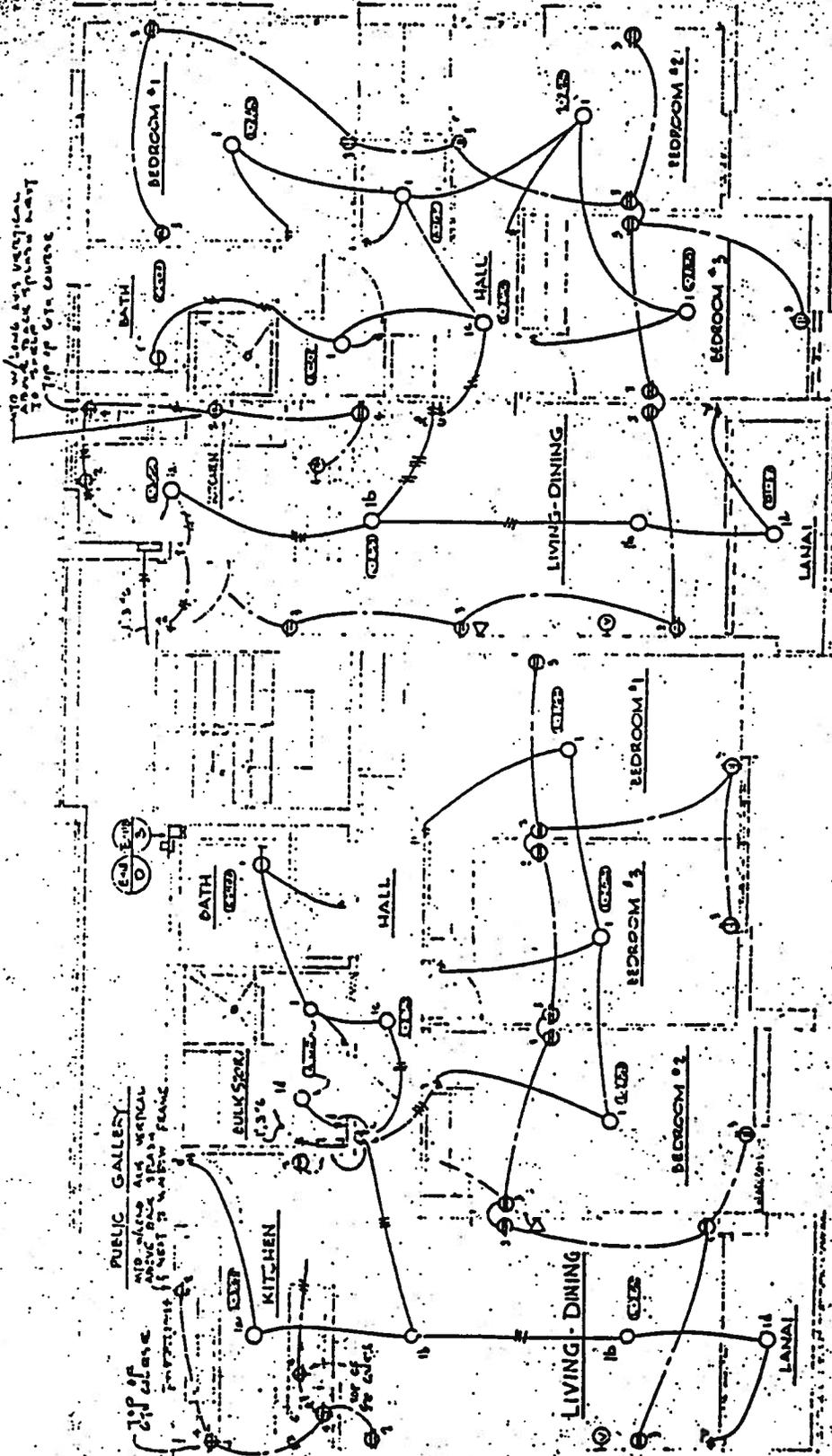


UNIT TYPE 3-G1
 - scales 1/8" = 1'-0"

- RECOMMENDATIONS: (Typical Unit Layout)**
1. Replace kitchen receptacles with GFI type.
 2. Replace lighting, switches, and receptacles.
 3. Replace wiring.
 4. Replace/Provide additional smoke detectors.

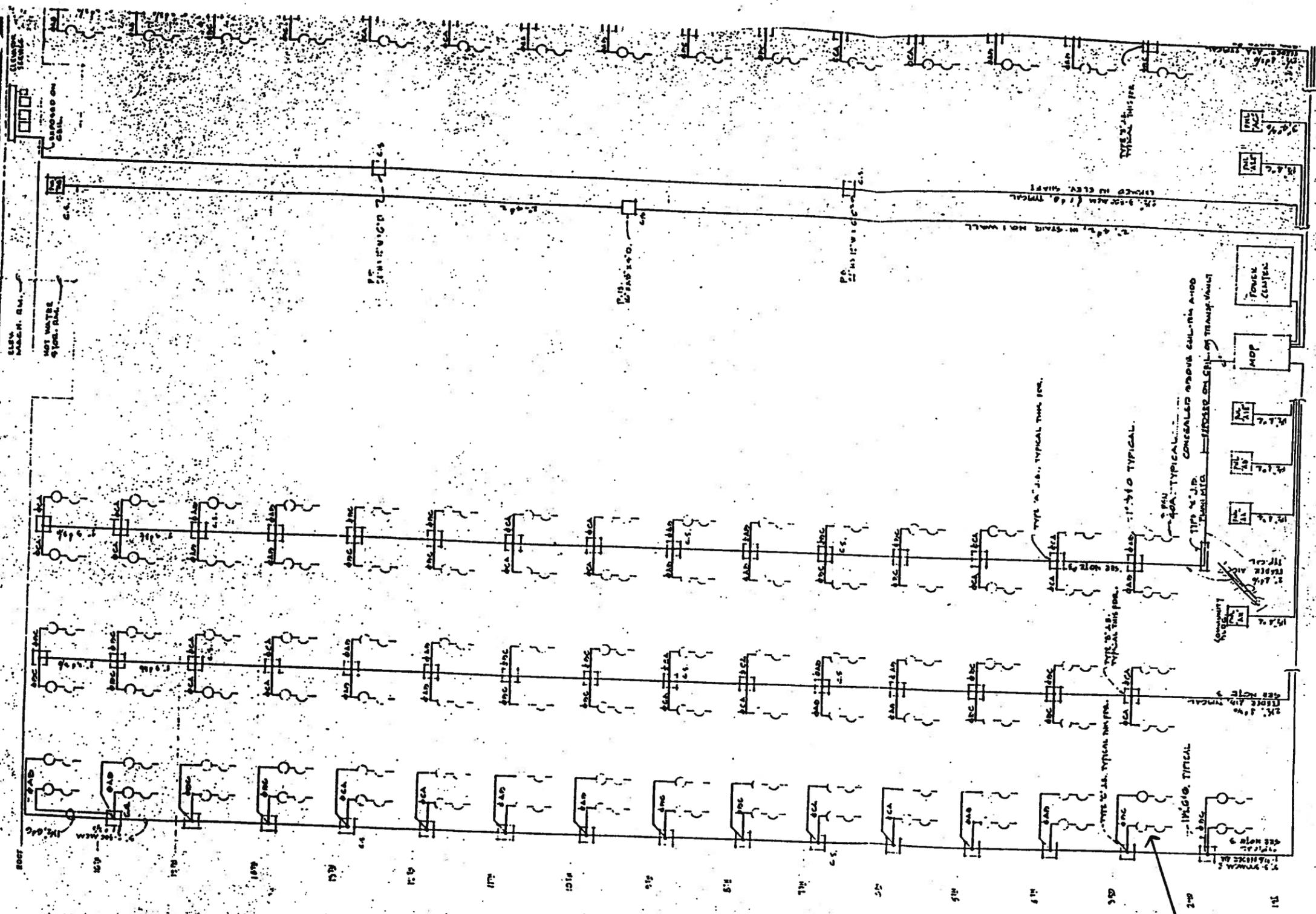
RECOMMENDATIONS: (Typical Unit Layout)

1. Replace kitchen receptacles with GFI type.
2. Replace lighting, switches, and receptacles.
3. Replace wiring.
4. Replace/Provide additional smoke detectors.



UNIT TYPE 3-D

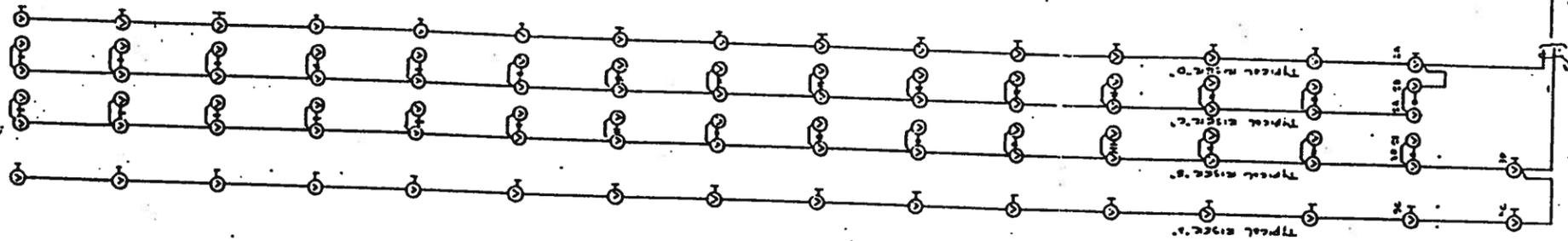
UNIT TYPE 3-C



FEEDER RISER DIAGRAM
BLDG. 'A'

WING A-1

RECOMMENDATIONS: (Service Meters)
1. Replace electrical meters, typical for three wings.



TELEVISION (COMIT)

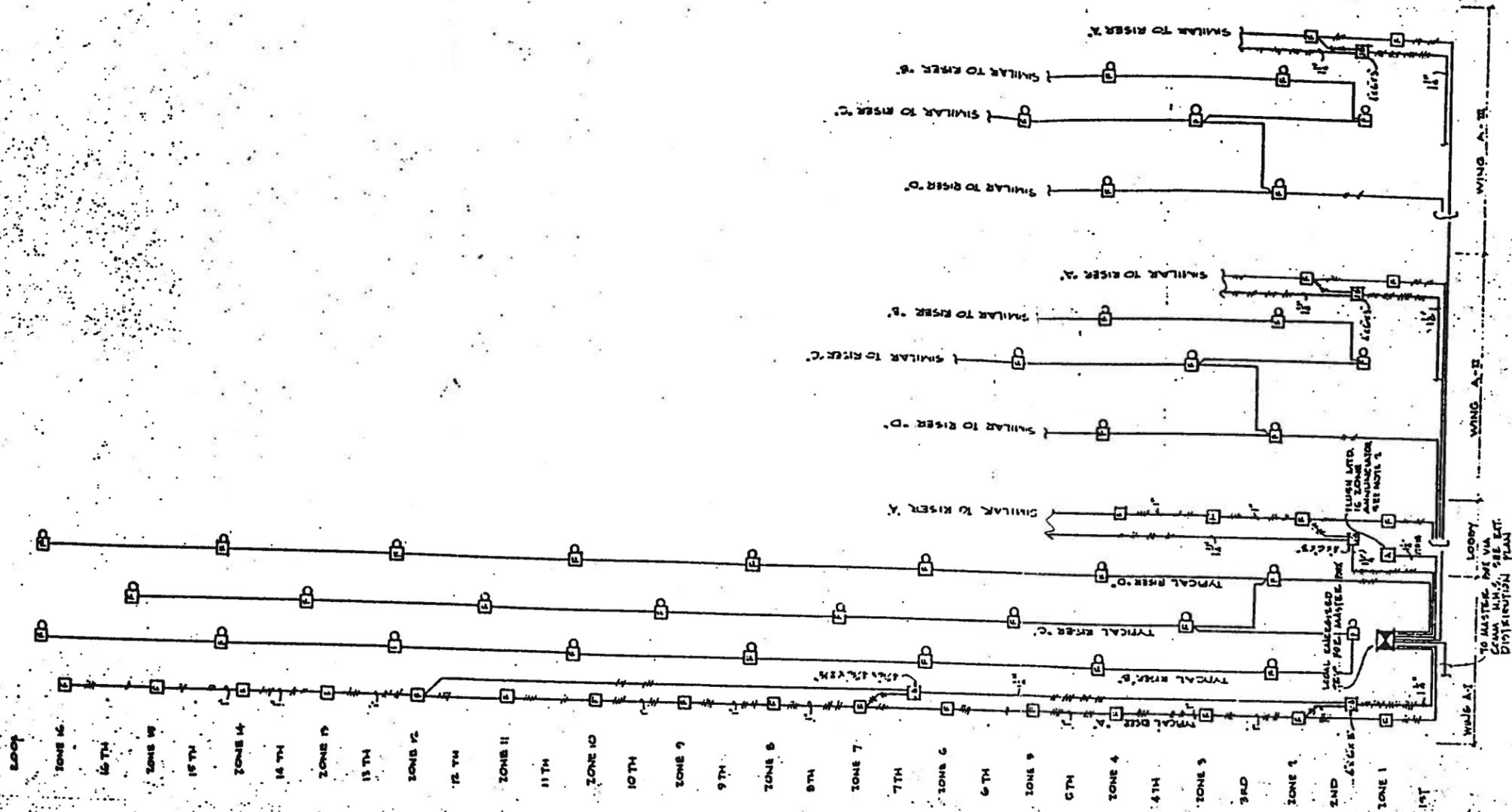
SYSTEM CONDUITS SHALL BE 2 LEVELS. SEE FOR TYPICAL CONDUIT SIZES WITH FIRE

RISER DIAGRAMS

BLDG. A

NOT TO SCALE
 DRAWING BY
 DATE
 SHEET NO. 1 OF 1

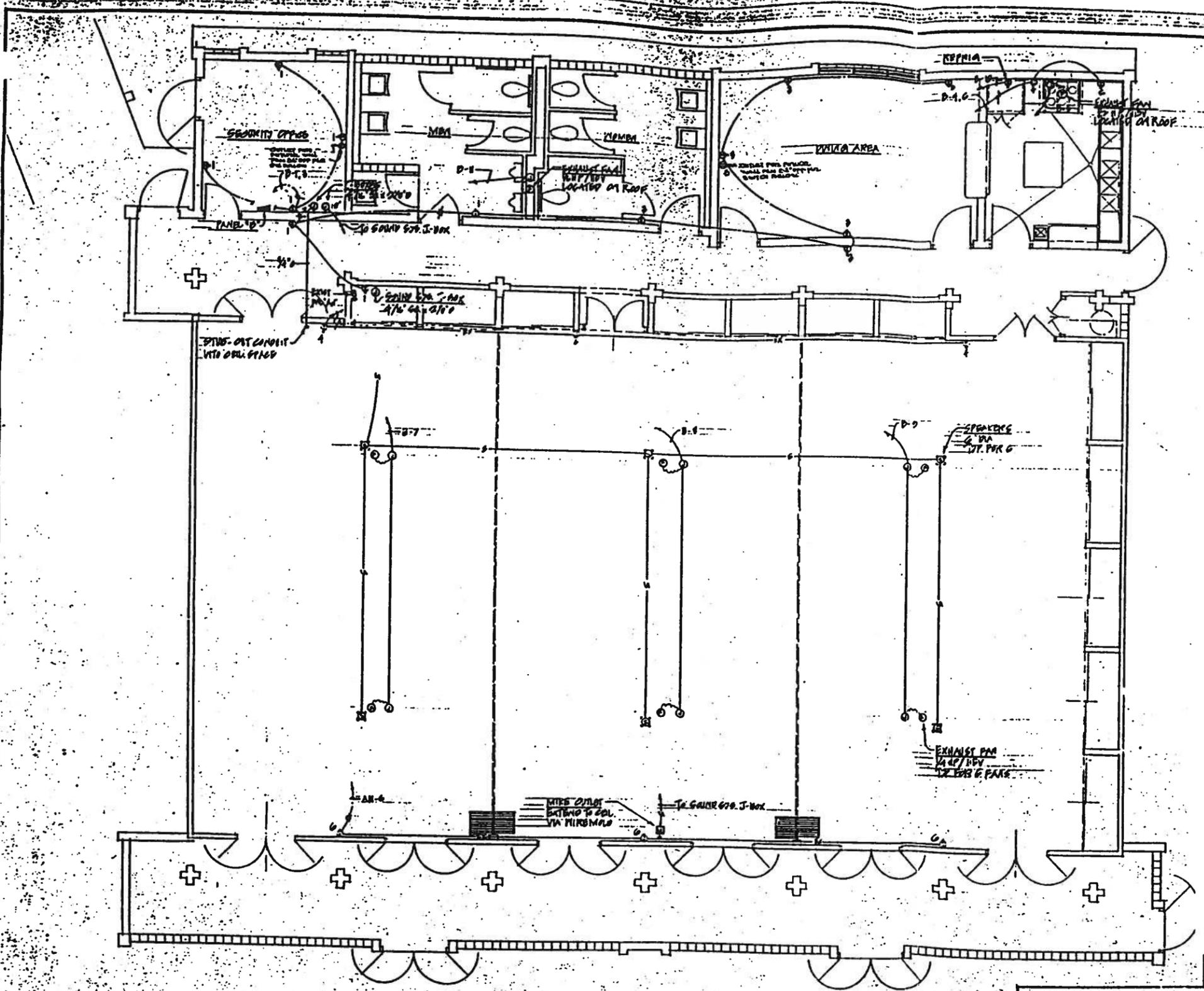
- RECOMMENDATIONS: (Television Service Feeders)**
1. Replace telephone service feeders, typical for three wings.



FIRE ALARM

NOTES: 1. ALL FIRE ALARMS, TELEVISION, TELEPHONES &
 2. MINIMUM GALLOPS - 27-30/100/100 - INDICATE
 3. SYSTEMS SHALL BE ZONED BY FLOOR
 4. CONTRACTOR SHALL VERIFY FIRE ALARMS
 5. ALARMS EQUIPMENT SUPPLIER

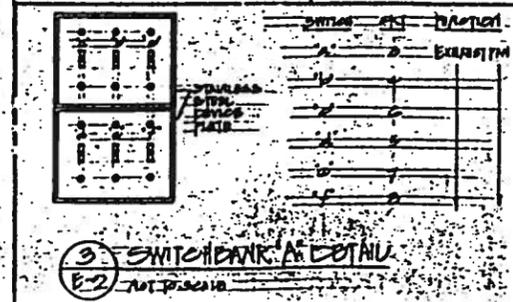
- RECOMMENDATIONS: (Fire Alarm System)**
1. Replace fire alarm notification devices and fire fighters microphone outlets, typical for three wings.
 2. Lower pull stations to 48" AFF for ADA compliance.



RECOMMENDATIONS: (Community Center Building)

1. Replace power and signal devices, and wiring.

1 ELECTRICAL FLOOR PLAN
E-2



CONT. 1

| REVISION NO. | DATE | DESCRIPTION | BY | CHKD. |
|--------------|------|-------------|----|-------|
| | | | | |

DEPARTMENT OF SOCIAL SERVICES AND HC
HAWAII HOUSING AUTHORITY
STATE OF HAWAII

**COMMUNITY CENTER REAC
KUNIO PARK TERRACE HA**

REAR PORCH DATE OF BIRTH

ELECTRICAL FLOOR PLAN
MIS. OUTLET & DEPEND

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

PART 8 - ADAAG ISSUES

8.1 GENERAL

- A. This general evaluation addresses the issue of accessibility at Kuhio Park Terrace. In determining the level of accessibility, we were asked to apply the design standards of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). References to noncompliance or inaccessibility indicate nonconformity or discrepancy in applying the ADAAG to that particular element.
- B. Areas covered in this evaluation include exterior routes, common areas and buildings, parking, and interiors of the residential units.
- C. Historical
 - 1. Kuhio Park Terrace's two multi-level towers were the subject of this evaluation. The facility was built in the early 1960's. Management indicated that there were and are disabled residents. Some adaptable features exist in the tower units, however, they do not meet the ADA design standards.

8.2 ACCESSIBILITY ISSUES

A. Exterior routes

- 1. The exterior route from the public sidewalk and bus stop is not accessible due to level changes. Complying curb ramps along the public sidewalk are not provided. Entry ramps at the towers should be reconfigured.

B. Parking

- 1. Existing accessible parking spaces are non-complying.

C. Common areas

- 1. Retail shops: There is a step at the entrances to the tenant shops on the ground level.
- 2. Elevators: The four passenger elevators in the towers are non-complying.
- 3. Laundry facility: The laundry facility is not accessible.
- 4. Public telephones: The public telephones are not accessible.
- 5. Exit doors: Accessible door hardware on exit doors is not accessible type.
- 6. Fire alarm pull stations: Pull stations are not within reach ranges.

D. Residential units

1. Entrances to the units are not accessible (knob type). The kitchen and bathrooms do not meet the ADA accessibility guidelines. The interior doors have a clear width of less than 32". The closet is not accessible.

E. Cost Issues:

1. Replacement cost for fixtures is covered in the Mechanical budget. Reconfiguration cost for structural compliance and relocation of plumbing is covered in the ADA budget.
2. Replacement cost for doors is covered in the estimates. An additional cost for "accessible doors" is included in the ADA budget.
3. ADA electrical is included in the Electrical budget.
4. Accessible routes to units and maneuvering clearance at entry doors is included in the ADA and Civil budgets.
5. All interior reconfiguration is covered in ADA budget.

8.3 SUMMARY OF RECOMMENDATIONS

A. Renovation Recommendations

1. Provide compliant sidewalks along perimeter of facility
2. Provide complying curb ramps along public sidewalks
3. Provide accessible parking spaces dispersed throughout facility
4. Reconfigure entry ramps leading to towers
5. Provide elevators with accessible features
6. Provide accessible entrances to residential units proposed to be accessible.
7. Provide accessible interior elements in residential units proposed to be accessible
8. Provide Tactile/Braille signage to designate permanent rooms and spaces
9. Provide accessible entrances to retail tenant spaces
10. Provide accessible public telephones
11. Provide accessible laundry facility

B. Replacement Recommendations

1. Provide ADA accommodations as noted in the new project design.

PART 9 - ENVIRONMENTAL

9.1 GENERAL

A. Purpose & Objective

1. The purposes of the environmental hazards section, of this feasibility study, are to determine if the hazardous materials which are contained on, or in, the facilities inspected would instrumentally effect the cost of renovation or replacement of the facilities. The scope of the study is confined to the hazardous material inspection to confirming the presence and, if present the amount, of asbestos-containing building material, lead-based paints (LBP), and polychlorinated biphenyl (PCBs) compounds present in a representative apartment for each of the projects.
2. Based on the discussions with HHA Engineering staff, other environmental concerns, such as the presence or absence of emplaced persistent pesticides for ground termite control, and off-site in-migration of subsurface contaminants from nearby leaking underground storage tanks, were not undertaken during this phase of the investigation.

B. Scope of Work & Assumptions

1. The scope of work was limited to review of existing historical documentation and previously commissioned reports performed by consultants for the Hawaii Housing Authority to determine the presence or absence of asbestos-containing building material and lead-based paint within the structures.
2. Determination of the presence of asbestos fibers in the construction material, was determined by using analytical techniques broadly defined as petrographic analysis. In this technique the optical properties of the extracted sample fibers from the construction material are compared with known optical properties of asbestiform minerals. By convention and legal definition as set forth in 29 CFR 1926.1101, asbestos containing material is defined as a homogenous material which is determined by the above mentioned analytical technique to contain at least 1 per cent asbestos material.
3. Determination of the presence of lead-containing paint is performed by laboratory analysis of paint chip samples for lead content using flame atomic absorption spectrometry. Lead containing paint is defined by the U.S. Department of Housing and Urban Development regulation, 24 CFR Parts 35, 200, 881, and 886, in which the lead content of at least 0.50 percent or greater.
4. PCB content is determined by sample analysis performed in an analytical laboratory, using gas chromatography followed by electron capture detection. In general, the U.S. EPA Toxic Substance Control Act, 40 CFR 761 Appendix A, defines PCB containing liquids as liquids which have been analyzed to contain PCB in excess of 50 parts per million.

C. Renovation vs. Replacement

1. Federal government guidance from the U.S. Environmental Protection Agency, and the U.S. Department of Labor, Occupational Safety and Health Administration, do not permit the disruption of asbestos-containing building material (ACBM) or lead-based paints (LBP) without adequate protection of the workers involved in the renovation or removal of the asbestos or lead-based paint. Adequate protection of workers would involve, the development of safe, handling and disposal plans, as well as, the formal training of workers involved in the tasks, medical and industrial hygiene monitoring to ensure that OSHA prescribed action levels for lead-containing dust are not exceeded. Workers performing removal or demolition of LBP components must use proper equipment and tools to prevent exposure to hazardous dusts produced during the renovation process. Additionally, contractors who perform the renovation must be licensed asbestos abatement contractors and lead-abatement contractors.
2. The stringent workers protection requirements result in increased renovation cost. As an example, the worksite must be monitored during renovation demolition for lead dust in excess of the permissible level. If worksite lead dust levels are higher than the permitted air concentrations, stringent (expensive) contamination control and worker protection requirements are triggered. It may be possible to avoid the cost of lead-paint abatement in the case of demolition prior to replacement.
3. Therefore, if any renovation is planned for the structures, which would include mechanical disruption of the asbestos-containing material or the lead-based paint, the control measures required in the governing regulations would go into effect. This in turn, drives up the relative cost of renovation and to a limited extent, replacement.
4. Much of the driving force behind removal of the nonfriable asbestos containing debris is a result of limited municipal landfill acceptance. While current regulations allow some types of nonfriable construction material to be left in the building during demolition, with subsequent disposal as part of the construction debris. The current municipal landfill regulations forbid the disposal of the asbestos containing building material, and require that any ACBM be segregated and suitably enclosed and labeled for disposal. As a result, ACBM must, be removed and segregated from other construction material prior to demolition and subsequent disposal.
5. Technically, LBP containing construction debris cannot be disposed of in the municipal landfill without satisfaction that the debris will not leach harmful levels of lead into the environment. In order to satisfy this requirement, the State of Hawaii, Solid Waste Branch and the City and County Municipal landfill operators require that the suspect construction debris be tested using the Toxic Characteristic Leachate Potential Test (TCLP). Acknowledging the nonhomogeneous nature of construction debris, an alternative calculation can be

used in lieu of the TCLP to allow for the disposal of LBP contaminated construction debris in the landfill.

D. Methodology

1. The asbestos inspection and sampling methodology followed the protocol set forth by the U.S. Environmental Protection Agency in 40 CFR 763.85 through 87. Following a walk-through by an accredited inspector at least three samples were taken of homogenous suspect areas of less than or equal to 1,000 square feet; at least five samples from areas between 1,000 square feet and 5,000 square feet, and at least seven samples from areas greater than 10,000 square feet (called the 3-5-7 rule). The samples are taken from a grid pattern in which the sample area is divided into equally spaced areas which are systematically numbered. The numbers are then randomly selected to which represent the grids.
2. The lead inspection and sampling methodology follow protocols set forth by the U.S. Housing and Urban Development Agency, lead sampling is performed by an accredited lead assessor in which multiple layers of suspect LBP is removed and analyzed in an AIHA-accredited laboratory, accredited in lead paint chip analysis, for lead content. The paint chips are taken from homogenous areas which are randomly selected to represent the entire area. If the paint contains 0.5% by weight or greater of elemental lead in the matrix analyzed, the paint is considered lead-based paint.
3. Due to the limited scope of the study, and the desire by the HHA, to avoid duplication of investigations performed on the facilities in prior studies, the current investigation was limited to a confirmation interior survey of one apartment in each of the housing projects. The apartment was randomly selected from the limited number of unoccupied apartments at the time of the survey. The survey was limited to lead-based paint since the ACBM information available was adequate for the current phase of the feasibility study. Since some of the information on which this report is based can be as much as three years old, minor changes in the data may have occurred in the interim.

E. Historical & Existing Conditions

1. The Kuhio Park Terrace was a part of 1950-1960 federally funded low-income housing projects developed in the then Territory of Hawaii (after 1959 the State of Hawaii).
2. The housing project is operated and maintained by the Hawaii Housing Authority (HHA), an agency of the State of Hawaii. Current occupants are long-term residential occupants who qualify for federal and State of Hawaii housing assistance criteria.

F. Regulatory Guidance References

1. U.S. Environmental Protection Agency regulation 40 CFR 761 Toxic Substances Control Act (TSCA) Appendix A
2. U.S. Department of Labor Final Environmental Impact Statement, Inorganic Lead, Office of Environmental and Economic Impact
3. U.S. Environmental Protection Agency, Air Quality Criteria for Lead, Office of Research and Development, EPA-600/8-77-017 Washington, D.C.
4. U.S. Environmental Protection Agency, Control Techniques for Lead Air Emissions EPA-450/2-77-012
5. U.S. Department of Housing and Urban Development 24 CFR 35, Lead-based Paint Poisoning Prevention in Federal and Federally-Assisted Construction.
6. U.S. Department of Labor Occupational Safety and Health Administration, Title 29, Code of Federal Regulations, Part 1910, Section 1101 and Part 1926, Section 1101
7. U.S. Department of Labor Occupational Safety and Health Administration, Title 29, Code of Federal Regulations, Part 1910, Section 134
8. U.S. Environmental Protection Agency, 40 CFR Part 763 Subpart E Asbestos Hazard Emergency Response Act
9. U.S. Environmental Protection Agency, 40 CFR, Part 763, Subpart G
10. U.S. Environmental Protection Agency, 40 CFR Part 61 subpart M, National Emission Standards for Hazardous Air Pollutants- Asbestos Regulations
11. EPA guidance document EPA 560/5-85-024
12. EPA guidance document EPA 205-2003
13. EPA guidance document EPA 530-SW-85-007
14. U.S. Department of Transportation, 49 CFR, Parts 171 and 172 Hazardous Substances Final Rule
15. State of Hawaii Revised Statutes, Title 12, DLIR, Subtitle 8, Hawaii Occupational Safety and Health Branch, Asbestos-worker and Lead-worker exposure regulations
16. State of Hawaii Revised Statutes, Title 19, Chapter 342 Section 21-24 DOH - Air pollution

17. State of Hawaii Revised Statutes, Title 19 Act 219, DOH, Asbestos Statutory Authority
18. State of Hawaii, Department of Health Guidelines, Use of Municipal Landfills
19. State of Hawaii Revised Statutes, Department of Health, Title 11, chapter 58, solid Waste Management Control 1158-3

9.2 OVERVIEW

- A. As discussed in earlier sections, the documentation of ACBM and LBP removal and replacement performed on the subject buildings is limited by the lack of uniform building maintenance management. The overall lack of standardized accessible building maintenance records and the use of cost-shifting programs such as self-help and relaxed residential building management regulations has resulted in the sporadic field sampling and analytical findings.
- B. As an example, some of the housing project inspected have ongoing unit improvement programs in effect. When the residents leave an apartment, the maintenance staff undertakes a renovation of the apartment interior, which usually includes repainting, removal of cabinets, and removal and replacement of damaged or aged flooring material. Some of the residents have resided in the projects for twenty years or more, and the turn over of resident families are best measured in decades. Therefore, the presence or absence of ACBM or LBP is determined by the chance occurrence of when the apartment was last vacant, and, if the building maintenance management used an ACBM, or lead-containing paint mixture at the time of vacancy.
- C. Major Items Requiring Action
 1. The overall building maintenance management structure must be improved. As an example, an inventory of the ACBM present in all of the HHA-owned property was performed in 1992-1993 at considerable cost. However, because ongoing building maintenance is not coordinated, the inventory is now outdated since it does not account for ACBM which may have been removed since 1993. Recommend the development and institutionalization of a work scheduling maintenance program with updated records including plans of work performed (as built) and maintenance program quality assurance checks.
 2. Current plans within the files often do not reflect the present status of the buildings. Recommend that the building drawings be systematically reviewed so that they reflect the current field conditions.

D. Analysis and Recommendations

1. The Hawaii Housing Authority has instituted programs through their Hazardous Material Coordinator, Ms. Christine Kinimaka, to monitor and control ACM and LBP hazards in the housing projects. We recommend that planned action be coordinated with her office.
2. A review by the HHA administration of the asbestos maintenance and repair plans is recommended. Worker training and work-site procedural control to prevent workers inadvertent exposure to unmonitored levels of asbestos fibers need to be addressed. A top-down building maintenance management program with major program elements such as life-cycle scheduling, material and workmanship Quality Control/ Quality Assurance and plan design, and records maintenance needs to be implemented.
3. Almost all of the ACM found can be classified as non-friable ACM. Renovation will, in most cases, involve the removal of the existing flooring material. However, if properly coordinated and if the substrate is not damaged, alternative abatement techniques (to removal abatement), such as enclosure of the flooring ACM may be possible using appropriate technology. When performing a cost comparison of these abatement techniques the eventual cost of removal of the ACM and the future disposal cost must be factored into the analysis.
4. Currently, when residents leave the structures, extensive renovation, including the removal of flooring, is performed by the HHA staff. This process decreases the ACM inventory on an ongoing basis. A review of the HHA maintenance staffs work practices and procedures is highly recommended. Anecdotal observation during the inspection process has revealed that violations of OSHA regulation regarding worksite exposure to asbestos and LCP may be occurring.
5. In general, the LBP found in the interiors was mostly located on doors and window frames. All of the doors and framed windows should be considered LBP contaminated, and treated accordingly. It may be possible to remove the doors and windows intact, thus eliminating the hazard of lead dust to workers.
6. Some of the structures have lead-based paint on interior walls and ceiling, however, the results are sporadic. If renovation is undertaken, in which painted interior surfaces are either demolished or disturbed, the painted surfaces should be individually tested prior to disturbance. Recent studies performed by NIOSH for HUD has indicated that higher blood lead levels can be associated with residents of structures in which the LBP has been abated. We strongly recommend that should renovation be performed in which the interior painted surfaces of residences are disturbed, that the current EPA/ HUD re-occupancy testing guidelines be implemented.

**HHA FEASIBILITY STUDY - KUHIO PARK TERRACE
FACILITY AND BUILDING SYSTEMS EVALUATION**

7. If replacement demolition is undertaken, it is highly unlikely that the resultant construction debris would exceed the lead TCLP landfill disposal criteria of 5 mg/Liter. ACBM will have to be removed prior to replacement demolition due to non-acceptance of ACBM contaminated construction debris by the landfill operators.
8. Previously performed surveys have failed to reveal lead contaminated soil in excess of current HUD guidelines. However, we recommend that soil samples testing for lead should be performed on all residences in which lead abatement is performed, following abatement and prior to re-occupancy.
9. Recommend further investigation of possible subsurface in-migration of contaminants from underground storage tanks located adjacent to the Kalihi Valley housing project.
10. Recommend further investigation of subsurface utility man-ways for ACBM.

9.3 EVALUATION

A. Historical

1. Kuhio Park Terrace (KPT) is adjacent the Kuhio Homes project which is not part of this study.
2. KPT is situated in on a large HHA owned property located in lower Kalihi Valley. Preconstruction demolition plans reveal residential and agricultural uses prior to the existing construction in 1959. Review of planning and use documentation does not reveal prior uses which would have resulted in residual environmental contamination.

B. Existing Conditions

1. The project consist of two 16-story high rise residential structures (Buildings A and B) and two associated community support buildings and parking complex. The buildings exteriors appear to be reasonable well maintained however the mechanical systems (elevator, trash collection) appear to be in need of servicing. The parking lot shows signs of deterioration.

9.4 SITE OBSERVATIONS AND FINDINGS

A. Asbestos

1. Asbestos floor tiles were originally used in almost all of the residential units. However, in the interim most of the units have had the flooring changed at least once. In some cases, the old tile flooring was removed and replaced with modern flooring material. In other cases, the original flooring tile was left in place and covered with the new flooring material.

2. The type of asbestos containing building material found is exclusively defined as the nonfriable asbestos containing construction material, i.e., flooring tile, floor tile mastic, and soundproofing undercoating found on the sheet metal kitchen sinks. Additionally, cementitious asbestos material was found in the paneling of the boiler-room.
3. Friable asbestos was found in the boiler rooms and exhaust pipe chases, contracting records indicate that this may have been removed, however, due to the limited scope of work, we could not confirm whether all of the insulation had been removed.

B. Lead-Based Paint

1. Lead-based paint was not found to have been used on almost all of the original wood doors and metal window frames used as entrance doors, and interior doors. The non-standardized treatment of the frames has resulted in a sporadic finding in lead-containing paint, found on window frames and doors.
2. In addition, interior walls show sporadic LBP content. As a result, during renovation, walls may have to be tested on a case-by-case basis prior to disturbance and the painted surface.

C. PCB

1. Records of electrical service contracts made available to us, stated those services as provided by the Hawaiian Electric Company indicate the all electrical equipment provided on the site has been tested and if it contained PCB the equipment had been removed, or has been found not to contain PCB.

D. Others Environmental Issues

1. Neighboring property uses include an automobile fuel station which had contained underground storage tanks. The gas station had been closed. However, sub-surface contamination is suspected to have occurred. We recommend further investigation in this area.

9.5 RECOMMENDATIONS

A. Renovation Recommendations

1. Due to sporadic lead testing results we recommend that case-by case testing be performed prior to any disturbance of painted surfaces if renovation is undertaken.
2. Prior to demolition, the nonfriable ACBM must be removed by a licensed abatement contractor. This requirement is mandated by the refusal to accept ACBM-contaminated construction debris by the landfill operator.

3. Prior to demolition, the friable ACM must be removed by a licensed abatement contractor.
- B. Alternative Ameliorative Action
1. If renovation is undertaken, a possible cost-effective alternative to ACM removal would be enclosure by a suitable surfacing substrate. However, because the existing flooring material is in various stages of disrepair, the determination to use this alternative abatement technique would have to be determined on a case-by-case basis.
- C. Prioritized cost Estimate for Encapsulation
1. The asbestos containing material is already suitably encapsulated within the material matrix, i.e., floor tiles.
- D. Prioritized cost Estimate for Enclosure
1. The asbestos containing construction material can be easily enclosed using commercially available thin set flooring compounds which would also serve as leveling surfaces for new flooring. However, this application is not recommended since the existing flooring may not be a suitable substrate for this treatment. Additionally, the ACM will still be left in place, and the removal/disposal cost will probably be greater in the future.
- E. Prioritized cost Estimate for Maintenance program
1. A maintenance/flooring removal program is in place. We strongly recommend administrative review of the program to ensure compliance with existing State of Hawaii and US Federal OSHA requirements.
- F. Recommended Course of Action and Summary
1. As discussed in the introduction, renovation costs and replacement cost in the area of asbestos abatement, if removal technology is employed, will be the same. Renovation cost for ACM may be slightly lower than replacement cost if alternative abatement technology is employed, however, use of such technology will mean that final removal cost in the future may be higher.
 2. LBP removal is not recommended if demolition is planned. LBP removal may be necessary if renovation involves disturbance of LBP surfaces.

HHA FEASIBILITY STUDY

KUHIO PARK TERRACE

PREPARED FOR:
PREPARED BY:
DATE:

Group 70 International, Inc
Rider Hunt Ltd
26 March 1997

RENOVATION COST ESTIMATE

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|--|----------------|-------------|---------------------|
| A SITE WORK | | | 516,470 |
| B TOWER A | | | |
| B1 ARCHITECTURAL - GROUND FLOOR | 21,870 | 16 | 354,782 |
| B2 ARCHITECTURAL - 2ND - 16TH FL | 270,510 | 21 | 5,596,995 |
| B3 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 9 | 13,042 |
| B4 MECHANICAL | | | 3,654,395 |
| B5 ELECTRICAL | | | 2,710,004 |
| | 293,914 | \$42 | \$12,329,218 |
| C TOWER B | | | |
| C1 ARCHITECTURAL - GROUND FLOOR | 21,820 | 22 | 478,251 |
| C2 ARCHITECTURAL - 2ND - 16TH FL | 277,215 | 21 | 5,913,645 |
| C3 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 116 | 177,803 |
| C4 MECHANICAL | | | 3,614,000 |
| C5 ELECTRICAL | | | 2,845,800 |
| | 300,569 | \$43 | \$13,029,499 |
| D COMMUNITY BUILDING | 5,453 | 45 | 244,724 |
| E STRUCTURAL REPAIR WORK | | | 71,282 |
| F CODE COMPLIANCE - ELECTRICAL | | | 2,072 |
| G ADA COMPLIANCE | | | |
| G1 COMMON ELEMENTS | | | 286,000 |
| G2 TOWER A - 2 BEDROOM | | | 124,000 |
| G3 TOWER A - 3 BEDROOM | | | 81,625 |
| G4 TOWER B - 1 BEDROOM | | | 19,600 |
| G5 TOWER B - 2 BEDROOM | | | 108,500 |
| G6 TOWER B - 3 BEDROOM | | | 114,275 |
| G7 MECHANICAL | | | 87,000 |
| G8 ELECTRICAL | | | 183,130 |
| | | | \$1,004,130 |
| H HAZARDOUS MATERIALS REMEDIATION | | | |
| H1 ASBESTOS ABATEMENT | | | 1,073,500 |
| H2 LEAD BASED PAINT REMOVAL | | | 51,900 |
| | | | \$1,125,400 |
| I PHASING AND RELOCATION COST | | | 930,000 |
| Net Cost carried forward | 599,936 | \$49 | \$29,252,795 |

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|---------------------------------|----------------|-------------|---------------------|
| Net Cost brought forward | 599,936 | \$49 | \$29,252,795 |
| Margin & Adjustments | | | |
| GENERAL CONDITIONS | 8.0% | | 2,340,224 |
| CONTRACTORS MARGIN | 5.0% | | 1,579,651 |
| GENERAL EXCISE TAX | 1.8% | | 597,330 |
| Grand Totals | 599,936 | \$56 | \$33,770,000 |

ITEM DETAILS

A SITE WORK

| Item | Description | Unit | Qty | Rate | \$ |
|------------|--|------|------|----------|---------|
| XP | SITE PREPARATION | | | | |
| 1 | Remove tree | No | 2 | 800.00 | 1,600 |
| | Element XP total | | | | 1,600 |
| XR | ROADS, FOOTPATHS AND PAVED AREAS | | | | |
| 1 | Repave 1/2 acre pavement | SY | 2420 | 28.22 | 68,292 |
| 2 | Replace sidewalk | SY | 300 | 39.30 | 11,790 |
| | Element XR total | | | | 80,082 |
| XD | EXTERNAL SEWER DRAINAGE | | | | |
| 1 | 10" Trunk Line | LF | 1450 | 33.55 | 48,648 |
| 2 | 10" Pipe (at bursting pipe) | Item | | | 75,000 |
| 3 | 8" Lateral | LF | 700 | 27.74 | 19,418 |
| 4 | Manholes | No | 13 | 2797.30 | 36,365 |
| 5 | Cleanout | No | 10 | 137.50 | 1,375 |
| | Element XD total | | | | 180,806 |
| XW | EXTERNAL WATER SUPPLY | | | | |
| 1 | 8" Main | LF | 1500 | 30.00 | 45,000 |
| 2 | 6" Laterals | LF | 120 | 28.00 | 3,360 |
| 3 | 4" Pipe | LF | 250 | 22.00 | 5,500 |
| 4 | 8" Gate valve w/box | No | 5 | 1370.00 | 6,850 |
| 5 | 6" Gate valve w/box | No | 2 | 975.00 | 1,950 |
| 6 | 4" Gate valve w/box | No | 2 | 650.00 | 1,300 |
| 7 | Water meter, 4" compound | No | 1 | 12000.00 | 12,000 |
| 8 | Water meter, double 6" multiple compound | No | 2 | 55000.00 | 110,000 |
| 9 | Thrust blocks | No | 25 | 66.00 | 1,650 |
| | Element XW total | | | | 187,610 |
| XG | EXTERNAL GAS | | | | |
| 1 | 4" Line (in road) | LF | 1500 | 20.00 | 30,000 |
| 2 | 2"-3" Line w/plastic pip | LF | 500 | 5.00 | 2,500 |
| 3 | 2" Line | LF | 970 | 17.60 | 17,072 |
| | Element XG total | | | | 49,572 |
| Page Total | | | | | 499,670 |

ITEM DETAILS

A SITE WORK

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-----------------------------------|------|-----|---------|----------------|
| XF | EXTERNAL FIRE PROTECTION | | | | |
| | 1 Fire hydrant | No | 4 | 3000.00 | 12,000 |
| | Element XF total | | | | 12,000 |
| XE | EXTERNAL ELECTRIC LIGHT AND POWER | | | | |
| | 1 Additional security lighting | No | 12 | 400.00 | 4,800 |
| | Element XE total | | | | 4,800 |
| Total | | | | | 516,470 |

HEA FEASIBILITY STUDY - KUHIO PARK TERRACE - RENOVATION (REVISED)

Page ID/3

ITEM DETAILS

B TOWER A

GFA

21870 SF

B1 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$16

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|--|------|-------|---------|----------------|
| EW | EXTERNAL WALLS | | | | |
| | 1 Refurbish paver tile to walls | SF | 497 | 2.50 | 1,243 |
| | Element EW total | | | | 1,243 |
| WW | WINDOWS | | | | |
| | 1 Remove and replace windows, glass | SF | 1101 | 35.00 | 38,535 |
| | 2 Remove/replace windows, alum jalousie | SF | 217 | 28.00 | 6,076 |
| | Element WW total | | | | 44,611 |
| ED | EXTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 20 | 900.00 | 18,000 |
| | 2 Rem/repl pair of doors, frame and hdwr | Pr | 5 | 1605.00 | 8,025 |
| | 3 Rem/replace cement plaster panel | SF | 56 | 4.00 | 224 |
| | 4 Remove/replace single steel gate | No | 7 | 500.00 | 3,500 |
| | 5 Remove/replace pair of steel gates | Pr | 1 | 885.00 | 885 |
| | 6 Rem/replace sliding glass door, 9'9"x8' | No | 4 | 1300.00 | 5,200 |
| | 7 Remove/replace overhead coiling door | SF | 608 | 38.00 | 23,104 |
| | Element ED total | | | | 58,938 |
| ND | INTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 25 | 600.00 | 15,000 |
| | 2 Rem/repl pair of doors, frame and hdwr | Pr | 1 | 1065.00 | 1,065 |
| | Element ND total | | | | 16,065 |
| WF | WALL FINISHES | | | | |
| | 1 Prep/paint walls | SF | 38333 | 1.10 | 42,166 |
| | 2 Remove/replace tile shower surround | SF | 280 | 8.50 | 2,380 |
| | 3 Rem/repl tile wainscot to public restrm | SF | 1071 | 8.50 | 9,104 |
| | Element WF total | | | | 53,650 |
| FF | FLOOR FINISHES | | | | |
| | 1 Refurbish paver tile to lobby/entry | SF | 5141 | 2.50 | 12,853 |
| | 2 Asphaltic floor tile | SF | 3180 | 2.30 | 7,314 |
| | 3 Rem/repl tile to shower/public restroom | SF | 584 | 8.50 | 4,964 |
| | 4 VCT flooring to office spaces | SF | 2007 | 3.50 | 7,025 |
| Page Total | | | | | 206,663 |

SC3662-12

Printed 26 MAR 1997



ITEM DETAILS

B TOWER A

B1 ARCHITECTURAL - GROUND FLOOR

GFA
Cost/SF

21870 SF
\$16

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|---|------|-------|---------|----------------|
| 5 | Refinish concrete slab | SF | 10958 | 1.20 | 13,150 |
| | Element FF total | | | | 45,306 |
| CF | CEILING FINISHES | | | | |
| 1 | Prep/paint plaster soffit | SF | 2856 | 1.10 | 3,142 |
| 2 | Prep/paint concrete soffit and ceiling | SF | 13171 | 1.10 | 14,488 |
| | Element CF total | | | | 17,630 |
| FT | FITMENTS | | | | |
| 1 | Prep/paint wood bench, 16' long | No | 4 | 60.00 | 240 |
| 2 | Rem/replace base cabinet to kitchen | LF | 46 | 145.00 | 6,670 |
| 3 | Rem/replace wall cabinet to kitchen | LF | 40 | 125.00 | 5,000 |
| 4 | Rem/replace wardrobe shelf and rod | No | 12 | 80.00 | 960 |
| 5 | Rem/replace closet curtain rod | No | 20 | 35.00 | 700 |
| 6 | Rem/replace bulk storage shelving | LF | 156 | 40.00 | 6,240 |
| 7 | Rem/replace linen closet shelving | LF | 52 | 42.00 | 2,184 |
| 8 | Rem/replace toilet partition | No | 5 | 1000.00 | 5,000 |
| 9 | Rem/replace toilet roll holder (public) | No | 5 | 65.00 | 325 |
| 10 | Rem/replace toilet roll holder | No | 4 | 40.00 | 160 |
| 11 | Rem/replace paper towel dispenser | No | 6 | 110.00 | 660 |
| 12 | Rem/replace mirror (public) | No | 6 | 90.00 | 540 |
| 13 | Rem/replace mirrored medicine cabinet | No | 4 | 150.00 | 600 |
| 14 | Rem/replace shower curtain rod | No | 4 | 50.00 | 200 |
| 15 | Rem/replace towel bar | No | 4 | 40.00 | 160 |
| 16 | Allowance for sundry fitments | Item | | | 12,000 |
| | Element FT total | | | | 41,639 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Remove/replace washer (laundry room) | No | 29 | 1300.00 | 37,700 |
| 2 | Remove/replace dryer (laundry room) | No | 11 | 2800.00 | 30,800 |
| 3 | Remove/replace stove | No | 4 | 900.00 | 3,600 |
| 4 | Remove/replace refrigerator | No | 4 | 900.00 | 3,600 |
| | Element SE total | | | | 75,700 |
| Total | | | | | 354,782 |

ITEM DETAILS

B TOWER A

GFA

18034 SF

B3 ARCHITECTURAL - 2ND - 16TH FL

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|------------|--|------|-------|---------|---------|
| WW | WINDOWS | | | | |
| 1 | Remove and replace windows, glass | SF | 1170 | 35.00 | 40,950 |
| | Element WW total | | | | 40,950 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 20 | 900.00 | 18,000 |
| 2 | Rem/replace cement plaster panel | SF | 162 | 4.00 | 648 |
| 3 | Rem/replace sliding glass door, 9'9"x8' | No | 18 | 1300.00 | 23,400 |
| | Element ED total | | | | 42,048 |
| ND | INTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 78 | 600.00 | 46,800 |
| 2 | Prep/paint cased opening w/removable pnl | No | 6 | 130.00 | 780 |
| | Element ND total | | | | 47,580 |
| WF | WALL FINISHES | | | | |
| 1 | Prep/paint walls | SF | 49166 | 1.10 | 54,083 |
| 2 | Remove/replace tile shower surround | SF | 1260 | 8.50 | 10,710 |
| | Element WF total | | | | 64,793 |
| FF | FLOOR FINISHES | | | | |
| 1 | Asphaltic floor tile | SF | 12806 | 2.30 | 29,454 |
| 2 | Rem/repl. tile to shower | SF | 189 | 8.50 | 1,607 |
| 3 | Refinish concrete slab | SF | 5039 | 1.20 | 6,047 |
| | Element FF total | | | | 37,108 |
| CF | CEILING FINISHES | | | | |
| 1 | Prep/paint concrete soffit and ceiling | SF | 18034 | 1.10 | 19,837 |
| | Element CF total | | | | 19,837 |
| FT | FITMENTS | | | | |
| 1 | Rem/replace base cabinet to kitchen | LF | 177 | 145.00 | 25,665 |
| 2 | Rem/replace wall cabinet to kitchen | LF | 162 | 125.00 | 20,250 |
| 3 | Rem/replace wardrobe shelf and rod | No | 42 | 80.00 | 3,360 |
| 4 | Rem/replace closet curtain rod | No | 78 | 35.00 | 2,730 |
| 5 | Rem/replace bulk storage shelving | LF | 481 | 40.00 | 19,240 |
| Page Total | | | | | 323,561 |

ITEM DETAILS

B TOWER A

GFA

18034 SF

B2 ARCHITECTURAL - 2ND - 16TH FL

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|---------------------------------------|------|-----|--------|----------------|
| 6 | Rem/replace linen closet shelving | LF | 246 | 42.00 | 10,332 |
| 7 | Rem/replace toilet roll holder | No | 18 | 40.00 | 720 |
| 8 | Rem/replace mirrored medicine cabinet | No | 18 | 150.00 | 2,700 |
| 9 | Rem/replace shower curtain rod | No | 18 | 50.00 | 900 |
| 10 | Rem/replace towel bar | No | 18 | 40.00 | 720 |
| 11 | Allowance for sundry fitments | Item | | | 1,800 |
| | Element FT total | | | | 88,417 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Remove/replace stove | No | 18 | 900.00 | 16,200 |
| 2 | Remove/replace refrigerator | No | 18 | 900.00 | 16,200 |
| | Element SE total | | | | 32,400 |
| Total | | | | | 373,133 |

ITEM DETAILS

B TOWER A

GFA

1534 SF

B3 ARCHITECTURAL - FINISHES & ROOF

Cost/SF

\$9

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|------|---------|---------------|
| WW | WINDOWS | | | | |
| | 1 Rem/replace fixed metal louvers | SF | 6 | 12.00 | 72 |
| | Element WW total | | | | 72 |
| ED | EXTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 3 | 900.00 | 2,700 |
| | 2 Rem/repl pair of doors, frame and hdwr | Pr | 1 | 1605.00 | 1,605 |
| | Element ED total | | | | 4,305 |
| ND | INTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 2 | 600.00 | 1,200 |
| | Element ND total | | | | 1,200 |
| WF | WALL FINISHES | | | | |
| | 1 Paint to walls | SF | 3579 | 1.10 | 3,937 |
| | Element WF total | | | | 3,937 |
| FF | FLOOR FINISHES | | | | |
| | 1 Refinish concrete slab | SF | 1534 | 1.20 | 1,841 |
| | Element FF total | | | | 1,841 |
| CF | CEILING FINISHES | | | | |
| | 1 Prep/paint concrete soffit and ceiling | SF | 1534 | 1.10 | 1,687 |
| | Element CF total | | | | 1,687 |
| Total | | | | | 13,042 |

ITEM DETAILS

B TOWER A
B4 MECHANICAL

| Item | Description | Unit | Qty | Rate | \$ |
|-----------------------------|---------------------------------|------|-------|---------|-----------|
| PD SANITARY PLUMBING | | | | | |
| 1 | Remove plumbing fixtures | No | 1170 | 120.00 | 140,400 |
| 2 | Remove waste piping | LF | 6300 | 4.25 | 26,775 |
| 3 | Remove vent piping | LF | 5670 | 4.00 | 22,680 |
| 4 | Water closet | No | 288 | 1162.50 | 334,800 |
| 5 | Lavatory | No | 288 | 1157.50 | 333,360 |
| 6 | Shower | No | 288 | 1245.00 | 358,560 |
| 7 | Kitchen faucet | No | 288 | 920.00 | 264,960 |
| 8 | Hose bibb | No | 18 | 425.00 | 7,650 |
| 9 | Waste piping | LF | 6300 | 34.00 | 214,200 |
| 10 | Vent piping | LF | 5670 | 32.00 | 181,440 |
| 11 | Relocate cleanout | No | 18 | 650.00 | 11,700 |
| 12 | Laundry area plumbing | No | 25 | 2600.00 | 65,000 |
| Element PD total | | | | | 1,961,525 |
| WS WATER SUPPLY | | | | | |
| 1 | Remove water piping | LF | 14256 | 5.00 | 71,280 |
| 2 | Water piping | LF | 14256 | 35.00 | 498,960 |
| 3 | Repair solar system | No | 40 | 2000.00 | 80,000 |
| 4 | Solar insulation | LF | 700 | 7.00 | 4,900 |
| Element WS total | | | | | 655,140 |
| GS GAS SERVICE | | | | | |
| 1 | Gas piping | LF | 2160 | 32.00 | 69,120 |
| Element GS total | | | | | 69,120 |
| SH SPACE HEATING | | | | | |
| 1 | Heating system | Item | | | 100,000 |
| Element SH total | | | | | 100,000 |
| VE VENTILATION | | | | | |
| 1 | Kitchen exhaust hood | No | 288 | 320.00 | 92,160 |
| 2 | Ground floor bathroom vent | Item | | | 6,500 |
| 3 | Vent system for Carpenters Shop | Item | | | 1,500 |
| 4 | Generator exhaust | Item | | | 36,000 |
| 5 | Vent system for Paint Shop | Item | | | 1,500 |
| Element VE total | | | | | 137,660 |
| Page Total | | | | | 2,923,445 |

ITEM DETAILS

B TOWER A
 B4 MECHANICAL

| Item Description | Unit | Qty | Rate | \$ |
|--|------|--------|------|------------------|
| FP FIRE PROTECTION 1 Fire sprinkler | SF | 292380 | 2.50 | 730,950 |
| Element FP total | | | | 730,950 |
| Total | | | | 3,654,395 |



ITEM DETAILS

B TOWER A
 B5 ELECTRICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-------------------------------|------|-------|--------|----------------|
| LP | ELECTRIC LIGHT AND POWER | | | | |
| 1 | Lighting | SF | 17290 | 3.24 | 56,020 |
| 2 | Power and signal devices | SF | 17290 | 2.91 | 50,314 |
| 3 | Smoke detector | No | 78 | 196.00 | 15,288 |
| 4 | Electrical service equipment | Item | | | 12,970 |
| 5 | GFI receptacles | No | 54 | 148.00 | 7,992 |
| 6 | Unit telephone & CATV feeders | LF | 6000 | 1.12 | 6,720 |
| 7 | Conduit and wiring | SF | 4161 | 1.13 | 4,702 |
| 8 | Fire alarm pull station | No | 3 | 136.00 | 408 |
| 9 | Fire alarm horn/strobe | No | 6 | 196.00 | 1,176 |
| 10 | Fire alarm modular jack | No | 3 | 124.00 | 372 |
| 11 | Fire alarm system | Item | | | 3,450 |
| | Element LP total | | | | 159,412 |
| Total | | | | | 159,412 |

ITEM DETAILS

C TOWER B
 C1 ARCHITECTURAL - GROUND FLOOR
 GFA 21820 SF
 Cost/SF \$23

| Item | Description | Unit | Qty | Rate | \$ |
|-----------|--|------|-------|---------|---------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Prep/paint concrete/CMU walls | SF | 15271 | 1.10 | 16,798 |
| 2 | Prep/paint precast concrete grille | SF | 95 | 1.25 | 119 |
| | Element EW total | | | | 16,917 |
| RF | ROOF | | | | |
| 1 | Remove/replace rigid insulation, 1" thk | SF | 3472 | 2.00 | 6,944 |
| 2 | Remove/replace b/u roofing system | SF | 3472 | 4.50 | 15,624 |
| 3 | Rem/replace aluminum fascia, 1'6" high | LF | 266 | 9.00 | 2,394 |
| 4 | Remove and replace sheet metal flashing | LF | 96 | 11.00 | 1,056 |
| 5 | Allowance for earthquake joint | Item | | | 3,800 |
| | Element RF total | | | | 29,818 |
| WW | WINDOWS | | | | |
| 1 | Remove and replace windows, glass | SF | 1563 | 35.00 | 54,705 |
| 2 | Remove/replace windows, alum jalousie | SF | 81 | 28.00 | 2,268 |
| 3 | Remove/replace fixed metal louvers | SF | 17 | 12.00 | 204 |
| | Element WW total | | | | 57,177 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 23 | 900.00 | 20,700 |
| 2 | Rem/repl pair of doors, frame and hdwr | Pr | 5 | 1605.00 | 8,025 |
| 3 | Rem/replace cement plaster panel | SF | 31 | 4.00 | 124 |
| 4 | Remove/replace single steel gate | No | 7 | 500.00 | 3,500 |
| 5 | Remove/replace pair of steel gates | Pr | 1 | 885.00 | 885 |
| 6 | Rem/replace sliding glass door, 9'9"x8' | No | 13 | 1300.00 | 16,900 |
| 7 | Remove/replace overhead coiling door | SF | 69 | 38.00 | 2,622 |
| | Element ED total | | | | 52,756 |
| ND | INTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 58 | 600.00 | 34,800 |
| | Element ND total | | | | 34,800 |
| WF | WALL FINISHES | | | | |
| 1 | Prep/paint walls | SF | 44247 | 1.10 | 48,672 |
| 2 | Remove/replace tile shower surround | SF | 910 | 8.50 | 7,735 |

Page Total 247,875

ITEM DETAILS

C TOWER B

GFA

21820 SF

C1 ARCHITECTURAL - GROUND FLOOR

Cost/SF

823

| Item | Description | Unit | Qty | Rate | \$ |
|-----------------------------|---|------|-------|---------|--------|
| 3 | Rem/repl tile wainscot to public restrm | SF | 372 | 8.50 | 3,162 |
| | Element WF total | | | | 59,569 |
| FF FLOOR FINISHES | | | | | |
| 1 | Reurbish exposed aggregate to Lobby/ent | SF | 4157 | 2.50 | 10,393 |
| 2 | Asphaltic floor tile | SF | 8957 | 2.30 | 20,601 |
| 3 | Rem/repl tile to shower/public restroom | SF | 318 | 8.50 | 2,703 |
| 4 | Refinish concrete slab | SF | 8388 | 1.20 | 10,066 |
| | Element FF total | | | | 43,763 |
| CF CEILING FINISHES | | | | | |
| 1 | Prep/paint plaster ceiling | SF | 3472 | 1.10 | 3,819 |
| 2 | Prep/paint concrete soffit and ceiling | SF | 15009 | 1.10 | 16,510 |
| | Element CF total | | | | 20,329 |
| FT FITMENTS | | | | | |
| 1 | Prep/paint wood bench, 16' long | No | 4 | 60.00 | 240 |
| 2 | Rem/replace base cabinet to kitchen | LF | 127 | 145.00 | 18,415 |
| 3 | Rem/replace wall cabinet to kitchen | LF | 116 | 125.00 | 14,500 |
| 4 | Rem/replace wardrobe shelf and rod | No | 30 | 80.00 | 2,400 |
| 5 | Rem/replace closet curtain rod | No | 50 | 35.00 | 1,750 |
| 6 | Rem/replace bulk storage shelving | LF | 405 | 40.00 | 16,200 |
| 7 | Rem/replace linen closet shelving | LF | 176 | 42.00 | 7,392 |
| 8 | Rem/replace toilet partition | No | 3 | 1000.00 | 3,000 |
| 9 | Rem/replace toilet roll holder (public) | No | 3 | 65.00 | 195 |
| 10 | Rem/replace toilet roll holder | No | 13 | 40.00 | 520 |
| 11 | Rem/replace paper towel dispenser | No | 2 | 110.00 | 220 |
| 12 | Rem/replace mirror (public) | No | 3 | 90.00 | 270 |
| 13 | Rem/replace mirrored medicine cabinet | No | 13 | 150.00 | 1,950 |
| 14 | Rem/replace shower curtain rod | No | 13 | 50.00 | 650 |
| 15 | Rem/replace towel bar | No | 13 | 40.00 | 520 |
| 16 | Allowance for sundry fitments | Item | | | 3,000 |
| | Element FT total | | | | 71,222 |
| SE SPECIAL EQUIPMENT | | | | | |
| 1 | Remove/replace washer (laundry room) | No | 29 | 1300.00 | 37,700 |
| 2 | Remove/replace dryer (laundry room) | No | 11 | 2800.00 | 30,800 |
| 3 | Remove/replace stove | No | 13 | 900.00 | 11,700 |

Page Total

218,676

ITEM DETAILS

C TOWER B

GFA 21820 SF

C1 ARCHITECTURAL - GROUND FLOOR

Cost/SF \$23

| Item Description | Unit | Qty | Rate | \$ |
|-------------------------------|------|-----|--------|----------------|
| 4 Remove/replace refrigerator | No | 13 | 900.00 | 11,700 |
| Element SE total | | | | 91,900 |
| Total | | | | 478,251 |

ITEM DETAILS

C TOWER B

GFA

18681 SF

C3 ARCHITECTURAL - 2ND - 16TH FL.

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|------|--|------|-------|---------|--------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Prep/paint concrete/CMU walls | SF | 16264 | 1.10 | 17,890 |
| 2 | Prep/paint precast concrete grille | SF | 629 | 1.25 | 786 |
| | Element EW total | | | | 18,676 |
| WW | WINDOWS | | | | |
| 1 | Remove and replace windows, glass | SF | 1194 | 35.00 | 41,790 |
| | Element WW total | | | | 41,790 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 21 | 900.00 | 18,900 |
| 2 | Rem/replace cement plaster panel | SF | 171 | 4.00 | 684 |
| 3 | Rem/replace sliding glass door, 9'9"x8' | No | 19 | 1300.00 | 24,700 |
| | Element ED total | | | | 44,284 |
| ND | INTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 97 | 600.00 | 58,200 |
| | Element ND total | | | | 58,200 |
| WF | WALL FINISHES | | | | |
| 1 | Prep/paint walls | SF | 50243 | 1.10 | 55,267 |
| 2 | Remove/replace tile shower surround | SF | 1330 | 8.50 | 11,305 |
| | Element WF total | | | | 66,572 |
| FF | FLOOR FINISHES | | | | |
| 1 | Asphaltic floor tile | SF | 12961 | 2.30 | 29,810 |
| 2 | Rem/repl tile to shower | SF | 200 | 8.50 | 1,700 |
| 3 | Refinish concrete slab | SF | 5320 | 1.20 | 6,384 |
| | Element FF total | | | | 37,894 |
| CF | CEILING FINISHES | | | | |
| 1 | Prep/paint concrete soffit and ceiling | SF | 1534 | 1.10 | 1,687 |
| | Element CF total | | | | 1,687 |

Page Total

269,103

ITEM DETAILS

C TOWER B

GFA

18481 SF

C2 ARCHITECTURAL - 2ND - 16TH FL

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|-----------------------------|---------------------------------------|------|-----|--------|----------------|
| FT FITMENTS | | | | | |
| 1 | Rem/replace base cabinet to kitchen | LF | 181 | 145.00 | 26,245 |
| 2 | Rem/replace wall cabinet to kitchen | LF | 160 | 125.00 | 20,000 |
| 3 | Rem/replace wardrobe shelf and rod | No | 42 | 80.00 | 3,360 |
| 4 | Rem/replace closet curtain rod | No | 77 | 35.00 | 2,695 |
| 5 | Rem/replace bulk storage shelving | LF | 515 | 40.00 | 20,600 |
| 6 | Rem/replace linen closet shelving | LF | 260 | 42.00 | 10,920 |
| 7 | Rem/replace toilet roll holder | No | 19 | 40.00 | 760 |
| 8 | Rem/replace mirrored medicine cabinet | No | 19 | 150.00 | 2,850 |
| 9 | Rem/replce shower curtain rod | No | 19 | 50.00 | 950 |
| 10 | Rem/replace towel bar | No | 19 | 40.00 | 760 |
| 11 | Allowance for sundry fitments | Item | | | 1,800 |
| Element FT total | | | | | 90,940 |
| SE SPECIAL EQUIPMENT | | | | | |
| 1 | Remove/replace stove | No | 19 | 900.00 | 17,100 |
| 2 | Remove/replace refrigerator | No | 19 | 900.00 | 17,100 |
| Element SE total | | | | | 34,200 |
| Total | | | | | 394,263 |

ITEM DETAILS

C TOWER B

GFA

1534 SF

C3 ARCHITECTURAL -- FINISHES & ROOF

Cost/SF

\$116

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-------|---------|----------------|
| RF | ROOF | | | | |
| | 1 Remove/replace rigid insulation, sloping | SF | 20564 | 3.30 | 67,861 |
| | 2 Remove/replace b/u roofing system | SF | 20564 | 4.50 | 92,538 |
| | Element RF total | | | | 160,399 |
| EW | EXTERNAL WALLS | | | | |
| | 1 Prep/paint concrete/CMU walls | SF | 3147 | 1.10 | 3,462 |
| | 2 Paint to precast concrete grille | SF | 720 | 1.25 | 900 |
| | Element EW total | | | | 4,362 |
| WW | WINDOWS | | | | |
| | 1 Remove/replace fixed metal louvers | SF | 6 | 12.00 | 72 |
| | Element WW total | | | | 72 |
| ED | EXTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 3 | 900.00 | 2,700 |
| | 2 Rem/repl pair of doors, frame and hdwr | Pr | 1 | 1605.00 | 1,605 |
| | Element ED total | | | | 4,305 |
| ND | INTERNAL DOORS | | | | |
| | 1 Rem/repl single door, frame and hardware | No | 2 | 600.00 | 1,200 |
| | Element ND total | | | | 1,200 |
| WF | WALL FINISHES | | | | |
| | 1 Prep/paint walls | SF | 3579 | 1.10 | 3,937 |
| | Element WF total | | | | 3,937 |
| FF | FLOOR FINISHES | | | | |
| | 1 Refinish concrete slab | SF | 1534 | 1.20 | 1,841 |
| | Element FF total | | | | 1,841 |
| CF | CEILING FINISHES | | | | |
| | 1 Prep/paint concrete soffit and ceiling | SF | 1534 | 1.10 | 1,687 |
| | Element CF total | | | | 1,687 |
| Total | | | | | 177,803 |

ITEM DETAILS

C TOWER B
C4 MECHANICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--------------------------|------|--------|---------|------------------|
| PD | SANITARY PLUMBING | | | | |
| 1 | Remove plumbing fixtures | No | 1235 | 120.00 | 148,200 |
| 2 | Remove waste piping | LF | 6300 | 4.25 | 26,775 |
| 3 | Remove vent piping | LF | 5670 | 4.00 | 22,680 |
| 4 | Water closet | No | 304 | 1162.50 | 353,400 |
| 5 | Lavatory | No | 304 | 1157.50 | 351,880 |
| 6 | Shower | No | 304 | 1245.00 | 378,480 |
| 7 | Kitchen faucet | No | 304 | 920.00 | 279,680 |
| 8 | Hose bibb | No | 19 | 425.00 | 8,075 |
| 9 | Waste piping | LF | 6300 | 34.00 | 214,200 |
| 10 | Vent piping | LF | 5670 | 32.00 | 181,440 |
| 11 | Relocate cleanout | No | 18 | 650.00 | 11,700 |
| 12 | Laundry area plumbing | No | 25 | 2600.00 | 65,000 |
| | Element PD total | | | | 2,041,510 |
| WS | WATER SUPPLY | | | | |
| 1 | Remove water piping | LF | 14256 | 5.00 | 71,280 |
| 2 | Water piping | LF | 14256 | 35.00 | 498,960 |
| 3 | Solar insulation | LF | 700 | 7.00 | 4,900 |
| | Element WS total | | | | 575,140 |
| GS | GAS SERVICE | | | | |
| 1 | Gas piping | LF | 2160 | 32.00 | 69,120 |
| | Element GS total | | | | 69,120 |
| SH | SPACE HEATING | | | | |
| 1 | Heating system | Item | | | 100,000 |
| | Element SH total | | | | 100,000 |
| VE | VENTILATION | | | | |
| 1 | Kitchen exhaust hood | No | 304 | 320.00 | 97,280 |
| | Element VE total | | | | 97,280 |
| FP | FIRE PROTECTION | | | | |
| 1 | Fire sprinkler | SF | 292380 | 2.50 | 730,950 |
| | Element FP total | | | | 730,950 |
| Total | | | | | 3,614,000 |

ITEM DETAILS

C TOWER B
CS ELECTRICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-------------------------------|------|-------|--------|----------------|
| LP | ELECTRIC LIGHT AND POWER | | | | |
| 1 | Lighting | SF | 17681 | 3.24 | 57,286 |
| 2 | Power and signal devices | SF | 17681 | 2.91 | 51,452 |
| 3 | Smoke detector | No | 77 | 196.00 | 15,092 |
| 4 | Electrical service equipment | Item | | | 18,750 |
| 5 | GFI receptacles | No | 54 | 148.00 | 7,992 |
| 6 | Unit telephone & CATV feeders | LF | 6000 | 1.12 | 6,720 |
| 7 | Conduit and wiring | SF | 4161 | 1.13 | 4,702 |
| 8 | Fire alarm pull station | No | 3 | 136.00 | 408 |
| 9 | Fire alarm horn/strobe | No | 6 | 196.00 | 1,176 |
| 10 | Fire alarm modular jack | No | 3 | 124.00 | 372 |
| 11 | Fire alarm system | Item | | | 3,450 |
| | Element LP total | | | | 167,400 |
| Total | | | | | 167,400 |

HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - RENOVATION (REVISED)

Page ID/19

ITEM DETAILS

D COMMUNITY BUILDING

GFA 5453 SF
Cost/SF \$45

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|---|------|------|---------|----------------|
| UF | UPPER FLOORS | | | | |
| 1 | Remove/replace wooden stage | Item | | | 4,800 |
| | Element UF total | | | | 4,800 |
| RF | ROOF | | | | |
| 1 | Roof insulation | SF | 5233 | 1.20 | 6,280 |
| 2 | Remove and replace b/u roofing system | SF | 5233 | 4.50 | 23,549 |
| 3 | Rem/repl sheet metal gutter and dwnspout | LF | 366 | 12.00 | 4,392 |
| | Element RF total | | | | 34,221 |
| EW | EXTERNAL WALLS | | | | |
| 1 | Prep/paint concrete/CMU wall | SF | 1711 | 1.10 | 1,882 |
| 2 | Prep/paint cmu/plaster wall | SF | 213 | 1.10 | 234 |
| 3 | Prep/paint CMU screen block wall | SF | 727 | 1.25 | 909 |
| 4 | Prep/paint wood framed ext. plaster wall | SF | 1452 | 1.10 | 1,597 |
| | Element EW total | | | | 4,622 |
| WW | WINDOWS | | | | |
| 1 | Remove and replace windows | SF | 160 | 35.00 | 5,600 |
| 2 | Remove and replace wood grille | SF | 96 | 7.50 | 720 |
| | Element WW total | | | | 6,320 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 4 | 900.00 | 3,600 |
| 2 | Rem/repl pair of doors, frame and hdwr | Pr | 2 | 1605.00 | 3,210 |
| | Element ED total | | | | 6,810 |
| NS | INTERNAL SCREENS AND BORROWED LIGHTS | | | | |
| 1 | Remove/replace operable partition | SF | 800 | 38.00 | 30,400 |
| 2 | Rem/repl overhead coiling door w/counter | No | 1 | 1250.00 | 1,250 |
| 3 | Remove and replace interior windows | SF | 216 | 33.00 | 7,128 |
| | Element NS total | | | | 38,778 |
| ND | INTERNAL DOORS | | | | |
| 1 | Rem/repl single door, frame and hardware | No | 7 | 600.00 | 4,200 |
| 2 | Rem/repl pair of doors, frame and hdwr | Pr | 10 | 1065.00 | 10,650 |
| Page Total | | | | | 110,401 |

SC3662-12

Printed 26 MAR 1997

BHA FEASIBILITY STUDY - KUHIO PARK TERRACE - RENOVATION (REVISED)

Page ID/20

D COMMUNITY BUILDING

GFA 5653 SF
Cost/SF 965

ITEM DETAILS

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|---|------|------|---------|---------------|
| 3 | R/repl pair of sliding closet drs, complt | No | 5 | 625.00 | 3,125 |
| | Element ND total | | | | 17,975 |
| WF | WALL FINISHES | | | | |
| 1 | Prep/paint plastered CMU/concrete walls | SF | 7148 | 1.10 | 7,863 |
| 2 | Prep/paint CMU screen block wall | SF | 13 | 1.25 | 16 |
| 3 | Remove and replace ceramic tile wainscot | SF | 1024 | 8.50 | 8,704 |
| 4 | Remove and replace quarry tile wainscot | SF | 192 | 17.00 | 3,264 |
| | Element WF total | | | | 19,847 |
| FF | FLOOR FINISHES | | | | |
| 1 | Remove and replace ceramic tile flooring | SF | 336 | 8.50 | 2,856 |
| 2 | VCT flooring | SF | 417 | 3.50 | 1,460 |
| 3 | Remove and replace quarry tile flooring | SF | 143 | 17.00 | 2,431 |
| 4 | Refinish concrete slab | SF | 4557 | 1.20 | 5,468 |
| | Element FF total | | | | 12,215 |
| CF | CEILING FINISHES | | | | |
| 1 | Prep/paint concrete soffit and ceiling | SF | 1706 | 1.10 | 1,877 |
| 2 | Prep/paint concrete ledge | SF | 534 | 1.10 | 587 |
| | Element CF total | | | | 2,464 |
| FT | FITMENTS | | | | |
| 1 | Rem/replace toilet partition | No | 5 | 1000.00 | 5,000 |
| 2 | Rem/replace toilet roll holder | No | 5 | 65.00 | 325 |
| 3 | Rem/replace paper towel dispenser | No | 2 | 110.00 | 220 |
| 4 | Rem/replace mirror | No | 4 | 90.00 | 360 |
| 5 | Rem/replace handicap grab bars | No | 4 | 72.00 | 288 |
| 6 | Rem/repl stainless stl counter w/ splash | LF | 37 | 350.00 | 12,950 |
| | Element FT total | | | | 19,143 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Remove/replace stove | No | 1 | 900.00 | 900 |
| 2 | Remove/replace refrigerator | No | 1 | 900.00 | 900 |
| | Element SE total | | | | 1,800 |
| Page Total | | | | | 58,594 |

SC3662-12

Printed 26 MAR 1997



ITEM DETAILS

D COMMUNITY BUILDING

GFA 5453 SF
Cost/SF \$45

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|---------------------------------|------|------|---------|----------------|
| PD | SANITARY PLUMBING | | | | |
| 1 | Remove plumbing fixtures | No | 14 | 120.00 | 1,680 |
| 2 | Remove waste piping | LF | 200 | 4.25 | 850 |
| 3 | Remove vent piping | LF | 150 | 4.00 | 600 |
| 4 | Water closet | No | 5 | 1162.50 | 5,813 |
| 5 | Lavatory | No | 4 | 1157.50 | 4,630 |
| 6 | Kitchen faucet | No | 5 | 920.00 | 4,600 |
| 7 | Waste piping | LF | 200 | 34.00 | 6,800 |
| 8 | Vent piping | LF | 150 | 32.00 | 4,800 |
| | Element PD total | | | | 29,773 |
| WS | WATER SUPPLY | | | | |
| 1 | Remove water piping | LF | 300 | 5.00 | 1,500 |
| 2 | Water piping | LF | 300 | 35.00 | 10,500 |
| | Element WS total | | | | 12,000 |
| VE | VENTILATION | | | | |
| 1 | Kitchen exhaust hood | No | 1 | 420.00 | 420 |
| | Element VE total | | | | 420 |
| LP | ELECTRIC LIGHT AND POWER | | | | |
| 1 | Lighting | SF | 5453 | 3.24 | 17,668 |
| 2 | Power and signal devices | SF | 5453 | 2.91 | 15,868 |
| | Element LP total | | | | 33,536 |
| Total | | | | | 244,724 |

ITEM DETAILS

E STRUCTURAL REPAIR WORK

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|---|------|-----|--------|---------------|
| AR | ALTERATIONS AND RENOVATIONS TO EXISTING BUILDINGS | | | | |
| | 1 Repair lanai spall, 3"x4" | No | 182 | 106.00 | 19,292 |
| | 2 Repair lanai rail spalls | No | 270 | 187.00 | 50,490 |
| | 3 Patch and seal CMU partition cracks | LF | 100 | 15.00 | 1,500 |
| | Element AR total | | | | 71,282 |
| Total | | | | | 71,282 |

ITEM DETAILS

F CODE COMPLIANCE - ELECTRICAL

| Item Description | Unit | Qty | Rate | \$ |
|---|------|-----|--------|--------------|
| LP ELECTRIC LIGHT AND POWER | | | | |
| 1 Roof top GFI receptacles | No | 6 | 148.00 | 888 |
| 2 Roof top fire alarm notification device | No | 2 | 592.00 | 1,184 |
| Element LP total | | | | 2,072 |
| Total | | | | 2,072 |

ITEM DETAILS

G ADA COMPLIANCE
 G1 COMMON ELEMENTS

| Item | Description | Unit | Qty | Rate | \$ |
|------|--|------|-----|------|---------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| 1 | Allow for elevators (4 No.) | Item | | | 100,000 |
| 2 | Allow for exit door hardware | Item | | | 76,000 |
| 3 | Allow for tactile/braille signage | Item | | | 35,000 |
| 4 | Allow for regrading at Bus stop | Item | | | 22,500 |
| 5 | Allow for curb ramps at entry (3 No.) | Item | | | 14,250 |
| 6 | Allow for parking and signage (10 stall) | Item | | | 1,750 |
| 7 | Allow for ramps at Tower A entry | Item | | | 7,500 |
| 8 | Allow for ramps at Tower B entry | Item | | | 5,000 |
| 9 | Allow for loading zone at Tower A | Item | | | 6,500 |
| 10 | Allow for door manuev. clearance (6 No.) | Item | | | 12,000 |
| 11 | Allow for work at laundry facilities | Item | | | 5,500 |
| | Element SU total | | | | 286,000 |

Total 286,000

ITEM DETAILS

G ADA COMPLIANCE

G2 TOWER A - 2 BEDROOM

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|---------------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| 1 | Allow for bedroom and bath | Item | | | 6,250 |
| 2 | Allow for kitchen and entry | Item | | | 4,150 |
| 3 | Allow for door replacement/maneuvering | Item | | | 3,650 |
| 4 | Allow for lock latch, door threshold | Item | | | 1,450 |
| | Element SU total | | | | 15,500 |
| Total | | | | | 15,500 |

ITEM DETAILS

G ADA COMPLIANCE

U3 TOWER 1 - 3 BEDROOM

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|---------------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| 1 | Allow for bedroom and bath | Item | | | 6,750 |
| 2 | Allow for kitchen and entry | Item | | | 4,250 |
| 3 | Allow for door replacement/maneuvering | Item | | | 3,875 |
| 4 | Allow for lock latch, door threshold | Item | | | 1,450 |
| | Element SU total | | | | 16,325 |
| Total | | | | | 16,325 |

ITEM DETAILS

G ADA COMPLIANCE

G4 TOWER B -- 1 BEDROOM

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|--------------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| | 1 Allow for bedroom and bath | Item | | | 3,850 |
| | 2 Allow for kitchen and entry | Item | | | 4,500 |
| | 3 Allow for lock latch, door threshold | Item | | | 1,450 |
| | Element SU total | | | | 9,800 |
| Total | | | | | 9,800 |

ITEM DETAILS

G ADA COMPLIANCE

G5 TOWER B - 2 BEDROOM

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|---------------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| | 1 Allow for bedroom and bath | Item | | | 6,250 |
| | 2 Allow for kitchen and entry | Item | | | 4,150 |
| | 3 Allow for door replacement/maneuvering | Item | | | 3,650 |
| | 4 Allow for lock latch, door threshold | Item | | | 1,450 |
| | Element SU total | | | | 15,500 |
| Total | | | | | 15,500 |

ITEM DETAILS

G ADA COMPLIANCE
 G6 TOWER B - 3 BEDROOM

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|---------------|
| SU | ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| | 1 Allow for bedroom and bath | Item | | | 6,750 |
| | 2 Allow for kitchen and entry | Item | | | 4,250 |
| | 3 Allow for door replacement/maneuvering | Item | | | 3,875 |
| | 4 Allow for lock latch, door threshold | Item | | | 1,450 |
| | Element SU total | | | | 16,325 |
| Total | | | | | 16,325 |

ITEM DETAILS

G ADA COMPLIANCE
 G7 MECHANICAL

| Item Description | Unit | Qty | Rate | \$ |
|-----------------------------|------|-----|---------|---------------|
| PD SANITARY PLUMBING | | | | |
| 1 Water closet modification | No | 29 | 1000.00 | 29,000 |
| 2 Lavatory modification | No | 29 | 1000.00 | 29,000 |
| 3 Shower/tub modification | No | 29 | 1000.00 | 29,000 |
| Element PD total | | | | 87,000 |
| Total | | | | 87,000 |

ITEM DETAILS

G ADA COMPLIANCE
 G8 ELECTRICAL

| Item Description | Unit | Qty | Rate | \$ |
|--------------------------------------|------|-----|---------|----------------|
| LP ELECTRIC LIGHT AND POWER | | | | |
| 1 Combination strobe/horn smoke det. | No | 260 | 276.72 | 71,947 |
| 2 Visual telephone device | No | 124 | 196.00 | 24,304 |
| 3 Visual door knocker device | No | 124 | 199.00 | 24,676 |
| 4 Lower loadcenter | No | 62 | 1003.28 | 62,203 |
| Element LP total | | | | 183,130 |
| Total | | | | 183,130 |

ITEM DETAILS

H HAZARDOUS MATERIALS REMEDIATION

H1 ASBESTOS ABATEMENT

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|---|------|-----|------|------------------|
| AR | ALTERATIONS AND RENOVATIONS TO EXISTING BUILDINGS | | | | |
| | 1 Remove VAT flooring | Item | | | 1,073,500 |
| | Element AR total | | | | 1,073,500 |
| Total | | | | | 1,073,500 |

ITEM DETAILS

H HAZARDOUS MATERIALS REMEDIATION

H2 LEAD BASED PAINT REMOVAL

| Item Description | Unit | Qty | Rate | \$ |
|--|------|-----|------|---------------|
| AR ALTERATIONS AND RENOVATIONS TO EXISTING BUILDINGS | | | | |
| 1 Lead based paint removal (doors/frames) | Item | | | 51,900 |
| Element AR total | | | | 51,900 |
| Total | | | | 51,900 |

ITEM DETAILS

I PHASING AND RELOCATION COST

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|-----|------|----------------|
| YY | SPECIAL PROVISIONS | | | | |
| | 1 Phasing and relocation costs (full occp) | Item | | | 930,000 |
| | Element YY total | | | | 930,000 |
| Total | | | | | 930,000 |

REPLACEMENT COST ESTIMATE

TOTAL COST SUMMARY

| Zone Level | GFA SF | Cost /SF | Total Cost |
|--|----------------|--------------|---------------------|
| A SITE WORK | | | 4,341,869 |
| B TOWER A | | | |
| B1 STRUCTURAL | | | 10,269,274 |
| B2 ARCHITECTURAL - GROUND FLOOR | 21,870 | 21 | 452,083 |
| B3 ARCHITECTURAL - 2ND - 16TH FL | 270,510 | 25 | 6,702,630 |
| B4 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 108 | 165,607 |
| B5 CONVEYING SYSTEMS | | | 515,000 |
| B6 MECHANICAL | | | 3,769,260 |
| B7 ELECTRICAL | | | 2,657,678 |
| | 293,914 | \$83 | \$24,531,532 |
| C TOWER B | | | |
| C1 STRUCTURAL | | | 10,556,162 |
| C2 ARCHITECTURAL - GROUND FLOOR | 21,820 | 24 | 522,468 |
| C3 ARCHITECTURAL - 2ND - 16TH FL | 277,215 | 25 | 7,008,990 |
| C4 ARCHITECTURAL - PENTHSE & ROOF | 1,534 | 109 | 167,451 |
| C5 CONVEYING SYSTEMS | | | 515,000 |
| C6 MECHANICAL | | | 3,345,065 |
| C7 ELECTRICAL | | | 2,640,899 |
| | 300,569 | \$82 | \$24,756,035 |
| D COMMUNITY BUILDING | 5,453 | 82 | 447,783 |
| E ADA COMPLIANCE | | | 954,800 |
| F HAZARDOUS MATERIALS REMEDIATION | | | |
| F1 ASBESTOS ABATEMENT | | | 1,073,500 |
| F2 LEAD BASED PAINT REMOVAL | | | 51,900 |
| | | | \$1,125,400 |
| G PHASING AND RELOCATION COST | | | 930,000 |
| Total Net Cost | 599,936 | \$95 | \$57,087,419 |
| Margin & Adjustments | | | |
| GENERAL CONDITIONS | 8.0% | | 4,566,994 |
| CONTRACTORS MARGIN | 5.0% | | 3,082,721 |
| GENERAL EXCISE TAX | 1.8% | | 1,164,866 |
| Grand Totals | 599,936 | \$110 | \$65,902,000 |

ITEM DETAILS

A SITE WORK

| Item | Description | Unit | Qty | Rate | \$ |
|--|--|------|-------|----------|------------------|
| XP SITE PREPARATION | | | | | |
| 1 | Demolish existing buildings | Item | | | 3,006,600 |
| 2 | Grade site | SY | 7000 | 2.00 | 14,000 |
| | Element XP total | | | | 3,020,600 |
| XR ROADS, FOOTPATHS AND PAVED AREAS | | | | | |
| 1 | AC pavement including 6" base course | SY | 12300 | 28.22 | 347,106 |
| 2 | Sidewalk/walkway, 4' wide | SY | 3270 | 39.30 | 128,511 |
| | Element XR total | | | | 475,617 |
| XL LANDSCAPING AND IMPROVEMENTS | | | | | |
| 1 | Allow for landscaping and irrigation | Item | | | 388,200 |
| | Element XL total | | | | 388,200 |
| XD EXTERNAL SEWER DRAINAGE | | | | | |
| 1 | 10" Trunk Line | LF | 1550 | 33.55 | 52,003 |
| 2 | 8" Laterals | LF | 700 | 27.74 | 19,418 |
| 3 | Manholes | No | 13 | 2797.30 | 36,365 |
| 4 | Cleanout, 2-1/2" | No | 10 | 137.50 | 1,375 |
| | Element XD total | | | | 109,161 |
| XW EXTERNAL WATER SUPPLY | | | | | |
| 1 | 8" Main | LF | 1500 | 30.00 | 45,000 |
| 2 | 6" Laterals | LF | 120 | 28.00 | 3,360 |
| 3 | 4" Household connection | LF | 250 | 22.00 | 5,500 |
| 4 | 8" Gate valve w/box | No | 5 | 1370.00 | 6,850 |
| 5 | 6" Gate valve w/box | No | 2 | 975.00 | 1,950 |
| 6 | 4" Gate valve w/box | No | 2 | 650.00 | 1,300 |
| 7 | Water meter, 4" compound | No | 1 | 12000.00 | 12,000 |
| 8 | Water meter, double 6" multiple compound | No | 2 | 55000.00 | 110,000 |
| 9 | Thrust blocks | No | 25 | 66.00 | 1,650 |
| | Element XW total | | | | 187,610 |
| XG EXTERNAL GAS | | | | | |
| 1 | 4" Line (in road) | LF | 1500 | 20.00 | 30,000 |
| 2 | 3" Line | LF | 500 | 18.50 | 9,250 |
| Page Total | | | | | 4,220,438 |

ITEM DETAILS

A SITE WORK

| Item Description | Unit | Qty | Rate | \$ |
|---|------|------|---------|------------------|
| 3 2" Line | LF | 970 | 17.60 | 17,072 |
| Element XG total | | | | 56,322 |
| XF EXTERNAL FIRE PROTECTION | | | | |
| 1 Fire hydrant | No | 4 | 3000.00 | 12,000 |
| Element XF total | | | | 12,000 |
| XE EXTERNAL ELECTRIC LIGHT AND POWER | | | | |
| 1 Parking pole lights | No | 14 | 4233.50 | 59,269 |
| 2 Wiring | LF | 3000 | 1.02 | 3,060 |
| 3 Trench | LF | 3000 | 6.01 | 18,030 |
| 4 Backfill | CY | 20 | 600.00 | 12,000 |
| Element XE total | | | | 92,359 |
| Total | | | | 4,341,869 |

ITEM DETAILS

B TOWER A
B1 STRUCTURAL

| Item | Description | Unit | Qty | Rate | \$ |
|------------------------|---|------|--------|--------|-----------|
| SB SUBSTRUCTURE | | | | | |
| 1 | Foundation system (footings) | SF | 21870 | 2.50 | 54,675 |
| 2 | 10" Concrete retaining wall | SF | 2755 | 25.00 | 68,875 |
| 3 | Mat foundation to stair/elev, 2' deep | SF | 1213 | 21.20 | 25,716 |
| 4 | Slab on grade | SF | 21776 | 5.00 | 108,880 |
| 5 | Trench including grating | LF | 47 | 109.00 | 5,123 |
| Element SB total | | | | | 263,269 |
| CL COLUMNS | | | | | |
| 1 | 10"x17" Concrete column | LF | 306 | 31.00 | 9,486 |
| 2 | 10"x24" Concrete column | LF | 462 | 44.00 | 20,328 |
| 3 | 12"x12" Concrete column | LF | 9 | 26.00 | 234 |
| 4 | 12"x17" Concrete column | LF | 102 | 37.00 | 3,774 |
| 5 | 12"x24" Concrete column | LF | 136 | 52.00 | 7,072 |
| 6 | 12"x26" Concrete column | LF | 1530 | 57.00 | 87,210 |
| 7 | 12"x28" Concrete column | LF | 3060 | 61.00 | 186,660 |
| 8 | 12"x34" Concrete column | LF | 306 | 74.00 | 22,644 |
| 9 | 16"x26" Concrete column | LF | 510 | 75.00 | 38,250 |
| 10 | 18"x28" Concrete column | LF | 1020 | 91.00 | 92,820 |
| 11 | 20"x34" Concrete column | LF | 102 | 123.00 | 12,546 |
| Element CL total | | | | | 481,024 |
| UF UPPER FLOORS | | | | | |
| 1 | Suspended slab, including beams | SF | 270510 | 12.50 | 3,381,375 |
| 2 | Concrete steps | SF | 40 | 7.60 | 304 |
| Element UF total | | | | | 3,381,679 |
| SC STAIRCASES | | | | | |
| 1 | Concrete stair including metal handrail | FT/R | 528 | 310.00 | 163,680 |
| Element SC total | | | | | 163,680 |
| RF ROOF | | | | | |
| 1 | Structural steel canopy framing | SF | 2856 | 7.00 | 19,992 |
| 2 | Metal roof deck, 1-1/2" deep | SF | 2856 | 4.50 | 12,852 |
| 3 | 6" Concrete roof slab including beams | SF | 20236 | 12.50 | 252,950 |
| Element RF total | | | | | 285,794 |
| Page Total | | | | | 4,575,446 |

ITEM DETAILS

B TOWER A
 B1 STRUCTURAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-----------------------------------|------|--------|-------|-------------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | 10" Concrete wall | SF | 200323 | 18.00 | 3,605,814 |
| 2 | 6" CMU wall | SF | 1162 | 8.00 | 9,296 |
| 3 | 4" CMU wall | SF | 23164 | 6.00 | 138,984 |
| 4 | Precast concrete grille, 8" thick | SF | 10178 | 18.00 | 183,204 |
| 5 | Precast concrete rail, 3'9" high | LF | 10635 | 72.00 | 765,720 |
| | Element EW total | | | | 4,703,018 |
| NW | INTERNAL WALLS | | | | |
| 1 | 10" Concrete wall | SF | 54346 | 18.00 | 978,228 |
| 2 | 8" CMU wall | SF | 1398 | 9.00 | 12,582 |
| | Element NW total | | | | 990,810 |
| Total | | | | | 10,269,274 |

ITEM DETAILS

B TOWER A

GFA

21870 SF

B2 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|-----------------------------------|------|-------|---------|----------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Metal grille | SF | 431 | 25.00 | 10,775 |
| 2 | Metal railing, 3'9" high | LF | 8 | 65.00 | 520 |
| 3 | Paint to concrete/CMU walls | SF | 15107 | .90 | 13,596 |
| 4 | Paint to precast concrete grille | SF | 95 | 2.30 | 219 |
| 5 | Paver tile to walls | SF | 497 | 4.50 | 2,237 |
| | Element EW total | | | | 27,347 |
| RF | ROOF | | | | |
| 1 | Rigid insulation, 1" thick | SF | 2856 | 1.10 | 3,142 |
| 2 | Built-up roofing system | SF | 2856 | 2.80 | 7,997 |
| 3 | Aluminum fascia, 1'6" high | LF | 266 | 6.50 | 1,729 |
| 4 | Sheet metal flashing | LF | 96 | 8.50 | 816 |
| 5 | Roof drains | No | 2 | 2200.00 | 4,400 |
| | Element RF total | | | | 18,084 |
| WW | WINDOWS | | | | |
| 1 | Windows, glass | SF | 1101 | 32.00 | 35,232 |
| 2 | Windows, aluminum jalousie | SF | 217 | 20.00 | 4,340 |
| | Element WW total | | | | 39,572 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 20 | 880.00 | 17,600 |
| 2 | Pair of doors, frame and hardware | Pr | 5 | 1580.00 | 7,900 |
| 3 | Extra for cement plaster panel | SF | 56 | 3.50 | 196 |
| 4 | Single steel gate | No | 7 | 480.00 | 3,360 |
| 5 | Pair of steel gates | Pr | 1 | 860.00 | 860 |
| 6 | Sliding glass door, 9'9"x8' | No | 4 | 1100.00 | 4,400 |
| 7 | Overhead coiling door | SF | 608 | 35.00 | 21,280 |
| | Element ED total | | | | 55,596 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 8239 | 6.00 | 49,434 |
| | Element NW total | | | | 49,434 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 25 | 580.00 | 14,500 |
| Page Total | | | | | 204,533 |

ITEM DETAILS

B TOWER A

GFA

21870 SF

B2 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|------|--|------|-------|---------|--------|
| | 2 Pair of doors, frame and hardware | Pr | 1 | 1040.00 | 1,040 |
| | Element ND total | | | | 15,540 |
| WF | WALL FINISHES | | | | |
| | 1 Paint to walls | SF | 38333 | .90 | 34,500 |
| | 2 Hard tile shower surround | SF | 280 | 7.50 | 2,100 |
| | 3 Hard tile wainscot to public restrooms | SF | 1071 | 7.50 | 8,033 |
| | Element WF total | | | | 44,633 |
| FF | FLOOR FINISHES | | | | |
| | 1 Paver tile to lobby/entry | SF | 5141 | 4.50 | 23,135 |
| | 2 Asphaltic floor tile | SF | 3180 | 2.30 | 7,314 |
| | 3 Hard tile to shower/public restrooms | SF | 584 | 7.50 | 4,380 |
| | 4 VCT flooring to office spaces | SF | 2007 | 3.20 | 6,422 |
| | 5 Hardener/sealer to slab | SF | 10958 | 1.20 | 13,150 |
| | Element FF total | | | | 54,401 |
| CF | CEILING FINISHES | | | | |
| | 1 Suspended plaster ceiling to entry | SF | 2856 | 5.50 | 15,708 |
| | 2 Acoustic tile ceiling to office spaces | SF | 2007 | 4.00 | 8,028 |
| | 3 Paint to plaster soffit | SF | 2856 | .90 | 2,570 |
| | 4 Paint to concrete soffit and ceiling | SF | 13171 | .90 | 11,854 |
| | Element CF total | | | | 38,160 |
| FT | FITMENTS | | | | |
| | 1 Mailbox (140 units) | Item | | | 7,000 |
| | 2 Wood bench, 16' long | No | 4 | 650.00 | 2,600 |
| | 3 Base cabinet to kitchen | LF | 46 | 125.00 | 5,750 |
| | 4 Wall cabinet to kitchen | LF | 40 | 105.00 | 4,200 |
| | 5 Wardrobe shelf and rod | No | 12 | 70.00 | 840 |
| | 6 Closet curtain rod | No | 20 | 30.00 | 600 |
| | 7 Bulk storage shelving | LF | 156 | 35.00 | 5,460 |
| | 8 Linen closet shelving | LF | 52 | 38.00 | 1,976 |
| | 9 Toilet partition | No | 5 | 850.00 | 4,250 |
| | 10 Toilet roll holder (public) | No | 5 | 60.00 | 300 |
| | 11 Toilet roll holder | No | 4 | 25.00 | 100 |
| | 12 Paper towel dispenser | No | 6 | 90.00 | 540 |
| | 13 Mirror (public) | No | 6 | 80.00 | 480 |

Page Total

172,330

ITEM DETAILS

B TOWER A

GFA

21870 SF

B1 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$21

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-------------------------------|------|-----|---------|----------------|
| 14 | Mirrored medicine cabinet | No | 4 | 120.00 | 480 |
| 15 | Shower curtain rod | No | 4 | 30.00 | 120 |
| 16 | Towel bar | No | 4 | 30.00 | 120 |
| 17 | Allowance for sundry fitments | Item | | | 12,000 |
| | Element FT total | | | | 46,816 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Washer (laundry room) | No | 29 | 1000.00 | 29,000 |
| 2 | Dryer (laundry room) | No | 11 | 2500.00 | 27,500 |
| 3 | Stove | No | 4 | 750.00 | 3,000 |
| 4 | Refrigerator | No | 4 | 750.00 | 3,000 |
| | Element SE total | | | | 62,500 |
| Total | | | | | 452,083 |

HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - REPLACEMENT (REVISED)

Page ID/8

ITEM DETAILS

B TOWER A

GFA

18034 SF

B3 ARCHITECTURAL - 2ND - 16TH FL.

Cost/SF

\$25

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|------------------------------------|------|-------|---------|----------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Metal grille | SF | 585 | 25.00 | 14,625 |
| 2 | Metal railing, 3'9" high | LF | 36 | 65.00 | 2,340 |
| 3 | Paint to concrete/CMU walls | SF | 16144 | .90 | 14,530 |
| 4 | Paint to precast concrete grille | SF | 629 | 2.30 | 1,447 |
| | Element EW total | | | | 32,942 |
| WW | WINDOWS | | | | |
| 1 | Windows, glass | SF | 1170 | 32.00 | 37,440 |
| | Element WW total | | | | 37,440 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 20 | 880.00 | 17,600 |
| 2 | Extra for cement plaster panel | SF | 162 | 3.50 | 567 |
| 3 | Sliding glass door, 9'9"x8' | No | 18 | 1100.00 | 19,800 |
| | Element ED total | | | | 37,967 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 13711 | 6.00 | 82,266 |
| | Element NW total | | | | 82,266 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 78 | 580.00 | 45,240 |
| 2 | Cased opening with removable panel | No | 6 | 175.00 | 1,050 |
| | Element ND total | | | | 46,290 |
| WF | WALL FINISHES | | | | |
| 1 | Paint to walls | SF | 49166 | .90 | 44,249 |
| 2 | Hard tile shower surround | SF | 1260 | 7.50 | 9,450 |
| | Element WF total | | | | 53,699 |
| FF | FLOOR FINISHES | | | | |
| 1 | Asphaltic floor tile | SF | 12806 | 2.30 | 29,454 |
| 2 | Hard tile to shower | SF | 189 | 7.50 | 1,418 |
| Page Total | | | | | 321,476 |

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HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - REPLACEMENT (REVISED)

Page ID/9

ITEM DETAILS

B TOWER A

GFA

18034 SF

B3 ARCHITECTURAL - 2ND - 16TH FL

Cost/SF

\$25

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--------------------------------------|------|-------|--------|----------------|
| 3 | Hardener/sealer to slab | SF | 5039 | 1.20 | 6,047 |
| | Element FF total | | | | 36,919 |
| CF | CEILING FINISHES | | | | |
| 1 | Paint to concrete soffit and ceiling | SF | 18034 | .90 | 16,231 |
| | Element CF total | | | | 16,231 |
| FT | FITMENTS | | | | |
| 1 | Base cabinet to kitchen | LF | 177 | 125.00 | 22,125 |
| 2 | Wall cabinet to kitchen | LF | 162 | 105.00 | 17,010 |
| 3 | Wardrobe shelf and rod | No | 42 | 70.00 | 2,940 |
| 4 | Closet curtain rod | No | 78 | 30.00 | 2,340 |
| 5 | Bulk storage shelving | LF | 481 | 35.00 | 16,835 |
| 6 | Linen closet shelving | LF | 246 | 38.00 | 9,348 |
| 7 | Toilet roll holder | No | 18 | 25.00 | 450 |
| 8 | Mirrored medicine cabinet | No | 18 | 120.00 | 2,160 |
| 9 | Shower curtain rod | No | 18 | 30.00 | 540 |
| 10 | Towel bar | No | 18 | 30.00 | 540 |
| 11 | Allowance for sundry fitments | Item | | | 1,800 |
| | Element FT total | | | | 76,088 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Stove | No | 18 | 750.00 | 13,500 |
| 2 | Refrigerator | No | 18 | 750.00 | 13,500 |
| | Element SE total | | | | 27,000 |
| Total | | | | | 446,842 |

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HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - REPLACEMENT (REVISED)

Page ID/10

ITEM DETAILS

B TOWER A

GFA

1534 SF

B4 ARCHITECTURAL - PERIMETER & ROOF

Cost/SF

\$108

| Item | Description | Unit | Qty | Rate | \$ |
|------------|------------------------------------|------|-------|---------|---------|
| RF | ROOF | | | | |
| 1 | Rigid insulation, sloping | SF | 20236 | 2.50 | 50,590 |
| 2 | Built-up roofing system | SF | 20236 | 2.80 | 56,661 |
| 3 | Roof drains | No | 12 | 2200.00 | 26,400 |
| | Element RF total | | | | 133,651 |
| EW | EXTERNAL WALLS | | | | |
| 1 | Paint to concrete/CMU walls | SF | 3147 | .90 | 2,832 |
| 2 | Paint to precast concrete grille | SF | 720 | 2.30 | 1,656 |
| 3 | Chain link fence to roof perimeter | LF | 1299 | 11.00 | 14,289 |
| | Element EW total | | | | 18,777 |
| WW | WINDOWS | | | | |
| 1 | Fixed metal louvers | SF | 6 | 10.00 | 60 |
| | Element WW total | | | | 60 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 3 | 880.00 | 2,640 |
| 2 | Pair of doors, frame and hardware | Pr | 1 | 1580.00 | 1,580 |
| | Element ED total | | | | 4,220 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 216 | 6.00 | 1,296 |
| | Element NW total | | | | 1,296 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 2 | 580.00 | 1,160 |
| | Element ND total | | | | 1,160 |
| WF | WALL FINISHES | | | | |
| 1 | Paint to walls | SF | 3579 | .90 | 3,221 |
| | Element WF total | | | | 3,221 |
| Page Total | | | | | 162,385 |

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HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - REPLACEMENT (REVISED)

Page ID/11

ITEM DETAILS

B TOWER A

GFA

1534 SF

B4 ARCHITECTURAL - FINISHES & ROOF

Cost/SF

\$108

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|------|------|----------------|
| FF | FLOOR FINISHES | | | | |
| | 1 Hardener/sealer to slab | SF | 1534 | 1.20 | 1,841 |
| | Element FF total | | | | 1,841 |
| CF | CEILING FINISHES | | | | |
| | 1 Paint to concrete soffit and ceiling | SF | 1534 | .90 | 1,381 |
| | Element CF total | | | | 1,381 |
| Total | | | | | 165,607 |

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ITEM DETAILS

B TOWER A
 B5 CONVEYING SYSTEMS

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-------------------------------|------|-----|-----------|----------------|
| TS | TRANSPORTATION SYSTEMS | | | | |
| | 1 Passenger elevator, 16 stop | No | 2 | 170000.00 | 340,000 |
| | 2 Freight elevator, 16 stop | No | 1 | 153000.00 | 153,000 |
| | 3 Trash chute | No | 2 | 11000.00 | 22,000 |
| | Element TS total | | | | 515,000 |
| Total | | | | | 515,000 |

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ITEM DETAILS

B TOWER A
B6 MECHANICAL

| Item | Description | Unit | Qty | Rate | \$ |
|-----------------------------|----------------------------------|------|-------|---------|------------------|
| PD SANITARY PLUMBING | | | | | |
| 1 | Water closet | No | 288 | 1162.50 | 334,800 |
| 2 | Lavatory | No | 288 | 1157.50 | 333,360 |
| 3 | Shower | No | 288 | 1245.00 | 358,560 |
| 4 | Kitchen faucet | No | 288 | 920.00 | 264,960 |
| 5 | Hose bibb | No | 18 | 425.00 | 7,650 |
| 6 | Waste piping | LF | 6300 | 34.00 | 214,200 |
| 7 | Vent piping | LF | 5670 | 32.00 | 181,440 |
| 8 | Cleanout | No | 18 | 650.00 | 11,700 |
| 9 | Laundry area plumbing | No | 25 | 2600.00 | 65,000 |
| | Element PD total | | | | 1,771,670 |
| WS WATER SUPPLY | | | | | |
| 1 | Water piping | LF | 14256 | 35.00 | 498,960 |
| 2 | Solar system | No | 228 | 2000.00 | 456,000 |
| 3 | Solar insulation | LF | 700 | 7.00 | 4,900 |
| | Element WS total | | | | 959,860 |
| GS GAS SERVICE | | | | | |
| 1 | Gas piping | LF | 2160 | 32.00 | 69,120 |
| | Element GS total | | | | 69,120 |
| SH SPACE HEATING | | | | | |
| 1 | Heating system ground floor | Item | | | 100,000 |
| | Element SH total | | | | 100,000 |
| VE VENTILATION | | | | | |
| 1 | Kitchen exhaust hood | No | 288 | 320.00 | 92,160 |
| 2 | Ground floor bathroom vent | Item | | | 6,500 |
| 3 | Vent system for Carpenter's Shop | Item | | | 1,500 |
| 4 | Generator exhaust | Item | | | 36,000 |
| 5 | Vent system fo Paint Shop | Item | | | 1,500 |
| | Element VE total | | | | 137,660 |
| Page Total | | | | | 3,038,310 |

ITEM DETAILS

B TOWER A
 B6 MECHANICAL

| Item Description | Unit | Qty | Rate | \$ |
|--|------|--------|------|------------------|
| FP FIRE PROTECTION 1 Fire sprinkler | SF | 292380 | 2.50 | 730,950 |
| Element FP total | | | | 730,950 |
| Total | | | | 3,769,260 |

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ITEM DETAILS

B TOWER A
 B7 ELECTRICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|------------------------------|------|-------|--------|----------------|
| LP | ELECTRIC LIGHT AND POWER | | | | |
| 1 | Lighting | SF | 17290 | 2.27 | 39,248 |
| 2 | Power and signal devices | SF | 14766 | 2.08 | 30,713 |
| 3 | Smoke detector | No | 78 | 160.50 | 12,519 |
| 4 | Electrical service equipment | Item | | | 21,550 |
| 5 | GFI receptacles | No | 54 | 98.00 | 5,292 |
| 6 | Unit panel feeders | LF | 6000 | 1.80 | 10,800 |
| 7 | Range outlet | No | 18 | 247.73 | 4,459 |
| 8 | Load center | No | 18 | 603.28 | 10,859 |
| 9 | Conduit and wiring | SF | 17290 | 1.13 | 19,538 |
| 10 | Fire alarm pull station | No | 3 | 86.00 | 258 |
| 11 | Fire alarm horn/strobe | No | 6 | 146.00 | 876 |
| 12 | Fire alarm modular jack | No | 3 | 74.00 | 222 |
| | Element LP total | | | | 156,334 |
| Total | | | | | 156,334 |

ITEM DETAILS

C TOWER B
 C1 STRUCTURAL

| Item | Description | Unit | Qty | Rate | \$ |
|------------------------|---|------|--------|--------|------------------|
| SB SUBSTRUCTURE | | | | | |
| 1 | Foundation system (footings) | SF | 21820 | 2.50 | 54,550 |
| 2 | 10" Concrete retaining wall | SF | 4285 | 25.00 | 107,125 |
| 3 | Mat foundation to stair/elev, 2' deep | SF | 1213 | 21.20 | 25,716 |
| 4 | Slab on grade | SF | 21726 | 5.00 | 108,630 |
| 5 | Trench including grating | LF | 47 | 109.00 | 5,123 |
| Element SB total | | | | | 301,144 |
| CL COLUMNS | | | | | |
| 1 | 10"x17" Concrete column | LF | 306 | 31.00 | 9,486 |
| 2 | 10"x24" Concrete column | LF | 462 | 44.00 | 20,328 |
| 3 | 12"x12" Concrete column | LF | 9 | 26.00 | 234 |
| 4 | 12"x17" Concrete column | LF | 102 | 37.00 | 3,774 |
| 5 | 12"x24" Concrete column | LF | 136 | 52.00 | 7,072 |
| 6 | 12"x26" Concrete column | LF | 1632 | 57.00 | 93,024 |
| 7 | 12"x28" Concrete column | LF | 2856 | 61.00 | 174,216 |
| 8 | 12"x34" Concrete column | LF | 306 | 74.00 | 22,644 |
| 9 | 16"x26" Concrete column | LF | 544 | 75.00 | 40,800 |
| 10 | 18"x28" Concrete column | LF | 952 | 91.00 | 86,632 |
| 11 | 20"x34" Concrete column | LF | 102 | 123.00 | 12,546 |
| Element CL total | | | | | 470,756 |
| UF UPPER FLOORS | | | | | |
| 1 | Suspended slab, including beams | SF | 277215 | 12.50 | 3,465,188 |
| 2 | Concrete steps | SF | 60 | 7.60 | 456 |
| Element UF total | | | | | 3,465,644 |
| SC STAIRCASES | | | | | |
| 1 | Concrete stair including metal handrail | FT/R | 528 | 310.00 | 163,680 |
| Element SC total | | | | | 163,680 |
| RF ROOF | | | | | |
| 1 | Structural steel canopy framing | SF | 2932 | 7.00 | 20,524 |
| 2 | Metal roof deck, 1-1/2" deep | SF | 2932 | 4.50 | 13,194 |
| 3 | 6" Concrete roof slab including beams | SF | 20564 | 12.50 | 257,050 |
| Element RF total | | | | | 290,768 |
| Page Total | | | | | 4,691,992 |

ITEM DETAILS

C TOWER B
C1 STRUCTURAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-----------------------------------|------|--------|-------|-------------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | 10" Concrete wall | SF | 198933 | 18.00 | 3,580,794 |
| 2 | 6" CMU wall | SF | 1508 | 8.00 | 12,064 |
| 3 | 4" CMU wall | SF | 21966 | 6.00 | 131,796 |
| 4 | Precast concrete grille, 8" thick | SF | 10178 | 18.00 | 183,204 |
| 5 | Precast concrete rail, 3'9" high | LF | 11531 | 72.00 | 830,232 |
| | Element EW total | | | | 4,738,090 |
| NW | INTERNAL WALLS | | | | |
| 1 | 10" Concrete wall | SF | 61806 | 18.00 | 1,112,508 |
| 2 | 8" CMU wall | SF | 1508 | 9.00 | 13,572 |
| | Element NW total | | | | 1,126,080 |
| Total | | | | | 10,556,162 |

ITEM DETAILS

C TOWER B

GFA

21820 SF

C2 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$26

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|-----------------------------------|------|-------|---------|----------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Metal grille | SF | 724 | 25.00 | 18,100 |
| 2 | Metal railing, 3'9" high | LF | 26 | 65.00 | 1,690 |
| 3 | Paint to concrete/CMU walls | SF | 15271 | .90 | 13,744 |
| 4 | Paint to precast concrete grille | SF | 95 | 2.30 | 219 |
| | Element EW total | | | | 33,753 |
| RF | ROOF | | | | |
| 1 | Rigid insulation, 1" thick | SF | 3472 | 1.10 | 3,819 |
| 2 | Built-up roofing system | SF | 3472 | 2.80 | 9,722 |
| 3 | Aluminum fascia, 1'6" high | LF | 266 | 6.50 | 1,729 |
| 4 | Sheet metal flashing | LF | 96 | 8.50 | 816 |
| 5 | Roof drains | No | 2 | 2200.00 | 4,400 |
| | Element RF total | | | | 20,486 |
| WW | WINDOWS | | | | |
| 1 | Windows, glass | SF | 1563 | 32.00 | 50,016 |
| 2 | Windows, aluminum jalousie | SF | 81 | 20.00 | 1,620 |
| 3 | Fixed metal louvers | SF | 17 | 10.00 | 170 |
| | Element WW total | | | | 51,806 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 23 | 880.00 | 20,240 |
| 2 | Pair of doors, frame and hardware | Pr | 5 | 1580.00 | 7,900 |
| 3 | Extra for cement plaster panel | SF | 31 | 3.50 | 109 |
| 4 | Single steel gate | No | 7 | 480.00 | 3,360 |
| 5 | Pair of steel gates | Pr | 1 | 860.00 | 860 |
| 6 | Sliding glass door, 9'9"x8' | No | 13 | 1100.00 | 14,300 |
| 7 | Overhead coiling door | SF | 69 | 35.00 | 2,415 |
| | Element ED total | | | | 49,184 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 10338 | 6.00 | 62,028 |
| | Element NW total | | | | 62,028 |
| Page Total | | | | | 217,257 |

ITEM DETAILS

C TOWER B

GFA

21820 SF

C2 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$24

| Item | Description | Unit | Qty | Rate | \$ |
|------------|--|------|-------|--------|---------|
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 58 | 580.00 | 33,640 |
| | Element ND total | | | | 33,640 |
| WF | WALL FINISHES | | | | |
| 1 | Paint to walls | SF | 44247 | .90 | 39,822 |
| 2 | Hard tile shower surround | SF | 910 | 7.50 | 6,825 |
| 3 | Hard tile wainscot to public restrooms | SF | 372 | 7.50 | 2,790 |
| | Element WF total | | | | 49,437 |
| FF | FLOOR FINISHES | | | | |
| 1 | Extra for exposed aggregate to Lobby/ent | SF | 4157 | 1.40 | 5,820 |
| 2 | Asphaltic floor tile | SF | 8957 | 2.30 | 20,601 |
| 3 | Hard tile to shower/public restrooms | SF | 318 | 7.50 | 2,385 |
| 4 | Hardener/sealer to slab | SF | 8388 | 1.20 | 10,066 |
| | Element FF total | | | | 38,872 |
| CF | CEILING FINISHES | | | | |
| 1 | Suspended plaster ceiling to entry | SF | 3472 | 5.50 | 19,096 |
| 2 | Paint to plaster ceiling | SF | 3472 | .90 | 3,125 |
| 3 | Paint to concrete soffit and ceiling | SF | 15009 | .90 | 13,508 |
| | Element CF total | | | | 35,729 |
| FT | FITMENTS | | | | |
| 1 | Mailbox (152 units) | Item | | | 7,600 |
| 2 | Wood bench, 16' long | No | 4 | 650.00 | 2,600 |
| 3 | Base cabinet to kitchen | LF | 127 | 125.00 | 15,875 |
| 4 | Wall cabinet to kitchen | LF | 116 | 105.00 | 12,180 |
| 5 | Wardrobe shelf and rod | No | 30 | 70.00 | 2,100 |
| 6 | Closet curtain rod | No | 50 | 30.00 | 1,500 |
| 7 | Bulk storage shelving | LF | 405 | 35.00 | 14,175 |
| 8 | Linen closet shelving | LF | 176 | 38.00 | 6,688 |
| 9 | Toilet partition | No | 3 | 850.00 | 2,550 |
| 10 | Toilet roll holder (public) | No | 3 | 60.00 | 180 |
| 11 | Toilet roll holder | No | 13 | 25.00 | 325 |
| 12 | Paper towel dispenser | No | 2 | 90.00 | 180 |
| 13 | Mirror (public) | No | 3 | 80.00 | 240 |
| 14 | Mirrored medicine cabinet | No | 13 | 120.00 | 1,560 |
| Page Total | | | | | 225,431 |

ITEM DETAILS

C TOWER B

GFA

21820 SF

C2 ARCHITECTURAL - GROUND FLOOR

Cost/SF

\$24

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-------------------------------|------|-----|---------|----------------|
| 15 | Shower curtain rod | No | 13 | 30.00 | 390 |
| 16 | Towel bar | No | 13 | 30.00 | 390 |
| 17 | Allowance for sundry fitments | Item | | | 3,000 |
| | Element FT total | | | | 71,533 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Washer (laundry room) | No | 29 | 1000.00 | 29,000 |
| 2 | Dryer (laundry room) | No | 11 | 2500.00 | 27,500 |
| 3 | Stove | No | 13 | 750.00 | 9,750 |
| 4 | Refrigerator | No | 13 | 750.00 | 9,750 |
| | Element SE total | | | | 76,000 |
| Total | | | | | 522,468 |

HHA FEASIBILITY STUDY - KUHIO PARK TERRACE - REPLACEMENT (REVISED)

Page ID/21

ITEM DETAILS

C TOWER B

GFA

18481 SF

C3 ARCHITECTURAL - 200D - 16TH FL

Cost/SF

\$25

| Item | Description | Unit | Qty | Rate | \$ |
|-----------|----------------------------------|------|-------|---------|----------------|
| EW | EXTERNAL WALLS | | | | |
| 1 | Metal grille | SF | 618 | 25.00 | 15,450 |
| 2 | Metal railing, 3'9" high | LF | 38 | 65.00 | 2,470 |
| 3 | Paint to concrete/CMU walls | SF | 16264 | .90 | 14,638 |
| 4 | Paint to precast concrete grille | SF | 629 | 2.30 | 1,447 |
| | Element EW total | | | | 34,005 |
| WW | WINDOWS | | | | |
| 1 | Windows, glass | SF | 1194 | 32.00 | 38,208 |
| | Element WW total | | | | 38,208 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 21 | 880.00 | 18,480 |
| 2 | Extra for cement plaster panel | SF | 171 | 3.50 | 599 |
| 3 | Sliding glass door, 9'9"x8' | No | 19 | 1100.00 | 20,900 |
| | Element ED total | | | | 39,979 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 13753 | 6.00 | 82,518 |
| | Element NW total | | | | 82,518 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 97 | 580.00 | 56,260 |
| | Element ND total | | | | 56,260 |
| WF | WALL FINISHES | | | | |
| 1 | Paint to walls | SF | 50243 | .90 | 45,219 |
| 2 | Hard tile shower surround | SF | 1330 | 7.50 | 9,975 |
| | Element WF total | | | | 55,194 |
| FF | FLOOR FINISHES | | | | |
| 1 | Asphaltic floor tile | SF | 12961 | 2.30 | 29,810 |
| 2 | Hard tile to shower | SF | 200 | 7.50 | 1,500 |
| 3 | Hardener/sealer to slab | SF | 5320 | 1.20 | 6,384 |
| | Element FF total | | | | 37,694 |
| | Page Total | | | | 343,858 |

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ITEM DETAILS

C TOWER B
 C3 ARCHITECTURAL - 2ND - 16TH FL. GPA 18481 SF
 Cost/SF \$25

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--------------------------------------|------|-------|--------|----------------|
| CF | CEILING FINISHES | | | | |
| 1 | Paint to concrete soffit and ceiling | SF | 18481 | .90 | 16,633 |
| | Element CF total | | | | 16,633 |
| FT | FITMENTS | | | | |
| 1 | Base cabinet to kitchen | LF | 181 | 125.00 | 22,625 |
| 2 | Wall cabinet to kitchen | LF | 160 | 105.00 | 16,800 |
| 3 | Wardrobe shelf and rod | No | 42 | 70.00 | 2,940 |
| 4 | Closet curtain rod | No | 77 | 30.00 | 2,310 |
| 5 | Bulk storage shelving | LF | 515 | 35.00 | 18,025 |
| 6 | Linen closet shelving | LF | 260 | 38.00 | 9,880 |
| 7 | Toilet roll holder | No | 19 | 25.00 | 475 |
| 8 | Mirrored medicine cabinet | No | 19 | 120.00 | 2,280 |
| 9 | Shower curtain rod | No | 19 | 30.00 | 570 |
| 10 | Towel bar | No | 19 | 30.00 | 570 |
| 11 | Allowance for sundry fitments | Item | | | 1,800 |
| | Element FT total | | | | 78,275 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Stove | No | 19 | 750.00 | 14,250 |
| 2 | Refrigerator | No | 19 | 750.00 | 14,250 |
| | Element SE total | | | | 28,500 |
| Total | | | | | 467,266 |



ITEM DETAILS

C TOWER B

GFA

1534 SF

C6 ARCHITECTURAL -- FINISHES & ROOF

Cost/SF

\$109

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|-----------------------------------|------|-------|---------|----------------|
| RF | ROOF | | | | |
| 1 | Rigid insulation, sloping | SF | 20564 | 2.50 | 51,410 |
| 2 | Built-up roofing system | SF | 20564 | 3.50 | 71,974 |
| 3 | Roof drains | No | 12 | 2200.00 | 26,400 |
| | Element RF total | | | | 149,784 |
| EW | EXTERNAL WALLS | | | | |
| 1 | Paint to concrete/CMU walls | SF | 3147 | .90 | 2,832 |
| 2 | Paint to precast concrete grille | SF | 720 | 2.30 | 1,656 |
| | Element EW total | | | | 4,488 |
| WW | WINDOWS | | | | |
| 1 | Fixed metal louvers | SF | 6 | 10.00 | 60 |
| | Element WW total | | | | 60 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 3 | 880.00 | 2,640 |
| 2 | Pair of doors, frame and hardware | Pr | 1 | 1580.00 | 1,580 |
| | Element ED total | | | | 4,220 |
| NW | INTERNAL WALLS | | | | |
| 1 | 4" CMU partition | SF | 216 | 6.00 | 1,296 |
| | Element NW total | | | | 1,296 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 2 | 580.00 | 1,160 |
| | Element ND total | | | | 1,160 |
| WF | WALL FINISHES | | | | |
| 1 | Paint to walls | SF | 3579 | .90 | 3,221 |
| | Element WF total | | | | 3,221 |
| Page Total | | | | | 164,229 |

ITEM DETAILS

C TOWER B

GFA

1534 SF

C4 ARCHITECTURAL - FINISHES & ROOF

Cost/SF

\$109

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|--|------|------|------|----------------|
| FF | FLOOR FINISHES | | | | |
| | 1 Hardener/sealer to slab | SF | 1534 | 1.20 | 1,841 |
| | Element FF total | | | | 1,841 |
| CF | CEILING FINISHES | | | | |
| | 1 Paint to concrete soffit and ceiling | SF | 1534 | .90 | 1,381 |
| | Element CF total | | | | 1,381 |
| Total | | | | | 167,451 |

ITEM DETAILS

C TOWER B
 CS CONVEYING SYSTEMS

| Item Description | Unit | Qty | Rate | \$ |
|----------------------------------|------|-----|-----------|----------------|
| TS TRANSPORTATION SYSTEMS | | | | |
| 1 Passenger elevator, 16 stop | No | 2 | 170000.00 | 340,000 |
| 2 Freight elevator, 16 stop | No | 1 | 153000.00 | 153,000 |
| 3 Trash chute | No | 2 | 11000.00 | 22,000 |
| Element TS total | | | | 515,000 |
| Total | | | | 515,000 |

ITEM DETAILS

C TOWER B
C6 MECHANICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|-----------------------------|------|--------|---------|------------------|
| PD | SANITARY PLUMBING | | | | |
| 1 | Water closet | No | 304 | 1162.50 | 353,400 |
| 2 | Lavatory | No | 304 | 1157.50 | 351,880 |
| 3 | Shower | No | 304 | 1245.00 | 378,480 |
| 4 | Kitchen faucet | No | 304 | 920.00 | 279,680 |
| 5 | Hose bibb | No | 19 | 425.00 | 8,075 |
| 6 | Waste piping | LF | 6300 | 34.00 | 214,200 |
| 7 | Vent piping | LF | 5670 | 32.00 | 181,440 |
| 8 | Cleanout | No | 18 | 650.00 | 11,700 |
| 9 | Laundry area plumbing | No | 25 | 2600.00 | 65,000 |
| | Element PD total | | | | 1,843,855 |
| WS | WATER SUPPLY | | | | |
| 1 | Water piping | LF | 14256 | 35.00 | 498,960 |
| 2 | Solar insulation | LF | 700 | 7.00 | 4,900 |
| | Element WS total | | | | 503,860 |
| GS | GAS SERVICE | | | | |
| 1 | Gas piping | LF | 2160 | 32.00 | 69,120 |
| | Element GS total | | | | 69,120 |
| SH | SPACE HEATING | | | | |
| 1 | Heating system ground floor | Item | | | 100,000 |
| | Element SH total | | | | 100,000 |
| VE | VENTILATION | | | | |
| 1 | Kitchen exhaust hood | No | 304 | 320.00 | 97,280 |
| | Element VE total | | | | 97,280 |
| FP | FIRE PROTECTION | | | | |
| 1 | Fire sprinkler | SF | 292380 | 2.50 | 730,950 |
| | Element FP total | | | | 730,950 |
| Total | | | | | 3,345,065 |

ITEM DETAILS

C TOWER B
C7 ELECTRICAL

| Item | Description | Unit | Qty | Rate | \$ |
|--------------|------------------------------|------|-------|--------|----------------|
| LP | ELECTRIC LIGHT AND POWER | | | | |
| 1 | Lighting | SF | 17681 | 2.27 | 40,136 |
| 2 | Power and signal devices | SF | 15075 | 2.08 | 31,356 |
| 3 | Smoke detector | No | 77 | 160.50 | 12,359 |
| 4 | Electrical service equipment | Item | | | 18,750 |
| 5 | GFI receptacles | No | 54 | 98.00 | 5,292 |
| 6 | Unit panel feeders | LF | 6000 | 1.80 | 10,800 |
| 7 | Range outlet | No | 18 | 247.73 | 4,459 |
| 8 | Load center | No | 18 | 603.28 | 10,859 |
| 9 | Conduit and wiring | SF | 17681 | 1.13 | 19,980 |
| 10 | Fire alarm pull station | No | 3 | 86.00 | 258 |
| 11 | Fire alarm horn/strobe | No | 6 | 146.00 | 876 |
| 12 | Fire alarm modular jack | No | 3 | 74.00 | 222 |
| | Element LP total | | | | 155,347 |
| Total | | | | | 155,347 |

ITEM DETAILS

D COMMUNITY BUILDING

GFA 5453 SF
Cost/SF \$82

| Item | Description | Unit | Qty | Rate | \$ |
|-----------|--|------|------|---------|---------------|
| SB | SUBSTRUCTURE | | | | |
| 1 | Foundation system (footings) | SF | 5453 | 2.50 | 13,633 |
| 2 | Slab on grade | SF | 5453 | 5.00 | 27,265 |
| 3 | Slab to covered walk | SF | 360 | 5.00 | 1,800 |
| | Element SB total | | | | 42,698 |
| CL | COLUMNS | | | | |
| 1 | Precast concrete frame | No | 14 | 1018.00 | 14,252 |
| 2 | CMU column, 12"x12" | LF | 48 | 45.00 | 2,160 |
| 3 | CMU column, 8"x8" | LF | 79 | 40.00 | 3,160 |
| 4 | Precast concrete frame to covered walk | No | 3 | 900.00 | 2,700 |
| | Element CL total | | | | 22,272 |
| UF | UPPER FLOORS | | | | |
| 1 | Allowance for wooden stage | Item | | | 4,500 |
| | Element UF total | | | | 4,500 |
| RF | ROOF | | | | |
| 1 | Concrete roof slab including beams | SF | 5233 | 12.50 | 65,413 |
| 2 | Built-up roofing system | SF | 5233 | 2.80 | 14,652 |
| 3 | Sheet metal gutter and downspout | LF | 366 | 10.00 | 3,660 |
| 4 | Concrete roof slab at covered walk | SF | 360 | 8.00 | 2,880 |
| | Element RF total | | | | 86,605 |
| EW | EXTERNAL WALLS | | | | |
| 1 | 6" Concrete wall | SF | 595 | 16.00 | 9,520 |
| 2 | 8" CMU wall | SF | 1014 | 9.00 | 9,126 |
| 3 | 8" CMU w/ cement plaster | SF | 213 | 12.50 | 2,663 |
| 4 | 8" CMU screen block wall | SF | 727 | 8.20 | 5,961 |
| 5 | 10"x16" Concrete beam | LF | 76 | 28.00 | 2,128 |
| 6 | Wood framed, ext. plaster wall/fascia | SF | 1452 | 5.30 | 7,696 |
| 7 | Paint to concrete/CMU wall | SF | 1711 | .90 | 1,540 |
| 8 | Paint to CMU screen block wall | SF | 727 | 2.30 | 1,672 |
| 9 | Paint to wood framed ext. plaster wall | SF | 1452 | .90 | 1,307 |
| | Element EW total | | | | 41,613 |

Page Total

197,688

ITEM DETAILS

D COMMUNITY BUILDING

GFA 5453 SF
Cost/SF \$83

| Item | Description | Unit | Qty | Rate | \$ |
|-----------|---|------|------|---------|---------------|
| WW | WINDOWS | | | | |
| 1 | Windows | SF | 160 | 32.00 | 5,120 |
| 2 | Wood grille | SF | 96 | 6.00 | 576 |
| | Element WW total | | | | 5,696 |
| ED | EXTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 4 | 880.00 | 3,520 |
| 2 | Pair of doors, frame and hardware | Pr | 2 | 1580.00 | 3,160 |
| | Element ED total | | | | 6,680 |
| NW | INTERNAL WALLS | | | | |
| 1 | 6" Concrete wall | SF | 1134 | 16.00 | 18,144 |
| 2 | 8" CMU wall | SF | 977 | 9.00 | 8,793 |
| 3 | 4" CMU wall | SF | 383 | 6.00 | 2,298 |
| 4 | 8" CMU screen block | SF | 13 | 8.20 | 107 |
| | Element NW total | | | | 29,342 |
| NS | INTERNAL SCREENS AND BORROWED LIGHTS | | | | |
| 1 | Operable partition | SF | 800 | 35.00 | 28,000 |
| 2 | Overhead coiling door with counter | No | 1 | 1000.00 | 1,000 |
| 3 | Interior windows | SF | 216 | 30.00 | 6,480 |
| | Element NS total | | | | 35,480 |
| ND | INTERNAL DOORS | | | | |
| 1 | Single door, frame and hardware | No | 7 | 580.00 | 4,060 |
| 2 | Pair of doors, frame and hardware | Pr | 10 | 1040.00 | 10,400 |
| 3 | Pair of sliding closet drs, frame & hdw | No | 5 | 600.00 | 3,000 |
| | Element ND total | | | | 17,460 |
| WF | WALL FINISHES | | | | |
| 1 | Skim coat plaster to CMU/concrete walls | SF | 7148 | 3.00 | 21,444 |
| 2 | Paint to CMU screen block wall | SF | 13 | 2.30 | 30 |
| 3 | Ceramic tile wainscot | SF | 1024 | 7.50 | 7,680 |
| 4 | Quarry tile wainscot | SF | 192 | 15.00 | 2,880 |
| | Element WF total | | | | 32,034 |

Page Total 126,692

ITEM DETAILS

D COMMUNITY BUILDING

GFA 5653 SF
Cost/SF \$82

| Item | Description | Unit | Qty | Rate | \$ |
|-------------------|--------------------------------------|------|------|---------|---------------|
| FF | FLOOR FINISHES | | | | |
| 1 | Ceramic floor tile | SF | 336 | 7.50 | 2,520 |
| 2 | VCT flooring | SF | 417 | 3.20 | 1,334 |
| 3 | Quarry tile | SF | 143 | 15.00 | 2,145 |
| 4 | Concrete hardener/sealer | SF | 4557 | 1.20 | 5,468 |
| | Element FF total | | | | 11,467 |
| CF | CEILING FINISHES | | | | |
| 1 | Concrete ledge | LF | 89 | 12.50 | 1,113 |
| 2 | Acoustical ceiling tile | SF | 3527 | 4.00 | 14,108 |
| 3 | Paint to concrete soffit and ceiling | SF | 1706 | .90 | 1,535 |
| 4 | Paint to concrete ledge | SF | 534 | .90 | 481 |
| | Element CF total | | | | 17,237 |
| FT | FITMENTS | | | | |
| 1 | Toilet partition | No | 5 | 850.00 | 4,250 |
| 2 | Toilet roll holder | No | 5 | 60.00 | 300 |
| 3 | Paper towel dispenser | No | 2 | 90.00 | 180 |
| 4 | Mirror | No | 4 | 80.00 | 320 |
| 5 | Handicap grab bars | No | 4 | 55.00 | 220 |
| 6 | Stainless steel counter with splash | LF | 37 | 250.00 | 9,250 |
| | Element FT total | | | | 14,520 |
| SE | SPECIAL EQUIPMENT | | | | |
| 1 | Stove | No | 1 | 750.00 | 750 |
| 2 | Refrigerator | No | 1 | 750.00 | 750 |
| | Element SE total | | | | 1,500 |
| PD | SANITARY PLUMBING | | | | |
| 1 | Water closet | No | 5 | 1162.50 | 5,813 |
| 2 | Lavatory | No | 4 | 1157.50 | 4,630 |
| 3 | Kitchen faucet | No | 5 | 920.00 | 4,600 |
| 4 | Waste piping | LF | 200 | 34.00 | 6,800 |
| 5 | Vent piping | LF | 150 | 32.00 | 4,800 |
| | Element PD total | | | | 26,643 |
| Page Total | | | | | 71,367 |



D COMMUNITY BUILDING

ITEM DETAILS

GFA 5453 SF
Cost/SF \$83

| Item | Description | Unit | Qty | Rate | \$ |
|------|--------------------------------|------|------|--------|--------|
| WS | WATER SUPPLY | | | | |
| | 1 Water piping | LF | 300 | 35.00 | 10,500 |
| | Element WS total | | | | 10,500 |
| VE | VENTILATION | | | | |
| | 1 Kitchen exhaust hood | No | 1 | 420.00 | 420 |
| | Element VE total | | | | 420 |
| LP | ELECTRIC LIGHT AND POWER | | | | |
| | 1 Lighting | SF | 5453 | 2.27 | 12,378 |
| | 2 Power and signal devices | SF | 5453 | 2.08 | 11,342 |
| | 3 Electrical service equipment | SF | 5453 | 1.50 | 8,180 |
| | 4 Conduit and wiring | SF | 5453 | 1.13 | 6,162 |
| | 5 Air conditioning power | SF | 5453 | .56 | 3,054 |
| | Element LP total | | | | 41,116 |

Total 447,783



ITEM DETAILS

E ADA COMPLIANCE

| Item Description | Unit | Qty | Rate | \$ |
|--|------|-----|------|----------------|
| SU ALLOWANCE FOR UNMEASURED SUNDRY ITEMS | | | | |
| 1 Allow for ADA compliance (1.5% total) | Item | | | 954,800 |
| Element SU total | | | | 954,800 |
| Total | | | | 954,800 |

ITEM DETAILS

F HAZARDOUS MATERIALS REMEDIATION
 F1 ASBESTOS ABATEMENT

| Item Description | Unit | Qty | Rate | \$ |
|--|------|-----|------|-----------|
| XP SITE PREPARATION 1 Remove VAT flooring | Item | | | 1,073,500 |
| Element XP total | | | | 1,073,500 |
| Total | | | | 1,073,500 |

ITEM DETAILS

F HAZARDOUS MATERIALS REMEDIATION
 F7 LEAD BASED PAINT REMOVAL

| Item Description | Unit | Qty | Rate | \$ |
|---|------|-----|------|---------------|
| XP SITE PREPARATION | | | | |
| 1 Lead based paint removal (doors/frames) | Item | | | 51,900 |
| Element XP total | | | | 51,900 |
| Total | | | | 51,900 |

ITEM DETAILS

G PHASING AND RELOCATION COST

| Item Description | Unit | Qty | Rate | \$ |
|--|------|-----|------|----------------|
| YY SPECIAL PROVISIONS | | | | |
| 1 Phasing and relocation costs (full occp) | Item | | | 930,000 |
| Element YY total | | | | 930,000 |
| Total | | | | 930,000 |

APPENDIX A
BUILDING PERMITS
AND
CERTIFICATES OF OCCUPANCIES

TSUTOMU IZUMI
Building Superintendent

~~TSUTOMU IZUMI~~

JINJI HIGA
Assistant to the Director of
Building Inspection



No. 65-778
This supersedes
Certificate No.
64-1577

BUILDING DEPARTMENT
City and County of Honolulu

CERTIFICATE OF OCCUPANCY

KUHIO PARK TERRACE

Name And/Or Description Of Structure
BUILDING "A" THREE-WING HIGH RISE

Number of Stories 16 Floor Area 17,112 sq. ft. - per floor

Owner HAWAII HOUSING AUTHORITY

Address 1475 Linapuni Street

Tax Map Key: 1-3-39: 1 & 2 Use Zone - Hotel Apartment
Fire Zone No. 3

Major Occupancy Group H Type of Construction I

Permit No. 208596 Date 5/14/63 Ext. Wall Constr. 10" Reinforced Concrete

ARCHITECT BELT, LEMMON & LO Roof Construction 6" Reinforced concrete w/insulation & built-up pitch & gravel roof covering.

CONTRACTOR HAWAIIAN DREDGING & CONSTRUCTION CO., LTD. Allowance for:

- REMARKS: () Automatic Sprinkler System
- () Separation on _____ Sides
- () Building Separation Wall

This is to certify that the above described structure has been inspected and the following occupancy thereof is hereby authorized:

| OCCUPANCY | Max. allowable floor loads (lbs. per sq. ft.) | Max. allowable occupancy load |
|--|---|-------------------------------|
| Basement | | |
| 1st floor WING A-1, C, DAYCARE | GROUND FLOOR LOAD | 68 |
| 1st floor WING A-2, H, APARTMENTS (2) | GROUND FLOOR LOAD | |
| 1st floor WING A-3, H, APARTMENTS (2) | GROUND FLOOR LOAD | |
| 2nd-16th WING A-1, H, APARTMENTS (6 per floor) | 40 | |
| 2nd-16th WING A-2, H, APARTMENTS (6 per floor) | 40 | |
| 2nd-16th WING A-3, H, APARTMENTS (6 per floor) | 40 | |
| 7th floor | | |
| Additional floors as necessary | | |

By: E. Nakimura 4-23-65 Occupancy Examiner Date Approved: Jinji Higa 4-23-65 For Building Superintendent Date

This certificate must be posted and prominently maintained in a conspicuous place at _____ as to the entrance of the building or structure referred to above.

TSUTOMU IZUMI
Building Superintendent
EDWARD Y. FUNG
Director of Building Inspection
JINJI HIGA
Assistant to the Director of
Building Inspection



No. 64-1578

BUILDING DEPARTMENT
City and County of Honolulu
CERTIFICATE OF OCCUPANCY

KUHIO PARK TERRACE
Name And/Or Description Of Structure

BUILDING "B" - THREE-WING HIGH RISE

Number of Stories 16 Floor Area 17,373 sq. ft. per floor

Owner HAWAII HOUSING AUTHORITY

Address 1545 Linapuni Street

Tax Map Key: 1-3-39; 1 & 2 Use Zone Hotel/Apartment
Fire Zone No.

Major Occupancy Group H Type of Construction I

Permit No. 208597 Date 5/14/63 Ext. Wall Constr. 10" reinforced concrete

ARCHITECT BELT, LINDEN & LO Roof Construction 6" reinforced concrete w/ insulation & built-up pitch & gravel roof covering
CONTRACTOR HAWAIIAN DREDGING & CONSTRUCTION CO., LTD. Allowance for:

- REMARKS:
- Automatic Sprinkler System
 - Separation on _____ Sides
 - Building Separation Wall

This is to certify that the above described structure has been inspected and the following occupancy thereof is hereby authorized:

| OCCUPANCY | Max. allowable floor loads (lbs. per sq. ft.) | Max. allowable occupancy load |
|---|---|-------------------------------|
| Basement | | |
| 1st floor Wing B-1, H, APARTMENTS (4) | | |
| 1st floor Wing B-1, H, EQUIPMENT ROOMS (2) | | GROUND FLOOR LOAD |
| 1st floor Wing B-2, H, APARTMENTS (5) | | |
| 1st floor Wing B-2, H, STORAGE (2) | | GROUND FLOOR LOAD |
| 1st floor Wing B-3, H, APARTMENTS (4) | | |
| 1st floor Wing B-3, H, LAUNDRY & STORAGE | | GROUND FLOOR LOAD |
| nd-16th floor Wing B-1, H, APARTMENTS (6 PER FLOOR) | 40 | |
| nd-16th floor Wing B-2, H, APARTMENTS (7 PER FLOOR) | 40 | |
| nd-16th floor Wing B-3, H, APARTMENTS (6 PER FLOOR) | 40 | |
| 7th floor | | |
| Additional floors as necessary | | |

By: [Signature] 12-29-64 Date Approved: [Signature] 12/29/64 Date
OCCUPANCY EXAMINER For BUILDING SUPERINTENDENT

This certificate must be posted and permanently maintained in a conspicuous place or _____ to the entrance of the building or structure referred to above.

TSUTOMU IZUMI
Building Superintendent
EDWARD Y. FUNG
Director of Building Inspection
JINJI HIGA
Assistant to the Director of
Building Inspection



No. 64-1566

BUILDING DEPARTMENT
City and County of Honolulu
CERTIFICATE OF OCCUPANCY

KUHIO PARK TERRACE
Name And/Or Description Of Structure

COMMUNITY BUILDING

Number of Stories 1 Floor Area 3,382 sq. ft.

Owner HAWAII HOUSING AUTHORITY

Address 1483 Linapuni Street

Tax Map Key: 1-3-39: 1 & 2 Use Zone Hotel Apartment
Fire Zone No. 3

Major Occupancy Group B-2 Type of Construction I

Permit No. 208595 Date 5/14/63 Ext. Wall Constr. 6" reinforced concrete

ARCHITECT BELT, LEMON & LO Roof Construction 4" reinforced concrete slab
HAWAIIAN DREDGING w/ built-up pitch & gravel
& CONSTRUCTION CO., LTD. roof covering

REMARKS: Allowance for:
 Automatic Sprinkler System
 Separation on _____ Sides
 Building Separation Wall

This is to certify that the above described structure has been inspected and the following occupancy thereof is hereby authorized:

| OCCUPANCY | Max. allowable floor loads (lbs. per sq. ft.) | Max. allowable occupancy load |
|--------------------------------|---|-------------------------------|
| Basement | | |
| 1st floor <u>B-2, ASSEMBLY</u> | <u>GROUND FLOOR LOAD</u> | <u>448</u> |
| 2nd floor | | |
| 3rd floor | | |
| 4th floor | | |
| 5th floor | | |
| 6th floor | | |
| 7th floor | | |
| Additional floors as necessary | | |

By: [Signature] 12-2-63 Date Approved: [Signature] 12-2-63 Date
OCCUPANCY EXAMINER For BUILDING SUPERINTENDENT

This certificate must be posted and prominently maintained in a conspicuous place at or close to the entrance of the building or structure referred to above.

PERMIT NUMBER

208595

BUILDING DEPARTMENT
DIVISION OF BUILDING SAFETY
CITY AND COUNTY OF HONOLULU

APPLICATION AND BUILDING PERMIT

Fee Received

SEE INSTRUCTIONS BELOW

2477 Blvd.

WRITE IN ALL INFORMATION

| EST. VALUE | PERMIT FEE | CLASS OF CONSTRUCTION | NO. OF STORIES | ZONE | SEC. | PLAT | PARCEL | LOT NO. | DISTRICT |
|------------|------------|-----------------------|----------------|------|------|------|--------|---------|----------|
| 46,800 | 11700 | II-1A(1) | 1 | 1 | 3 | 39 | 142 | | KALINI |

CHECK BOX OR WRITE IN IF NECESSARY

| | | | | | | | | |
|---|---|---|--|------------------------------------|---------------------------------|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> NEW BLDG. | <input type="checkbox"/> EXIST. BLDG. | <input type="checkbox"/> OTHER STRUCTURES | | <input type="checkbox"/> ADD. | <input type="checkbox"/> ALTER. | <input type="checkbox"/> REPAIR | <input type="checkbox"/> OTHER WORK | |
| <input type="checkbox"/> FENCE WALL | <input type="checkbox"/> RETAINING WALL | | | <input type="checkbox"/> RECONSTR. | | <input type="checkbox"/> DEMOLITION | | |

APPLICATION IS HEREBY MADE FOR PERMIT TO DO WORK AS FOLLOWS:

CLASSIFICATION OF OCCUPANCIES GROUP: B-2 Social Hall

SHOW NUMBER OF UNITS

| SINGLE FAMILY DWELLING | DUPLEX | APARTMENT | BUSINESS | INDUSTRIAL | PUBLIC | INSTITUTIONAL | STORAGE | MIXED |
|------------------------|--------|-----------|----------|------------|-------------------------------------|---------------|---------|-------|
| | | | | | <input checked="" type="checkbox"/> | | | |

CLASSIFICATION OF CONSTRUCTION

CHECK PROPER BOX

| | | | | | | |
|---|--|--|---|--|--|--|
| <input checked="" type="checkbox"/> FIRE PROOF TYPE I | <input type="checkbox"/> SEMI FIRE PROOF TYPE II | <input type="checkbox"/> HEAVY TIMBER TYPE III | <input checked="" type="checkbox"/> NON COMBUSTIBLE TYPE IV (1) | <input type="checkbox"/> UNPROTECTED METAL TYPE IV (N) | <input type="checkbox"/> ORDINARY MASONRY TYPE V (1) | <input type="checkbox"/> WOOD FRAME TYPE V (N) |
|---|--|--|---|--|--|--|

FILL IN REQUIRED INFORMATION

PROPOSED ADDRESS (NO.) LINAPUNI STREET (STREET) LOT AREA 621,940 SQ. FT. USE DISTRICT _____

OVERALL DIMENSIONS 46'-8" X 74'-6" FLOOR AREA 2250 SQ. FT. NO. OF STORIES 1

BASEMENT NONE SO. FT. TYPE OF FOUNDATION CONCRETE TYPE OF FLOOR CONCRETE

TYPE OF EXTERNAL WALLS CONC & ALUM GUM TYPE OF INTERNAL PARTITIONS - TYPE OF ROOF CONCRETE

CONNECTION TO SEWER NO CONNECTION TO CESSPOOL NO

NO PART OF THIS BUILDING WILL BE NEARER THAN 270 FT. 0 INCHES TO NEAREST ADJOINING PROPERTY LINE AND NO PART OF THIS BUILDING WILL BE NEARER THAN 0 FT. 0 INCHES FROM 1ST STORY, NOR 32 FT. 0 INCHES FROM STORIES ABOVE THE 1ST FLOOR OF ANY BUILDING ON THE SAME LOT. NO EAVE, OVERHANG, OR OTHER PROJECTION WILL PROJECT MORE THAN 50% OF THE SPACE ADJOINING A PROPERTY LINE. UNDERSIDE OF FLOOR SILLS WILL BE AT LEAST 20 INCHES ABOVE HIGHEST PART OF GROUND. CEMENT FLOOR SLABS OF BUILDINGS SHALL HAVE MARGINAL WALLS 24 INCHES BELOW GRADE WHERE REQUIRED.

PERMIT APPLIED FOR AND RECEIVED

BUILDING OWNER HAWAII HOUSING AUTHORITY ADDRESS 1002 N. SCHOOL ST.

GENERAL CONTRACTOR CONSTR CO STATE LICENSE NO. ABC-7 ADDRESS 1441 KAPIOLANI BLVD

PLAN MAKER BELI LEMMON P. LO ADDRESS 165 SO. KING ST.

PLUMBING SUB-CONTRACTOR LATER

ELECTRICAL SUB-CONTRACTOR LATER

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL CITY AND COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION.

DATE AND SIGN

SIGNATURE OF APPLICANT [Signature] DATE 3-12-63 SIGNATURE OF OWNER OR BUILDING [Signature]

PERMISSION IS HEREBY GIVEN TO DO THE ABOVE WORK ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLAN AND SPECIFICATIONS PERTAINING THERETO. SUBJECT TO COMPLIANCE WITH ORDINANCES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII.

APPLICANTS WILL NOT WRITE IN THIS PART OF FORM

CONSTRUCTION TO BE COMPLETED ON OR ABOUT 3-20-63 APPROVED [Signature] AGENT, BOARD OF HEALTH

DATE 5/14-63 APPROVED [Signature] CHIEF ENGINEER, FIRE DEPARTMENT

WARNING! PERMIT PLACARD MUST BE POSTED ON THE SITE OF THE WORK. BE SURE YOU ARE FULLY INFORMED ON BUILDING AND ZONING LAWS BEFORE BEGINNING YOUR WORK. PLANTING HEDGES, TREES OR CONSTRUCTING FENCES BEYOND LIMITS OF YOUR PROPERTY LINE IS FORBIDDEN BY LAW. (PENALTY OF \$100.00 FINE AND/OR 30 DAYS IMPRISONMENT.)

PLANNING DEPARTMENT DATE 3/27-63

ZONE (USE DISTRICT) 1A(1) SUB-DIVISION PENDING no

SET BACK no ON MASTER PLAN yes

SUB-DIVISION FILED yes COMMISSION REPORT social hall

SUB-DIVISION APPROVED yes RECOMMENDATION yes

OFFICE INDEX COPY

3-16-63

PERMIT NUMBER

SEE INSTRUCTIONS BELOW 208596

BUILDING DEPARTMENT DIVISION OF BUILDING SAFETY CITY AND COUNTY OF HONOLULU

HIGH RISE BLDG 'A' APPLICATION AND BUILDING PERMIT

Fee Receive

Table with columns: EST. VALUE (2,661,876), PERMIT FEE (165000), CLASS OF CONSTRUCTION (I), NO. OF STORIES (16), ZONE (1), SEC. (3), PLAT (39), PARCEL (142), LOT NO., DISTRICT (KALINI). Includes checkboxes for NEW BLDG., EXIST. BLDG., FENCE WALL, RETAINING WALL, ADD., ALTER., REPAIR, RECONSTR., DEMOLITION, OTHER WORK.

APPLICATION IS HEREBY MADE FOR PERMIT TO DO WORK AS FOLLOWS:

CLASSIFICATION OF OCCUPANCIES GROUP: A - Apt. Bldg.

Table with columns: SHOW NUMBER OF UNITS, SINGLE FAMILY DWELLING, DUPLEX, APARTMENT (274), BUSINESS, INDUSTRIAL, PUBLIC, INSTITUTIONAL, STORAGE, MIXED.

CLASSIFICATION OF CONSTRUCTION

Table with columns: CHECK PROPER BOX, FIRE PROOF TYPE I, SEMI FIRE PROOF TYPE II, HEAVY TIMBER TYPE III, NON COMBUSTIBLE TYPE IV (1), UNPROTECTED METAL TYPE IV (N), ORDINARY MASONRY TYPE V (1), WOOD FRAME TYPE V (2).

PROPOSED ADDRESS: LINA PUNI STREET (NO. 318' X 382'). LOT AREA 621,940 SQ. FT. USE DISTRICT H/A. FLOOR AREA 295,764 SQ. FT. NO. OF STORIES 16.

BASEMENT NONE SQ. FT. TYPE OF FOUNDATION CONCRETE TYPE OF FLOOR CONCRETE. TYPE OF EXTERNAL WALLS CONCRETE TYPE OF INTERNAL PARTITIONS CONC. BLOCK TYPE OF ROOF CONCRETE. CONNECTION TO SEWER YES CONNECTION TO CESSPOOL NO.

NO PART OF THIS BUILDING WILL BE NEARER THAN 32 FT 0 INCHES TO NEAREST ADJOINING PROPERTY LINE AND NO PART OF THIS BUILDING WILL BE NEARER THAN 45 FT 0 INCHES FROM 1ST STORY.

OF THIS BUILDING WILL BE NEARER THAN 45 FT 0 INCHES FROM 1ST STORY. NO EAVE, OVERHANG, OR OTHER PROJECTION WILL PROJECT MORE THAN 50% OF THE SPACE ADJOINING A PROPERTY LINE. UNDERSIDE OF FLOOR SILLS WILL BE AT LEAST 24 INCHES ABOVE HIGHEST PART OF GROUND. CEMENT FLOOR SLABS OF BUILDINGS SHALL HAVE MARGINAL WALLS 24 INCHES BELOW GRADE WHERE REQUIRED.

PERMIT APPLICANT: HAWAII HOUSING AUTHORITY ADDRESS 1002 N SCHOOL ST. GENERAL CONTRACTOR: HAWAIIAN DREDGING AND CONST. CO. STATE LICENSE NO. ABC7 ADDRESS 1441 KAPIOLANI BLVD. PLAN MANAGER: BELT, LEMMON & LO ADDRESS 165 SO KING ST.

SUB-CONTRACTOR: ELECTRICAL LATER. SIGNATURE OF APPLICANT: [Signature] DATE 3-12-63. SIGNATURE OF OWNER OF BUILDING: [Signature]

PERMISSION IS HEREBY GIVEN TO DO THE ABOVE WORK ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLAN AND SPECIFICATIONS PERTAINING THERETO. SUBJECT TO COMPLIANCE WITH ORDINANCES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII.

APPLICANTS WILL NOT WRITE IN THIS PART OF FORM. DATE 3-20 1963 APPROVED [Signature] AGENT, BOARD OF HEALTH. DATE 5/19 1963 APPROVED [Signature] CHIEF ENGINEER, FIRE DEPARTMENT.

WARNING! PERMIT PLACARD MUST BE POSTED ON THE SITE OF THE WORK. BE SURE YOU ARE FULLY INFORMED ON BUILDING AND ZONING LAWS BEFORE BEGINNING YOUR WORK. PLANTING HEDGES, TREES OR CONSTRUCTING FENCES BEYOND LIMITS OF YOUR PROPERTY LINE IS FORBIDDEN BY LAW. (PENALTY OF \$100.00 FINE AND/OR 30 DAYS IMPRISONMENT.)

PLANNING DEPARTMENT. ZONE (USE DISTRICT) H/A SUB-DIVISION PENDING. SET BACK -10 ON MASTER PLAN. SUB-DIVISION FILED. COMMISSION REPORT. SUB-DIVISION APPROVED. RECOMMENDATION. OFFICE INDEX COPY. DATE 3/27 1963. 405 spaces provided. OK per Dept. K. H. O.

3-20-63

PERMIT NUMBER

208597

BUILDING DEPARTMENT
DIVISION OF BUILDING SAFETY
CITY AND COUNTY OF HONOLULU

SEE INSTRUCTIONS BELOW

APPLICATION AND BUILDING PERMIT

Fee Receive

WRITE IN ALL INFORMATION

| EST. VALUE | PERMIT FEE | CLASS OF CONSTRUCTION | NO. OF STORIES | ZONE | SEC. | PLAT | PARCEL | LOT NO. | DISTRICT |
|------------|------------|-----------------------|----------------|------|------|------|--------|---------|----------|
| 2,702,676 | Waived | I | 16 | 1 | 3 | 39 | 142 | | 3 KALINI |

CHECK BOX OR WRITE IN IF NECESSARY

| NEW BLDG. | EXIST. BLDG. | OTHER STRUCTURES | | | ADD. | ALTER. | REPAIR | OTHER WORK |
|-------------------------------------|--------------------------|------------------|--|--|-----------|--------|------------|------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | | | | |
| FENCE WALL | RETAINING WALL | | | | RECONSTR. | | DEMOLITION | |

APPLICATION IS HEREBY MADE FOR PERMIT TO DO WORK AS FOLLOWS:

CLASSIFICATION OF OCCUPANCIES GROUP: H - Apartment

| SHOW NUMBER OF UNITS | SINGLE FAMILY DWELLING | DUPLEX | APARTMENT | BUSINESS | INDUSTRIAL | PUBLIC | INSTITUTIONAL | STORAGE | MIXED |
|----------------------|------------------------|--------|-----------|----------|------------|--------|---------------|---------|-------|
| | | | 298 | | | | | | |

CLASSIFICATION OF CONSTRUCTION

| CHECK PROPER BOX | FIRE PROOF TYPE I | SEMI FIRE PROOF TYPE II | HEAVY TIMBER TYPE III | NON COMBUSTIBLE TYPE IV (1) | UNPROTECTED METAL TYPE IV (N) | ORDINARY MASONRY TYPE V (1) | WOOD FRAME TYPE V (N) |
|-------------------------------------|-------------------------------------|-------------------------|-----------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | |

FILL IN REQUIRED INFORMATION

PROPOSED ADDRESS: LINA PUNI STREET (NO.) 319' X 393' (STREET) LOT AREA 621,940 SQ. FT. USE DISTRICT H/A

OVERALL DIMENSIONS: 319' X 393' FLOOR AREA 300,964 SQ. FT. NO. OF STORIES 16

BASEMENT: NONE SQ. FT. TYPE OF FOUNDATION: CONCRETE TYPE OF FLOOR: CONCRETE

TYPE OF EXTERNAL WALLS: CONCRETE TYPE OF INTERNAL PARTITIONS: CONG. BLOCK TYPE OF ROOF: CONCRETE

CONNECTION TO SEWER: YES CONNECTION TO CESSPOOL: NO

NO PART OF THIS BUILDING WILL BE NEARER THAN 41 FT. 0 INCHES TO NEAREST ADJOINING PROPERTY LINE AND NO PART OF THIS BUILDING WILL BE NEARER THAN 110 FT. 0 INCHES FROM 1ST STORY, NOR 110 FT. 0 INCH FROM STORIES ABOVE THE 1ST FLOOR OF ANY BUILDING ON THE SAME LOT. NO EAVE, OVERHANG, OR OTHER PROJECTION WILL PROJECT MORE THAN 50% OF THE SPACE ADJOINING A PROPERTY LINE. UNDERSIDE OF FLOOR SILLS WILL BE AT LEAST 20 INCHES ABOVE HIGHEST PART OF GROUND. LEMENT FLOOR SLABS OF BUILDINGS SHALL HAVE MARGINAL WALLS 24 INCHES BELOW GRADE WHERE REQUIRED.

PERMIT APPLICANT'S AND ADDRESSES OF:

BUILDING OWNER: HAWAII HOUSING AUTHORITY ADDRESS 1002 N. SCHOOL ST

GENERAL CONTRACTOR: HAWAIIAN DREDGING CONST. CO. STATE LICENSE NO. ABC-7 ADDRESS 1441 KAPIOLANI BLVD

PLAN MAKER: BELT LEMMON & LO ADDRESS 165 SO KING ST.

PLUMBING SUB-CONTRACTOR: LATEL

ELECTRICAL SUB-CONTRACTOR: LATEL

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL CITY AND COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION.

DATE AND SIGN: SIGNATURE OF APPLICANT: [Signature] DATE: 3-12-63 SIGNATURE OF OWNER OF BUILDING: [Signature]

PERMISSION IS HEREBY GIVEN TO DO THE ABOVE WORK ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLAN AND SPECIFICATIONS PERTAINING THERETO. SUBJECT TO COMPLIANCE WITH ORDINANCES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII. CONSTRUCTION TO BE COMPLETED ON OR ABOUT _____ 19__

APPLICANTS WILL NOT WRITE IN THIS PART OF FORM

DATE: 3-20-63 APPROVED: [Signature] AGENT BOARD OF HEALTH

DATE: _____ 19__ APPROVED: _____ CHIEF ENGINEER, FIRE DEPARTMENT

WARNING! PERMIT PLACARD MUST BE POSTED ON THE SITE OF THE WORK. BE SURE YOU ARE FULLY INFORMED ON BUILDING AND ZONING LAWS BEFORE BEGINNING YOUR WORK. PLANTING HEDGES, TREES OR CONSTRUCTING FENCES BEYOND LIMITS OF YOUR PROPERTY LINE IS FORBIDDEN BY LAW. (PENALTY OF \$100.00 FINE AND/OR 30 DAYS IMPRISONMENT.)

PLANNING DEPARTMENT DATE: 3/27/63

ZONE (USE DISTRICT): H/A SUB-DIVISION PENDING: No

SET BACK: None ON MASTER PLAN: yes

SUB-DIVISION FILED: [Signature] COMMISSION REPORT: 445 parking spaces provided

SUB-DIVISION APPROVED: [Signature] RECOMMENDATION: Refer to Public Dept. OK'd by

OFFICE INDEX COPY SIGNATURE: [Signature]

3-20-63

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

PERMIT NO. 41866

| APPLICANT FILL IN AREA BELOW | FOR BUILDING DEPARTMENT USE |
|--|--|
| OWNER'S ADDRESS <u>KUHO PARIS TERRACE HAWAII HONOLULU</u> | ZONE <u>1</u> SEC <u>3</u> PLAT <u>34</u> PARCEL <u>1</u> LOT NO. <u>163, 046</u> LOT AREA <u>163, 046</u> |
| CONSTRUCTION SITE ADDRESS <u>1002 North School Street</u> | OCCUPANCY GROUP <u>H - Apt. Bldg.</u> DISTRICT <u>Kalihi</u> |
| PLAN MAKER <u>GIUVANNI K.L. CHUNG Assoc. 2385</u> | ACCEPTED VALUE <u>101.00</u> PERMIT FEE <u>101.00</u> |
| ADDRESS <u>770 KAPIOLANI BLVD.</u> | TYPE OF CONSTRUCTION MINIMUM ACTUAL NO. OF STORIES EXISTING FINAL FIRE ZONE <u>17</u> <u>15</u> <u>3</u> |
| CONTRACTOR <u>Albert C. Kobayashi, Inc B-1088</u> | FLOOR AREA (SQ.FT.) EXISTING NEW TOTAL |
| ADDRESS <u>2646 Kilihua St. 847-5346</u> | NAME OF PROJECT <u>...</u> |
| ELECTRICAL CONTRACTOR <u>None</u> | REMARKS <u>...</u> |
| PLUMBING CONTRACTOR <u>F. ... Plumbing</u> | ZONING AND CZC DATA LUI _____ FAR _____ PERMITTED AREA _____ AREA SHOWN ON PLAN _____ |
| DESCRIPTION OF WORK TO BE DONE <u>System to A Computation system Bldg A ALL FLOORS</u> | STRUCTURE CODE: <u>50</u> CENSUS TRACT-BLOCK NO.: <u>113</u> ZONE (USE DISTRICT): <u>A-3</u> SET BACK: _____ GP OR DLUM DESIGNATION: <u>...</u> SHORELINE S/B: _____ |
| ESTIMATED VALUE OF WORK: <u>\$25,000.00</u> | WORK WILL ADD DELETE RESIDENTIAL UNITS _____ TOTAL _____ TOT HOTEL ROOMS _____ ROOMS _____ ROO OFF-STREET PARKING SPACES _____ SPACES _____ SPAC |
| NATURE OF WORK 1 <input type="checkbox"/> NEW BLDG 2 <input type="checkbox"/> FOUNDATION ONLY 3 <input type="checkbox"/> SHELL ONLY 4 <input type="checkbox"/> ADDITION 5 <input checked="" type="checkbox"/> ALTERATION 6 <input checked="" type="checkbox"/> REPAIR 7 <input type="checkbox"/> DEMOLITION 8 <input type="checkbox"/> FENCE 9 <input type="checkbox"/> RETAINING WALL 10 <input type="checkbox"/> ELECTRICAL 11 <input checked="" type="checkbox"/> PLUMBING 12 <input type="checkbox"/> OTHER | APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) |
| SIDEWALK, CURB, AND DROP DRIVEWAY <input type="checkbox"/> Construct <input checked="" type="checkbox"/> Conc. <input type="checkbox"/> A.C. <input type="checkbox"/> SIDEWALK* <input type="checkbox"/> Reconstruct LINEAL FEET _____ of <input type="checkbox"/> Lava Rock <input type="checkbox"/> Conc. <input type="checkbox"/> CURBING* <input type="checkbox"/> R.C. <input type="checkbox"/> A.C. <input type="checkbox"/> DRIVEWAY* | CITY AND COUNTY LAND UTILIZATION DIV. OF ENGINEERING LOT GRADING HIGHWAY DRAINAGE DIVISION OF SEWERS FIRE DEPT. HON. REDEV. AGENCY BD. OF WATER SUPPLY |
| SEWAGE DISPOSAL <input type="checkbox"/> NEW <input checked="" type="checkbox"/> EXISTING <input type="checkbox"/> NOT APPLICABLE METHOD 1 <input checked="" type="checkbox"/> PUBLIC SEWER 2 <input type="checkbox"/> AEROBIC UNIT 3 <input type="checkbox"/> CESSPOOL 4 <input type="checkbox"/> PRIVATE SEWAGE TREATMENT PLANT 5 <input type="checkbox"/> OTHER (SPECIFY) _____ | STATE OF HAWAII HEALTH DEPT. FIRE MARSHAL LAND & NATURAL RESOURCES HIGHWAYS DIVISION DIV. OF INDUSTRIAL SAFETY |
| I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regarding building construction. <u>12/10/74</u> OWNER (OWNER OR AGENT) <u>...</u> DATE | NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSON AS REQUIRED UNDER CHAPTER 49E, HAWAII REVISED STATUTES. POST PERMIT PLACED ON SITE OF WORK. THIS PERMIT EXPIRES IF WORK IS NOT STARTED WITHIN 90 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 90 DAYS. VIOLATION OF ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT. |
| AGENT, PRINT NAME <u>...</u> AGENT'S TEL. NO. <u>847-5346</u> | FOR DIRECTOR AND BUILDING SUPERINTENDENT <u>...</u> DATE <u>12/20/74</u> |

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION

PERMIT NO 49904

| APPLICANT FILL IN AREA BELOW | FOR BUILDING DEPARTMENT USE |
|---|--|
| OWNER'S ADDRESS <u>Kuhio Park Terrace</u> <u>1475 Kimoana St.</u> | ZONE <u>1</u> SEC <u>3</u> PLAT <u>B71</u> PARCEL <u>7</u> LOT NO. <u>63046</u> |
| CONSTRUCTION SITE ADDRESS <u>1475 Kimoana St.</u> | OCCUPANCY GROUP <u>H-1</u> DISTRICT <u>Kalihi</u> |
| PLAN MAKER <u>Robert A. Ayres</u> | ACCEPTED VALUE <u>\$ 19,000</u> PERMIT FEE <u>78.00</u> |
| ADDRESS <u>1475 Kimoana St.</u> | TYPE OF CONSTRUCTION MINIMUM <u>1</u> ACTUAL <u>1</u> |
| CONTRACTOR <u>Hicks Contract</u> | FLOOR AREA (SQ. FT.) EXISTING <u>16</u> NEW <u>16</u> TOTAL <u>32</u> |
| ADDRESS <u>1475 Kimoana St.</u> | NAME OF PROJECT <u>Kuhio Park Terrace</u> |
| ELECTRICAL CONTRACTOR <u>H-1-A Electric</u> | REMARKS |
| ADDRESS <u>2849 Keolu Dr.</u> | |
| PLUMBING CONTRACTOR <u>H-1-A Electric</u> | |
| ADDRESS <u>2849 Keolu Dr.</u> | |
| DESCRIPTION OF WORK TO BE DONE <u>ALTER EXISTING ELEVATOR AND</u> <u>ADDITIONAL SECURITY LIGHTS IN FINAL</u> <u>SIGNATURE BLDG B.</u> | ZONING AND CZC DATA LUI _____ FAR _____ PERMITTED AREA _____ AREA SHOWN ON PLAN _____ STRUCTURE CODE <u>J3</u> CENSUS TRACT-BLOCK NO. <u>621</u> ZONE (USE DISTRICT) <u>H-3</u> SET BACK: _____ GP OR DLUM DESIGNATION <u>APT / PMK</u> SHORELINE S/B: _____ |
| ESTIMATED VALUE OF WORK: \$ <u>17,000</u> | WORK WILL RESIDENTIAL UNITS _____ TOTAL _____ HOTEL ROOMS _____ ROOMS _____ OFF-STREET PARKING SPACES _____ SPACES _____ |
| NATURE OF WORK 1 <input type="checkbox"/> NEW BLDG. 2 <input checked="" type="checkbox"/> ALTERATION 3 <input type="checkbox"/> RETAINING WALL 4 <input type="checkbox"/> FOUNDATION ONLY 5 <input type="checkbox"/> REPAIR 6 <input checked="" type="checkbox"/> ELECTRICAL 7 <input type="checkbox"/> SHELL ONLY 8 <input type="checkbox"/> DEMOLITION 9 <input type="checkbox"/> PLUMBING 10 <input type="checkbox"/> ADDITION 11 <input type="checkbox"/> FENCE 12 <input type="checkbox"/> OTHER | APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) |
| SIDEWALK, CURB, AND DROP DRIVEWAY <input type="checkbox"/> Construct _____ of _____ <input type="checkbox"/> Reconstruct _____ of _____ | AGENCY SIGNATURE DATE CITY AND COUNTY _____ LAND UTILIZATION _____ DIV. OF ENGINEERING _____ LOT GRADING _____ HIGHWAY <u>2472</u> _____ DRAINAGE _____ DIVISION OF SEWERS _____ FIRE DEPT. _____ HON. REDEV. AGENCY _____ BD. OF WATER SUPPLY _____ STATE OF HAWAII <u>not park w.</u> HEALTH DEPT. _____ FIRE MARSHAL _____ LAND & NATURAL RESOURCES _____ HIGHWAYS DIVISION _____ DIV. OF INDUSTRIAL SAFETY <u>REITERMAN</u> <u>11.11.0</u> <u>TITLE DEPT.</u> |
| SEWAGE DISPOSAL <input type="checkbox"/> NEW <input type="checkbox"/> EXISTING <input checked="" type="checkbox"/> NOT APPLICABLE METHOD 1 <input type="checkbox"/> PUBLIC SEWER 2 <input type="checkbox"/> AEROBIC UNIT 3 <input type="checkbox"/> CESSPOOL 4 <input type="checkbox"/> PRIVATE SEWAGE TREATMENT PLANT 5 <input type="checkbox"/> OTHER (SPECIFY) _____ | NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSON AS REQUIRED UNDER CHAPTER 46E, HAWAII REVISED STATUTES. THIS PERMIT EXPIRES IF WORK IS NOT STARTED WITHIN 90 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 90 DAYS. VIOLATION OF ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES PUNISHABLE BY FINE AND/OR IMPRISONMENT. |
| I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction. | |
| SIGNATURE (OWNER OR AGENT) _____ DATE _____ AGENT, PRINT NAME _____ AGENT'S TEL. NO. <u>746-1491</u> | |

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.
OFFICE INDEX COPY

FOR DIRECTOR AND BUILDING SUPERINTENDENT _____ DATE 6-5-75

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

PERMIT NO. 50466

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Hawaii Housing Authority Kuliou Park (A)

OWNER'S ADDRESS: ~~Kuliou Park~~
TEL. NO.

CONSTRUCTION SITE ADDRESS: 1475 LANAIPUNA ST.

PLAN MAKER: KENNETH K. DKIPUNA
PROF. REG. NO. 1053
ADDRESS: _____ TEL. NO. _____

CONTRACTOR: Albert C. Kobayashi, Inc. P-1088
STATE LIC. NO. 8175346
ADDRESS: 2646 K. Iolani St.
ELECTRICAL CONTRACTOR: _____
ADDRESS: _____ TEL. NO. _____

PLUMBING CONTRACTOR: _____
STATE LIC. NO. _____
ADDRESS: Nirone
TEL. NO. _____

| | | | | | |
|---|-------|-----------|------------------|---------------------------------------|------------------|
| ZONE 1 | SEC 3 | PLAT 39 | PARCEL 1 | LOT NO. | LOT AREA 663,096 |
| OCCUPANCY GROUP: H. Apartment. | | | DISTRICT: KALIHI | | |
| ACCEPTED VALUE: 5000 | | | PERMIT FEE: 22 | | |
| TYPE OF CONSTRUCTION: I MINIMUM | | I ACTUAL | | NO. OF STORIES: EXISTING 17, FINAL 17 | |
| FLOOR AREA (SQ. FT.): EXISTING | | NO CHANGE | | TOTAL | |
| NAME OF PROJECT: KULIU PARK TERRACE | | | | | |
| REMARKS: (Install Mail Boxes & Enclosure) | | | | | |

DESCRIPTION OF WORK TO BE DONE

Install Mail Boxes & Enclosure
Pkg A

ZONING AND CZC DATA

LUI _____ FAR _____ PERMITTED AREA _____ AREA SHOWN ON PLAN _____

STRUCTURE CODE: 53 CENSUS TRACT-BLOCK NO.: 62.0

ZONE (USE DISTRICT): A-2 SET BACK: _____

GP OR DLUM DESIGNATION: APT-3 SHORELINE S/B: _____

REMARKS: _____

ESTIMATED VALUE OF WORK: \$ 5,000.00

NATURE OF WORK

| | | |
|--|-------------------------------------|--|
| <input type="checkbox"/> NEW BLDG. | <input type="checkbox"/> ALTERATION | <input type="checkbox"/> RETAINING WALL |
| <input type="checkbox"/> FOUNDATION ONLY | <input type="checkbox"/> REPAIR | <input checked="" type="checkbox"/> ELECTRICAL |
| <input type="checkbox"/> SHELL ONLY | <input type="checkbox"/> DEMOLITION | <input type="checkbox"/> PLUMBING |
| <input checked="" type="checkbox"/> ADDITION | <input type="checkbox"/> FENCE | <input type="checkbox"/> OTHER |

| WORK WILL | ADD | DELETE |
|---------------------------|--------------|--------------|
| RESIDENTIAL UNITS | _____ TOTAL | _____ TOTAL |
| HOTEL ROOMS | _____ ROOMS | _____ ROOMS |
| OFF-STREET PARKING SPACES | _____ SPACES | _____ SPACES |

SIDEWALK, CURB, AND DROP DRIVEWAY Existing

Construct Conc. A.C. SIDEWALK*

Reconstruct LINEAL FEET of Lava Rock Conc. CURBING*

R.C. A.C. DRIVEWAY*

*Please notify this office at least 24 hours before starting work. Phone 546-7098.

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|-----------|------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| LOT GRADING | | |
| HIGHWAY | | |
| DRAINAGE | | |
| DIVISION OF SEWERS | | |
| FIRE DEPT. | | |
| HON. REDEV. AGENCY | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| HEALTH DEPT. | | |
| FIRE MARSHAL | | |
| LAND & NATURAL RESOURCES | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | | |

SEWAGE DISPOSAL NEW EXISTING NOT APPLICABLE

METHOD

PUBLIC SEWER AEROBIC UNIT CESSPOOL

PRIVATE SEWAGE TREATMENT PLANT

OTHER (SPECIFY) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

RE (OWNER OR AGENT) _____ DATE 6/11/75

AGENT, PRINT NAME _____ AGENT'S TEL. NO. _____

NOTES TO APPLICANT:

SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 458, HAWAII REVISED STATUTES. THIS PERMIT EXPIRES IF WORK IS NOT STARTED WITHIN 90 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 90 DAYS, VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

K. G. ... 6-17-75

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. **138155**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

OWNER'S ADDRESS
HAWAII HOUSING AUTHORITY STATE OF HAWAII
 1002 NORTH SCHOOL ST E483211
 Tel. No. _____

CONSTRUCTION SITE ADDRESS
 1475 LINAPUNI

PLAN MAKER
HAWAII ARCHITECTS & ENGINEERS INC. Prof. Reg. No. _____
 Address: 190 SOUTH KING ST Tel. No. 5213808
 State Lic. No. _____

CONTRACTOR
Ralph S. Inouye Co., Ltd State Lic. No. AB-457
 Address: 2831 Awaawaloa Tel. No. 839-9002

ELECTRICAL CONTRACTOR
Wasa Electrical Service State Lic. No. 5886
 Address: 2908 Kaihikapu ST. Tel. No. 839-2741
 State Lic. No. C-7674

PLUMBING CONTRACTOR
Au's Plumbing State Lic. No. BC-7338
 Address: 999 Robelle Ln Tel. No. 848-1085

| | | | | | |
|---|-----------------|-------------------|--|--------------------------|---------------------------|
| ZONE 1 | SEC 3 | PLAT 39 | PARCEL 1357 | LOT NO. 663046 | LOT AREA 663046 |
| Occupancy Group K-1 apt. | | | Orig. Bldg. Permit No. _____ District Kalihi | | |
| Accepted Value \$556,940.00 | | | Permit Fee \$1202.00 | | |
| TYPE OF CONSTRUCTION MINIMUM: IFR ACTUAL: IFR | | | NO. OF STORIES EXISTING: 19 FINAL: 19 | | Fire Zone 3 |
| FLOOR AREA (SQ. FT.) Existing: _____ New: _____ Total: _____ | | | | | |
| Name of Project: Kuhio Park Tower | | | | | |
| REMARKS: (New Elevator) | | | | | |

DESCRIPTION OF WORK TO BE DONE
CONSTRUCTION OF ELEVATOR SHAFT
 + generator AND INSTALLATION
 ground floor BLDG. AT TRUCKALAE
 ELIMINATE WALL

Proposed Use: **FREIGHT ELEVATOR**

ZONING AND CZC DATA

STRUCTURE CODE: **53** CENSUS TRACK-BLOCK NO.: **62.0**

ZONE (Use District): **A-5** SET BACK: **none**

GP OR DLUM DESIGNATION: **apt.** SHORELINE S/B: **none**

SLU DESIGNATION: **Urban** SMA S/B: **none**

REMARKS: _____

| | | |
|-------------------------|-------------|---------------|
| WORK WILL | ADD | DELETE |
| RESIDENTIAL UNITS _____ | Total _____ | Total _____ |
| HOTEL ROOMS _____ | Rooms _____ | Rooms _____ |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|------------------------------|--------|
| CITY AND COUNTY | [Signature] | [Date] |
| LAND UTILIZATION | Refer to Bldg B-1, applicant | |
| DIV. OF ENGINEERING | [Signature] | [Date] |
| LOT GRADING | [Signature] | [Date] |
| HIGHWAY | [Signature] | [Date] |
| DRAINAGE | [Signature] | [Date] |
| DIVISION OF SEWERS | [Signature] | [Date] |
| FIRE DEPT. | [Signature] | [Date] |
| TRANSPORTATION | [Signature] | [Date] |
| BD. OF WATER SUPPLY | [Signature] | [Date] |
| STATE OF HAWAII | [Signature] | [Date] |
| HEALTH DEPT. | Refer to Bldg B-1, applicant | |
| HAWAIIAN HOME LANDS | [Signature] | [Date] |
| LAND & NATURAL RESOURCES | [Signature] | [Date] |
| HIGHWAYS DIVISION | [Signature] | [Date] |
| DIV. OF INDUSTRIAL SAFETY | Refer to Bldg B-1, applicant | |

Estimated Value of Work: \$ **556,940 -**

NATURE OF WORK

| | | |
|--|--|--|
| 1 <input type="checkbox"/> New Bldg. | 5 <input checked="" type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input type="checkbox"/> Repair | 10 <input checked="" type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 4 <input type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input checked="" type="checkbox"/> Other generator |

SIDEWALK, CURB, AND DROP DRIVEWAY **EXIST**

| | | | |
|--------------------------------------|------------------------------------|--------------------------------|-----------------|
| <input type="checkbox"/> Construct | <input type="checkbox"/> Conc. | <input type="checkbox"/> A.C. | SIDEWALK |
| <input type="checkbox"/> Reconstruct | <input type="checkbox"/> Lava Rock | <input type="checkbox"/> Conc. | CURBING |
| | <input type="checkbox"/> R.C. | <input type="checkbox"/> A.C. | DRIVEWAY |

Please notify this office at least 24 hours before starting work.
 Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

| | | |
|---|---|-------------------------------------|
| 1 <input type="checkbox"/> Public Sewer | 2 <input type="checkbox"/> Aerobic Unit | 3 <input type="checkbox"/> Cesspool |
| 4 <input type="checkbox"/> Private Sewage Treatment Plant | | |
| 5 <input type="checkbox"/> Other (Specify) _____ | | |

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE OF OWNER OR AGENT: **Albert H. Hamamoto** DATE: **10/22/70**

AGENT, PRINT NAME: **ALBERT H. HAMAMOTO** Tel. No. **839-9002**

ALBERT H. HAMAMOTO State Lic. No. **521355**

REMARKS: _____

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

OFFICE INDEX COPY

FOR DIRECTOR AND BUILDING SUPERINTENDENT

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. 138154
(Amended 3/21)

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Owner's Address
HAWAII HOUSING AUTHORITY
1002 NORTH SCHOOL ST
1475 LINAKUHI

STATE OF HAWAII
Tel. No. 848-3211

Plan Maker
HAWAII ARCHITECTS & ENGINEERS, INC.
Address 190 SOUTH KING ST
Tel. No. 521 9800

Contractor
Ralph S. Thayer Co., Ltd.
Address 2831 Awaawalea
Tel. No. 839-9002

Electrical Contractor
Wass Electrical Service
Address 2908 Kaihikapu
Tel. No. 839-2741

Plumbing Contractor
An's Plumbing
Address 1999 Rebell Ln.
Tel. No. 848-1085

| | | | | | |
|---|------------------------|----------|----------------|------------------------|----------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| 1 | 3 | 39 | 6 | | 663.046 |
| Occupancy Group | | | | Orig. Bldg. Permit No. | District |
| R-1 Rpt. | | | | | Kala |
| Accepted Value | Permit Fee | | | | |
| \$ 556,940 ⁰⁰ | \$ 1,202 ⁰⁰ | | | | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | |
| MINIMUM | ACTUAL | EXISTING | FINAL | Fire Zone | |
| | 12 | 18 | 18 | 2 | |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing _____ New _____ Total _____ | | | | | |
| Name of Project <u>Kuhio Park Plaza</u> | | | | | |
| REMARKS <u>(NEW CONSTRUCTION)</u> | | | | | |

DESCRIPTION OF WORK TO BE DONE
CONSTRUCTION OF ELEVATOR SHAFTS
AND INSTALLATION OF ELEVATORS AT

1110 MARK TERRACE BUILDING
GENERAL
Proposed Use: FREIGHT ELEVATOR

Estimated Value of Work: \$ 556,940

NATURE OF WORK

| | | |
|--|--|--|
| 1 <input type="checkbox"/> New Bldg. | 5 <input checked="" type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input type="checkbox"/> Repair | 10 <input type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input type="checkbox"/> Plumbing |
| 4 <input checked="" type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input checked="" type="checkbox"/> Other GENERAL |

SIDEWALK, CURB, AND DROP DRIVEWAY Exist

| | | | |
|--------------------------------------|------------------------------------|--------------------------------|----------|
| <input type="checkbox"/> Construct | <input type="checkbox"/> Conc. | <input type="checkbox"/> A.C. | SIDEWALK |
| <input type="checkbox"/> Reconstruct | <input type="checkbox"/> Lava Rock | <input type="checkbox"/> Conc. | CURBING |
| | <input type="checkbox"/> R.C. | <input type="checkbox"/> A.C. | DRIVEWAY |

Please notify this office at least 24 hours before starting work.
Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

| | | |
|---|---|-------------------------------------|
| 1 <input type="checkbox"/> Public Sewer | 2 <input type="checkbox"/> Aerobic Unit | 3 <input type="checkbox"/> Cesspool |
| 4 <input type="checkbox"/> Private Sewage Treatment Plant | | |
| 5 <input type="checkbox"/> Other (Specify) | | |

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT) Albert N. Hamamoto DATE 10/11/79

AGENT'S PRINT NAME Albert N. Hamamoto AGENT'S TEL. NO. 521 9051

ZONING AND CZC DATA

STRUCTURE CODE: 53 CENSUS TRACK-BLOCK NO.: 62

ZONE (Use District): A-3 SET BACK: 700

GP OR DLUM DESIGNATION: Rpts SHORELINE S/B: na

SLU DESIGNATION: 6000 SMA S/B: na

REMARKS _____

| WORK WILL | ADD | DELETE |
|-------------------|----------------|--------|
| RESIDENTIAL UNITS | <u>3</u> Total | |
| HOTEL ROOMS | <u>2</u> Repps | |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|-----------------|--------------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| LOT GRADING | | |
| HIGHWAY | | |
| DRAINAGE | | |
| DIVISION OF SEWERS | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| HEALTH DEPT. | <u>N.A.</u> | <u>10/11</u> |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | <u>10/11/79</u> | <u>11</u> |

REMARKS _____

NOTES TO APPLICANT:
SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448B, HAWAII REVISED STATUTES. POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS. DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

FOR DIRECTOR AND BUILDING SUPERINTENDENT

4.2.7-8

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. 154959

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Applicant's Address: WHEEL HOUSING AUTHORITY
1002 NORTH SCHOOL STREET Tel. No. 848-3747

Construction Site Address: 1485 LINAPUNI ST.

Plan Maker: S. KATO ASSOCIATES, INC. Prof. Reg. No. 1829

Address: 1149 BENDEL ST. SUITE 705 Tel. No. 533-3281

Contractor: RICHARD K.W. TUM, INC. State Lic. No. APL-183

Address: 163 ROSELLO LANE Tel. No. 8414231

Electrical Contractor: CHON'S ELECTRIC State Lic. No. C-9619

Address: 98-1282-B HOOHIKI PL. Tel. No. 455-3324

Plumbing Contractor: DAITH HUNTER & SONS, INC. State Lic. No. PL-5215

Address: 938 KATAU ST. Tel. No. 848-0111

| | | | | | |
|---|----------------------|-----------|-------------------------------------|--------------|--------------------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| <u>1</u> | <u>3</u> | <u>39</u> | <u>1</u> | | <u>663046</u> |
| Occupancy Group: <u>A2-1 (SINGLE UNIT)</u> | | | Orig. Bldg. Permit No. <u>_____</u> | | Dist. <u>_____</u> |
| Accepted Value | \$ <u>365,000.00</u> | | Permit Fee <u>1752.00</u> | | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | Fire Zone |
| MINIMUM | ACTUAL | EXISTING | FINAL | | |
| <u>V-144</u> | <u>V-144</u> | <u>1</u> | <u>1</u> | | <u>3</u> |
| FLOOR AREA (SQ. FT.) | | | Total <u>5,342</u> | | |
| Existing | <u>3,270</u> | | New | <u>2,064</u> | |
| Name of Project: <u>Comm. Bldg. for Kiahua Park</u> | | | | | |

DESCRIPTION OF WORK TO BE DONE
COMMUNITY CENTER RENOVATION,
KUHIO PARK TERRACE

ZONING AND CZC DATA

STRUCTURE CODE: 69 CENSUS TRACK-BLOCK NO.: 62

ZONE (Use District): A-3 SET BACK: None

GP OR DLUM DESIGNATION: Up SHORELINE S/B: None

SLU DESIGNATION: Urban SMA S/B: None

REMARKS: THIRD: None

| | | |
|-------------------|-------------|---------------|
| WORK WILL | ADD | DELETE |
| RESIDENTIAL UNITS | _____ Total | _____ Total |
| HOTEL ROOMS | _____ Rooms | _____ Rooms |

Use: _____

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---|-----------|-------------|
| <input checked="" type="checkbox"/> CITY AND COUNTY | | |
| <input type="checkbox"/> LAND UTILIZATION | | |
| <input checked="" type="checkbox"/> DIV. OF ENGINEERING | | |
| <input checked="" type="checkbox"/> LOT GRADING | | |
| <input checked="" type="checkbox"/> HIGHWAY <u>2412</u> | | <u>3/15</u> |
| <input checked="" type="checkbox"/> DRAINAGE | | <u>3/15</u> |
| <input checked="" type="checkbox"/> DIVISION OF SEWERS | | <u>3/15</u> |
| <input type="checkbox"/> FIRE DEPT. | | |
| <input type="checkbox"/> TRANSPORTATION | | |
| <input type="checkbox"/> BD. OF WATER SUPPLY | | |
| <input checked="" type="checkbox"/> STATE OF HAWAII | | |
| <input checked="" type="checkbox"/> HEALTH DEPT. | | <u>3/18</u> |
| <input type="checkbox"/> HAWAIIAN HOME LANDS | | |
| <input type="checkbox"/> LAND & NATURAL RESOURCES | | |
| <input type="checkbox"/> HIGHWAYS DIVISION | | |
| <input type="checkbox"/> DIV. OF INDUSTRIAL SAFETY | | |

Estimated Value of Work: \$ 364,300

NATURE OF WORK

| | | |
|--|-------------------------------------|--|
| <input type="checkbox"/> New Bldg. | <input type="checkbox"/> Alteration | <input type="checkbox"/> Retaining Wall |
| <input type="checkbox"/> Foundation Only | <input type="checkbox"/> Repair | <input type="checkbox"/> Electrical |
| <input type="checkbox"/> Shell Only | <input type="checkbox"/> Demolition | <input checked="" type="checkbox"/> Plumbing |
| <input checked="" type="checkbox"/> Addition | <input type="checkbox"/> Fence | <input type="checkbox"/> Other |

SIDEWALK, CURB, AND DROP DRIVEWAY Reconst.

Construct Conc. A.C. SIDEWALK

Reconstruct LINEAL FEET of Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work.
Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

Public Sewer Aerobic Unit Cesspool

Private Sewage Treatment Plant

Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT): Steph Park Kwak 3/17/81

DATE: 3/17/81

REMARKS

NOTES TO APPLICANT:
SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
POST PERMIT PLACARD ON SITE OF WORK.
THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS.
VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

OFFICE INDEX COPY

FOR DIRECTOR AND BUILDING SUPERINTENDENT: Tom Adair 6/15/81

DATE: _____

FORM B5D-45 (REV. 3/79)

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. **165730**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Hawaii Housing Authority 48377
 Owner's Address: *1002 Al Selan St Hon HI 96819*
 Tel. No. *96819*

Kuhio Park Terrace 1475 Binquist Ave
 Construction Site Address: *1750A*
 Plan Maker: *Thomson, Pease, Laxson, Langfelle*
 Prof. Reg. No. *1750A*

K. Nagata Construction Co
 Contractor: *K. Nagata Construction Co*
 State Lic. No. *125 King St Honolulu HI 96817 544-1070*
 Address: *K. Nagata Co Joint Venture 125 King St Honolulu HI 96817 544-1070*
 Tel. No. *544-1070*

731 E. Union St Honolulu HI 96819 867-0602
 Electrical Contractor: *731 E. Union St Honolulu HI 96819 867-0602*
 State Lic. No. *867-0602*

4420 Tanageria (Electric)
 Address: *4420 Tanageria (Electric) C 10266*
 Tel. No. *4420 Tanageria (Electric) C 10266*

745-D Hawaii Hwy Honolulu HI 96819 531-1971
 Plumbing Contractor: *745-D Hawaii Hwy Honolulu HI 96819 531-1971*
 State Lic. No. *745-D Hawaii Hwy Honolulu HI 96819 531-1971*

Reliable Plumbing Inc C 6595
 Address: *Reliable Plumbing Inc C 6595*
 Tel. No. *Reliable Plumbing Inc C 6595*

731 Koa Hwy Honolulu HI 96819 48-1332
 Electrical Contractor: *731 Koa Hwy Honolulu HI 96819 48-1332*
 State Lic. No. *731 Koa Hwy Honolulu HI 96819 48-1332*

| | | | | | |
|---|--------|----------|----------------|------------------------|-------------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| 1 | 3 | 39 | 1 | | 663 056 |
| Occupancy Group | | | | Orig. Bldg. Permit No. | District |
| R-1 APT. | | | | | KAL |
| Accepted Value | | | Permit Fee | | |
| \$145,951.50 | | | \$876.00 | | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | FLOOD HAZAR |
| MINIMUM | ACTUAL | EXISTING | FINAL | | |
| TER | TER | 18 | 18 | | NON |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing | | New | | Total | |
| Name of Project | | | | | |
| KUHIO PARK TERRACE | | | | | |
| REMARKS | | | | | |
| Modernization of Lobby & Laundry Facilities - BLDG. "B" | | | | | |

DESCRIPTION OF WORK TO BE DONE

Modernization of Lobby & Laundry Facilities
Kuhio Park Terrace
BLD "B"

ZONING AND CZC DATA

STRUCTURE CODE: 53 CENSUS TRACK-BLOCK NO.: 62

ZONE (Use District): A-3 SET BACK: NONE

GP OR DLUM: APT SHORELINE S/B: NONE

DESIGNATION: APT SMA S/B: NONE

REMARKS

| | | |
|-------------------|------------|---------------|
| WORK WILL | ADD | DELETE |
| RESIDENTIAL UNITS | Total | Total |
| HOTEL ROOMS | Rooms | Room |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|-----------------------|----------------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| LOT GRADING | | |
| HIGHWAY <u>2412</u> | <i>B. [Signature]</i> | <u>1-11</u> |
| DRAINAGE | <i>E. [Signature]</i> | <u>1-11</u> |
| DIVISION OF SEWERS | <i>[Signature]</i> | <u>1/1</u> |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| HEALTH DEPT. | <i>[Signature]</i> | <u>1/14</u> |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | | |
| <u>HHA</u> | <i>[Signature]</i> | <u>1-11-50</u> |

REMARKS

Estimated Value of Work: \$145,951.50

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 5 <input checked="" type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input checked="" type="checkbox"/> Repair | 10 <input checked="" type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 4 <input type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Other |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING

Reconstruct Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work.
 Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT): *[Signature]* DATE: _____

AGENT'S PRINT NAME: *K. Nagata Construction Co* AGENT'S TEL. NO.: *867-0602*

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTE.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 1 DAY.
 VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

OFFICE INDEX COPY

FOR DIRECTOR AND BUILDING SUPERINTENDENT *[Signature]* DATE 3-11-50

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. **165731**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Hawaii Housing Authority 848-3275
 Owner's Address: **1002 N. School St. Honolulu, HI 96817**
 Construction Site Address: **Kuhio Park Terrace 1475 Linapuni St. Hon. HI 96819**
 Plan Maker: **Johnson, Reese, Luersen, Lowrey, Archts. 1750A**
 Address: **12 S. King St. Suite 202 Hon. HI 96817** 524-1070
 Contractor: **K. Nagata Construction, Inc. & K. Nagata, Ltd., Joint Venture** State Lic. No. **AB 8762**
 Address: **723-C Uai St. Hon., HI 96819** 847-0602
 Electrical Contractor: **Hawaii Industrial Electric** C 10266
 Address: **345-D Nimitz Hwy. Hon. HI 96817** 536-6971
 Plumbing Contractor: **Reliable Plumbing, Inc.** C 6595
 Address: **731 Kam Hwy. Pearl City, HI 96782** 456-1326

DESCRIPTION OF WORK TO BE DONE
 Modernization of lobby and laundry facilities -
 Kuhio Park Terrace
 BLDG "A"

| | | | | | |
|---|-----|-------------------------|---------------------------------|----------------|----------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| 1 | 3 | 39 | 1 | | 663,016 |
| Occupancy Group | | | Orig. Bldg. Permit No. District | | |
| R-1 | | | Kali | | |
| Accepted Value | | | Permit # | | |
| \$291,903.00 | | | #1460-28 | | |
| TYPE OF CONSTRUCTION | | | | NO. OF STORIES | |
| MINIMUM | | ACTUAL | | EXISTING | FINAL |
| IFR | | IFR | | 18 | 18 |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing | | | | | |
| Name of Project | | | | | |
| KUHIO PARK TERRACE | | | | | |
| REMARKS | | | | | |
| Modernization of lobby & laundry facilities - BLDG. "A" | | | | | |
| ZONING AND CZC DATA | | | | | |
| STRUCTURE CODE: | | CENSUS TRACK-BLOCK NO.: | | | |
| S3 | | 62 | | | |
| ZONE (Use District): | | SET BACK: | | NONE | |
| A-3 | | NONE | | NONE | |
| GP OR DLUM DESIGNATION: | | SHORELINE S/B: | | NONE | |
| AP1 | | NONE | | NONE | |
| SLU DESIGNATION: | | SMA S/B: | | NONE | |
| LISEAN | | NONE | | NONE | |
| REMARKS | | | | | |
| FUD. NONE | | | | | |

| | | |
|-------------------|------------|---------------|
| WORK WILL | ADD | DELETE |
| RESIDENTIAL UNITS | Total | Tot |
| HOTEL ROOMS | Rooms | Ro |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---|----------------|------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| <input checked="" type="checkbox"/> DIV. OF ENGINEERING | | |
| LOT GRADING | | |
| HIGHWAY 2412 | E. [Signature] | 1-11 |
| DRAINAGE | | 1-11 |
| <input checked="" type="checkbox"/> DIVISION OF SEWERS | [Signature] | 1/11 |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| <input checked="" type="checkbox"/> HEALTH DEPT. | [Signature] | 1/11 |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| HIGHWAYS DIVISION | | |
| <input checked="" type="checkbox"/> DIV. OF INDUSTRIAL SAFETY | [Signature] | 1/11 |
| HHA | [Signature] | 1/11 |

Estimated Value of Work: \$ 291,903.00 / A.S. 95150

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 5 <input checked="" type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input checked="" type="checkbox"/> Repair | 10 <input checked="" type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 4 <input type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Other |

SIDEWALK, CURB, AND DROP DRIVEWAY **EXISTING**

Construct Conc. A.C. SIDEWALK

Reconstruct LINEAL FEET of Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify)

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT) [Signature] DATE _____

AGENT, PRINT NAME: **Nagata Construction, Inc. & Nagata, Ltd. Joint Venture** AGENT'S TEL. NO. **847-0602**

REMARKS

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

[Signature] 5-11-82
 FOR DIRECTOR AND BUILDING SUPERINTENDENT

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION**

Permit No. **183160**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

City & County of Honolulu
 Owner's Address: **Honolulu, Hawaii**
 Construction Site Address: **1531 Linapuni St., Honolulu, HI**
 Plan Maker: **Niels Stoermer & Associates, A.I.A., A.I.C.P.**
 Address: **3115 Diamond Head Rd., Honolulu**
 Contractor: **Allied Construction, Inc.**
 Address: **1917 Homerule St., Hon. HI 96819**
 Electrical Contractor: **Rite-Way Electric Co., Ltd.**
 Address: **549 Kokea St., Hon. HI 96817**
 Plumbing Contractor: **M. Hara Plumbing Inc.**
 Address: **531 Puhale Rd., Hon. HI 96819**

Zone: **1** Sec: **3** Plat: **39** Parcel: **1** Lot No.: **663,026** Lot Area: **663,026**
 Occupancy Group: **A-3 (Multi Purpose Ln)** Orig. Bldg. Permit No.: **KAL141** District: **KAL141**
 Accepted Value: **\$358,000.00** Permit Fee: **WAIVED**
 TYPE OF CONSTRUCTION: **V-N** (Minimum) **II-N** (Actual) NO. OF STORIES: Existing **1** Final **1** FLOOD HAZARD: **Per Fee**
 Existing: **1,607** New: **3,243** Total: **4,900**
 Name of Project: **KUHO PARC TELECOM**

DESCRIPTION OF WORK TO BE DONE
Construction of Multi-Purpose Bldg.
Addition to Existing Multi Purpose Room.

ZONING AND CZC DATA
 STRUCTURE CODE: **69** CENSUS TRACK-BLOCK NO. **62**
 ZONE (Use District): **A-2** SET BACK: **10' R/W SCRU.**
 GP OR DLUM DESIGNATION: **MD DOT** SHORELINE S/B: **A-**
 SLU DESIGNATION: **URBAN** SMA S/B: **A-**

WORK WILL ADD DELETE
 RESIDENTIAL UNITS: _____ Total _____ Tot
 HOTEL ROOMS: _____ Rooms _____ Roc

Estimated Value of Work: **\$ 357,997.00**
NATURE OF WORK
 1 New Bldg. 2 Foundation Only 3 Shell Only 4 Addition
 5 Alteration 6 Repair 7 Demolition 8 Fence
 9 Retaining Wall 10 Electrical 11 Plumbing 12 Other

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---|-------------------------|-------------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| <input checked="" type="checkbox"/> DIV. OF ENGINEERING | <i>Walter G. Wilson</i> | <i>4/25</i> |
| <input checked="" type="checkbox"/> LOT GRADING | <i>Walter G. Wilson</i> | <i>4/25</i> |
| <input checked="" type="checkbox"/> HIGHWAY | | |
| <input checked="" type="checkbox"/> DRAINAGE | | |
| <input checked="" type="checkbox"/> DIVISION OF SEWERS | <i>Walter G. Wilson</i> | <i>4/25</i> |
| <input checked="" type="checkbox"/> FIRE DEPT. | | |
| <input checked="" type="checkbox"/> TRANSPORTATION | | |
| <input checked="" type="checkbox"/> BD. OF WATER SUPPLY | <i>Walter G. Wilson</i> | <i>4/25</i> |
| <input checked="" type="checkbox"/> STATE OF HAWAII | | |
| <input checked="" type="checkbox"/> HEALTH DEPT. | <i>Walter G. Wilson</i> | <i>4/25</i> |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | | |

SIDEWALK, CURB, AND DROP DRIVEWAY
 Construct Conc. A.C. SIDEWALK
 Lava Rock Conc. CURBING
 Reconstruct R.C. A.C. DRIVEWAY
 Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable
METHOD
 1 Public Sewer 2 Aerobic Unit 3 Cesspool
 4 Private Sewage Treatment Plant
 5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.
 SIGNATURE OWNER OR AGENT: *Manuel* DATE: _____
 AGENT'S NAME: **Manuel** AGENT'S TEL. NO.: **841-0177**
Allied Construction, Inc.

REMARKS: **Copy retained**

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTE. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 180 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL, PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.
 This building shall not be occupied until a certificate of occupancy has been issued.
 OFFICE INDEX COPY

R.A. DATE: **8/4/82**
 FOR DIRECTOR AND BUILDING SUPERINTENDENT

| APPLICANT FILL IN AREA BELOW | | | | FOR BUILDING DEPARTMENT USE | | | | | | |
|---|--|--|--|--|-----------------|--|-----------------------------------|----------------------------|-----------------------------|--|
| <p><u>Swain Housing Authority</u> Owner's Address: <u>1002 N. School Street</u> Tel. No. <u>848-3275</u></p> | | | | ZONE <u>1</u> | SEC <u>3</u> | PLAT <u>39</u> | PARCEL <u>1</u> | LOT NO. <u>15.221 A</u> | LOT AREA <u>15.221 A</u> | |
| <p>Construction Site Address: <u>1475 Linapuni St. Honolulu Hawaii, Bldg "B"</u> Apt. Room No. <u></u></p> | | | | Occupancy Group <u>R-1 - Apt. Bldg</u> | | | Flood Hazard Dist. <u>None</u> | | | |
| <p>Plan Maker: <u>Arnold Okubo & Assoc, Inc. 4173-5</u> Prt. Reg. No. <u></u></p> | | | | Accepted Value <u>\$ 67,067.00</u> | | | Permit Fee <u>500.00</u> | | | |
| <p>Address: <u>98-029 Hekaha St. #22, Aiea, HI 987-7195</u> Tel. No. <u>497-7195</u></p> | | | | Plan Review Fee | | NO. OF STORIES | | Distri | | |
| <p>Contractor: <u>Walter H. Arakaki, Gen. Contr. Inc. 843-3377</u> State Lic. No. <u>843-3377</u></p> | | | | TYPE OF CONSTRUCTION | | EXISTING | | FINAL | | |
| <p>Address: <u>1804 Republican St.</u> Tel. No. <u>841-3307</u></p> | | | | MINIMUM <u>I-F.R.</u> | | ACTUAL <u>I-F.R.</u> | | <u>16</u> | | |
| <p>Electrical Contractor: <u>KATOK</u> State Lic. No. <u></u></p> | | | | FLOOR AREA (SQ. FT.) | | NEW | | TOTAL | | |
| <p>Address: <u></u> Tel. No. <u></u></p> | | | | Existing <u>2004</u> | | Name of Project <u>Kukui Park Terrace</u> | | Total <u>(Copy)</u> | | |
| <p>Plumbing Contractor: <u>None</u> State Lic. No. <u></u></p> | | | | REMARKS | | | | | | |
| <p>Address: <u></u> Tel. No. <u></u></p> | | | | | | | | | | |
| <p>DESCRIPTION OF WORK TO BE DONE <u>Remove existing roof canopy and replace with new concrete roof canopy (Repair)</u></p> | | | | ZONING AND CZC DATA | | | | | | |
| <p>Proposed Use: <u>Repair roof cover</u></p> | | | | ZONE (Use District): <u>A-2</u> | | SETBACKS: ROAD WIDENING <u>none</u> | | | | |
| <p>Estimated Market Value of Work: <u>\$ 67,067.00</u></p> | | | | DESIGNATION: <u>MO Apt</u> | | SHORELINE <u>no</u> | | | | |
| <p>NATURE OF WORK</p> | | | | SLU DESIGNATION: <u>Urban</u> | | SMA <u>u</u> | | | | |
| <p>1 <input type="checkbox"/> New Bldg. 5 <input type="checkbox"/> Alteration 10 <input checked="" type="checkbox"/> Electrical</p> | | | | SDD or HCSD <u>none</u> | | STRUCTURE CODE: <u>53</u> | | | | |
| <p>2 <input type="checkbox"/> Foundation Only 6 <input checked="" type="checkbox"/> Repair 10a <input type="checkbox"/> Electrical meter only</p> | | | | PUBLIC FACILITIES <u>none</u> | | REMARKS | | | | |
| <p>3 <input type="checkbox"/> Shell Only 7 <input type="checkbox"/> Demolition 11 <input type="checkbox"/> Plumbing</p> | | | | WORK WILL | | ADD | | DELETI | | |
| <p>4 <input type="checkbox"/> Addition 8 <input type="checkbox"/> Fence 12 <input type="checkbox"/> Other</p> | | | | RESIDENTIAL UNITS | | Total | | To | | |
| <p>5 <input type="checkbox"/> Retaining Wall</p> | | | | HOTEL ROOMS | | Rooms | | Ro | | |
| <p>SIDEWALK, CURB, AND DROP-DRIVEWAY</p> | | | | APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) | | | | | | |
| <p><input type="checkbox"/> Construct <input type="checkbox"/> Conc. <input type="checkbox"/> A.C. <input checked="" type="checkbox"/> EXISTING</p> | | | | AGENCY | | SIGNATURE | | D. | | |
| <p><input type="checkbox"/> Reconstruct <input type="checkbox"/> Lava Rock <input type="checkbox"/> Conc. CURBING</p> | | | | CITY AND COUNTY | | <u>Okubo</u> | | | | |
| <p><input type="checkbox"/> R.C. <input type="checkbox"/> A.C. DRIVEWAY</p> | | | | LAND UTILIZATION | | <u>Okubo</u> | | | | |
| <p>Please notify this office at least 24 hours before starting work. Phone 523-4276.</p> | | | | DIV. OF ENGINEERING | | <u>Walter H. Arakaki</u> | | | | |
| <p>SEWAGE DISPOSAL <input type="checkbox"/> New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> Not Applicable</p> | | | | Highway | | | | | | |
| <p>METHOD</p> | | | | Drainage | | | | | | |
| <p>1 <input type="checkbox"/> Public Sewer 2 <input type="checkbox"/> Aerobic Unit 3 <input type="checkbox"/> Cesspool</p> | | | | DIV. OF WASTEWATER MGMT. | | | | | | |
| <p>4 <input type="checkbox"/> Private Sewage Treatment Plant</p> | | | | FIRE DEPT. | | | | | | |
| <p>5 <input type="checkbox"/> Other (Specify) _____</p> | | | | TRANSPORTATION | | | | | | |
| <p>I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.</p> | | | | BD. OF WATER SUPPLY | | | | | | |
| <p>SIGNATURE (OWNER OR AGENT): <u>Arnold Okubo</u> DATE: <u>5/29/91</u></p> | | | | STATE OF HAWAII | | | | | | |
| <p>AGENT'S PRINT NAME: <u>Arnold Okubo</u> AGENT'S TEL. NO.: <u>497-7195</u></p> | | | | HEALTH DEPT. | | | | | | |
| <p>OFFICE INDEX COPY</p> | | | | HAWAIIAN HOME LANDS | | | | | | |
| <p>Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.</p> | | | | LAND & NATURAL RESOURCES | | | | | | |
| <p><input type="checkbox"/> This building shall not be occupied until a certificate of occupancy has been issued.</p> | | | | LAND USE COMMISSION | | | | | | |
| <p>FOR DIRECTOR AND BUILDING SUPERINTENDENT</p> | | | | HIGHWAYS DIVISION | | | | | | |
| <p><u>H. H. H. H.</u> 7/11/91</p> | | | | REMARKS | | | | | | |
| <p>Form BSD-45 (1)</p> | | | | NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT. | | | | | | |

AS APPLICATION INDEX NO. A 91-7-531
EASE PRINT - USE INK

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION

Permit No. 308485

TMK: 1-3-39:1

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

OWNER
STATE OF HAWAII-HAWAII HOUSING AUTHORITY
Owner's Address
1002 NO. SCHOOL STREET
Construction Site Address
1545 LINAPUNI ST.
KUHIO PARK TERRACE - BUILDING B
Plan Maker
CEDRIC CHONG & ASSOCIATES
Address
730 E NO. KING STREET
Contractor
OAHU PLUMBING & SHEET METAL, LTD.
Address
032 KOHOLO STREET
Electrical Contractor
TRI ELECTRIC
Address
730 D MOOWAA STREET
Plumbing Contractor
OAHU PLUMBING & SHEET METAL, LTD.
Address
032 KOHOLO STREET

Tel. No. 848-3230
Apt. Room No.
Prof. Reg. No. 2604-M
Tel. No. 847-6557
State Lic. No. BC 5325
Tel. No. 848-0111
State Lic. No. BC 5325
Tel. No. 841-6102
Tel. No. 848-0111

DESCRIPTION OF WORK TO BE DONE
REMOVE EXISTING BOILER AND REPLACE WITH NEW
BOILER IN HEATER ROOM

| | | | | | |
|----------------------------------|-----|-------------------|----------------|-----------------------|---------------------|
| ZONE | SEC | FLAT | PARCEL | LOT NO. | LOT AREA |
| 1 | 6 | 9 | 3 | | 543,672 |
| Occupancy Group | | | | | Flood Hazard Dist. |
| Accepted Value \$80000- | | | | | Permit Fee 1572 |
| Plan Review Fee 231- / PRF# 5680 | | | | | Balance Due 1241- |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | District |
| MINIMUM | | | EXISTING | | FINAL |
| ACTUAL | | | EXISTING | | FINAL |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing | | New | | Total | |
| Name of Project | | | | | Plan Review Fee No. |
| STATE KUHIO PARK TERR | | | | | |
| REMARKS | | | | | |
| (91-ENG/1264) contract #91-29.1 | | | | | |
| ZONING AND CZC DATA | | | | | |
| ZONE (Use District): | | R-S/A-2 | | SETBACKS: | |
| DESIGNATION: | | SHORELINE | | ROAD WIDENING | |
| DESIGNATION: | | SMA | | STRUCTURE CODE: 96/97 | |
| SDD or HCSD | | PUBLIC FACILITIES | | | |
| REMARKS | | | | | |

Proposed Use: HOT WATER SUPPLY FOR BUILDING

| | | |
|-------------------|-------|--------|
| WORK WILL | ADD | DELETE |
| RESIDENTIAL UNITS | Total | Total |
| HOTEL ROOMS | Rooms | Room |

Estimated Value of Work: \$ 95,000.00

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 5 <input type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input checked="" type="checkbox"/> Repair | 10 <input checked="" type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 4 <input type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Other |

| AGENCY | SIGNATURE | DATE |
|---------------------------|-----------|------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| Lot Grading | | |
| Highway | | |
| Drainage | | |
| DIV. OF WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| HEALTH DEPT. | | |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | | |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING

Reconstruct R.C. A.C. DRIVEWAY

of Lava Rock Conc. CURBING

Please notify this office at least 24 hours before starting work.
Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify)

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

NATURE (OWNER OR AGENT) Norman K. Tava DATE 7/10/91

IF AGENT, PRINT NAME NORMAN IC TAVA AGENT'S TEL. NO. 848-0111

REMARKS

NOTES TO APPLICANT:
SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENS PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTE POST PERMIT PLACARD ON SITE OF WORK.
THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DA OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 1 DAYS.
VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

10/4/91

APPLICATION INDEX NO. 93-11-1125
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
 BUILDING PERMIT APPLICATION

Permit No. 346393

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Owner's Address: Hawaii Housing Authority
100 1/2 N. School Street
 Construction Site Address: 1475 KUALAPUNI ST
 Plan Maker: none
 Address: none
 Contractor: none
 Address: none
 Electrical Contractor: LED'S Wiring Service Old C-3955
 Address: 500 ALA KANA #222
 Plumbing Contractor: ELOMOM Plumbing - C-318
 Address: 1616 MAKAHI PI. 842-518

ZONE: 1 SEC: 3 SLAT: 39 PARCEL: 1 LOT NO: 15.221 LOT AREA: ac
 Occupancy Group: Pl. W. 7 Electrical Work Only
 Accepted Value: \$ 200,000 Permit Fee: 1300
 Plan Review Fee No.: _____ Plan Review Fee: _____ Balance Due: _____
 TYPE OF CONSTRUCTION: MINIMUM _____ ACTUAL _____ NO. OF STORIES: EXISTING _____ FINAL _____ FLOOD HAZARD DIST.: _____
 FLOOR AREA (SQ. FT.): Existing _____ New _____ Total _____
 Name of Project: Kuhio Park Terrace - Bldg A
 REMARKS: _____
 Special Inspection: C E NA Called Inspection Y

DESCRIPTION OF WORK TO BE DONE
Electrical Service - Bldg A
INSTALL HOSE BIB &
TEDGES

ZONING AND LUO DATA
 ZONE (Use District): A-2 SETBACKS: ROAD WIDENING _____
 DESIGNATION: _____ SHORELINE _____
 SLU DESIGNATION: _____ SMA _____
 SDD or HCSD _____ STRUCTURE CODE: 96, 9
 PUBLIC FACILITIES: _____
 REMARKS: _____

Proposed Use: Residential Floor Level: _____
 Estimated Market Value of Work: \$ 200,000

| WORK WILL | ADD | DELETE |
|-------------------|-------------|-------------|
| RESIDENTIAL UNITS | _____ Total | _____ Total |
| HOTEL ROOMS | _____ Rooms | _____ Rooms |

NATURE OF WORK

| | |
|--|---|
| 6 <input type="checkbox"/> Repair | 11 <input checked="" type="checkbox"/> Plumbing |
| 7 <input type="checkbox"/> Demolition | 12 <input type="checkbox"/> Fire sprinkler |
| 2 <input type="checkbox"/> Foundation Only | 8 <input type="checkbox"/> Fence |
| 3 <input type="checkbox"/> Shell Only | 9 <input type="checkbox"/> Retaining Wall |
| 4 <input type="checkbox"/> Addition | 10 <input checked="" type="checkbox"/> Electrical |
| 5 <input type="checkbox"/> Alteration | 14 <input type="checkbox"/> Other |
| 10a <input type="checkbox"/> Electrical meter only | |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|--------------------|-----------------|
| CITY AND COUNTY | <u>[Signature]</u> | <u>12/1/93</u> |
| LAND UTILIZATION | <u>[Signature]</u> | <u>11/19/93</u> |
| DIV. OF ENGINEERING | <u>[Signature]</u> | <u>11/19/93</u> |
| Lot Grading | <u>[Signature]</u> | <u>11/19/93</u> |
| Drainage/Highway | | |
| WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | <u>[Signature]</u> | <u>11/19/93</u> |
| STATE OF HAWAII | | |
| HEALTH DEPT. | | |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | <u>[Signature]</u> | <u>11/19/93</u> |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING SIDEWALK

Reconstruct LINEAL FEET _____ of Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regarding building construction.

NATURE (OWNER OR AGENT) [Signature] DATE 11/17/93

IF AGENT, PRINT NAME _____ AGENT'S TEL. NO. _____

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 180 DAYS.
 VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

12/21/93

APPLICATION INDEX NO. **A93-11-1124**
PLEASE PRINT - USE INK

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION

Permit No. **244039**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Hawaii Housing Authority
Owner's Address: **1002 N School Street** 845-3533 No.
Construction Site Address: **Kuhio Park Terrace** 1545 APT. ROOM NO. **21**
Plan Maker: **None** Prof. Reg. No.
Address: _____ Tel. No.
Contractor: **None** State Lic. No.
Address: _____ Tel. No.
Electrical Contractor: **Ted's Wiring Service, Ltd** State Lic. No. **C-3905**
Address: _____ Tel. No.
Plumbing Contractor: **Equinox Plumbing** State Lic. No. **C-318**
Address: **1616 Ala Makeni Pl** 842-5100 Tel. No.

| | | | | | |
|--|----------|-----------------|----------------|---------------------------|--------------------|
| ZONE | SEC | PLAT | PARCEL | LOT NO | LOT AREA |
| 1 | 3 | 39 | 1 | 15.231 | 2 |
| Occupancy Group: Flu-1 - Electrical work only | | | | | |
| Accepted Value: \$ 2,356,751 | | | | Permit Fee: 624.00 | |
| Plan Review Fee No. | | Plan Review Fee | | Balance Due | |
| | | | | | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | Flood Hazard Dist. |
| MINIMUM | ACTUAL | EXISTING | FINAL | | |
| | | | | | |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing | | New | | Total | |
| Name of Project: Kuhio Park Terrace Bldg B | | | | | |
| REMARKS | | | | | |

DESCRIPTION OF WORK TO BE DONE

Electrical Service - Bldg B
INSTALL HOSE BIB
HEDGIES

Proposed Use: **Residential** Floor Level: _____
Estimated Market Value of Work: **\$ 335,675 100,675**

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 2 <input type="checkbox"/> Foundation Only | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Fire sprinkler |
| 3 <input type="checkbox"/> Shell Only | 9 <input type="checkbox"/> Retaining Wall | 13 <input type="checkbox"/> Air Conditioning |
| 4 <input type="checkbox"/> Addition | 10 <input checked="" type="checkbox"/> Electrical | 14 <input type="checkbox"/> Other |
| 5 <input type="checkbox"/> Alteration | 10a <input type="checkbox"/> Electrical meter only | |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. SIDEWALK
 Reconstruct Lava Rock Conc. CURBING
 R.C. A.C. DRIVEWAY

EXISTING

Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool
4 Private Sewage Treatment Plant
5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

DATE: **11/17/93**
NAME (OWNER OR AGENT): **Thomas Terayama**
AGENT'S TEL. NO.: _____

ZONING AND LUO DATA

ZONE (Use District): **A-2** SETBACKS: ROAD WIDENING _____
DESIGNATION: _____ SHORELINE _____
SLU DESIGNATION: _____ SMA _____
SDD or HCSD _____ STRUCTURE CODE: **96, 97**

PUBLIC FACILITIES _____
REMARKS _____

WORK WILL ADD DELETE

RESIDENTIAL UNITS _____ Total _____ Tot. _____
HOTEL ROOMS _____ Rooms _____ Room _____

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|--------------------|---------------|
| CITY AND COUNTY | <i>[Signature]</i> | <i>[Date]</i> |
| LAND UTILIZATION | <i>[Signature]</i> | <i>[Date]</i> |
| DIV. OF ENGINEERING | <i>[Signature]</i> | <i>[Date]</i> |
| Lot Grading | <i>[Signature]</i> | <i>[Date]</i> |
| Drainage/Highway | | |
| DIV. OF WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | <i>[Signature]</i> | <i>[Date]</i> |
| STATE OF HAWAII | | |
| HEALTH DEPT. | | |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | <i>[Signature]</i> | <i>[Date]</i> |

NOTES TO APPLICANT:
SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTE POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 180 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL & PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

[Signature] **12/22/93**

APPLICATION INDEX NO. **A 94-5-139**
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION

Permit No. **360580**

TMK 1-3-39:01

APPLICANT FILL IN AREA BELOW

State of Hawaii - HHA

Owner's Address: **1002 NORTH SCHOOL ST. PO BOX 17907**

Construction Site Address: **1545 LINA PUNI STREET**

Plan-Maker: **Paul Louie & Associates Inc.**

Address: **650 Ala Moana Blvd. Hon 96813**

Contractor: **LATER Fletcher Pacific**

Address: **107 Richards Street, Ste 400 Honolulu**

Electrical Contractor: **LATER Williams Electric**

Address: **761 A Drury Rd, Kaimuki, Maui**

Plumbing Contractor: **N/A**

FOR BUILDING DEPARTMENT USE

| | | | | | |
|------|-----|------|--------|--------|----------|
| ZONE | SEC | PLAT | PARCEL | LOT NO | LOT AREA |
| 1 | 3 | 39 | | | 15.221 a |

Occupancy Group: **R-1 APT.**

Accepted Value: **\$ 522,000**

Permit Fee: **\$ 2792.80**

Plan Review Fee No. / Plan Review Fee / Balance Due

| TYPE OF CONSTRUCTION | | NO. OF STORIES | | Flood Hazard Dist. |
|----------------------|--------|----------------|-------|--------------------|
| MINIMUM | ACTUAL | EXISTING | FINAL | |
| I-FR | I-FR | 16 | 16 | Flood Way |

FLOOR AREA (SQ. FT.)

| | | |
|----------|-----|-------|
| Existing | New | Total |
| | | |

Name of Project: **Kuhio Park Terrace**

REMARKS

Special Inspection: CE NA

Called Inspection Y/N

DESCRIPTION OF WORK TO BE DONE

Renovation of existing freight & passenger elevators for Kuhio Park Terrace - Building B.

ZONING AND LUD DATA

ZONE (Use District): **A-2**

DESIGNATION: **Med Den**

SLU DESIGNATION: **Urban**

SDD or HCSD: **None**

PUBLIC FACILITIES: **None**

SETBACKS: **School St**

ROAD WIDENING: **NO**

SHORELINE: **NO**

SMA: **NO**

STRUCTURE CODE: **53**

REMARKS

Proposed Use: **Housing**

Estimated Market Value of Work: **\$ 531,000**

Floor Level: **16**

Accepted Value: **\$ 522,000**

WORK WILL

| RESIDENTIAL UNITS | ADD | DELETE |
|-------------------|-------|--------|
| | Total | Tot |
| | Rooms | Ro |

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg | 6 <input checked="" type="checkbox"/> Repair | 11 <input type="checkbox"/> Plumbing |
| 2 <input type="checkbox"/> Foundation Only | 7 <input type="checkbox"/> Demolition | 12 <input type="checkbox"/> Fire sprinkler |
| 3 <input type="checkbox"/> Shell Only | 8 <input type="checkbox"/> Fence | 13 <input checked="" type="checkbox"/> Air Conditioning |
| 4 <input type="checkbox"/> Addition | 9 <input type="checkbox"/> Retaining Wall | 14 <input type="checkbox"/> Other |
| 5 <input checked="" type="checkbox"/> Alteration | 10 <input checked="" type="checkbox"/> Electrical | |
| | 10a <input type="checkbox"/> Electrical meter only | |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|-----------------------|-----------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| Lot Grading | | |
| Drainage/Highway | NIE TUC ELS EG | 9 |
| WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |
| STATE OF HAWAII | | |
| HEALTH DEPT. | JR | 9 |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | LR | 16 |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING

Reconstruct Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL

New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify)

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT): **Andrew Tang**

AGENT'S TEL NO: **2 MAY 1994**

GENT. PRINT NAME: **Paul Louie & Associates, Inc.**

AGENT'S TEL NO: **524-6400**

NOTES TO APPLICANT:

SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENS PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTE POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DA OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 1 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

OFFICE INDEX COPY

W. Mohr

10/31/94

FOR DIRECTOR AND BUILDING SUPERINTENDENT DATE

APPLICATION INDEX NO. **A 94-10-956**
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION
TMK 1-3-39.01

Permit No. **376531**
 1-3-39:1 LOS 1F 1D

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE 1172A

State of Hawaii - HHA

Owner's Address: **1002 NORTH SCHOOL ST. PO BOX 17107**
 Tel. No. _____

Construction Site Address: **1475 LIKAPUNI STREET**
 Apt. Room No. _____

Plan Maker: **PAUL LOUIE & ASSOCIATES INC.**
 Prof. Reg. No. **66002**

Address: **650 AIA MOANA BLVD. HONOLULU 96813 524-6400**
 Tel. No. _____

Contractor: **Metcalf Construction**
 State Lic. No. **BC19022**

Address: _____
 Tel. No. **#1 883-8899**

Electrical Contractor: **M. Sakum Elec**
 State Lic. No. **C14519**

Address: _____
 Tel. No. **#1 847-7173**

Plumbing Contractor: **Alliance Mechanical**
 State Lic. No. **BC12784**

Address: _____
 Tel. No. **#1 591-0201**

DESCRIPTION OF WORK TO BE DONE
REPAIRS OF EXISTING PASSENGER ELEVATORS
REPAINTING ENTIRE BUILDING AND
REPAIRS FOR KUHIO PARK TERRACE
BLDG. A & B.

Proposed Use: **HOUSING** Floor Level: **16**

Estimated Market Value of Work: **2.5 MILLION 2,500,000**

- NATURE OF WORK
- | | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 7 <input type="checkbox"/> Demolition | 11 <input type="checkbox"/> Plumbing |
| 2 <input type="checkbox"/> Foundation Only | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Fire sprinkler |
| 3 <input type="checkbox"/> Shell Only | 9 <input type="checkbox"/> Retaining Wall | 13 <input checked="" type="checkbox"/> Air Conditioning |
| 4 <input type="checkbox"/> Addition | 10 <input checked="" type="checkbox"/> Electrical | 14 <input type="checkbox"/> Other |
| 5 <input type="checkbox"/> Alteration | 10a <input type="checkbox"/> Electrical meter only | |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING

Reconstruct Lava Rock Conc. CURBING

R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work. Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool

4 Private Sewage Treatment Plant

5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

DATE: **10 OCT 1994**

IF AGENT, PRINT NAME: **Paul Louie & Associates, Inc** AGENT'S TEL NO: **524-6400**

| ZONE | SEC | PLAT | PARCEL | LOT NO | LOT AREA |
|------|-----|------|--------|--------|----------|
| 1 | 3 | 39 | 1 | * | 15221A |

Occupancy Group: **AL-1 (APART.)**

Accepted Value: **\$2,889,000** Permit Fee: **9175.00**

| TYPE OF CONSTRUCTION | | NO. OF STORIES | | Flood Hazard Dist. |
|----------------------|--------|----------------|-------|--------------------|
| MINIMUM | ACTUAL | EXISTING | FINAL | |
| I m | F m | 16 | 16 | POV. FRINGE |

Name of Project: **Kuhio Park Terrace Bldg A**

REMARKS: **66/00P - old xmp**

Special Inspection: C E N A Called Inspection Y N

ZONING AND LUD DATA

ZONE (Use District): **A-2** SETBACKS: **RIW School**

DESIGNATION: **Urban** ROAD WIDENING: **NO**

SHORELINE: **NO**

SMA: **NO**

SDD or HCSD: **NO** STRUCTURE CODE: **53**

PUBLIC FACILITIES: **RIW School**

WORK WILL **ADD** **DELETE**

RESIDENTIAL UNITS: _____ Total _____

HOTEL ROOMS: _____ Rooms _____

| APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) | | |
|---|--------------------|-------|
| AGENCY | SIGNATURE | DATE |
| CITY AND COUNTY | | |
| LAND UTILIZATION | <i>[Signature]</i> | 11/14 |
| DIV. OF ENGINEERING | <i>[Signature]</i> | 11/12 |
| Lot Grading | <i>[Signature]</i> | 11/10 |
| Drainage/Highway | | |
| WASTEWATER MGMT. | <i>[Signature]</i> | 11/14 |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | <i>[Signature]</i> | 11/11 |
| STATE OF HAWAII | | |
| HEALTH DEPT. | <i>[Signature]</i> | 10/11 |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | <i>[Signature]</i> | 11/12 |
| HHA | <i>[Signature]</i> | 10/11 |

NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 180 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

APPLICATION INDEX NO. A 95-07-846
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
 BUILDING PERMIT APPLICATION

Permit No. 276532

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

Owner: State of Hawaii - HHA
 Owner's Address: 1002 N. School St PO Box 17907 Tel. No. _____
 Construction Site Address: 1545 Linapuni St. Apt. Room No. _____
 Plan Maker: Paul Louie & Assoc. Inc. Prof. Reg. No. 6602
 Address: 650 Ala Moku Rd Tel. No. 524-6400
 Contractor: Metcalf Construction DC19022 State Lic. No. _____
 Address: _____ Tel. No. _____
 Electrical Contractor: M. Sakuma Electric C14519 State Lic. No. _____
 Address: _____ Tel. No. _____
 Plumbing Contractor: Alliance Mechanical ABC12784 State Lic. No. _____
 Address: _____ Tel. No. _____

| | | | | | |
|---|-----------------------|-----------------------|--------------------|-----------------------------|-------------------------------|
| ZONE <u>1</u> | SEC <u>3</u> | PLAT <u>39</u> | PARCEL <u>1</u> | LOT NO. _____ | LOT AREA <u>15.221 acs</u> |
| Occupancy Group <u>R-1 Apt.</u> | | | | | |
| Accepted Value <u>\$ 100,000</u> | | | | Permit Fee <u>954.00</u> | |
| Plan Review Fee No. _____ | | Plan Review Fee _____ | | Balance Due _____ | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | Flood Hazard Dist |
| MINIMUM <u>I FR</u> | ACTUAL <u>I FR</u> | EXISTING <u>16</u> | FINAL <u>16</u> | <u>por flood fringe</u> | |
| FLOOR AREA (SQ. FT.) Existing _____ New _____ Total _____ | | | | | |
| Name of Project <u>Central Park Terrace Bldg B</u> | | | | | |
| REMARKS _____ | | | | | |
| Special Inspection <input type="checkbox"/> C <input type="checkbox"/> E <input type="checkbox"/> NA <input type="checkbox"/> Called Inspection <input type="checkbox"/> Y <input type="checkbox"/> | | | | | |

DESCRIPTION OF WORK TO BE DONE
Repairs to Bldg B

ZONING AND LUO DATA
 ZONE (Use District): A-2 SETBACKS ROAD WIDENING r/w School
 DESIGNATION: MD Apt/Comm SHORELINE: none
 DESIGNATION: Urban SMA: none
 SDD or HCSD: none STRUCTURE CODE: 53
 PUBLIC FACILITIES: r/w School St.
 REMARKS: _____

Proposed Use: Housing Floor Level: _____

Estimated Market Value of Work \$ 100,000

NATURE OF WORK

| | | |
|--|--|--|
| 1 <input type="checkbox"/> New Bldg. | 6 <input checked="" type="checkbox"/> Repair | 11 <input type="checkbox"/> Plumbing |
| 2 <input type="checkbox"/> Foundation Only | 7 <input type="checkbox"/> Demolition | 12 <input type="checkbox"/> Fire sprinkler |
| 3 <input type="checkbox"/> Shell Only | 8 <input type="checkbox"/> Fence | 13 <input type="checkbox"/> Air Conditioning |
| 4 <input type="checkbox"/> Addition | 9 <input type="checkbox"/> Retaining Wall | 14 <input type="checkbox"/> Other |
| 5 <input type="checkbox"/> Alteration | 10 <input checked="" type="checkbox"/> Electrical | |
| | 10a <input type="checkbox"/> Electrical meter only | |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING
 Reconstruct _____ LINEAL FEET of Lava Rock Conc. CURBING
 R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work.
 Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool
 4 Private Sewage Treatment Plant
 5 Other (Specify) _____

WORK WILL ADD DELETE

RESIDENTIAL UNITS _____ Total _____
 HOTEL ROOMS _____ Rooms _____

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|------------------|-------|
| CITY AND COUNTY | _____ | _____ |
| LAND UTILIZATION | _____ | _____ |
| DIV. OF ENGINEERING | _____ | _____ |
| Lot Grading | _____ | _____ |
| Drainage/Highway | See approvals of | _____ |
| WASTEWATER MGMT. | A94-10-956 | _____ |
| FIRE DEPT. | _____ | _____ |
| TRANSPORTATION | _____ | _____ |
| BD. OF WATER SUPPLY | _____ | _____ |
| STATE OF HAWAII | _____ | _____ |
| HEALTH DEPT. | _____ | _____ |
| LAND & NATURAL RESOURCES | _____ | _____ |
| LAND USE COMMISSION | _____ | _____ |
| HIGHWAYS DIVISION | _____ | _____ |
| DIV. OF INDUSTRIAL SAFETY | _____ | _____ |

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT) _____ DATE _____

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS.
 VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

AGENT'S NAME: Andrew Tabg AGENT'S TEL. NO. 524-6400

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu.

APPLICATION INDEX NO. **A 95-12-1051**
PLEASE PRINT - USE INK

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
BUILDING PERMIT APPLICATION

Permit No. **383210**

APPLICANT FILL IN AREA BELOW

FOR BUILDING DEPARTMENT USE

PCS Kims Co 575-6525
 Owner's Address: **1001 BISHOP ST Suite 710 Honolulu Hawaii 96813** Tel. No.
 Construction Site Address: **1545 LINAPUNI Honolulu HI** Apt. Room No.
 Plan Maker: **RANDALL HAMMOCK** Prof. Reg. No. **7893**
 Address: **46-318 HAIKU RD S to 58 KANOA HI** Tel. No.
 Contractor: **BKA Builders, Inc** State Lic. No. **17528 BC 236-2960**
 Address: **833-7360** Tel. No.
 Electrical Contractor: **Tri-Young Elec Svc** State Lic. No. **C16870**
 Address: **254-5244** Tel. No.
 Plumbing Contractor: **Mai Plumbing** State Lic. No. **C16870**
 Address: **422-8393** Tel. No.

| | | | | | |
|---------------------------------------|-------------|-----------------|----------------|---------------------------|--------------------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| 7 | 3 | 39107 | | | 15.221 ac |
| Occupancy Group: R-1 APT. | | | | | |
| Accepted Value: \$ 75,000 | | | | Permit Fee: 270.05 | |
| Plan Review Fee No. | | Plan Review Fee | | Balance Due | |
| | | | | | |
| TYPE OF CONSTRUCTION | | | NO. OF STORIES | | Flood Hazard Dist. |
| MINIMUM | ACTUAL | EXISTING | FINAL | AEDDA: X Flooding | |
| I-FR | I-FR | 16 | 16 | | |
| FLOOR AREA (SQ. FT.) | | | | | |
| Existing | | New | | Total | |
| | | | | | |
| Name of Project: PCS Prime Co. | | | | | |
| REMARKS: 95/CUP 1-065 A/C | | | | | |
| 95/C.P. 1-111 | | | | | |

DESCRIPTION OF WORK TO BE DONE
**ENCLOSE EXISTING SPACES AND PROVIDE
 STATIC RE-ENTRY COMMUNICATION SITE.
 RE ANTENNA INSTALLATION**

Special Inspection C E NA Called Inspector: Y N

ZONING AND LUO DATA

ZONE (Use District): **A-2** SETBACKS: **R/W School**
 DESIGNATION: **Mid-density** ROAD WIDENING: **1/2 St**
 SLU DESIGNATION: **Urban** SHORELINE: **NO**
 SDD or HCSD: **None** SMA: **NO**
 PUBLIC FACILITIES: **R/W School St** STRUCTURE CODE: **A 52**

REMARKS:

Proposed Use: **UTILITY INSTALL 145 B** Floor Level: **1st**
 Estimated Market Value of Work: **\$ 25K**

WORK WILL ADD DELETED

RESIDENTIAL UNITS _____ Total _____
 HOTEL ROOMS _____ Rooms _____

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 2 <input type="checkbox"/> Foundation Only | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Fire sprinkler |
| 3 <input type="checkbox"/> Shell Only | 9 <input type="checkbox"/> Retaining Wall | 13 <input type="checkbox"/> Air Conditioning |
| 4 <input type="checkbox"/> Addition | 10 <input checked="" type="checkbox"/> Electrical | 14 <input checked="" type="checkbox"/> Other (Specify) Antenna |
| 5 <input checked="" type="checkbox"/> Alteration | 10a <input type="checkbox"/> Electrical meter only | |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | D |
|---------------------|-----------|---|
| CITY AND COUNTY | | |
| LAND UTILIZATION | | |
| DIV. OF ENGINEERING | | |
| Lot Grading | | |
| Drainage/Highway | | |
| WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | | |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING
 Reconstruct LINEAL FEET of Lava Rock Conc. CURBING
 R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work.
 Phone 523-4276.

STATE OF HAWAII

HEALTH DEPT. **NA**
 LAND & NATURAL RESOURCES
 LAND USE COMMISSION
 HIGHWAYS DIVISION
 DIV. OF INDUSTRIAL SAFETY

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool
 4 Private Sewage Treatment Plant
 5 Other (Specify)

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSON
 REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES.
 POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE
 ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS.
 VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING
 CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

AGENT (OWNER OR AGENT) **SE** DATE **12/20/05**
 AGENT, PRINT NAME: **WAYNE SCOTT** AGENT'S TEL. NO. **525-6525**

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

APPLICATION INDEX NO. **DWPLICATE AS-11-044**
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
 BUILDING PERMIT APPLICATION

Permit No. **398242**

APPLICANT FILL IN AREA BELOW

101
 State of Hawaii - Hawaii Housing Authority
 Owner's Address: 1002 N. School St. Tel. No. 832-5960
 Construction Site Address: 1475 Linapuni St. Apt. Room No. Building B
 Plan Maker: Cedric D.O. Chong & Assoc., Inc. Prof. Reg. No. 5805-N
 Address: 2130-E N. King St., Hon. HI 96819 Tel. No. 847-6557
 Contractor: Alaka'i Mechanical Corp. State Lic. No. ABC-7338
 Address: 2655 Waiwai Loop; Hon, HI 96819 Tel. No. 834-1085
 Electrical Contractor: Certified Controls C-19429
 Address: 250 N. Beretania St., Hon, HI 96817 Tel. No. 531-8960
 Plumbing Contractor: Alaka'i Mechanical Corp. ABC-7338
 Address: 2655 Waiwai Loop, Hon, HI 96819 Tel. No. 834-1085

DESCRIPTION OF WORK TO BE DONE
 Hot Water System Modifications
 Replace Hot Water Storage Tank & Pump.
 New Heater Flue

Used Use: Housing

FOR BUILDING DEPARTMENT USE

| | | | | | |
|------|-----|------|--------|---------|----------|
| ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| 1 | 3 | 3A1 | | | 15.221 |

Occupancy Group: Plumbing/Elect Flood Hazard Dist. _____
 Accepted Value: \$ 72,000 Permit Fee: \$ 723.00

| TYPE OF CONSTRUCTION | | NO. OF STORIES | | Distri |
|----------------------|--------|----------------|-------|--------|
| MINIMUM | ACTUAL | EXISTING | FINAL | |
| | | | | |

FLOOR AREA (SQ. FT.)
 Existing _____ New _____ Total _____

REMARKS: *Plumbing/Elect
*Plumbing/Elect Bldg B - HOT WATER
96-ENPL-11 etc

*Plumbing does not affect project etc

STRUCTURE CODE: 53 CENSUS TRACT-BLOCK NO.: _____

ZONING AND CZC DATA
 ZONE (Use District): A-2 SETBACKS: *middle
 DP: _____ ROAD WIDENING: _____
 DESIGNATION: MDA SHORELINE: no
 SLU: urban SMA: _____

REMARKS: _____

WORK WILL ADD DELETE

| | | |
|-------------------|-------------|----------|
| RESIDENTIAL UNITS | _____ Total | _____ To |
| HOTEL ROOMS | _____ Rooms | _____ Ro |

APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED)

| AGENCY | SIGNATURE | DATE |
|---------------------------|----------------------|--------------|
| CITY AND COUNTY | | |
| LAND UTILIZATION | <u>H. Folger</u> | <u>12/24</u> |
| DIV. OF ENGINEERING | | |
| Lot Grading | | |
| Highway | | |
| Drainage | | |
| DIV. OF WASTEWATER MGMT. | | |
| FIRE DEPT. | | |
| TRANSPORTATION | | |
| BD. OF WATER SUPPLY | <u>Best Prustama</u> | <u>12/1</u> |
| STATE OF HAWAII | | |
| HEALTH DEPT. | | |
| HAWAIIAN HOME LANDS | | |
| LAND & NATURAL RESOURCES | | |
| LAND USE COMMISSION | | |
| HIGHWAYS DIVISION | | |
| DIV. OF INDUSTRIAL SAFETY | | |

Estimated Value of Work: \$ 72,000.00

NATURE OF WORK

| | | |
|--|--|---|
| 1 <input type="checkbox"/> New Bldg. | 5 <input checked="" type="checkbox"/> Alteration | 9 <input type="checkbox"/> Retaining Wall |
| 2 <input type="checkbox"/> Foundation Only | 6 <input type="checkbox"/> Repair | 10 <input checked="" type="checkbox"/> Electrical |
| 3 <input type="checkbox"/> Shell Only | 7 <input type="checkbox"/> Demolition | 11 <input checked="" type="checkbox"/> Plumbing |
| 4 <input type="checkbox"/> Addition | 8 <input type="checkbox"/> Fence | 12 <input type="checkbox"/> Other |

SIDEWALK, CURB, AND DROP DRIVEWAY

Construct Conc. A.C. EXISTING SIDEWALK
 Reconstruct Lava Rock Conc. CURBING
 R.C. A.C. DRIVEWAY

Please notify this office at least 24 hours before starting work.
 Phone 523-4276.

SEWAGE DISPOSAL New Existing Not Applicable

METHOD

1 Public Sewer 2 Aerobic Unit 3 Cesspool
 4 Private Sewage Treatment Plant
 5 Other (Specify) _____

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction.

SIGNATURE (OWNER OR AGENT): [Signature] DATE: 12/20/96
 AGENT, PRINT NAME: Joe Souza, Project Engineer AGENT'S TEL. NO.: 834-4239

REMARKS

NOTES TO APPLICANT:
 SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY.
 ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICEN PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUT POST PERMIT PLACARD ON SITE OF WORK.
 THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DA OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR DAYS.
 VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT.

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

OFFICE INDEX COPY

FOR DIRECTOR AND BUILDING SUPERINTENDENT

DATE: 1/10/97

APPLICATION INDEX NO. A 90051513
 PLEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
 BUILDING PERMIT APPLICATION

Permit No. 389785

| APPLICANT FILL IN AREA BELOW | | FOR BUILDING DEPARTMENT USE | | | | | |
|--|--|--|-----|--|--------|---|-----------|
| Applicant: <u>Hawaiian Wireless</u> <u>Kuliou Park Terrace</u> | | ZONE | SEC | PLAT | PARCEL | LOT NO. | LOT AREA |
| Owner's Address: <u>1475 Linauani St.</u> Tel. No. _____ | | 1 | 3 | 39 | 1 | | 15.221 ac |
| Construction Site Address: <u>same</u> Apt. Room No. _____ | | Occupancy Group | | | | | |
| Plan Maker: <u>ARNOIZ CAPE ARNOIZ</u> <u>James Croft</u> | | Accepted Value | | Permit Fee | | | |
| Prof. Reg. No. <u>8859</u> | | \$ <u>18,000</u> | | <u>203.80</u> | | | |
| Address: <u>Atlanta Ga</u> Tel. No. <u>4011-633-9298</u> | | Plan Review Fee No. | | Plan Review Fee | | Balance Due | |
| Contractor: <u>NONIE</u> State Lic. No. _____ | | TYPE OF CONSTRUCTION | | NO. OF STORIES | | Flood Hazard Dist. | |
| Address: _____ Tel. No. _____ | | MINIMUM | | ACTUAL | | EXISTING | |
| Electrical Contractor: <u>PAC ELECTRIC CO.</u> State Lic. No. <u>C-16529</u> | | FLOOR AREA (SQ. FT.) | | New | | Total | |
| Address: <u>3375 KOAHIKA</u> Tel. No. <u>829-8299</u> | | Existing | | | | | |
| Plumbing Contractor: <u>NONIE</u> State Lic. No. _____ | | Name of Project | | <u>(Kuliou Park Terrace)</u> | | | |
| Address: _____ Tel. No. _____ | | REMARKS | | <u>(HAWAIIAN WIRELESS)</u> | | | |
| DESCRIPTION OF WORK TO BE DONE <u>Power to telephone cabinet</u> <u>Block wall for fire protection</u> | | Special Inspection | | <input type="checkbox"/> E <input type="checkbox"/> NA <input type="checkbox"/> | | Called Inspection <input type="checkbox"/> Y <input type="checkbox"/> | |
| Proposed Use: <u>TYPE B INSTALLATION</u> Floor Level: _____ | | ZONING AND LUD DATA | | ZONE (Use District): <u>A2</u> SETBACKS ROAD WIDENING: _____ DESIGNATION: _____ SHORELINE: _____ SDD or HCSD: _____ STRUCTURE CODE: <u>96</u> | | | |
| Estimated Market Value of Work: \$ <u>13,000 -</u> | | PUBLIC FACILITIES: _____ | | REMARKS: <u>96/sep 71 x/c for electric</u> | | | |
| NATURE OF WORK 1 <input type="checkbox"/> New Bldg. 2 <input type="checkbox"/> Foundation Only 3 <input type="checkbox"/> Shell Only 4 <input type="checkbox"/> Addition 5 <input type="checkbox"/> Alteration 6 <input type="checkbox"/> Repair 7 <input type="checkbox"/> Demolition 8 <input type="checkbox"/> Fence 9 <input type="checkbox"/> Retaining Wall 10 <input checked="" type="checkbox"/> Electrical 10a <input type="checkbox"/> Electrical meter only 11 <input type="checkbox"/> Plumbing 12 <input type="checkbox"/> Fire sprinkler 13 <input type="checkbox"/> Air Conditioning 14 <input type="checkbox"/> Other | | WORK WILL RESIDENTIAL UNITS _____ Total _____ To _____ HOTEL ROOMS _____ Rooms _____ Rf _____ | | APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) | | | |
| SIDEWALK, CURB, AND DROP DRIVEWAY <input type="checkbox"/> Construct <input type="checkbox"/> Conc. <input type="checkbox"/> A.C. <input checked="" type="checkbox"/> EXISTING SIDEWALK <input type="checkbox"/> Reconstruct <input type="checkbox"/> Lava Rock <input type="checkbox"/> Conc. CURBING <input type="checkbox"/> R.C. <input type="checkbox"/> A.C. DRIVEWAY Please notify this office at least 24 hours before starting work. Phone 523-4276. | | STATE OF HAWAII HEALTH DEPT. LAND & NATURAL RESOURCES LAND USE COMMISSION HIGHWAYS DIVISION DIV. OF INDUSTRIAL SAFETY | | CITY AND COUNTY LAND UTILIZATION DIV. OF ENGINEERING Lot Grading Drainage/Highway WASTEWATER MGMT. FIRE DEPT. TRANSPORTATION BD. OF WATER SUPPLY | | SIGNATURE <u>H. M. ...</u> | |
| SEWAGE DISPOSAL <input type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Not Applicable METHOD 1 <input type="checkbox"/> Public Sewer 2 <input type="checkbox"/> Aerobic Unit 3 <input type="checkbox"/> Cesspool 4 <input type="checkbox"/> Private Sewage Treatment Plant 5 <input type="checkbox"/> Other (Specify) _____ | | NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES. POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT. | | DATE: <u>1/29/96</u> AGENT'S TEL. NO.: _____ | | | |
| I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction. AGENT, PRINT NAME: <u>Hans J. Kolb</u> AGENT'S TEL. NO.: <u>833-3099</u> | | Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii. | | This building shall not be occupied until a certificate of occupancy has been issued. | | <u>1/29/96</u> <u>6-14-96</u> | |

APPLICATION NO. A 96-02-1004
 LEASE PRINT - USE INK

BUILDING DEPARTMENT
 CITY AND COUNTY OF HONOLULU
 BUILDING PERMIT APPLICATION

Permit No. 389185

| APPLICANT FILL IN AREA BELOW | | FOR BUILDING DEPARTMENT USE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|---|-----------------|--|--------------------|-----------------------------|------------------------|-----------|------|-----------------|--------------------|----------------|------------------|--------------------|----------------|---------------------|--------------------|----------------|-------------|--|--|------------------|--|--|------------------|--|--|------------|--|--|----------------|--|--|---------------------|--|--|-----------------|--|--|--------------|--|--|--------------------------|--|--|---------------------|--|--|-------------------|--|--|---------------------------|--|--|
| Western PCS II Owner's Address 99-860 Iwaena St. Aiea, HI 96701 Tel. No. 487-11061 | | ZONE <u>1</u> | SEC <u>3</u> | PLAT <u>39</u> | PARCEL <u>1</u> | LOT NO. <u>663</u> | LOT AREA <u>026</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction Site Address 1545 Linapuni St. Bldg. B Honolulu, HI 96819 | | Occupancy Group <u>R-1 APT.</u> | | Accepted Value <u>\$ 37,500</u> | | Permit Fee <u>413.90</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan Maker Richard M. Wakida - R.M. Towill Corp. Prof. Reg. No. 2200-C | | Plan Review Fee Type | | Plan Review Fee | | Balance Due | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address 420 Waikamilo Rd. Ste. 411 Honolulu, HI 96817 Tel. No. 842-1138 | | TYPE OF CONSTRUCTION MINIMUM <u>I-FR</u> ACTUAL <u>I-FR</u> | | NO. OF STORIES EXISTING <u>16</u> FINAL <u>16</u> | | Flood Hazard Dist. <u>A</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contractor Eagle Construction RC 11621 BC 0304 State Lic. No. | | FLOOR AREA (SQ. FT.) Existing _____ New _____ Total _____ | | Name of Project <u>WESTERN WIRELESS KPT.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address 117 Adams Way Honolulu, HI 96819 Tel. No. 847-7800 | | REMARKS <u>95/1001-065 A/C</u> <u>95/1001-111 A/C</u> <u>UNABLE TO VERIFY LOT DIMENSION.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electrical Contractor <u>AGNE PAC ELECTRIC</u> C-116827 State Lic. No. | | Special Inspection <input type="checkbox"/> E <input type="checkbox"/> NA <input type="checkbox"/> Called Inspection <input type="checkbox"/> Y <input type="checkbox"/> N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address <u>375 KOAPAKAI ST. HON. HI 96819</u> Tel. No. 847-8080 | | ZONING AND LUO DATA ZONE (Use District): <u>A-2</u> SETBACKS <u>R10 School St</u> DESIGNATION: <u>MED DEN APT</u> ROAD WIDENING: <u>Yes (DPT/Trans)</u> SLU DESIGNATION: <u>COMMERCIAL</u> SHORELINE: <u>NO</u> SDD or HCSD: <u>NONE</u> SMA: <u>NO</u> PUBLIC FACILITIES: <u>None</u> STRUCTURE CODE: <u>91</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plumbing Contractor <u>NONE</u> State Lic. No. | | WORK WILL ADD DELETE RESIDENTIAL UNITS _____ Total _____ Total HOTEL ROOMS _____ Rooms _____ Room | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proposed Use: <u>TELECOMMUNICATIONS</u> Floor Level: <u>17 & 18 (roof)</u> | | APPROVAL OF OTHER AGENCIES (ROUTE AS INDICATED) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Estimated Market Value of Work \$ <u>37,500.00</u> | | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>AGENCY</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>CITY AND COUNTY</td> <td><i>[Signature]</i></td> <td><u>5/27/96</u></td> </tr> <tr> <td>LAND UTILIZATION</td> <td><i>[Signature]</i></td> <td><u>5/31/96</u></td> </tr> <tr> <td>DIV. OF ENGINEERING</td> <td><i>[Signature]</i></td> <td><u>5/23/96</u></td> </tr> <tr> <td>Lot Grading</td> <td></td> <td></td> </tr> <tr> <td>Drainage/Highway</td> <td></td> <td></td> </tr> <tr> <td>WASTEWATER MGMT.</td> <td></td> <td></td> </tr> <tr> <td>FIRE DEPT.</td> <td></td> <td></td> </tr> <tr> <td>TRANSPORTATION</td> <td></td> <td></td> </tr> <tr> <td>BD. OF WATER SUPPLY</td> <td></td> <td></td> </tr> <tr> <td>STATE OF HAWAII</td> <td></td> <td></td> </tr> <tr> <td>HEALTH DEPT.</td> <td></td> <td></td> </tr> <tr> <td>LAND & NATURAL RESOURCES</td> <td></td> <td></td> </tr> <tr> <td>LAND USE COMMISSION</td> <td></td> <td></td> </tr> <tr> <td>HIGHWAYS DIVISION</td> <td></td> <td></td> </tr> <tr> <td>DIV. OF INDUSTRIAL SAFETY</td> <td></td> <td></td> </tr> </tbody> </table> | | | | | AGENCY | SIGNATURE | DATE | CITY AND COUNTY | <i>[Signature]</i> | <u>5/27/96</u> | LAND UTILIZATION | <i>[Signature]</i> | <u>5/31/96</u> | DIV. OF ENGINEERING | <i>[Signature]</i> | <u>5/23/96</u> | Lot Grading | | | Drainage/Highway | | | WASTEWATER MGMT. | | | FIRE DEPT. | | | TRANSPORTATION | | | BD. OF WATER SUPPLY | | | STATE OF HAWAII | | | HEALTH DEPT. | | | LAND & NATURAL RESOURCES | | | LAND USE COMMISSION | | | HIGHWAYS DIVISION | | | DIV. OF INDUSTRIAL SAFETY | | |
| AGENCY | SIGNATURE | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CITY AND COUNTY | <i>[Signature]</i> | <u>5/27/96</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAND UTILIZATION | <i>[Signature]</i> | <u>5/31/96</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIV. OF ENGINEERING | <i>[Signature]</i> | <u>5/23/96</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lot Grading | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drainage/Highway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WASTEWATER MGMT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIRE DEPT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRANSPORTATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD. OF WATER SUPPLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STATE OF HAWAII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HEALTH DEPT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAND & NATURAL RESOURCES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAND USE COMMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HIGHWAYS DIVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIV. OF INDUSTRIAL SAFETY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NATURE OF WORK 1 <input type="checkbox"/> New Bldg. 7 <input type="checkbox"/> Demolition 11 <input type="checkbox"/> Plumbing 2 <input type="checkbox"/> Foundation Only 8 <input type="checkbox"/> Fence 12 <input type="checkbox"/> Fire sprinkler 3 <input type="checkbox"/> Shell Only 9 <input type="checkbox"/> Retaining Wall 13 <input type="checkbox"/> Air Conditioning 4 <input type="checkbox"/> Addition 10 <input checked="" type="checkbox"/> Electrical 14 <input checked="" type="checkbox"/> Other 5 <input type="checkbox"/> Alteration 10a <input type="checkbox"/> Electrical meter only <u>Electronics Cabinet</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIDEWALK, CURB, AND DROP DRIVEWAY <input type="checkbox"/> Construct <input type="checkbox"/> Conc. <input type="checkbox"/> A.C. EXISTING <input type="checkbox"/> Reconstruct LINEAL FEET _____ of <input type="checkbox"/> Lava Rock <input type="checkbox"/> Conc. SIDEWALK <input type="checkbox"/> R.C. <input type="checkbox"/> A.C. CURBING <input type="checkbox"/> DRIVEWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SEWAGE DISPOSAL <input type="checkbox"/> New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> Not Applicable METHOD 1 <input type="checkbox"/> Public Sewer 2 <input type="checkbox"/> Aerobic Unit 3 <input type="checkbox"/> Cesspool 4 <input type="checkbox"/> Private Sewage Treatment Plant 5 <input checked="" type="checkbox"/> Other (Specify) _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City and County ordinances and State laws regulating building construction. OWNER OR AGENT: <i>[Signature]</i> DATE: <u>2/20/96</u> AGENT'S TEL. NO.: <u>255-4138</u> | | NOTES TO APPLICANT: SEPARATE SIGN PERMIT SHALL BE OBTAINED AS NECESSARY. ELECTRICAL AND PLUMBING WORK SHALL BE DONE BY DULY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448E, HAWAII REVISED STATUTES. POST PERMIT PLACARD ON SITE OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS. VIOLATING ANY OF THE PROVISIONS OF THE BUILDING, ELECTRICAL OR PLUMBING CODES IS PUNISHABLE BY FINE AND/OR IMPRISONMENT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Richard M. Wakida - R.M. Towill Corp. 842-1133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

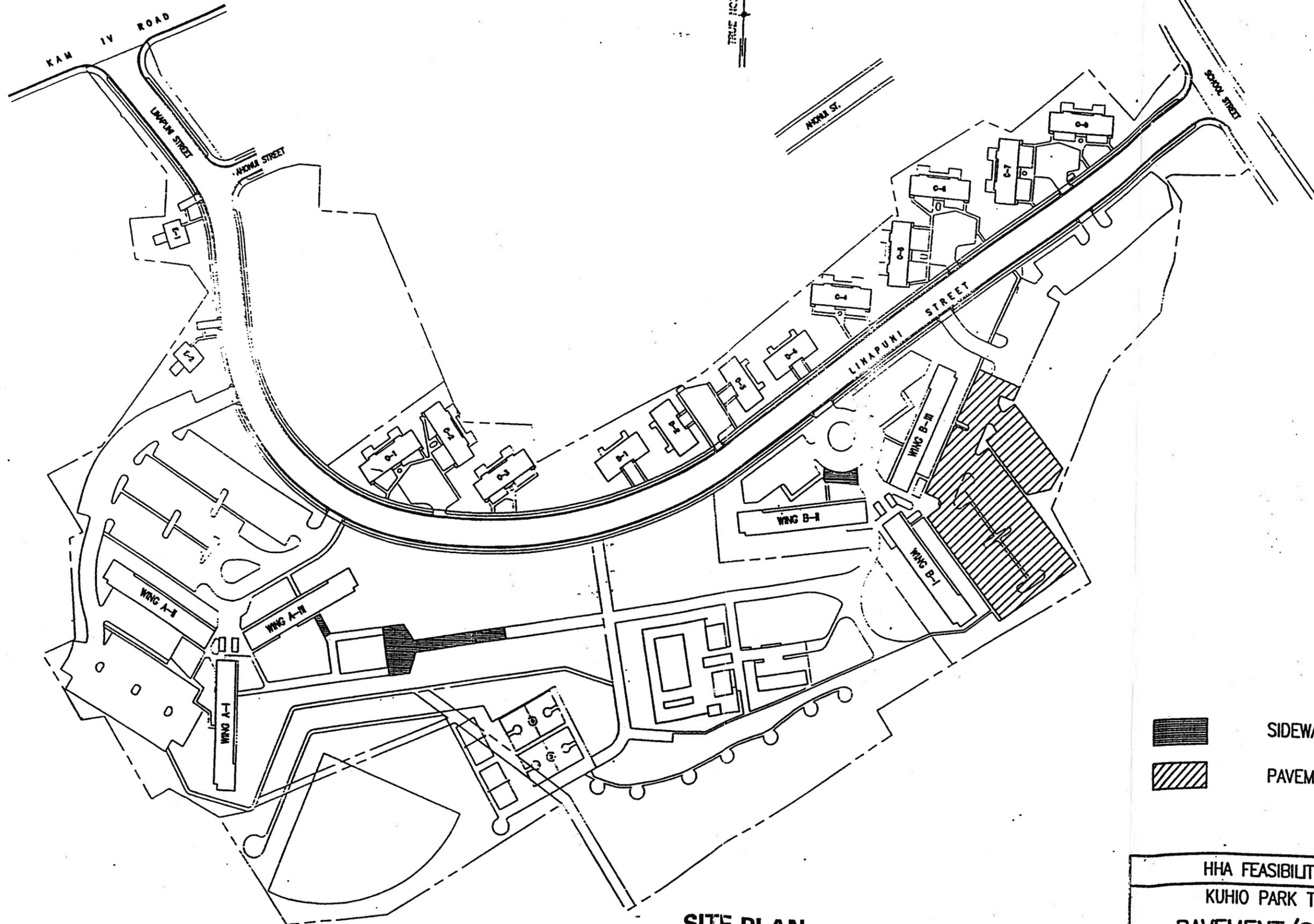
Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of City and County of Honolulu and State of Hawaii.

This building shall not be occupied until a certificate of occupancy has been issued.

[Signature] 2/2/96

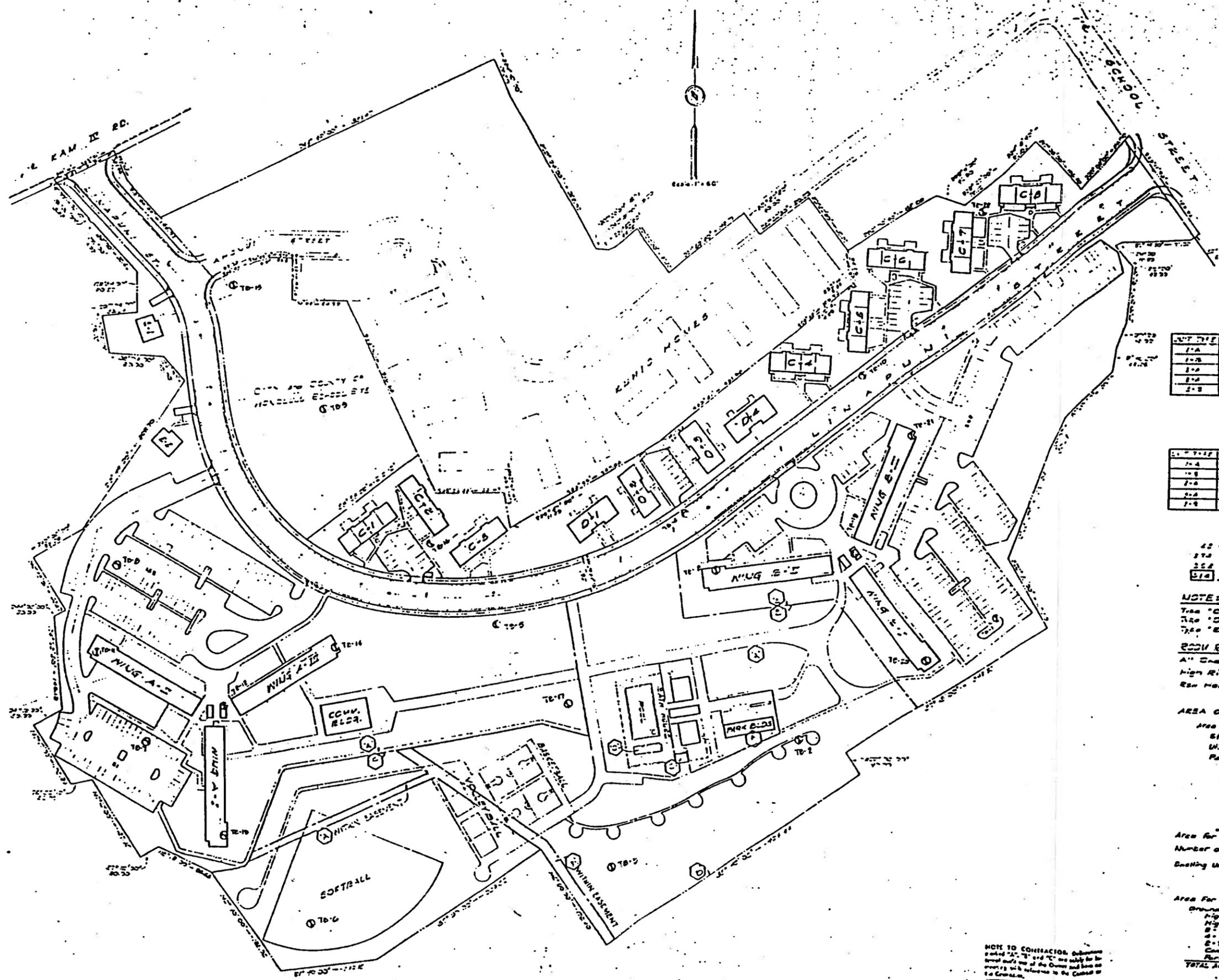
APPENDIX B

GEO-TECHNICAL EXISTING DOCUMENTS



SITE PLAN

HHA FEASIBILITY STUDY
 KUHIO PARK TERRACE
PAVEMENT/SIDEWALK



TABULATION
BUILDING 'A'

| UNIT TYPE | NO. OF UNITS | SQ. FT. AREA | NO. OF BATHS | NO. OF KITCHENS | NO. OF GARAGES |
|-------------|--------------|--------------|--------------|-----------------|----------------|
| 1-A | 1 | 1,000 | 1 | 1 | 1 |
| 1-B | 1 | 1,000 | 1 | 1 | 1 |
| 1-C | 1 | 1,000 | 1 | 1 | 1 |
| 1-D | 1 | 1,000 | 1 | 1 | 1 |
| 1-E | 1 | 1,000 | 1 | 1 | 1 |
| 1-F | 1 | 1,000 | 1 | 1 | 1 |
| 1-G | 1 | 1,000 | 1 | 1 | 1 |
| 1-H | 1 | 1,000 | 1 | 1 | 1 |
| 1-I | 1 | 1,000 | 1 | 1 | 1 |
| 1-J | 1 | 1,000 | 1 | 1 | 1 |
| 1-K | 1 | 1,000 | 1 | 1 | 1 |
| 1-L | 1 | 1,000 | 1 | 1 | 1 |
| 1-M | 1 | 1,000 | 1 | 1 | 1 |
| 1-N | 1 | 1,000 | 1 | 1 | 1 |
| 1-O | 1 | 1,000 | 1 | 1 | 1 |
| 1-P | 1 | 1,000 | 1 | 1 | 1 |
| 1-Q | 1 | 1,000 | 1 | 1 | 1 |
| 1-R | 1 | 1,000 | 1 | 1 | 1 |
| 1-S | 1 | 1,000 | 1 | 1 | 1 |
| 1-T | 1 | 1,000 | 1 | 1 | 1 |
| 1-U | 1 | 1,000 | 1 | 1 | 1 |
| 1-V | 1 | 1,000 | 1 | 1 | 1 |
| 1-W | 1 | 1,000 | 1 | 1 | 1 |
| 1-X | 1 | 1,000 | 1 | 1 | 1 |
| 1-Y | 1 | 1,000 | 1 | 1 | 1 |
| 1-Z | 1 | 1,000 | 1 | 1 | 1 |
| TOTAL UNITS | 20 | 20,000 | 20 | 20 | 20 |

BUILDING 'B'

| UNIT TYPE | NO. OF UNITS | SQ. FT. AREA | NO. OF BATHS | NO. OF KITCHENS | NO. OF GARAGES |
|-------------|--------------|--------------|--------------|-----------------|----------------|
| 2-A | 1 | 1,000 | 1 | 1 | 1 |
| 2-B | 1 | 1,000 | 1 | 1 | 1 |
| 2-C | 1 | 1,000 | 1 | 1 | 1 |
| 2-D | 1 | 1,000 | 1 | 1 | 1 |
| 2-E | 1 | 1,000 | 1 | 1 | 1 |
| 2-F | 1 | 1,000 | 1 | 1 | 1 |
| 2-G | 1 | 1,000 | 1 | 1 | 1 |
| 2-H | 1 | 1,000 | 1 | 1 | 1 |
| 2-I | 1 | 1,000 | 1 | 1 | 1 |
| 2-J | 1 | 1,000 | 1 | 1 | 1 |
| 2-K | 1 | 1,000 | 1 | 1 | 1 |
| 2-L | 1 | 1,000 | 1 | 1 | 1 |
| 2-M | 1 | 1,000 | 1 | 1 | 1 |
| 2-N | 1 | 1,000 | 1 | 1 | 1 |
| 2-O | 1 | 1,000 | 1 | 1 | 1 |
| 2-P | 1 | 1,000 | 1 | 1 | 1 |
| 2-Q | 1 | 1,000 | 1 | 1 | 1 |
| 2-R | 1 | 1,000 | 1 | 1 | 1 |
| 2-S | 1 | 1,000 | 1 | 1 | 1 |
| 2-T | 1 | 1,000 | 1 | 1 | 1 |
| 2-U | 1 | 1,000 | 1 | 1 | 1 |
| 2-V | 1 | 1,000 | 1 | 1 | 1 |
| 2-W | 1 | 1,000 | 1 | 1 | 1 |
| 2-X | 1 | 1,000 | 1 | 1 | 1 |
| 2-Y | 1 | 1,000 | 1 | 1 | 1 |
| 2-Z | 1 | 1,000 | 1 | 1 | 1 |
| TOTAL UNITS | 20 | 20,000 | 20 | 20 | 20 |

42 - 2 BEDROOM UNITS @ 2 = 84 UNITS
 170 UNITS @ 2.5 = 425 UNITS
 120 UNITS @ 1.5 = 180 UNITS
 100 UNITS @ 1.0 = 100 UNITS
TOTAL UNITS = 789

NOTE:
 Type 'C' Buildings are 4-BC. Row Houses
 Type 'D' Buildings are 4-BC. Duplexes
 Type 'E' Buildings are 4-BC. Single

ROOM RATIO:
 All Dwelling Units - 4.20
 High Rise Only - 4.78
 Row Houses Only - 6.20

AREA OF PROJECT PROPERTY = 1,000,000 SQ. FT. (22.96 AC.)
 Area to be Dedicated for:
 Streets 122,000 SQ. FT. (2.8 AC.)
 Utility Enclosures 18,000 SQ. FT. (0.4 AC.)
 Parks 24,000 SQ. FT. (0.5 AC.)
 447,000 SQ. FT. (10.2 AC.)
NET AREA = 521,000 SQ. FT. (11.9 AC.)

DWELLING UNIT DENSITY
 Area for Computation of Density 521,000 SQ. FT. (11.9 AC.)
 Number of Dwelling Units 614 Units
 Dwelling Unit Density $\frac{614}{521,000} = 0.00118$ = 48.0 UNITS/AC

COVERAGE
 Area for Computation of Coverage 521,000 SQ. FT.
 Ground Area of Buildings:
 High Rise - 18,000 SQ. FT.
 4-BC Type 'C' - 18,175 SQ. FT.
 4-BC Type 'D' - 8,500 SQ. FT.
 4-BC Type 'E' - 2,825 SQ. FT.
 Community - 9,100 SQ. FT.
 Park Facilities - 2,600 SQ. FT.
TOTAL AREA OF BUILDINGS = 58,200 SQ. FT.

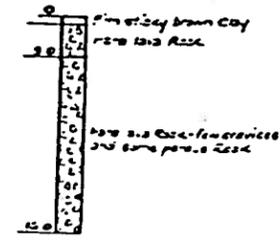
NOTE TO CONTRACTOR: Dimensions shown on this plan are subject to the survey and shall be in accordance with the Contract and the Survey.

James P. ...
 Traffic Engineer
 Director, Planning Dept.
 Director, Planning Dept.

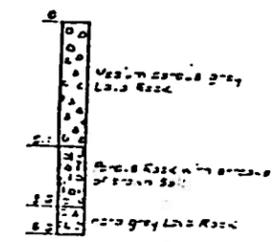


HAWAII HOUSING AUTHORITY
 HONOLULU, HAWAII
 KUHIO PARK TERRACE
 Q-89
 Dec. 1, 1958
GENERAL SITE PLAN
 C-3

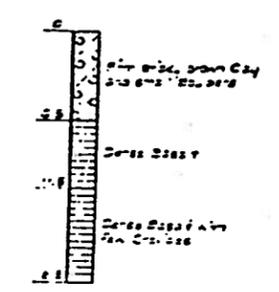
BORING NO. 1



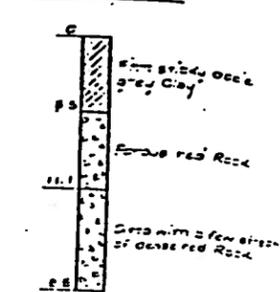
BORING NO. 2



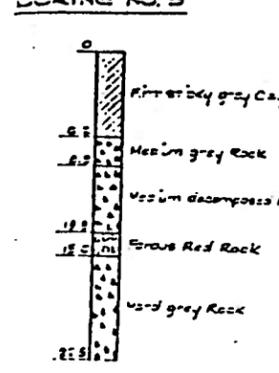
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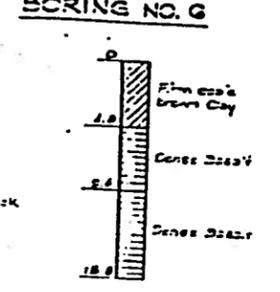
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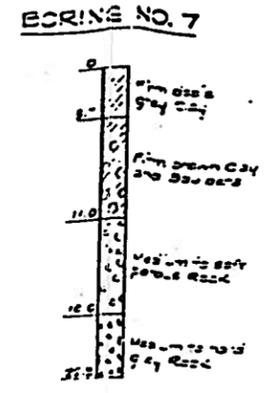
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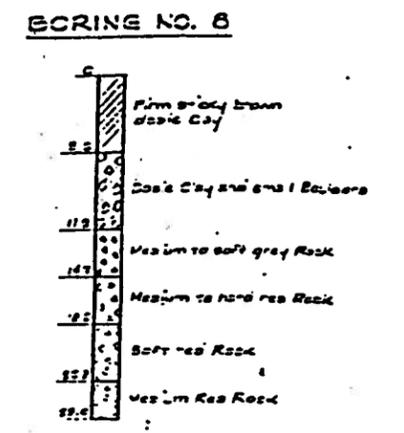
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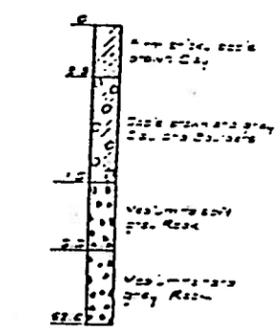
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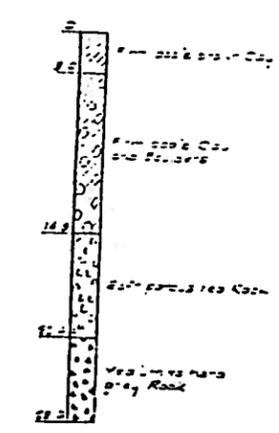
BORING NO. 8



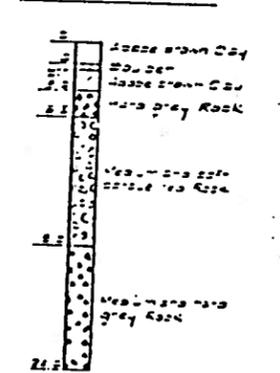
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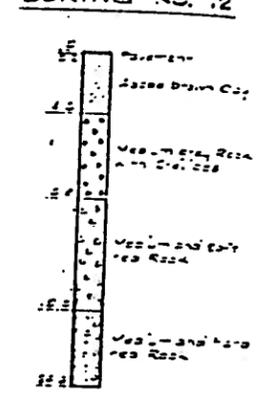
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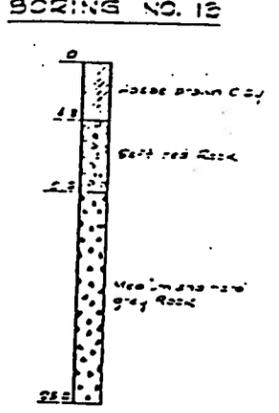
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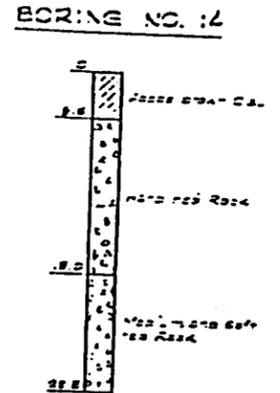
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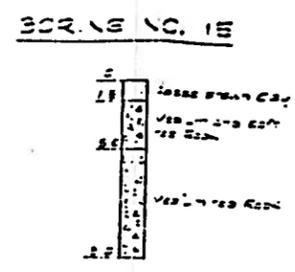
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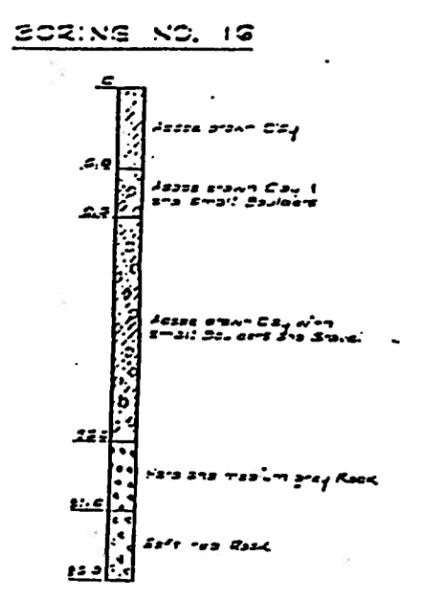
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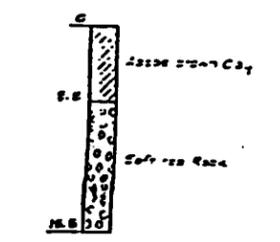
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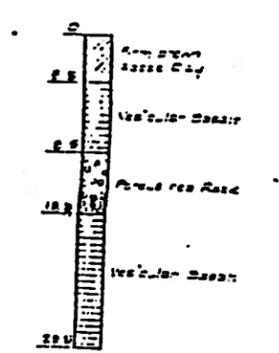
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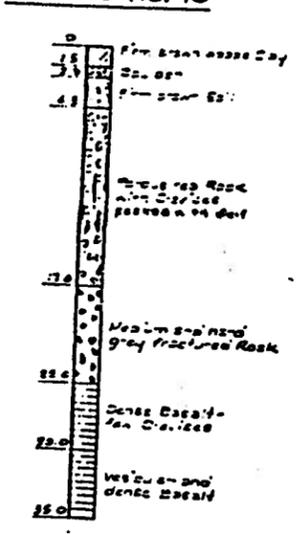
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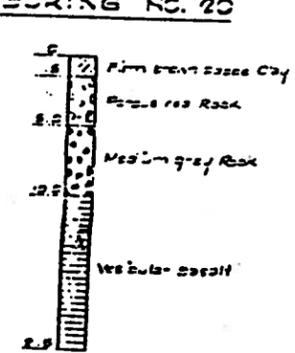
BORING NO. 18



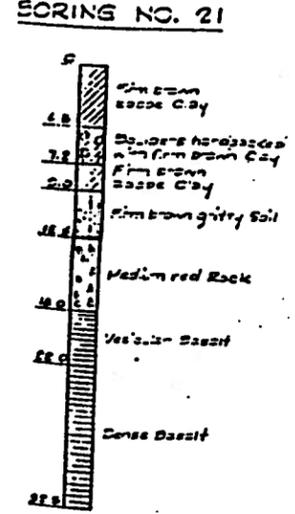
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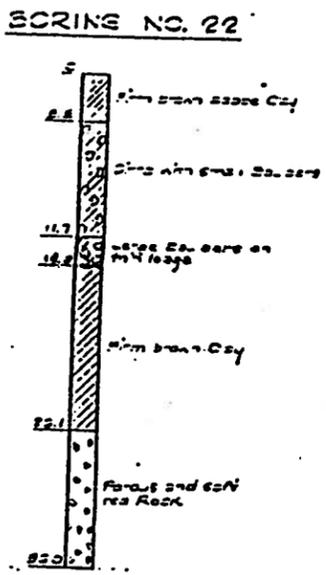
BORING NO. 20



BORING NO. 21



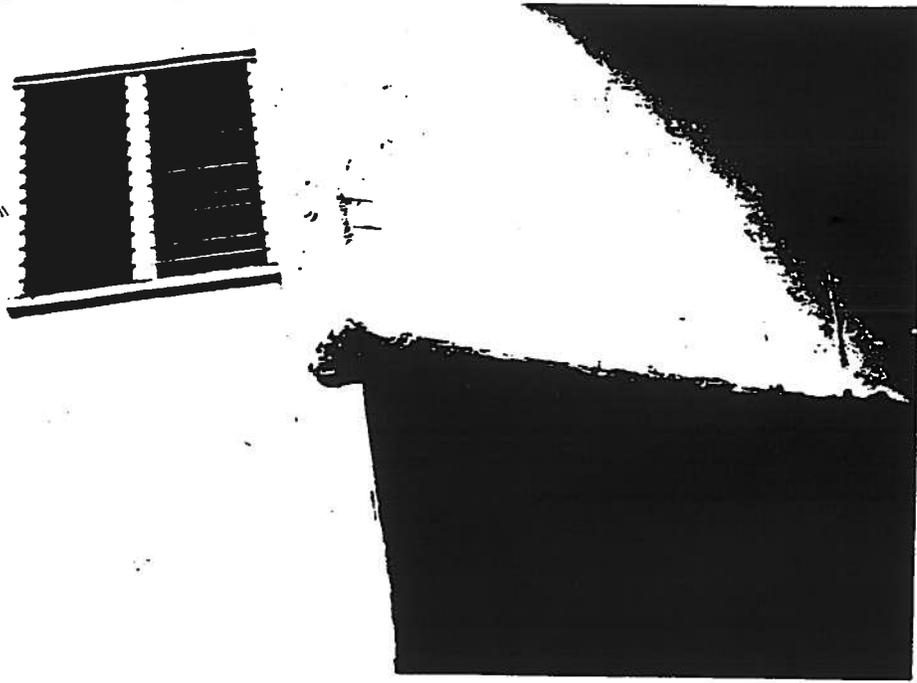
BORING NO. 22



See B.M. C-1 for Boring Locations

NOTE TO CONTRACTOR: Borehole logs are for information only and are not to be used for design purposes. The logs are the property of the Hawaii Housing Authority and are to be returned to the office of the Engineer in Charge.

APPENDIX C
STRUCTURAL DATA



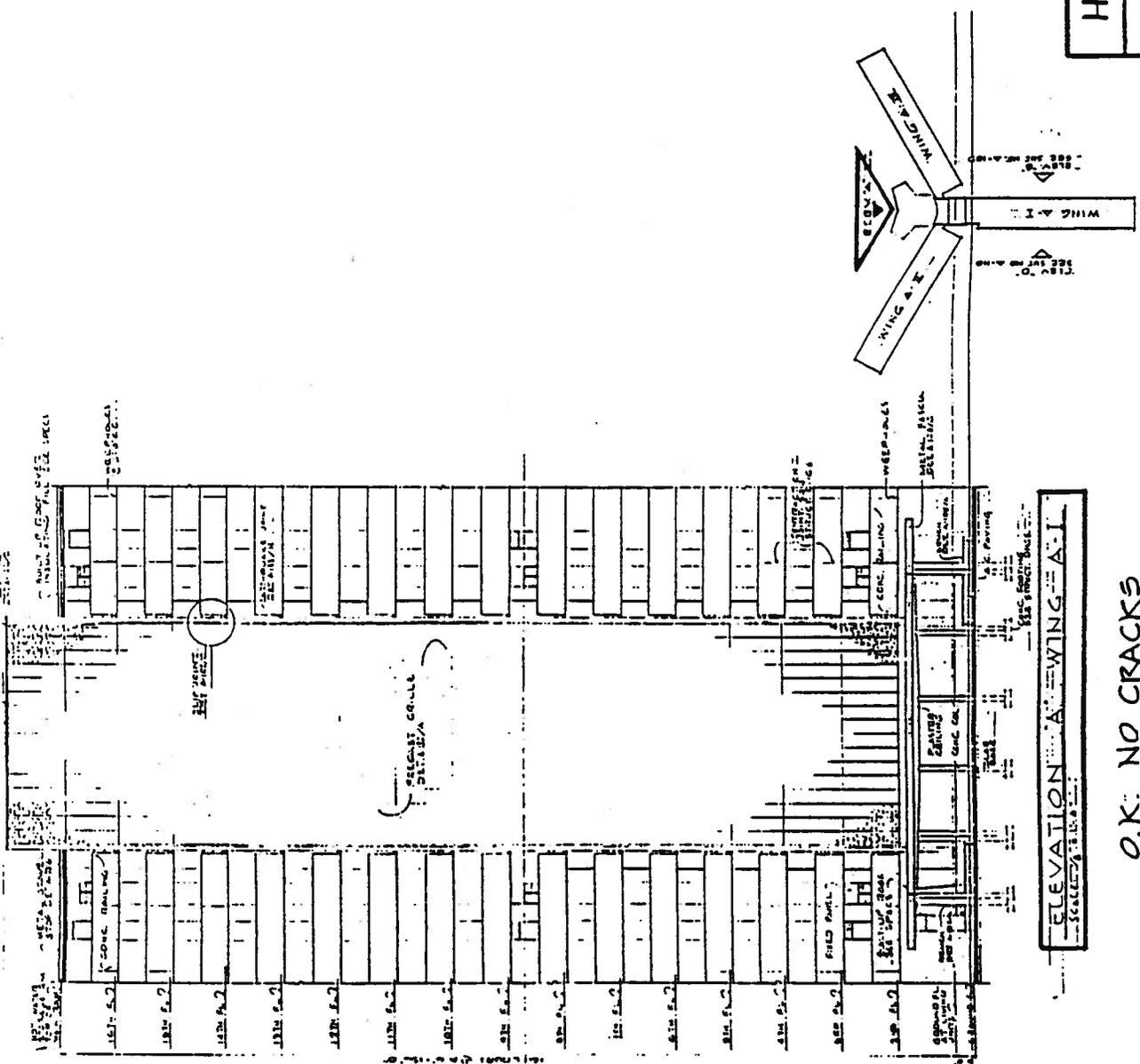
①

SPALL AT WING-B, CANOPY
ADJACENT TO TRASH ROOM.

HHA FEASIBILITY STUDY

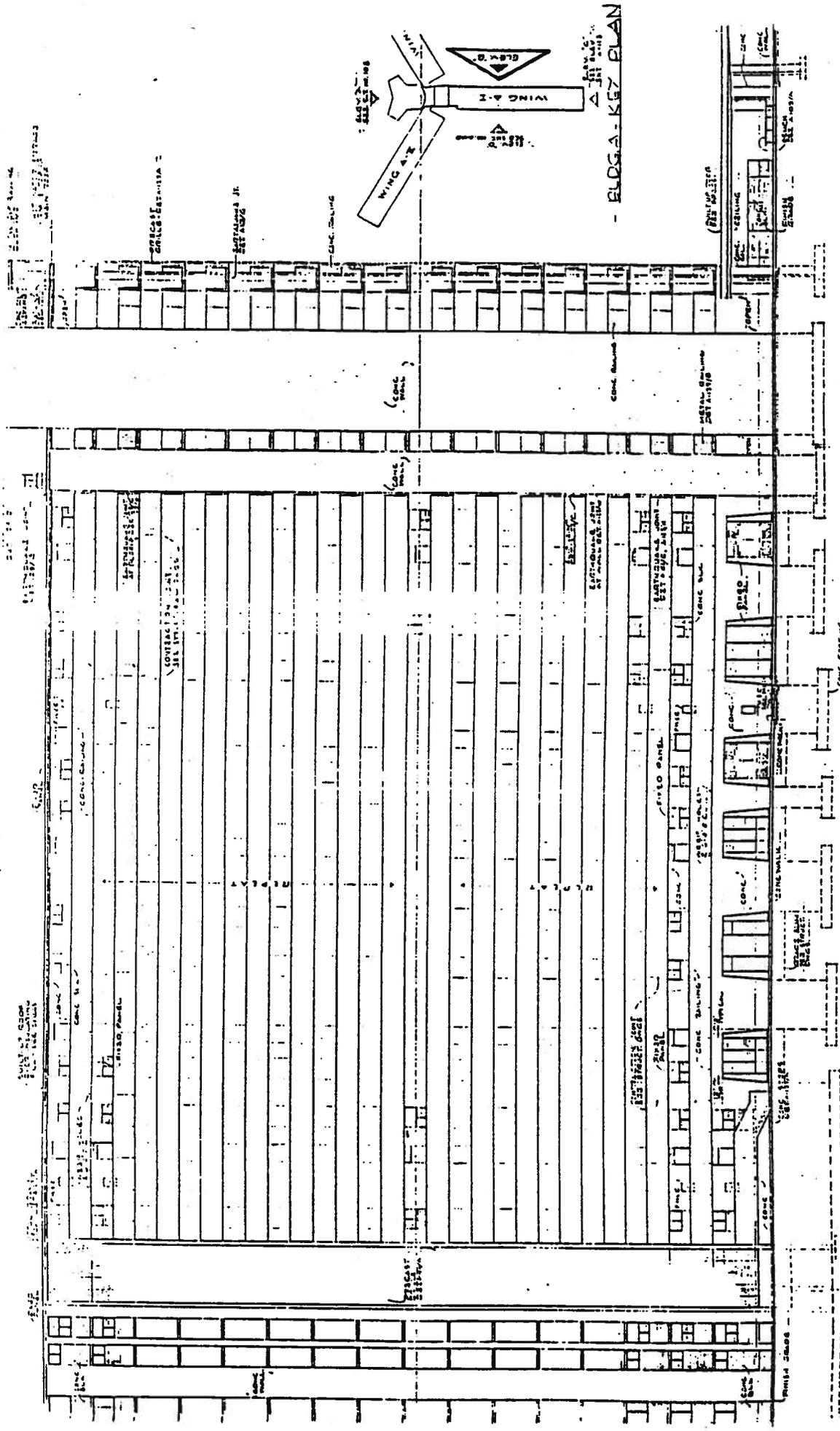
FIELD SURVEY RECORD
KUHIO PARK TERRACE
PHOTO - 1 DATE DEC 5, 96

HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE-1 DATE: DEC. 5, 96



O.K. NO CRACKS

FIELD SURVEY RECORD

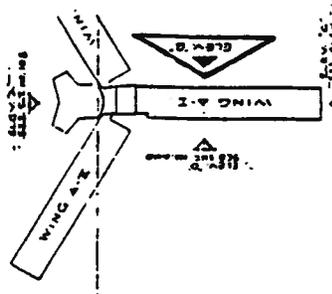


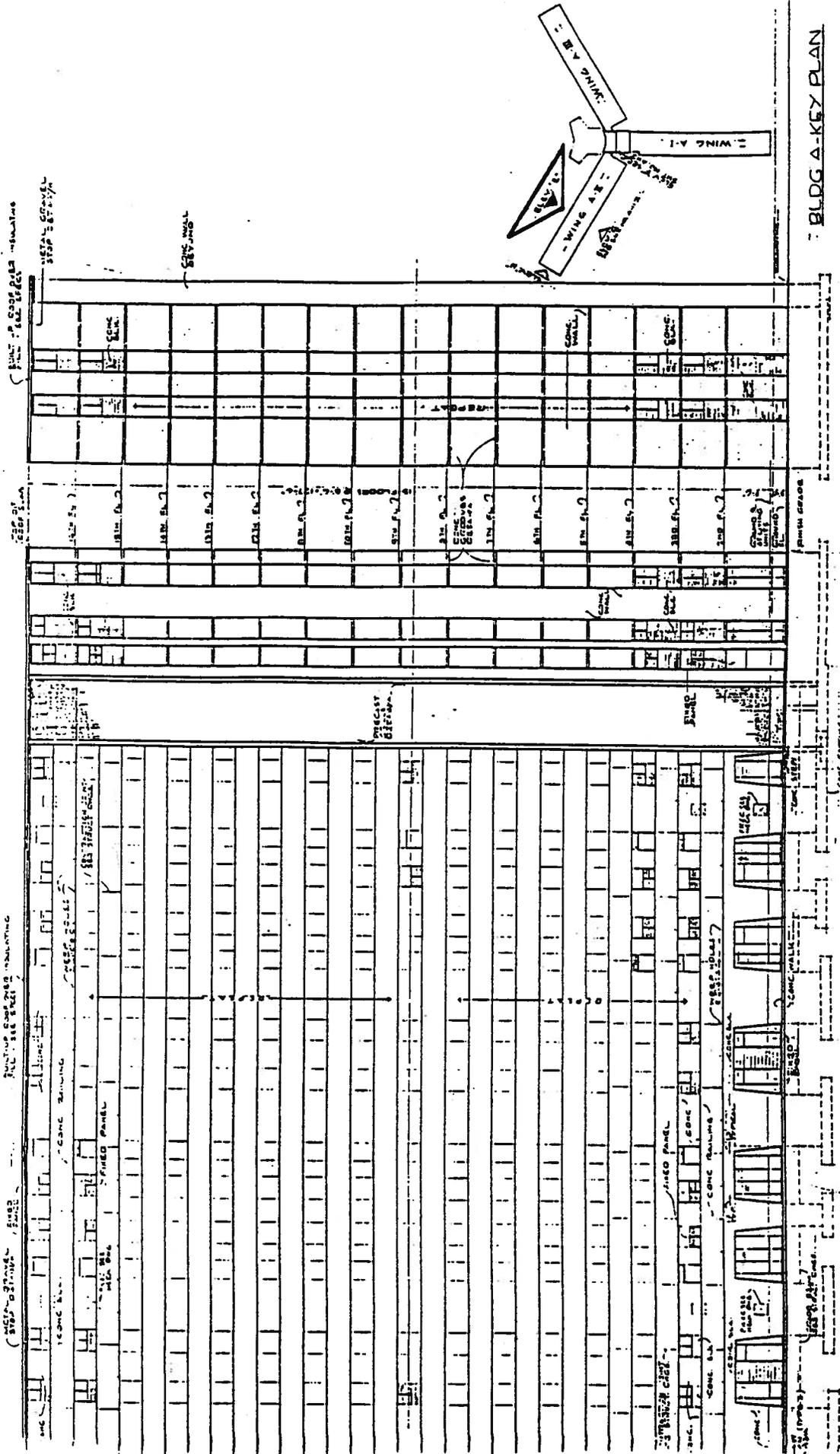
HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE- 2 DATE: DEC. 5, 90

ELEVATION 3 - WING A-1
 SCALE 1/8" = 1'-0"

O.K. NO CRACKS

- EDGE-A-KEY PLAN

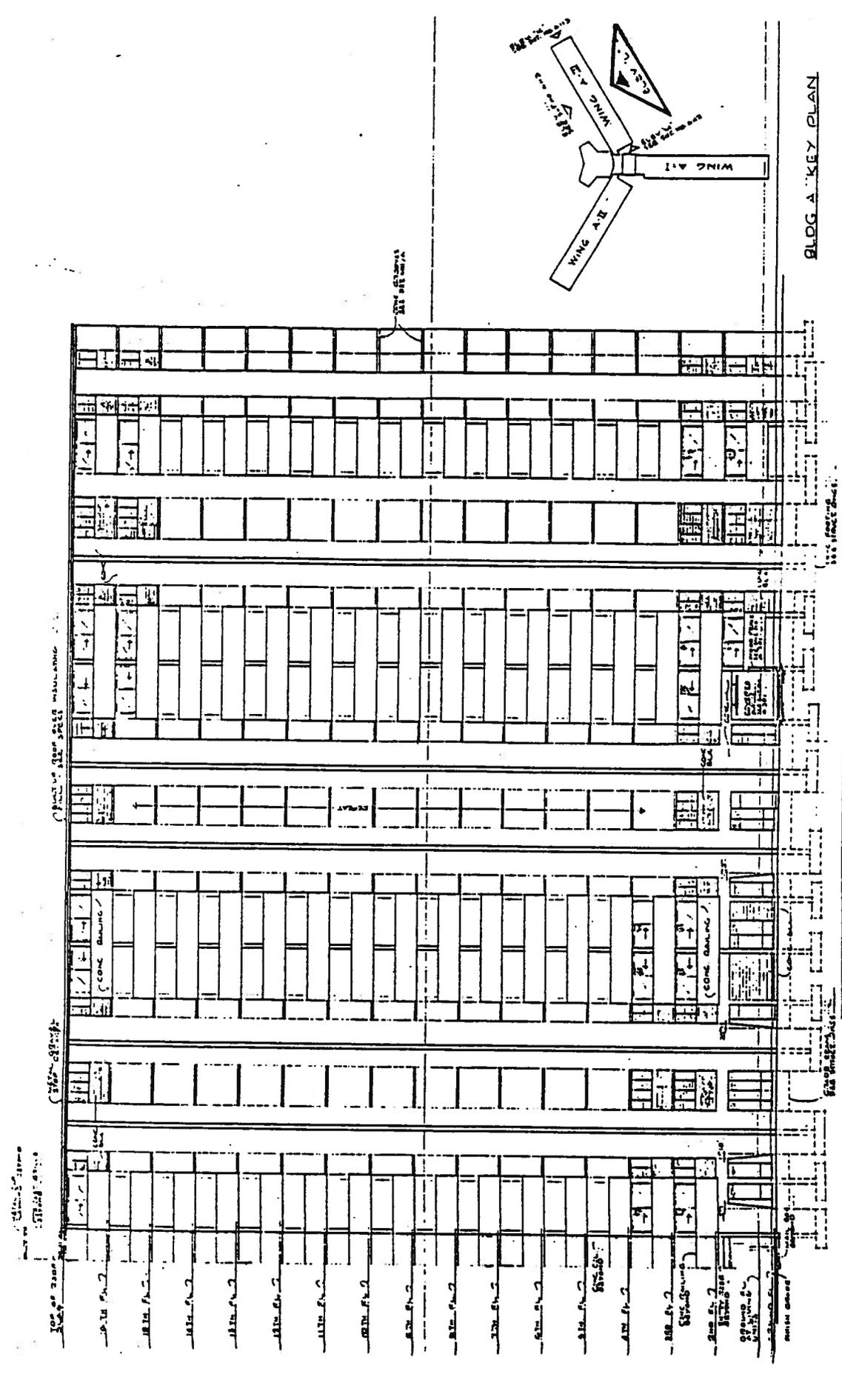




HHA FEASIBILITY STUDY
FIELD SURVEY RECORD
KUHIO PARK TERRACE
PLATE- 3 DATE: DEC. 5, 96

ELEVATION W WING A-II

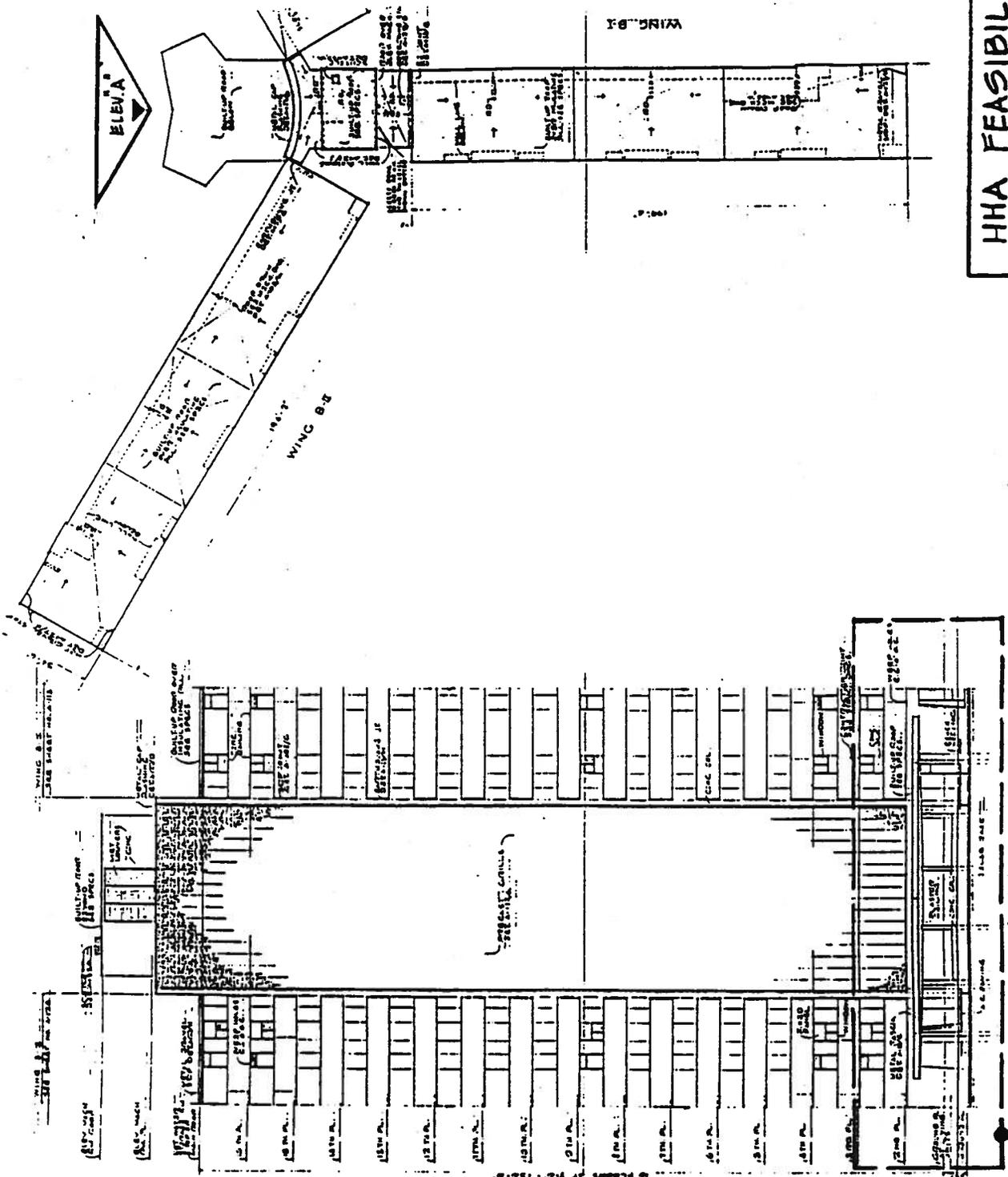
O.K. NO CRACKS



HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE-5 DATE: DEC. 5, 96

ELEVATION 'L' WING A-III

O.K. NO CRACKS

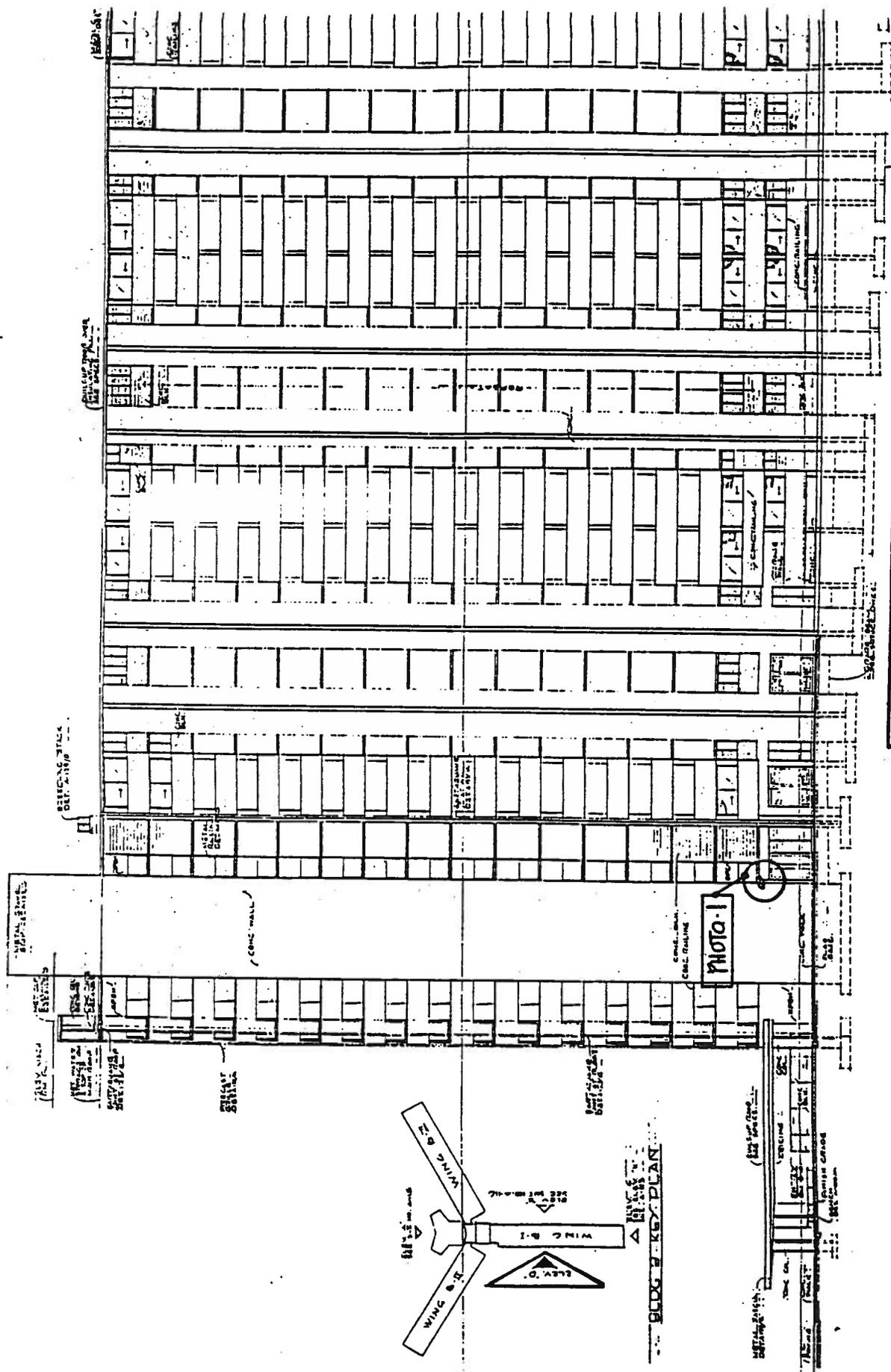


HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE- 6 DATE: DEC. 5, 96

ELEV "A" BLDG. B

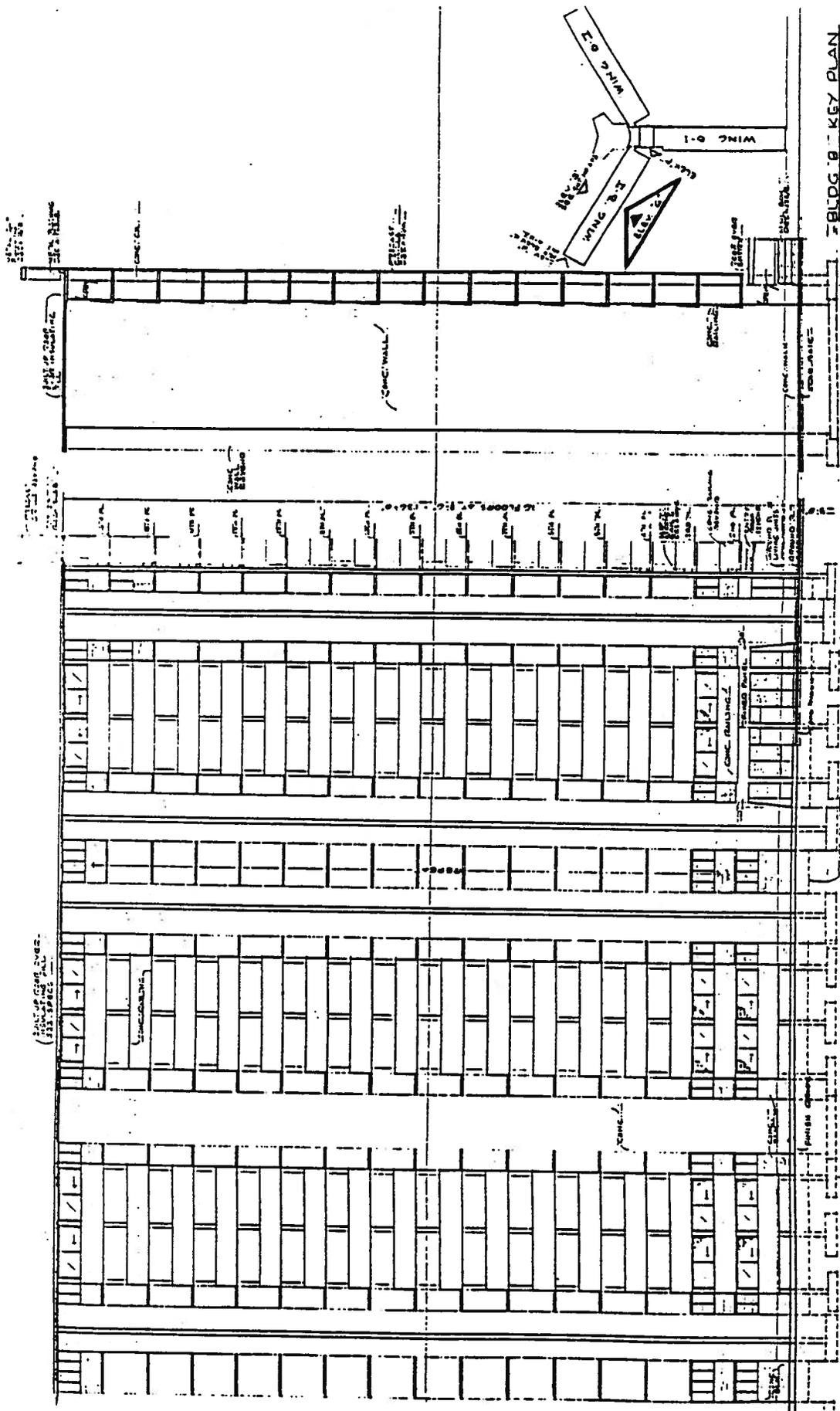
O.K.
 NO CRACKS

HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE- 7 DATE: DEC. 5, 96



ELEVATION "D" WING B-I
 SCALE 1/8" = 1'-0"

O.K. NO CRACKS



HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE- 8 DATE: DEC. 5, 96

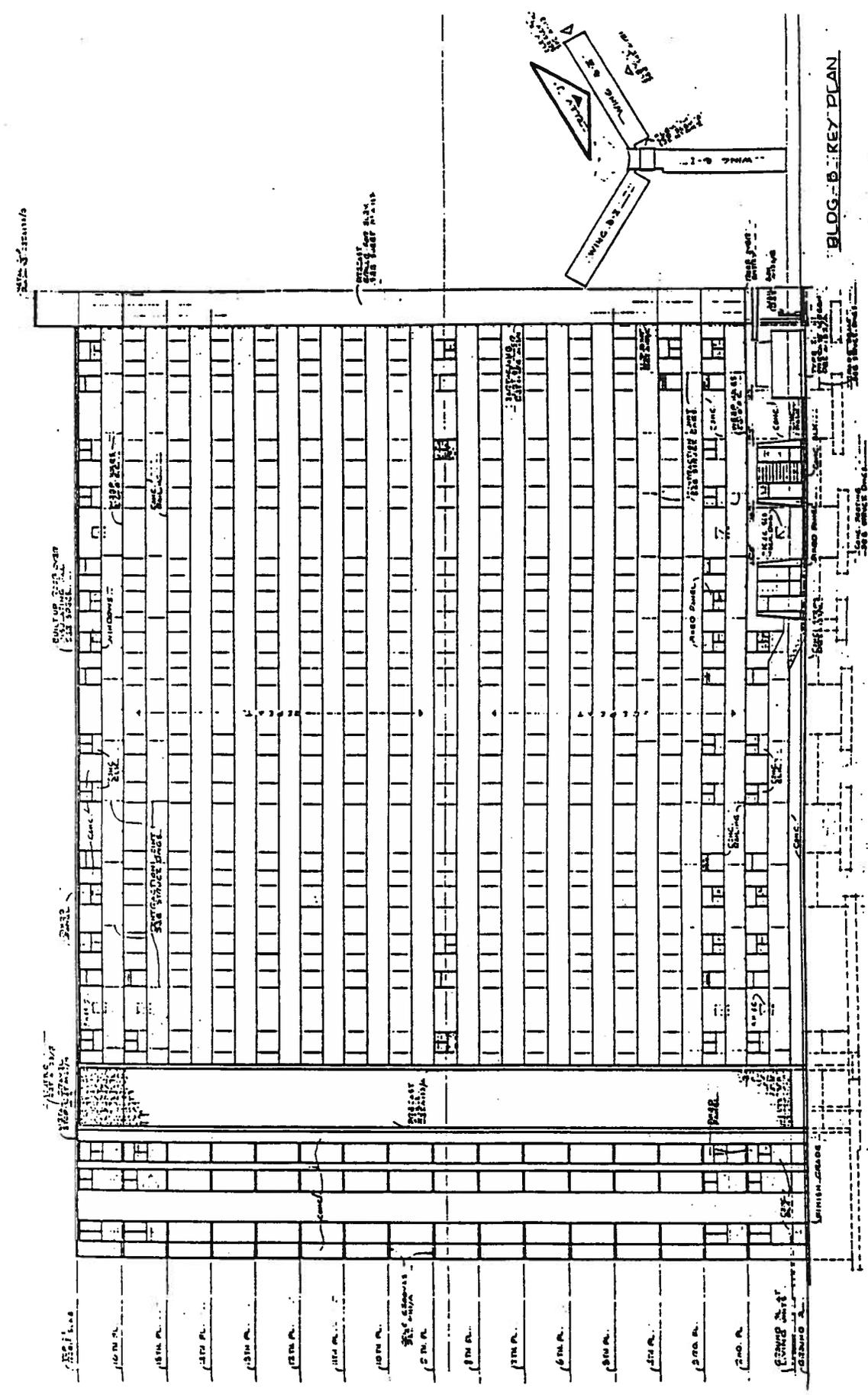
ELEVATION G WING 6-I
 1/2" = 1'-0"

ELEVATION F WING 6-II
 1/2" = 1'-0"

BLDG 8 KEY PLAN

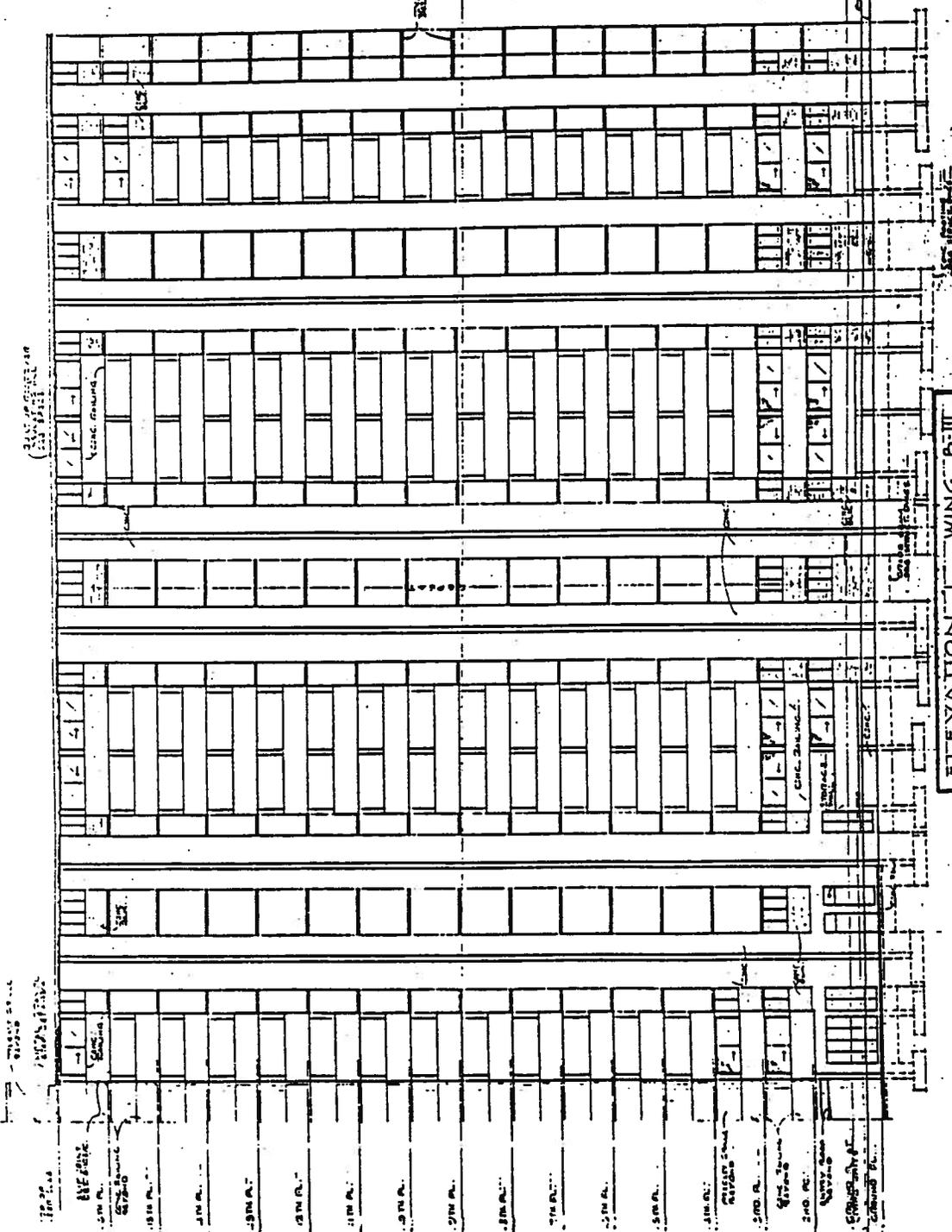
O.K. NO CRACKS

HHA FEASIBILITY STUDY
FIELD SURVEY RECORD
KUHIO PARK TERRACE
PLATE- 9 DATE: DEC. 5, 96

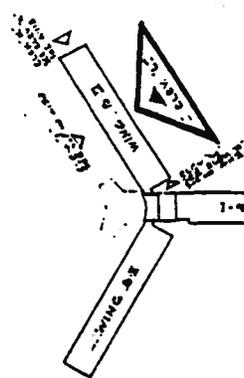


ELEVATION - WING B-III

O.K. NO CRACKS



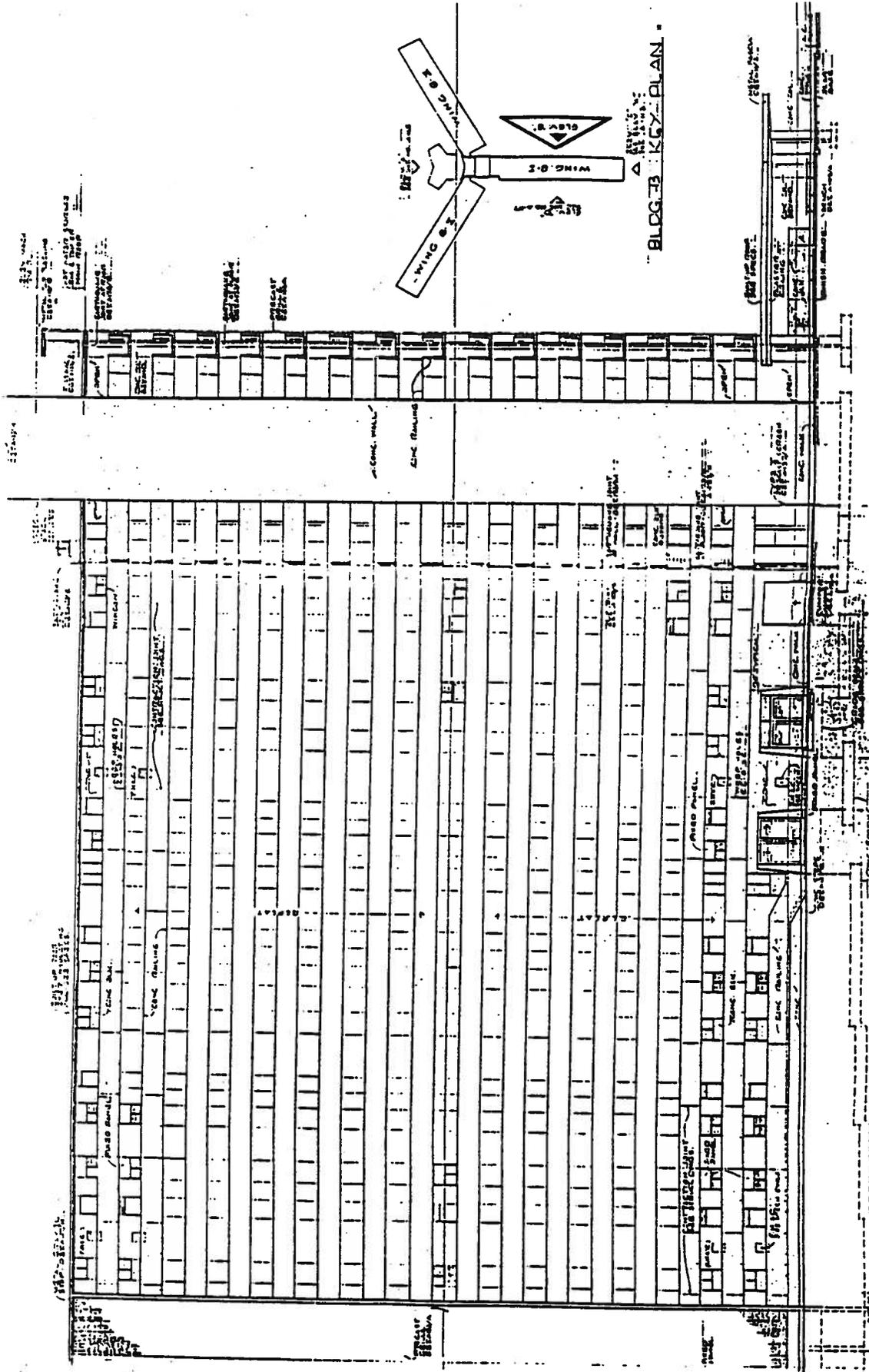
BLDG. B KEY PLAN



ELEVATION - WING B-III
 2/28/2010

O.K. NO CRACKS

HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE-10 DATE: DEC. 5, 96



ELEVATION '01' - WING '01'
 SCALE: 1/8" = 1'-0"

O.K. NO CRACKS

HHA FEASIBILITY STUDY
 FIELD SURVEY RECORD
 KUHIO PARK TERRACE
 PLATE-11 DATE: DEC. 5, 96