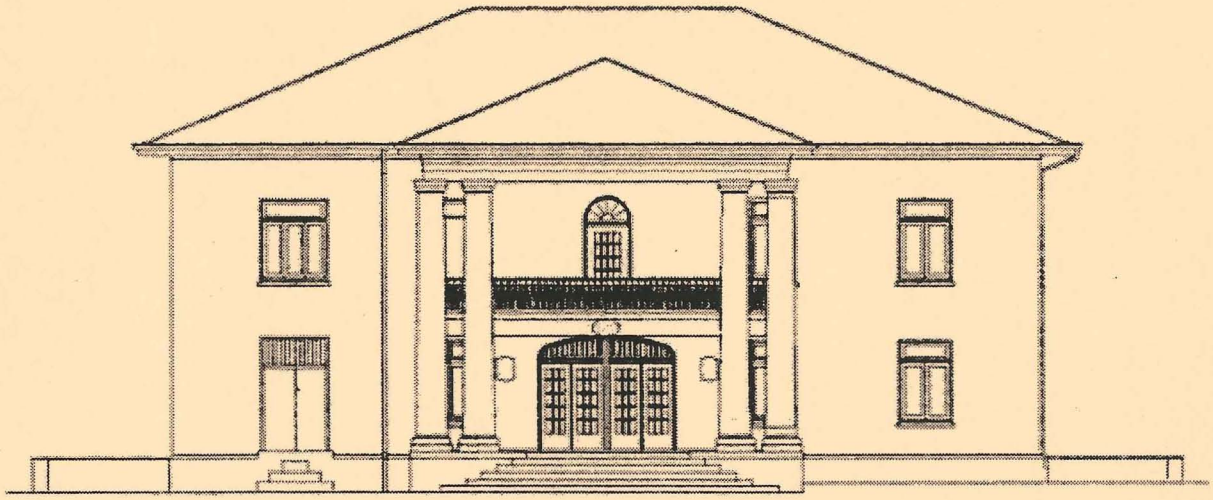
Historic Structures Report

OLD LAHAINA COURTHOUSE



December 16, 1996

Historic Structures Report

OLD LAHAINA COURTHOUSE

For the
County of Maui

Produced by

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TABLE OF CONTENTS

LIST OF FIGURES

PART 1 - INTRODUCTION

1.1 Executive Summary

The Old Lahaina Courthouse is one of the most important buildings in Lahaina. This report represents the initial step in a process to restore the building. Work proposed includes, to the maximum extent possible, restoring the exterior and interior of the building to its c.1925 appearance. The work recommended includes

- Some structural upgrading to increase its seismic resistance,
- All new electrical and plumbing systems,
- Installation of a new handicap ramp and elevator to make the first and second floor fully accessible,
- Revisions to the exterior grounds to remove parking from the front of the building, add landscaping,
- Refinishing all interior and exterior surfaces of the building.

1.2 Location and Scope of Work

The Old Lahaina Courthouse is located in the National Historic Landmark town of Lahaina on the island of Maui, Hawaii. It is situated at the makai side of a block bounded by Front Street, Canal Street, Wharf Street and Hotel Street, which, except for this building, serves primarily as a public park. The main entry elevation of the building faces Wharf Street, which is adjacent to the waterfront. To the mauka side of the building is a very large, picturesque Banyan tree that has spread to occupy most of the park (figure 1).

The scope of work of this project included a Historic Structures Report (HSR), which is represented by this document. The project also includes applying for and obtaining several discretionary permits such as a Special Management Area Use Permit, modifications to the Executive Order by which the State of Hawaii turned over the building to the County of Maui, and getting clearances from the Commission on Persons With Disabilities, the State Land Board and the State Historic Preservation Office for the work being proposed by this report.

PART 2 - HISTORY AND RESTORATION PERIOD

2.1 Summary of the Construction History of the Old Lahaina Courthouse

Lahaina was the capitol of the Kingdom of Hawaii from 1820 to 1845 after which the royal court and legislature moved to Honolulu. Lahaina remained the most important town on the island of Maui until the development of Wailuku in the early twentieth century. As the island's commercial center and main port of entry in the eighteenth century, there was need for a customs and court house.

By the 1850s, two of the prominent buildings in Lahaina, the old "Palace" and the fort, were deemed unnecessary structures. The legislature of 1852 directed that the

site of the fort be used as the place for building "two Gov. Houses . . . a Market House and a Custom House;" and that "a part of the stones of said fort shall be used in building said houses" (Peterson 1966: 8).

By the end of the 1850s an appropriation was made to build a "Court and Custom House." The 1858 appropriation was for $7,000, but no contract was arranged that year. The following year the appropriation was reduced to $6,000, perhaps because the Superintendent of Public Works planned to use timbers from the old "Palace" in Lahaina, as well as some of the stones from the fort. A construction contract for $2,000 was awarded to George Thomas, with materials to be supplied by the government (Peterson 1966: 1).

The building was started in July and finished by December of 1859. The costs totaled $9,674.43; the overrun, as explained by the Superintendent, was due to the lumber in the old "Palace" being decayed and unusable, the enlargement of the building after the contract was signed, and extra costs to enclose the building before the rainy season started (Peterson 1966: 2). A historic photo shows the appearance of the building around the turn of the century (figure 2). It was a simple rectangular shape with a two-story wooden lanai along the seaward side, and a flat roof behind pedimented parapets.

The building has obviously been greatly changed over the years. The first work on the building was undertaken only five and a half years after it was constructed. The repairs that were needed were mostly due to the faulty roof design and poor carpentry. The roofing installed was a new product, called "Warren's Patent New England Roofing." It consisted of a tar-impregnated paper felt, finished off with a gravel topping (Peterson 1966: 3). The architect in charge of the repairs noted that heavier felting, a double coat of asphaltic material, new gravel, new gutter strips, and additional outlets for water constituted the repaired roof (Peterson 1966: 15). He also had to bolt the lanai to the stone walls, repair roof trusses, and paint or repaint all the woodwork. Additional repairs to the building were necessary after the earthquake that hit Lahaina on February 19, 1871.

The major changes to the building occurred in 1925. A plaque on the building notes the work was undertaken by the County Board of Supervisors, and that they considered the building "restored". The work done in that 1925 project included the following:

- New floor plans at the first and second floors. All current ceiling and wall finishes, the stair and all panel doors date from this period.
- Excavation of the basement and installation of a reinforced concrete floor and concrete columns in the basement. The detention cells and stairs to the basement were also installed at this time.
- Installation of new steel columns from the first to the second floor and steel beams at both floor levels to support the floor structures.
- Installation of new floor structures and flooring.

- Installation of a new roof structure and mission tile roofing. This mission tile roofing had been replaced as least as early as 1959, based on photographs at the State Archives (figures 3 & 4).
- The mauka and makai lanai steps, floors, entry columns and roof were installed.
- All windows and transoms date from this period, although most are in the same openings and are the same size as in the original building. The jalousie windows are a later replacement, but many of the transoms and casements from those openings are still in the building and can be reinstalled.

The appearance of the current building is almost entirely determined by the 1925 renovation. The window openings and general massing of the building are the primary legacy of the original construction (figures 5, 6, 7 & 8).

Since 1925 there have been relatively few changes to the building. Some of those have already been mentioned (roofing changes and windows). Also on the exterior, a small addition was made to the mauka/Kaanapali corner to create more storage area. A small condenser shed has been attached to that. Within the past two years a wood handicap ramp has been added to the makai lanai, on the Kaanapali side of the building.

The significant interior changes include the removal of the post office boxes and reconstruction of the Kaanapali wall of the first floor hall. This involved a very slight narrowing of the first floor entry hall, removal of the mesh vent opening at the top of the wall and elimination of the pass-through post office windows. The 1925 plans indicate a rectangular-shaped recess where the post office windows were. A 1966 Historic American Building Survey (HABS) photo (figure 9) indicates a 45 degree angle at the corner of the recess and a hallway width that corresponds to the existing width. This is reinforced by the clear marks from the old wall on the wood floor.

On the second floor some single wall partitions were installed in the rooms on the Kaanapali side of the second floor. These were there at least as early as 1966, when the HABS drawings were done.

Date	**Physical History of Building**	**Source**
1852-55	Planning for custom house & market required demolition of the fort at Lahaina	Peterson 1966: 8
5/4/1859	$6,000 appropriated by Kingdom's Legislature	Peterson 1966: 1
5/23/1859	SPW directed prison laborers to take down "Old Palace" and salvage timber	Peterson 1966: 1
July 26, 1859	Construction contract to George Thomas, $2,000: Court & Custom House & Gov.. offices	Peterson 1966: 12

Dec. 1859	Custom & Court house completed	Peterson 1966: 2
May 1865	Repairs made to bldg. by Theo. Heuck	Peterson 1966: 13
Feb. 9, 1871	Earthquake damaged building	Peterson 1966: 3
Dec. 1898	New 5-ft. lanai along front. New floors were installed, wood support posts replaced and a hipped roof was installed.	Peterson 1966: 4
1925	Classical-style remodeling by William D'Esmond, apparently with County funding .	Peterson 1966: 4-5
1931	Single-story addition to the Kaanapali/ mauka corner	
pre 1966	Single wall partitions added at second floor.	
c. 1995	Wood ramp added to makai side	

2.2 Comments on Restoration Period

It is recommended that the building be restored to its c. 1925 appearance. The reasons for this target date for restoration are as follows:

1. The current physical appearance of the Old Lahaina Courthouse is almost entirely a result of the 1925 work designed by William D'Esmond. Although there have been some alterations to the building since then, these are relatively minor. In addition, the building is significant as the work of D'Esmond. D'Esmond designed many prominent buildings on Maui in the 1920s and early '30s including Maria Lanikila Church ('28), Kahului Railroad G. Building ('23) and the Baldwin Bank Building ('23).
2. There is excellent photographic and drawing evidence which would allow for accurate restoration to c. 1925. Restoration to an earlier period would involve much more conjecture than would be desirable in a restoration effort.
3. The cost to restore the building to a period prior to 1925 would be far greater than restoring to c. 1925.

PART 3 - EXISTING CONDITION ANALYSIS AND RECOMMENDATIONS

This section of the report of the report includes observations about the general condition of the existing architectural features, a structural analysis, mechanical and electrical engineering analysis and a brief review of landscape conditions. Each sub-section contains recommendations and conclusions about renovations that are needed.

3.1 - Architectural Exteriors

3.1.1 Roof

The original roofing was a clay mission tile (figure 3). The existing roof covering is asphalt shingles. The asphalt shingle roofing appears to be in fair condition. The existing sheathing, truss system and ceiling framing appear to be in very good condition. Structural analysis and recommendations are detailed in Appendix "A". All the eave vents have broken screens which have allowed birds to enter the attic (figure 10).

Recommendations:

1. The mission tile roofing should be reinstalled, using a good quality clay tile matching the profile that can be seen in the historic photographs. This type of roofing is durable and although it needs regular maintenance is not a high-maintenance roof. It should be installed with stainless steel nails and stainless steel hold downs.
2. The roof structure should be tied to the exterior walls at the wall plate. (See structural report, Appendix "A")
3. All screens at the attic vents should be replaced with stainless steel mesh.

3.1.2 Roof Drainage System

There is currently no roof drainage system. Rainwater falls from the eave onto the landscape beds around the building. This causes large muddy areas in the planting beds around the building and mud stains on the lower parts of the exterior walls. The 1925 reconstruction drawings indicate 4" x 6" gutters and 2-1/2" x 4" 'Armco' metal downspouts and the mauka porch is indicated to have 2-1/2" x 2-1/2" downspouts. Marks can be seen on the walls where the downspouts were before they were removed. These marks correspond to the locations of downspouts shown on the Historic American Buildings Survey drawings done in 1966. Some of the original concrete splash blocks still exist, but many of these are lower than the surrounding grade.

Recommendations:

1. Copper ogee gutters and rectangular downspouts of identical size to the originals should be installed in the original locations. They should be painted to match the ARMCO metal color.
2. Rather than re-install the splash blocks the downspouts should empty onto the proposed concrete edging to be placed all around the building.

3.1.3 Walls

The exterior walls consist of coral rubble and lime mortar masonry which is typically about 21 inches thick. Up to about 2 feet above ground level the wall steps out in a plinth course to 24 inches thick. The walls are plastered with cement plaster on the exterior and gypsum plaster on the interior.

In the 1925 restoration work was done to strengthen the walls. A concrete bond beam was cast at the top of the wall around the perimeter, under the roof trusses. A concrete L-shape retaining wall was cast around the inside of the foot of the basement walls; the top of this extends 16 inches above the basement floor. The present exterior plaster probably dates from the 1925 restoration although it has been repaired in many places. A note on the 1925 drawings indicates the plastering work to be done to the exterior walls:

> "All old plaster to be removed. Walls to be thoroughly picked and to be given a coat of cement gunite, gunite to be rodded to even plane floated if necessary and given spatter coat finish with the gun. All angles and corners to be straight, true and clean cut."

Examination of the exterior walls revealed many cracks in the exterior plaster and large areas of wall where the plaster is not bonded to the masonry substrate. Generally the south and west elevations are in poorer condition and the majority of the problems occur in the first story height of the walls. Vertical cracks were often found adjacent to the sides of window and door openings with an area of hollow-sounding plaster extending beyond the crack away from the opening. Spalling and cracks were also noted in some lintels and sills (figure 11). Any cracks in horizontal surfaces can allow rain water to penetrate into the wall.

Without removing the plaster it is not possible to tell whether these cracks are only in the plaster or if they extend into the wall substrate and are due to structural movement, but we expect it is the former. The cracking and bond failures of the plaster seems to be due to the action of three decay processes. First, cement plaster is hard and brittle. Any wall movement, such as shrinkage, thermal expansion/contraction or settlement is likely to result in cracks in the cement plaster. This is especially true when there are no contraction joints built into the plaster surface to relieve those stresses.

Second, salt is being deposited under the plaster, which can create forces that break the bond between the plaster and its stone substrate. Tests done in 1994 by Lectros showed that the walls are so salt-laden that moisture can be pulled from the air into the walls. Some of the moisture in the walls is probably coming from rain penetrating the exterior plaster through cracks. Most of the moisture in the walls is being drawn from the brackish ground water against the foundation walls, as shown by the fact that major interior plaster damage is limited to the first floor level.

The third cause of exterior plaster failure is from the expansion of rusting metal elements built into the wall (figure 12).

Recommendations:

1. All areas of cracked and hollow-sounding exterior plaster should be removed and repaired with cement plaster.
2. When the plaster is removed the walls should be inspected to see if any significant structural cracks exist.
3. Where rusting metal elements built into the wall are causing spalling the metal should be removed if possible. If it must remain (e.g. reinforcing bars) the rust should be removed and the metal item coated with rust inhibitive primers.

3.1.4 Exterior Stairs

3.1.4.1 Makai and Mauka Entrance Stairs

The makai entrance steps are chipped and have spalling cement plaster finish in several places. Some treads are pitted. The steps have been repaired in the past with cement plaster and in some cases these repairs are failing. The lowest step has been damaged in several places along the nosing, probably by overhanging vehicles.

Neither set of steps has handrails, which is a code violation.

There is a wood ramp leading up to the north end of the makai landing (figure 14). The ramp appears to be in reasonable condition but does not meet all the requirements for disabled access. In addition, it hides the historic steps on that side that used to serve as exterior access to the post office.

The mauka entrance steps have some chipping and damage to the steps.

Recommendations:

1. All areas where the plaster finish is not soundly attached to the substrate of the steps should be identified. All damaged areas and unsound plaster areas should be cut back to sound material and repaired with epoxy modified cement plaster.
2. Remove the existing ramp and provide a new ramp to the south of the mauka entrance (Proposed plan P3 - Appendix C). This is being proposed because

the mauka side is not as significant architecturally as the makai elevation and there is a better opportunity to landscape around the ramp on the mauka side.
3. Install at least one handrail at each stair. They shall be designed to be as unobtrusive as possible.
4. Move parking away from the makai steps to reduce the incidence of damage and to offer an unimpeded pedestrian entry to the building from the makai side. See the discussion in Part 8, page 24 for adjustments to parking.

3.1.4.2 Other Exterior Stairs

The stairs to the basement are in the middle of the north and south elevations. Currently the north (Kaanapali) stair is used for public access to the art gallery in the basement, the south stair seems to be used only for service access. Both stairs have chipped and spalling steps, at the north stair almost every nosing is chipped (figure 14). The stairs are not protected from the weather and a sump at the bottom landing collects rainwater which is then pumped up to drain at the ground level. On the north stair a slatted wood floor covers the bottom landing and raises the level to the top of the door threshold. Both stairs have a change in level of about 2-1/2 inches at the top landing where the top treads meets the higher concrete walkways that run parallel to the north and south elevations. This is a dangerous condition and is also a code violation.

The north stair has wood handrails, but they do not fully comply with code requirements. The south stair has no hand rails. The concrete parapet wall is only about 2 feet high, which doesn't comply with current guardrail height requirements of 42 inches.

There are two other sets of exterior steps, at doors nos. 14 and 17. These both have some chipped nosings. Neither has handrails, but these stairs are not currently in use.

Recommendations:

1) Provide new metal (painted stainless steel) handrails for both basement stairs. These shall be simple round rails.
2) Repair chipped and spalling nosings with epoxy modified cement mortar.
3) Replace the sump pumps. Connect the pumps to an overflow head in the landscaping to return any water to grade level.
4) Correct the 2-1/2" step condition by moving the walkways at least 4 feet further away from the building and ramping to accommodate the difference in level. Install a trench drain at the connection between the existing stair and the new walkway. The raised walkways serve a useful function in preventing sheet flow of rainwater in a heavy storm from flowing down into the basement stair ways. It is therefore preferable to keep them at their present height.
5. Secure the openings at doors 14 and 17 to ensure that the stairs will not be used. Do not install handrails at these steps.

3.1.5 Makai Lanais

The two-story portico was added in the 1925 renovations. The columns and balcony structure are made of reinforced concrete. The concrete of the columns and elsewhere is covered with a cement plaster finish. The floor of the balcony and the first floor lanai has a smooth concrete finish scored to look like tile (figure 15). The 1925 drawings refer to this pattern as a "Masterbuilt Finish". The beams supporting the roof over the balcony are cased in wood and the ceiling is gypsum board. There is an ornamental metal railing around the second floor balcony (figure 16).

Some cracking of the plaster on the columns was noted. The front edge of the balcony floor is spalling badly in two places. The balcony railing is rusting all over, but is in relatively good condition. The second floor balcony rail is 33" high, which is 9" lower than code allows. The first floor lanai has no guard rails despite the floor being 31-1/2" above the surrounding grade.

Recommendations:

1. *Repair the spalling concrete at the front edge of the balcony with epoxy modified cement plaster.*
2. *Remove rust from the second floor railing by sand blasting. Prime steel with epoxy primers and repaint to historic colors. Make no other changes to that railing.*
3. *Thoroughly clean and seal concrete floors.*
4. *Install a single rail at 36" above the lanai floor at each end. Regrade soil against ends of the lanai to decrease the height to grade to less than 30".*

3.1.6 Additions at the mauka/Kaanapali Corner

The single-story plastered masonry addition at this location is compatible in appearance with the rest of the two-story building (figure 17). Connection to the addition was made by cutting through the original wall (figure 18). In addition, there is a wood and mesh enclosure for an air conditioning condenser that serves the basement. These elements should ideally be removed to restore the exterior of the building to its 1925 appearance. However, some location must be found for mechanical and electrical equipment to serve the building, as mechanical ventilation and/or air conditioning is required for the basement and electrical service panels will be required somewhere.

Recommendations:

1. *Remove the existing wood and mesh enclosure and condenser.*
2. *Retain the single-story addition. Remove all existing shelves and cabinets from the interior of the addition. Install mission tile roofing on the roof of the addition. Install condensers in one room and electrical panels in the other room. Use existing window openings for exhaust vents.*

3.1.7 Other Exterior Elements

Doors and windows are discussed as part of the interior section 3.2 below. There are several other elements which require comment.

3.1.7.1 The bronze plaques in the wall at the makai lanai are in good condition.

Recommendation: Remove dirt and any paint from surface of plaques. Do not polish.

3.1.7.2 Metal Grilles and Gates

Bifold steel gates were installed in the opening of Door 17 and at each of the basement entrances. The steel gates ran in a track at the head, which still exists in each location. Above the track at door 17 the metal bars in the transom above still exist. The original latch strike for the folding gate still exists at the Kaanapali entrance to the basement (figure 19).

Recommendations:

1. Fabricate new a steel gate at door 17. Sandblast the existing runners and the top transom bars at door 17 and paint with rust-inhibiting coatings. Duplicate the strike from the Kaanapali basement door.
2. Clean and repaint the existing runners at both openings to the basement and the lock strike at the Kaanapali side. Restoration of the gates to the basement should not be done at this time because they would restrict the openings to the basement and their contribution to the historic appearance is not great. If the basement is abandoned as a public use facility the gates should be put in at that time.

3.1.7.3 Vent Openings Into Basement

Although these openings do not show on the 1925 D'Esmond drawings, there is some reason to believe they existed at that time and remain from that date. They are present in 1935 (figure 3) and at least one appears in a c.1900 photo (figure 2). The plaster around the openings looks like it was patched at some time, so it may be that the bars were added in 1925, at the same time the other ironwork was added (figure 20).

Recommendations:

1. Leave the bars and the openings, but block up openings from inside. Clean bars and repaint.
2. Remove all conduits which penetrate through the openings.
3. Make landscape improvements to help keep dirt and leaves from collecting in the openings.

3.1.8 Exterior Paint Finishes

The exterior walls appear to have been painted with an elastomeric paint. Generally, the paint is not well adhered and in several places the paint is peeling.

Recommendations:

1) All loose and poorly adhered paint should be removed. The walls should be repainted with a breathable finish.

3.2 Architectural Interiors

3.2.1 Ceilings

Existing ceilings are gypsum board and many are subdivided into rectangular panels by wood moldings (figure 21). Most of the rooms on the first and second floor have wood cornice moldings. The ceilings are generally in good condition.

Recommendation:

1. Although the ceilings are in good condition, it is recommended that they all be removed. Existing cornice and panel moldings shall all be salvaged and reused. New gypsum board ceilings and the existing wood moldings shall be reinstalled. This work is proposed for two reasons: the first is a need to use the floors for seismic strengthening of the building. (Appendix A). To create a diaphragm at the floor level it is necessary to add plywood to the floor. Adding plywood above the floor creates step problems at thresholds and stairs, so installing it under the floor structure is better. The second reason is that opening up the floor surface allows more opportunities for hiding new electrical, telephone and data lines throughout the building.

3.2.2 Walls

Interior surfaces of the exterior walls are typically gypsum plaster installed directly on the stone. On the second floor in the Police Station Room the walls are lined with 1/4" thick hardboard panels. In the adjoining room to the east there is canec attached to the wall from 2'-0" above floor level to 6'-7".

In the Courtroom the walls have a plywood wainscot. In the room designed as a temporary holding cell the original plaster walls are now covered with 7/8" thick tongue and groove wood boards to a height of seven feet.

Original interior partitions are wood studs covered with wood lath and plaster. All these walls have wood bases. Additional wood tongue and groove walls of a single board thickness were added in some of the rooms (Existing Plan E4 - Appendix C).

Recommendations:

1. The single walls, wood wainscot in the Courtroom, hardboard panels and canec, the boards on the walls in the holding cell, all of which are at the second floor level, shall be removed. The plaster under the hard board panels, plywood and canec shall be repaired.
2. Remove all panels from the exterior walls at the first floor in the current art gallery. Remove all plaster from all first floor exterior walls down to the original stone. Install nailers over the stone wall, with vapor proof film over that. Install gypsum plaster on lath. Provide ventilation slots at floor, spacing wood bases about 1/4 inch above floor, and below cornices to allow walls to vent and breath.

3.2.3 Floors

Wood flooring on the first floor is ohia and on the second floor is maple. On the second floor the floors have been painted. At the first floor level some of the rooms on the south side have painted floors.

The floor in the first floor lobby has areas of termite damage, most of which are adjacent to the wall below the stair. In this central hall area approximately 5 - 10% of the floor boards are damaged. There is also termite damage in the floor at the jambs of the exterior door no. 12 (figure 21). On the second floor the floor in the Hall has been repaired with approximately 10 metal plates covering damaged areas of flooring. The floor at the threshold to door 4 is damaged. In the room with W13 the floor is worn and also has metal plate repairs.

The first floor restrooms have 12" square vinyl composition floor tiles. These have been installed recently and do not contain asbestos. They cover another layer of either linoleum or asphalt tiles. This lower layer should be tested for asbestos content before removal. There is also a small area of 1" hexagonal floor tiles around the urinal in the former men's room on the first floor.

Recommendations:

1. Sand, repair and refinish the floors throughout the first floor except for the restrooms, closets and 1931 addition. Assume that the entire entry hall floor at the first floor will be replaced with new Ohia flooring with good pieces being used to replace damaged boards elsewhere.
2. Sand, repair and refinish the floors throughout the second floor.
3. Remove all resilient flooring from toilet rooms. Install new ceramic tile flooring in toilet rooms. The floor tiles should match the 1" hexagonal tiles existing on a small area in the men's room.

3.2.4 Doors

3.2.4.1 Exterior Doors

The existing exterior doors all date from 1925. The basement doors are double doors with five panels, the remaining exterior doors are double or single doors with multi-lite glazing. A detailed inventory and condition analysis of the existing doors has been completed (Door Schedule - Appendix D). Most of the original doors and hardware are still present in the building.

Parts of the door originally located at opening D17 is the door labeled D26. Door 26 is a double Dutch door with hardware that matches the original hardware in the building (figure 23). The HABS drawings indicate the door at D17 had upper doors with glass lights, while the existing upper doors are solid four-panel doors. It is theorized that the lower parts of the dutch doors are original and the glass lights were replaced with the solid panel doors when the doors were shortened to fit in the interior.

Much of the original hardware remains (figures 24, 25 & 26). The locksets and latchsets are typically bronze and can be refurbished to be operable. The hinges are all ball-tipped steel hinges and most are rusting.

Recommendations:

1. *The repairs listed in the door schedule should be performed.*
2. *Hinges shall be replaced with bronze hinges of identical configuration to the originals. Other door hardware, including original door locksets, shall be retained.*

3.2.4.2 Interior Doors

Several types of interior doors exist. There are two panel doors, glazed multi-lite doors and modern flush doors.

Recommendations:

1. *All flush doors shall be discarded. For other recommendations on doors, see the door schedule (Appendix D).*

3.2.5 Windows

Most of the windows dating from the 1925 restoration still exist and are operable. The majority of the windows on the first and second floor consist of a pair of casements with an inward opening hopper in the transom. The windows are wood with clear glass. Most windows are approximately 3'-6" wide and 6'-6" high. Windows 10 and 12 are wider than this and have three sashes in the lower part.

The 1925 restoration drawings indicate that some window openings were altered at that time. At window 16 a former door-way was made narrower by closing up the northern jamb to form the present window opening. Window 12 was made wider to accommodate three 1'-8" casement sashes; originally the width matched the other windows. Window 8 was made 5" narrower and window 9 was moved 8" to the north to clear the partition of the Judge's Chamber.

On the second floor the windows in the north elevation and the two northernmost windows in the west elevation have glass jalousies in their lower parts. Six windows on the second floor have had their transoms altered to accommodate window air conditioning units that are no longer there. Window 22 has fixed exterior wood shutters with closed louvers.

Some sashes are missing, for example where jalousies or window air conditioners have been installed, and other sashes do not seem to be original, these sashes have been extended at the stiles to fit in the existing opening. A number of loose sashes were found stored on site. A list of sashes required and those available from these extras is given in the recommendations section. Decay or termite damage was noted in the sills and frames of several windows. A detailed inventory and condition analysis of the windows has been completed (Window Schedule - Appendix D).

The 1925 restoration drawings indicate the windows are to have "Whitco" sashes. This refers to the sliding hinge and stay system (figures 27, 28). In several windows these sliding hinges are missing and have been replaced with regular hinges, this change has required the exterior molded casing to be cut to allow the sash to swing. Many of the windows have missing, broken and/or miss-matched hardware, hardware repairs are listed in the window schedule.

Miscellaneous Window Elements - There are metal security bars on the inside of windows 14 & 15 at the former jail (figure 29).

Recommendations:

1. *The exterior shutters should be removed from window 22.*
2. *All jalousie windows and all plywood panels and framing for a/c units should be removed*
3. *The repairs listed in the window schedule should be performed Replacement sashes are required in windows nos. 3, 9, 10, 11, 12, 13 & 22. The loose casements found on site can be used for one of these windows. Replacement transom sashes are required in six windows, four of these can come from the sashes found on site.*
4. *The security grilles in the transoms of windows nos. 23, 24 & 25 should be removed.*

3.2.6 Stair

The stair from the first to second floor is a straight flight (figure 30). The molded handrail is supported on closely spaced square balusters and terminates in a circular newel at the lowest step. A round wood hand rail is fixed to the wall. The guardrail at the second floor hall is 2'-6 1/4" high and the handrail is 2'-8 1/2" high above the line of the nosings.

The 1925 drawings indicate that the handrail, treads, risers are made of koa although it is hard to see this now that the stair has a painted finish. All of the treads have been covered with 3/4" plywood and the 11th and 16th risers are covered with 1/4" plywood.

A gate has been installed on the first riser of the stairs. This violates exiting codes.

Recommendations:

1. *When the plywood is removed some of the treads and risers will be found to be damaged. For estimating purposes, we have assumed five treads and two risers are to be replaced.*
2. *The height of the guardrail does not meet current codes because the guardrail is 11.75" too low. The handrail does not meet ADA requirements for the gripping dimension. A waiver shall be applied for which allows the second floor guardrail to remain without addition or alteration.*
3. *The stair and rails should be stripped of all paint and refinished.*
4. *Remove the gate at the first riser of the stairs.*

3.2.7 Furnishings

Significant built-in furniture exists in the courtroom and in what was originally the tax office. The L-shaped counter in the former Tax Office, made of koa and ohia, has been moved farther into the room by the current tenants. It is in need of minor repairs, but is in fairly good condition.

The judges stand, bailiff's position and witness stand all exist in the courtroom space. They are in fair condition. The flooring needs some repair.

There are benches in the first floor lobby/hall which appear to be part of the original courtroom seating. They are currently painted brown and appear to be in good condition. Their presence in the hall restricts passage in that area.

Recommendations:

1. *The L-shaped counter should be repaired and refinished. It shall be relocated to its original position.*

2. The judge's stand, bailiff's position and witness stand shall all be retained, repaired and refinished.
3. The benches in the first floor hallway should be stripped, refinished and relocated to the Courtroom.

3.2.8 Basement

The basement has a ceiling height of 7'-2 3/4" to the underside of the exposed floor joists. The existing floor joists are painted black. The original 1925 drawings indicated they were to be creosoted as a preservative treatment.

The basement area matches the outline of the two-story building above except that in the mauka/Kaanapali corner there is a wall that juts into the room that the old safe sits on. There are four detention cells in the space, built as part of the 1925 renovation. Temporary wood partitions have been erected to enclose two portions of the basement.

Recommendations:

1. Per the structural analysis, installing plywood to the underside of the first floor structure would be desirable but could be waived. Installing the plywood would visually lower the ceiling even more than is true today. Lighting must be recessed, because surface-applied fixtures would extend below the code-required minimum headroom height of seven feet. It is recommended that a ceiling finish be installed over the floor joists.
2. The cells shall be saved and the bars for one of the cells which were moved shall be reinstalled in their original location.
3. The existing partitions shall not be replaced at this time. Any new partitions shall be located to stay away from the cells. Air conditioning shall be extended to include any closed-off areas.

3.3 Handicapped Accessibility

The existing building is currently served by a ramp to the first floor. This ramp will be relocated and rebuilt, as discussed in section 3.1.4.1. The basement and second floor are not fully handicapped accessible. Those floor levels that are not handicapped accessible could not be used for any public retail or office function, which would severely limit the occupancy of rooms at those levels.

There are no handicapped accessible toilet rooms in the building. Door widths are typically 3'-0" wide or door pairs that are 5'-0" wide. Since most of the 5'-0" doors are left open whenever the building is open, they would meet the intent of the law. The two critical doors that would not meet accessibility requirements are those leading to the existing first floor toilet rooms. These are currently only 2'-6" wide.

The issue of handicapped parking stalls is covered in paragraph 8.3 "Parking".

Recommendations:

1. Install new, permanent, handicap ramp to gain access to the first floor. The ramp shall be designed to be as unobtrusive as possible. The railings of the ramp shall not copy the existing 2nd floor balcony rails. They shall relate to the building design but not copy existing details.
2. Install an elevator to service the second floor (see proposed floor plans). It is not recommended that the basement be served by an elevator, because the cost to do so would exceed the value of the space made accessible.
3. Remove the partitions in the original first floor toilet rooms and redesign to meet handicap accessibility requirements.
4. Install new handicapped accessible toilet rooms on the second floor in the mauka/Kaanapali corner.
5. Revise the door openings to the first floor toilet rooms to meet accessibility requirements.

3.4 Hazardous Materials

Due to the age of the building it is to be expected that lead paint will be present in the building. Paint containing lead is federally mandated to be treated as a hazardous material when its content of lead exceeds 0.5% by weight.

Recommendations:

1. Test paint samples for lead content. Any surfaces found to have lead paint shall be subject to treatment regimens approved for lead-containing surfaces. The paint can be safely encapsulated by repainting.
2. Test flooring and flooring adhesives in the toilet rooms for asbestos content.

3.5 Interior Displays

Various historic photographs of Lahaina and the Courthouse are currently displayed in the first floor lobby on the wall opposite the stair.

Recommendations:

1. Interpretive historic displays should be incorporated into the building restoration. These displays should primarily be comprised of wall mounted historic photographs with appropriate captions.
2. The displays in the first and second floor hallways should focus on the physical history of the building and the park in which it is located., and would therefor include information about the fort and other uses of the property preceding the construction of the Courthouse.

3. The other area to be used for displays should be the walls in the former courtroom. These should focus on the history of the building in its use as a police office and court facility.

PART 4 - STRUCTURAL EVALUATION

See Appendix "A"

PART 5 - MECHANICAL SYSTEMS EVALUATION

5.1 Air Conditioning and Ventilation

5.1.1. Approximately 75 % of the basement floor is air conditioned with a split, direct expansion system. The fan coil unit is located on the floor in a mechanical equipment space. The air-cooled condensing unit is located in a shed roof enclosure on the ground. The equipment is a nominal three (3) tons cooling capacity and appears to be near the end of its useful life. The remainder of the basement lacks ventilation and is in violation of the State Health Department, Rules and Regulations.

Recommendation: The entire basement be air conditioned from a single air conditioning system.

5.1.2. The ground floor and second floor is naturally ventilated. Ceiling type propeller fan supplements natural ventilation in occupied spaces. Fans appeared in satisfactory condition.

Recommendation:

1. The first and second floor should continue to be naturally ventilated. Various systems are possible for air conditioning, each with advantages and disadvantages. One thing each system would require would be condensers, pumps and compressors. There is no place to put them except in the grounds surrounding the Courthouse. For example, a condenser enclosure required to serve both the 1st and 2nd floors would be 12 by 20 feet in plan. Simple split systems would require condensers for each room, resulting in at least 7 condenser pads around the building. This is clearly not desirable from the perspective of either the building restoration or park aesthetics It may be possible to install a chilled water plant on the land between the harbor and Wharf Street, which, if screened by plantings, would not be too obtrusive.

Installing central air conditioning in the first floor would require extensive changes to the ceilings on that floor. In addition, the first floor is currently used in a very open way, with the entry hall open to the exterior and the rooms open to both the entry hall and the outside. The second floor could be more easily air conditioned, because the attic allows for installation of fan coil units and ducts.

For reference, cost estimates are supplied in Part 8, for air conditioning the first and second floors.

2. Reinstall the open grill work which existed above the post office boxes. This will improve cross ventilation throughout the first floor.

3. Insulation of the attic will reduce heat loads on the second floor rooms. Installation of ceiling fans or other methods of increasing air circulation in the room should be considered. It is not recommended that combination pendent lights and fans be installed, as these create poor lighting conditions.

5.2 Plumbing

5.2.1. General

5.2.2. Existing water piping is predominately galvanized steel with a few sections of copper. Copper pipe was probably installed where galvanized steel pipe failed.

Recommendation: The entire water system be replaced with copper piping.

5.2.3 Existing sewer piping in the building is predominately cast iron pipe with hub and spigot fittings. A few sections of ABS plastic pipe are present. Pipes appear to be in good condition. The material of the existing exterior sewer lines is not known at this time, but it is likely that the material is cast iron or ductile iron. This material has not stood up well in this area of Lahaina.

The existing toilet fixture unit count in the building is 37. After the restoration, the fixture unit count will be 38.

Recommendation:

1. Replace all interior rough-in plumbing in the process of installing new toilet fixtures.

2. Replace existing sewer line to the street with new 4" diameter PVC. line.

5.2.4 The existing water meter is located at the North corner of the property and is adequate for future use.

5.2.5 Existing irrigation around the building is inoperable. There is only one hose bibb at the North corner of the building. The plants surrounding the building are watered by a volunteer from this one hose bibb.

Recommendations:

1. At a minimum, hose bibbs be added to each of the three remaining corners that do not have hose bibbs.

2. Install a new irrigation system with time clock around the building.

5.2.6 Plumbing fixtures are old, stained and rusting. There is one stainless steel sink which can be cleaned to almost new condition and could be reused, but its faucets and plumbing would have to be replaced. The basement plumbing and second floor toilet and lavatory are additions subsequent to the target restoration period. The only fixtures which appear to remain from the 1925 period are the two lavatories in the first floor toilet rooms.

5.2.6.1 The original first floor women's toilet room is now used as unisex toilet facility and is the only toilet facility for the entire building. The fixtures consist of one water closet and one lavatory.

5.2.6.2 The original first floor men's toilet room is now used as a storage room. Two water closets have been removed. One urinal and one lavatory remain.

5.2.6.3 Rough in for a drinking fountain is located near the center of the South-East wall. The fixture has been removed.

5.2.6.4 A unisex toilet near the vault in the North corner of the building consists of one water closet and a two-compartment stainless steel sink.

5.2.6.5 On the second floor there is a toilet located in the mauka/Kaanapali corner of the building which consists of one water closet and one lavatory. The water closet is on a pedestal approximately 16" above the floor. Steps are provided to get to the water closet level.

5.2.6.6 Rough-in for a drinking fountain is located at the north corner of the second floor central hall. The fixture has been removed.

Recommendation:

1. *Remove the second floor toilet room.*
2. *Remove the first floor toilet room in the mauka/Kaanapali corner .*
3. *Replace all fixtures in the original first floor toilet rooms with new water conserving fixtures.*
4. *Construct new handicapped-accessible toilet rooms on the second floor.*
5. *Provide at least one drinking fountain at the first floor.*

5.2.7 Basement Sump Pumps

There are two sump pumps serving the basement entrance landings. The pump serving the South landing is not operable and the sump is full of water. The discharge from both sump pumps are directed to adjacent plantings through a rubber hose.

During times of high rainfall, especially when combined with high tides, the basement has experienced water infiltration coming up vertically from the floor. The water seeps through the joints between the slab and perimeter walls as well as from other joints in the floor.

Recommendation:

1. Install new subfloor drainage to remove hydrostatic pressure from concrete floor slab. Since rainwater is the cause of the flooding, the water that is collected will be fresh water as long as the drainage system created does not protrude below the ground water level. After consultation with a civil engineer, we are confident that the system can be designed so the collected water can be pumped to grade and directed to adjacent plantings through rigid piping.
2. Replace existing sump covers at the bottom of the basement stairs with grates that allow freer water flow into those sumps. Install new sump pumps to collect rainwater and put it back at grade.

There is single compartment stainless steel sink located on the North-East wall. The sink waste is pumped up to sewer pipe leaving the building near the sink. The pump was not visible.

Recommendation: Remove the sink and sump pump associated with it.

PART 6 - FIRE PROTECTION/EXITING

There is only one exit path from the second floor of the building. In addition, the existing doors that open into the hallways are not rated doors This is not a significant problem on the first floor, because almost every room has an alternate means of exit directly to the outside. It is a significant problem with use of the second floor as a public facility/assembly space. The building currently has several wall-mounted fire extinguishers but no other fire protection mechanisms.

Recommendation:

1. Install fire sprinklers in the basement and the central hallways. This should include sprinklers on both sides of any door into the corridor.
2. Install new semi-recessed fire extinguishers at all floors.

PART 7 - ELECTRICAL SYSTEMS EVALUATION

7.1. Electrical Systems Overview

This report covers the power distribution, building illumination, and communication systems at the historic Lahaina Courthouse. The building was originally designed and built without electrical power or lighting. It appears as if

electrical wiring was first added in the 1920's and was then upgraded around 1946. Many modifications have been made to the original system but there are still some pieces of the original system in use.

7.2. Power Distribution System

7.2.1. System Configuration

The power presently comes in to the building via an underground duct from Front street. Maui Electric Company pole-top transformers supply 120/240 volt, 1 phase, to the metering equipment located on the north end of the building. The metering equipment and main disconnects are enclosed in a wooden enclosure. The enclosure is in disrepair and is falling apart. A panel has been installed in this enclosure to power the lights in the park. The controls for the park lighting are also in this enclosure.

A main feeder runs into the basement through the window to a panel that serves the gallery lighting and air conditioning. This panel picks up a feeder that serves the original panels on the first and second floors. The lighting and power is still fed by knob-and-tube wiring in the attic and the walls.

A second main feeder runs up the side of the building to the attic that serves a supplemental panel on the second floor. This panel was installed to serve the window air conditioners and a few baseboard-mounted outlets in the offices on the second floor.

Recommendation:

1. *Install new electrical service and distribution panels inside the building. The only thing that would need to be outside would be the meter and the main disconnect. It may be possible to locate the meter inside if the building is always occupied.*
2. *Remove all exterior conduits, panels and enclosures for the electrical system.*
3. *Replace the existing electrical wiring system in the building.*

7.2.2. Emergency Power

There is currently no emergency power in this building. The options for emergency power include individual battery lights or a small generator.

7.2.3 Water Damage and Corrosion

The basement level is within a flood zone. We do not recommend any electrical equipment be installed there during the restoration.

7.2.4. Building Illumination

7.2.4.1. Exterior Lighting

The exterior lighting typically consists of area lights mounted on wood post distributed throughout the park area. Two historic cast iron poles exist on the makai side of the building (figure 31). These appear to have new lamp heads that are similar in shape to the historic lamp heads.

7.2.4.2 Interior Lighting

Most, if not all, of the original lighting has been replaced. The style of the lighting fixture bases on the lanai and balcony suggests that they are from the 1925 remodel. The glass is missing and only the base remains so it is not possible to know how this fixture actually looked. The lighting at the second floor hall is of a style compatible to the building but looks as if it is of more recent vintage. There are few photographs of the interior so the design of the original light fixtures remains an open question. Additional research will be required to determine the type of lighting that should be installed to match the restoration period.

The art gallery that is located in the old jail area has modern track lighting. The offices have fluorescent lighting that looks like it is of the 1960's vintage.

7.2.4.3 Emergency Egress Lighting

There currently is no emergency or exit lighting in the building. Emergency lighting will be required. An occupant load of the building over 50 will trigger the need for exit signage.

7.2.5 Communication Systems

7.2.5.1 Telephone Provisions

The telephone raceway system consists of a 2" conduit to the Hawaiian Tel manhole in front of the electrical equipment. It looks like a 50 pair cable has been installed for the current telephone service. The main telephone terminal cabinet is in the basement on the north wall.

7.2.6 ADA Compliance Within the Electrical Systems

7.2.6.1 Lighting

The lighting currently complies with the ADA.

7.2.6.2 Power

Outlets are required to be mounted 15" above the finished floor level by the ADA. The existing outlets in this building are generally mounted at 12" and lower.

7.3. Conclusions

• The existing Maui Electric service is adequate provided no additional air conditioning is added to the building.

• A space that is 4' by 6' on the first floor should be planned for the new electrical and telephone service. The size can be adjusted to fit the final design.

• Space for one panel is needed on the second floor.

• The basement is not a suitable place for electrical or telephone equipment because of the possibility of flooding.

• The existing interior lighting is not from the 1920's with the possible exception of the lanai light. Additional research is needed before specifying the new lighting.

• Emergency egress lighting is required in this building regardless of the use and can be accomplished using battery lights or a small emergency generator.

• The existing telephone service is adequate, however, the location of the terminal cabinet should be relocated to the new electrical room.

PART 8 - LANDSCAPE AND SITE ANALYSIS

The Old Lahaina Courthouse is located within a block that is itself important historically and for its public use. Significant elements in the block include the walls built of coral stone blocks, the Banyan tree and its associated pedestrian paths, a marker mounted on stone blocks and two historic light poles.

This project will have no effect on the coral stone walls and the concrete walkways under the Banyan tree. This project will have a minor effect on the elements below:

8.1 Banyan Tree and Other Landscaping:

The tree has spread until it has established tree trunks very near the building. The roots of Banyans are noted for their invasive characteristics. The proximity of the tree trunks to the building represents a threat to the structure of the building's basement walls, which are made of coral blocks. In addition, the canopy of the tree is close to the building roof, overhanging it in some places. When the gutters are

installed it will become much more important to keep the canopy clear of the building to avoid clogging the gutters with leaves.

In general, the landscaping around the building is poor. Large areas of bare soil exist. The selection of plant materials has been made with no thought to appropriateness for the location of the building or the nature of the building.

Recommendations:

1. *Remove the closest tree trunk, as indicated by Proposed Plan P1.*
2. *As part of the restoration project, install a 4-foot deep reinforced concrete root barrier between the tree and the building*
3. *Trim the Banyan tree canopy away from the roof by at least ten feet. All pruning of the tree shall be done by a certified arborist. Branches and roots shall be cut clean. The County should establish a regular program of tree trimming to keep the tree away from the building.*
4. *Install a concrete spacer strip around the building to keep plants from growing immediately against the building.*
5. *Remove all bushes or other plants that could touch the building exterior walls.*
6. *Prepare a landscape plan for the areas immediately around the building that would provide for low to medium height ground covers with minimal vertical plantings. (Drawing P8) The landscaping around the building should primarily be limited to ground covers and grass, preferably selected from the list of materials shown on the drawing. The materials selected shall be suitable for xeriscape landscaping and be native or endemic plant species. Accent plantings shall be used at the building entries.*

   Install soil amendments to improve planting conditions. Reactivate landscape sprinkler system.

8.2 Historic Light Poles

The two light poles on the makai side of the Old Lahaina Courthouse have been on the site since at least 1935. The round lamp heads they now have are very similar to, but slightly smaller than, the originals heads.

Recommendations:

1. *These two lamp posts be included in the scope of work on the Old Lahaina Courthouse.*
2. *The wiring of the lamps be modernized and the heads be changed to match the original size of the heads.*
3. *The "collar" at the mid-height of both lamp poles and the "capital" under the light fixture of the pole on the Kaanapali side shall be restored. Remove exterior conduit from the bases of poles.*

8.3 Marker on Stone Pedestal

There is a bronze plaque commemorating the National Historic Landmark status for Lahaina, dated 1964, on a pedestal made of coral stone (figure 32). The coral blocks, some of which have been sawcut to better fit together, sit on a concrete slab roughly 45" by 54" in size. One stone is missing from the upper left corner of the pedestal.

Recommendation: This marker be slightly relocated to provide for better handicapped parking stalls. The missing stone shall be replaced at that time.

8.4 Parking

Currently six cars park in a paved area adjacent to the makai steps. This includes two sub-standard handicapped parking stalls. To make these handicapped stalls meet code one of the other stalls would be sacrificed (for van access loading in handicapped areas an eight foot space is needed between stalls). Therefore the current count should really be five spaces for the area at the makai steps. The current parking arrangement creates awkward pedestrian access to the building, causes minor damage to the steps and is unsightly.

Recommendation:

Proposed Site Plan, drawing P1 summarizes the changes suggested. The handicapped stalls meet code and are located out of the primary pedestrian flow to the building. Moving the curb out allows three parallel parking stalls to be installed, with the deletion of one existing parallel stall for the new handicapped parking. Net loss is one parking (5 vs. 4) provided by the proposed plan.

8.5 Solid Waste

There is currently no system for collection or disposal of solid waste at the building. Occupants dispose of their waste in the harbor's dumpster and by taking it home with them.

Recommendations:

1. Provide a trash storage room in the building. This room shall allow sufficient space for recycling bins.
2. Formalize an agreement with the County Parks Department that results in trash pickup being conducted at the same time and by the same crew as currently services the park.

8.6 Exterior Signage

Exterior signs currently exist near the mauka entry, the Kaanapali stairs to the basement and on the makai lanai. The signage is graphically acceptable, but the

signs are made of wood and prone to decay. They advertise the occupancy of the building rather the building itself.

Recommendations:

1. *Appropriate signage shall be installed at the mauka side of the building which identifies the building and provides some history of the building. Smaller secondary signs to the basement shall be installed if the use requires it.*
2. *Signage shall be designed in accordance with the* Lahaina Architectural Style Book. *The size of the signage shall be further limited, however, to a maximum of 6 square feet for the primary sign and four square feet for the secondary sign. The signage materials shall be weather resistant and mounted on the ground, not on the building.*

PART 9 - COST ESTIMATES

The following cost estimate was done by Cost Engineering Inc., based on the schematic drawings and recommendations included in this report. The 25% "Job conditions" factor indicated on the first (summary) page of the estimate includes a 10% factor for historical preservation work and 15% factor that estimator uses for its location on Maui. The 10% contingency should be reduced as the level of detail of drawings and specifications is increased during later phases of this project.

The total construction cost estimated at this time is $1,132,933. In addition to the construction cost, design and reimbursable fees for the project should be budgeted at a maximum of $135,000. This would include a topographic survey and toning of the site for utility locations, construction document preparation, building permit processing and construction administration services. This figure also includes printing 25 sets of drawings and specifications for bidding and permit processing and includes general excise taxes. It would not include permit fees.

PROJECT NUMBER:
LAHAINA COURTHOUSE
MAUI, HAWAII

Date: 16 DECEMBER 1996
Prepared by: Cost Engineering, Inc.
Designed by: Spencer Mason Architects

ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST

SUMMARY OF COSTS

LAHAINA COURTHOUSE	1 ls	$225,486	$355,397	$580,883
SITEWORK	1 ls	$13,723	$26,292	$40,015
SUBTOTAL		$239,209	$381,689	$620,898
JOB CONDITIONS: 25.00%				$155,225
CONTINGENCIES: 10.00%				$77,612
FIRE PROTECTION (See Attachments)				$31,300
AIR CONDITIONING (See Attachments)				$16,000
PLUMBING (See Attachments)				$75,500
ELECTRICAL (See Attachments)				$77,298
LANDSCAPING (See Attachments)				$42,000
CIVIL ALLOWANCE				$7,100
ARCHEOLOGICAL MONITORING				$30,000
TOTAL PROJECT COST (See Note)				$1,132,933

NOTE: LBP & ACM removal not included.

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ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
General requirements								
Mobilization	1	ls	0.00	0	1500.00	1,500	1,500.00	1,500
Demobilization	1	ls	0.00	0	1500.00	1,500	1,500.00	1,500
Job shack and supplies	5	mon	400.00	2,000	0.00	0	400.00	2,000
Temporary utilities	5	mon	735.00	3,675	0.00	0	735.00	3,675
Equipment	5	mon	250.00	1,250	0.00	0	250.00	1,250
Job supervision	5	mon	0.00	0	7500.00	37,500	7,500.00	37,500
Job clean up	5	mon	0.00	0	1500.00	7,500	1,500.00	7,500
Dust control	5	mon	150.00	750	500.00	2,500	650.00	3,250
SUBTOTAL				$7,675		$50,500		$58,175
Demolition - Basement								
Remove window	5	ea	0.00	0	35.00	175	35.00	175
Demolish partitions	607	sf	0.00	0	3.00	1,821	3.00	1,821
Remove single door	3	ea	0.00	0	35.00	105	35.00	105
Remove sump pump grating	2	ea	0.00	0	25.00	50	25.00	50
Remove handrailing	24	lf	0.00	0	4.50	108	4.50	108
Remove screen wall	6	lf	0.00	0	10.00	60	10.00	60
Saw cut slab	34	lf	2.00	68	12.50	425	14.50	493
Remove slab	72	sf	0.00	0	4.50	324	4.50	324
Load, haul & dispose of debris	1	ls	50.00	50	150.00	150	200.00	200
SUBTOTAL				$118		$3,218		$3,336
Demolition - 1st floor								
Remove cement plaster	2080	sf	0.00	0	3.50	7,280	3.50	7,280
Demolish partitions	700	sf	0.00	0	3.00	2,100	3.00	2,100
Remove single door	4	ea	0.00	0	35.00	140	35.00	140
Remove double door	1	ea	0.00	0	50.00	50	50.00	50
Remove toilet partitions	3	ea	0.00	0	50.00	150	50.00	150
Remove toilet paper disp	3	ea	0.00	0	10.00	30	10.00	30
Remove toilet seat cover disp	3	ea	0.00	0	10.00	30	10.00	30
Remove mirror	2	ea	0.00	0	15.00	30	15.00	30
Remove soap dispenser	2	ea	0.00	0	10.00	20	10.00	20
Remove paper towel disp	2	ea	0.00	0	20.00	40	20.00	40
Remove shutter	1	ea	0.00	0	20.00	20	20.00	20
Remove shelving	135	lf	0.00	0	1.50	203	1.50	203
Remove base cabinet	4	lf	0.00	0	12.50	50	12.50	50
Remove gate	1	ea	0.00	0	75.00	75	75.00	75
Remove counter	20	lf	0.00	0	12.50	250	12.50	250
Remove column clading	80	sf	0.00	0	3.50	280	3.50	280
Saw cut slab	26	lf	2.00	52	12.50	325	14.50	377
Remove slab	42	sf	0.00	0	4.50	189	4.50	189

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ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
Remove ceiling	2691	sf	0.00	0	1.15	3,095	1.15	3,095
Remove ceiling trim	677	lf	0.00	0	1.00	677	1.00	677
Remove resilient flooring	112	sf	0.00	0	1.00	112	1.00	112
Load, haul & dispose of debris	1	ls	150.00	150	500.00	500	650.00	650
SUBTOTAL				$202		$15,646		$15,848
Demolition - 2nd floor								
Demolish partitions	240	sf	0.00	0	3.00	720	3.00	720
Remove single door	3	ea	0.00	0	35.00	105	35.00	105
Remove security grille	2	ea	0.00	0	25.00	50	25.00	50
Saw cut slab	26	lf	2.00	52	12.50	325	14.50	377
Remove slab	42	sf	0.00	0	4.50	189	4.50	189
Remove metal plates	10	ea	0.00	0	35.00	350	35.00	350
Remove windows	5	ea	0.00	0	50.00	250	50.00	250
Remove handrailing	18	lf	0.00	0	4.50	81	4.50	81
Remove wood wainscot	500	sf	0.00	0	1.50	750	1.50	750
Remove 1" wd panels	380	sf	0.00	0	2.50	950	2.50	950
Saw cut door opening	20	lf	1.00	20	6.50	130	7.50	150
Remove wall	21	sf	0.00	0	4.50	95	4.50	95
Remove counter	12	lf	0.00	0	12.50	150	12.50	150
Demolish platform	12	sf	0.00	0	4.50	54	4.50	54
Remove toilet paper disp	1	ea	0.00	0	10.00	10	10.00	10
Remove toilet seat cover disp	1	ea	0.00	0	10.00	10	10.00	10
Remove mirror	1	ea	0.00	0	15.00	15	15.00	15
Remove soap dispenser	1	ea	0.00	0	10.00	10	10.00	10
Remove paper towel disp	1	ea	0.00	0	20.00	20	20.00	20
Remove ceiling	2600	sf	0.00	0	1.15	2,990	1.15	2,990
Remove ceiling trim	558	lf	0.00	0	1.00	558	1.00	558
Remove resilient flooring	50	sf	0.00	0	1.00	50	1.00	50
Load, haul & dispose of debris	1	ls	150.00	150	500.00	500	650.00	650
SUBTOTAL				$222		$8,362		$8,584
Demolition - Exterior								
Remove roofing	4578	sf	0.00	0	0.85	3,891	0.85	3,891
Remove edge flashing	325	lf	0.00	0	1.00	325	1.00	325
Remove valley flashing	36	lf	0.00	0	1.50	54	1.50	54
Remove counterflashing	34	lf	0.00	0	1.50	51	1.50	51
Remove vent pipe	43	lf	0.00	0	2.50	108	2.50	108
Remove VTR flashing	2	ea	0.00	0	10.00	20	10.00	20

PROJECT NUMBER:
LAHAINA COURTHOUSE
MAUI, HAWAII

Date: 16 DECEMBER 1996
Prepared by: Cost Engineering, Inc.
Designed by: Spencer Mason Architects

ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
Remove AC platform	1	ea	0.00	0	25.00	25	25.00	25
Remove cement plaster	2394	sf	0.00	0	3.50	8,379	3.50	8,379
Load, haul & dispose of debris	1	ls	150.00	150	500.00	500	650.00	650
SUBTOTAL				$150		$13,353		$13,503
Structural - Exterior								
Repair cracks	250	lf	8.50	2,125	12.50	3,125	21.00	5,250
Repair spalls	463	sf	25.00	11,575	85.00	39,355	110.00	50,930
SUBTOTAL				$13,700		$42,480		$56,180
Roofing								
Clay tile roof	4578	sf	4.25	19,457	2.25	10,301	6.50	29,758
Edge flashing	325	lf	3.00	975	4.00	1,300	7.00	2,275
Counterflashing	34	lf	5.00	170	6.00	204	11.00	374
Valley flashing	36	lf	6.00	216	7.00	252	13.00	468
Gutter	325	lf	8.40	2,730	9.60	3,120	18.00	5,850
Downspout	236	lf	8.40	1,982	9.60	2,266	18.00	4,248
Splash block	10	ea	18.50	185	10.00	100	28.50	285
Attic bird screens	275	lf	2.50	688	10.00	2,750	12.50	3,438
SUBTOTAL				$26,403		$20,293		$46,696
Basement Renovations								
Modify slab @ elevator	3	cy	135.00	405	250.00	750	385.00	1,155
Formwork	34	sf	3.60	122	5.00	170	8.60	292
Reinforcing steel	300	lb	0.60	180	1.00	300	1.60	480
Finish/cure	72	sf	0.25	18	1.00	72	1.25	90
Enclose window openings	29	sf	12.00	348	25.00	725	37.00	1,073
Gypsum board partitions	65	sf	3.00	195	3.00	195	6.00	390
Gypsum board ceiling	2496	sf	2.25	5,616	2.50	6,240	4.75	11,856
Interior painting	5576	sf	0.25	1,394	1.00	5,576	1.25	6,970
Non-skid floor coating	144	sf	1.00	144	2.50	360	3.50	504
Single door	1	ea	950.00	950	350.00	350	1,300.00	1,300
Sump pit grating	2	ea	250.00	500	75.00	150	325.00	650
Modify door @ gate	1	ea	75.00	75	500.00	500	575.00	575
Handrailing	48	lf	28.50	1,368	12.50	600	41.00	1,968
Elevator	1	ea	70000.00	70,000	9500.00	9,500	79,500.00	79,500
Elevator shaft	702	sf	6.00	4,212	7.00	4,914	13.00	9,126
SUBTOTAL				$85,527		$30,402		$115,929

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ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
First Floor Renovations								
Gypsum board partitions	260	sf	3.00	780	3.00	780	6.00	1,560
Cement plaster furred wall	2080	sf	3.25	6,760	9.50	19,760	12.75	26,520
Repair wood flooring	30	sf	18.50	555	35.00	1,050	53.50	1,605
Refinish wood flooring	2579	sf	1.50	3,869	4.50	11,606	6.00	15,475
Refinish wood base	284	lf	1.00	284	3.50	994	4.50	1,278
Ceiling moulding	306	lf	2.75	842	2.50	765	5.25	1,607
Refinish ceiling moulding	284	lf	1.00	284	4.00	1,136	5.00	1,420
Refinish ext double door	3	ea	15.00	45	250.00	750	265.00	795
Refinish ext single door	2	ea	10.00	20	150.00	300	160.00	320
Refinish int double door	1	ea	15.00	15	250.00	250	265.00	265
Refinish int single door	4	ea	10.00	40	150.00	600	160.00	640
Refinish windows	11	ea	15.00	165	75.00	825	90.00	990
Wood base	306	lf	2.50	765	2.00	612	4.50	1,377
Interior painting	8591	sf	0.25	2,148	1.00	8,591	1.25	10,739
Patch floor @ shaft	26	sf	15.00	390	35.00	910	50.00	1,300
Plywood sheathing ceiling	2691	sf	0.85	2,287	1.50	4,037	2.35	6,324
Gypsum board ceiling	2691	sf	2.25	6,055	2.50	6,728	4.75	12,783
Ceramic tile floor	112	sf	7.00	784	8.00	896	15.00	1,680
Ceramic tile wainscot	256	sf	7.00	1,792	8.00	2,048	15.00	3,840
5/0 x 7/0 upper part double dutch door	1	ea	1350.00	1,350	550.00	550	1,900.00	1,900
Folding ext gate	1	ea	975.00	975	400.00	400	1,375.00	1,375
3/0 x 7/0 single door	3	ea	950.00	2,850	350.00	1,050	1,300.00	3,900
4/0 x 7/0 double door	1	ea	1250.00	1,250	550.00	550	1,800.00	1,800
Replace door hinges	42	ea	15.00	630	35.00	1,470	50.00	2,100
Gate	1	ea	275.00	275	125.00	125	400.00	400
Repair windows	11	ea	50.00	550	150.00	1,650	200.00	2,200
Signage	4	ea	45.00	180	25.00	100	70.00	280
Toilet paper dispenser	2	ea	50.00	100	35.00	70	85.00	170
Toilet seat cover disp	2	ea	55.00	110	35.00	70	90.00	180
Paper towel dispenser	2	ea	150.00	300	50.00	100	200.00	400
Mirror	2	ea	95.00	190	40.00	80	135.00	270
Soap dispenser	2	ea	60.00	120	35.00	70	95.00	190
Grab bars	4	ea	65.00	260	40.00	160	105.00	420
Mop rack	1	ea	125.00	125	50.00	50	175.00	175
Refinish counter	20	lf	35.00	700	100.00	2,000	135.00	2,700
Pass-thru counter	11	lf	185.00	2,035	65.00	715	250.00	2,750
SUBTOTAL				$39,880		$71,848		$111,728

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Prepared by: Cost Engineering, Inc.
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ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
Second Floor Renovations								
Gypsum board partitions	310	sf	3.00	930	3.00	930	6.00	1,860
Repair cement plaster	1000	sf	1.85	1,850	6.50	6,500	8.35	8,350
Repair wood flooring	128	sf	18.50	2,368	35.00	4,480	53.50	6,848
Repair stair riser/tread	7	ea	75.00	525	500.00	3,500	575.00	4,025
Refinish wood flooring	2414	sf	1.50	3,621	4.50	10,863	6.00	14,484
Refinish wood base	295	lf	1.00	295	3.50	1,033	4.50	1,328
Ceiling moulding	270	lf	2.75	743	2.50	675	5.25	1,418
Refinish ceiling moulding	295	lf	1.00	295	4.00	1,180	5.00	1,475
Refinish ext single door	1	ea	10.00	10	150.00	150	160.00	160
Refinish guardrailing	305	sf	1.00	305	5.50	1,678	6.50	1,983
Refinish int double door	1	ea	15.00	15	250.00	250	265.00	265
Refinish int single door	5	ea	10.00	50	150.00	750	160.00	800
Refinish windows	10	ea	15.00	150	75.00	750	90.00	900
Wood base	270	lf	2.50	675	2.00	540	4.50	1,215
Interior painting	7980	sf	0.25	1,995	1.00	7,980	1.25	9,975
Patch floor @ shaft	26	sf	15.00	390	35.00	910	50.00	1,300
Plywood sheathing ceiling	2560	sf	0.85	2,176	1.50	3,840	2.35	6,016
Gypsum board ceiling	2560	sf	2.25	5,760	2.50	6,400	4.75	12,160
Ceramic tile floor	146	sf	7.00	1,022	8.00	1,168	15.00	2,190
Ceramic tile wainscot	340	sf	7.00	2,380	8.00	2,720	15.00	5,100
5/0 x 7/0 double door	1	ea	1350.00	1,350	550.00	550	1,900.00	1,900
3/0 x 7/0 single door	4	ea	950.00	3,800	350.00	1,400	1,300.00	5,200
Replace door hinges	24	ea	15.00	360	35.00	840	50.00	1,200
Windows	124	sf	38.50	4,774	18.50	2,294	57.00	7,068
Transom panel @ AC removal	1	ea	80.00	80	125.00	125	205.00	205
Repair windows	10	ea	50.00	500	150.00	1,500	200.00	2,000
Signage	5	ea	45.00	225	25.00	125	70.00	350
Handrailing	18	lf	28.50	513	12.50	225	41.00	738
Toilet paper dispenser	2	ea	50.00	100	35.00	70	85.00	170
Toilet seat cover disp	2	ea	55.00	110	35.00	70	90.00	180
Paper towel dispenser	2	ea	150.00	300	50.00	100	200.00	400
Mirror	2	ea	95.00	190	40.00	80	135.00	270
Soap dispenser	2	ea	60.00	120	35.00	70	95.00	190
Grab bars	4	ea	65.00	260	40.00	160	105.00	420
Mop rack	1	ea	125.00	125	50.00	50	175.00	175
SUBTOTAL				$38,362		$63,956		$102,318
Exterior Repairs								
Refinish lanai floor	224	sf	1.00	224	2.50	560	3.50	784
Cement plaster	2394	sf	1.85	4,429	6.50	15,561	8.35	19,990
Exterior painting	9262	sf	0.65	6,020	1.25	11,578	1.90	17,598

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ITEMS OF WORK	QUANTITIES		MATERIAL COST		LABOR COST		TOTAL COST	
DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
Clean plaques	1	ls	10.00	10	100.00	100	110.00	110
Repair stair nosing	276	lf	1.50	414	20.00	5,520	21.50	5,934
Guardrailing	20	lf	40.00	800	20.00	400	60.00	1,200
Concrete edging @ perimeter	270	lf	5.00	1,350	6.00	1,620	11.00	2,970
SUBTOTAL				$13,247		$35,339		$48,586
TOTAL				$225,486		$355,397		$580,883
			SITEWORK					
Demolition								
Demo ramp, walk & paver	1015	sf	0.00	0	3.50	3,553	3.50	3,553
Remove signage	6	ea	0.00	0	100.00	600	100.00	600
Remove tree	2	ea	0.00	0	650.00	1,300	650.00	1,300
Remove tree root	1	ls	0.00	0	3000.00	3,000	3,000.00	3,000
Remove wheel stop	2	ea	0.00	0	10.00	20	10.00	20
Demolish wd ramp	88	sf	0.00	0	4.50	396	4.50	396
Remove guardrailing	44	lf	0.00	0	3.00	132	3.00	132
Remove backflow preventer	1	ea	0.00	0	150.00	150	150.00	150
Remove wd post w/fixture	1	ea	0.00	0	100.00	100	100.00	100
Remove concrete pad	20	sf	0.00	0	3.50	70	3.50	70
Remove curbing	63	lf	0.00	0	5.00	315	5.00	315
Demolish enclosure	28	sf	0.00	0	8.50	238	8.50	238
Remove AC pavement	140	sy	0.00	0	6.50	910	6.50	910
Load, haul & dispose of debris	1	ls	75.00	75	250.00	250	325.00	325
SUBTOTAL				$75		$11,034		$11,109
Flexible pavement								
AC pavement	21	sy	9.50	200	15.00	315	24.50	515
Base course	4	cy	31.00	124	25.00	100	56.00	224
Concrete curbing	145	lf	7.00	1,015	8.00	1,160	15.00	2,175
Island striping	190	sf	0.25	48	1.50	285	1.75	333
Logo	1	ea	15.00	15	50.00	50	65.00	65
Signage	1	ea	150.00	150	250.00	250	400.00	400
SUBTOTAL				$1,552		$2,160		$3,712
Concrete pavement								
Concrete walk	1584	sf	3.00	4,752	4.00	6,336	7.00	11,088
Concrete ramp	90	sf	5.00	450	6.00	540	11.00	990
Guardrailing	62	lf	40.00	2,480	20.00	1,240	60.00	3,720
Concrete pads	40	sf	3.00	120	4.00	160	7.00	280
Raise landing slab	32	sf	2.00	64	3.00	96	5.00	160
SUBTOTAL				$7,866		$8,372		$16,238

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DESCRIPTIONS	NO OF UNITS	UNIT	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
Signage								
Signage allowance	1	ls	1500.00	1,500	500.00	500	2,000.00	2,000
SUBTOTAL				$1,500		$500		$2,000
Landscaping								
Concrete root barrier	124	lf	20.00	2,480	24.00	2,976	44.00	5,456
SUBTOTAL				$2,480		$2,976		$5,456
Storm drainage								
Trench drain	10	lf	25.00	250	125.00	1,250	150.00	1,500
SUBTOTAL				$250		$1,250		$1,500
TOTAL				$13,723		$26,292		$40,015

MECHANICAL ENGINEERS OF HAWAII CORPORATION

50 SOUTH BERETANIA STREET, SUITE C-208A, HONOLULU, HAWAII, 96813

TEL (808) 521-8981
FAX (808) 536-5457

December 5, 1996

Spencer Mason Architects Ltd.
1050 Smith Street
Honolulu, Hawaii 96817

Attention: Mr. Glenn Mason

Project: Lahaina Courthouse
MEH 638

Subject: Revised Cost Estimate

Gentlemen:

The following is provided as requested.

1. Fire Sprinkler System:

   A. Fire Sprinkler - Basement only.
   $22,000.

   B. Fire Sprinkler - 1st & 2nd Floor Hallways.
   $23,000.

   C. Fire Sprinkler - Basement and Hallways.
   Items A and B above.
   $31,300.

   D. Fire Sprinkler - Entire Building (Museum occupancy).
   $43,600.

2. Air Conditioning System:

   A. Air Conditioning - Basement only (Present occupancy/Museum Occupancy).
   $11,000/$16,000. Replace existing with similar system.

B. Air Conditioning - Entire Building (Museum occupancy).

1) 12' x 16' AHU room required on each floor, or multiple Fan Coil. Units in ceiling or attic space.

2) 12' x 20' Outdoor equipment enclosure required.

C. Air Conditioning - First and Second Floors (Office Occupancy). $43,000 per floor, $86,000 total.

3. Plumbing:

A. Replace galvanized water pipes with copper. $10,500.

B. Replace ground and second floor toilets (water closets, urinals and lavatories for two men's and two women's toilets). $29,000.

C. Replace sink faucet and trim and refurbish stainless steel sink. $2,000.

D. Replace two sump pumps with new. $30,000.

E. Irrigation system with time clock for existing plants. $4,000.

Please call if you need further assistance or wish to discuss any of the above items.

Sincerely,

Robert G. Ho

APPENDIX A

STRUCTURAL EVALUATION

PRELIMINARY STRUCTURAL EVALUATION REPORT

for

Lahaina Courthouse Building

Lahaina, Maui, Hawaii

PREPARED BY:

SARWAR STRUCTURAL ENGINEERING
CONSULTING ENGINEERS

PREPARED FOR:

SPENCER MASON ARCHITECTS

DATE:

OCTOBER 28, 1996

Introduction

The historic Lahaina Courthouse building, located in Lahaina, Maui, is planned to undergo a restoration program. Sarwar Structural Engineering was retained by Spencer Mason Architects to undertake a preliminary evaluation of the building structure.

Purpose of Evaluation

The purpose of this preliminary structural evaluation was to ascertain, in general, the expected performance level of the building structural system, and the physical condition of the building structure. The underlying goal was to identify any structural safety problems, and to propose a general mitigation program.

The expected performance and capability of the building structural system was evaluated by comparing its level of conformance with appropriate contemporary building codes and standards. For a building of this age, a substantial conformance with contemporary code and standards is not expected. The purpose for this comparison was to quantify the structural performance characteristics of the building so that the scope of any structural upgrading can be identified on rational basis.

The physical condition of the building structure was evaluated to identify damage and deterioration to the visible and accessible structural elements and components of the building. The objective was to identify elements and components requiring repair or replacement, and to specify repair or replacement.

Scope of Investigation

This was intended to be a preliminary level evaluation, and therefore the scope of the related investigation was proportionally limited.

A site visit was conducted on September 12, 1996, to review the visible and accessible elements and components of the building structure. During the site visit available construction drawings of the building were reviewed to become familiar with the structural system of the building. It was observed during this site visit that the building structure is fairly consistent with that depicted on the construction drawings.

(continues)

The Lahaina Courthouse building, was built in 1859, and underwent a major reconstruction in 1925. The construction drawings available were prepared for this reconstruction work. Drawings of the original construction were not available.

During the site visit, the areas of the building where signs of damage or deterioration to the structural elements and components was visible were documented, and this information is contained in this report.

Based on the information available on the drawings, a preliminary level analysis and design-check of the building structure was performed to compare its conformance with contemporary code and standards. These include:

- Uniform Building Code, 1991 Edition
- Uniform Code For The Abatement Of Dangerous Buildings, 1991 Edition
- Uniform Code For Building Conservation, 1991 Edition

The Uniform Building Code, 1991 Edition, with certain amendments is the legal building code county of Maui. However, the Uniform Code For The Abatement Of Dangerous Buildings, 1991 Edition; and Uniform Code For Building Conservation, 1991 Edition, have not been adopted and their provisions do not have a legal status. Nonetheless, these are still the most appropriate contemporary standards available for dealing with the important structural aspects of existing buildings.

The investigation was carried out on the basis that no significant structural changes or occupancy changes are being contemplated for the building. This is important since the building code does not require structural upgrading or strengthening unless a change in occupancy or substantial structural changes are sought. Addition of a new hydraulic elevator, with relatively insignificant adverse impact on the existing structure, is under consideration.

The available superimposed load (live and dead load) capacity of the first and second floor framing was calculated. Although these calculation provide a relatively approximate estimate of, it would a useful information in determining the future use of the space at these floors.

Finally this report presents recommendations in sufficient detail so that their cost can be estimated for budgetary purposes.

(continues)

Description Of The Existing Structure

The footprint of the building is defined by a 69 ft x 44 ft. rectangle. The basement occupies the complete footprint of the building. There is a two story structure at the front of the building with a porch at ground floor level, and a balcony at the second floor. There is a small one story porch at the back of the building. The building has a hip roof with a 5:12 pitch. The building height is approximately 38 ft. from street level to the top of the roof.

Except for the 21" thick perimeter walls constructed with unreinforced coral block masonry, all other elements of the structure including roof, first floor, and second floor framing, are part of the 1925 reconstruction work. The front porch and balcony, as well as the back porch were also added during reconstruction. There is a small one story addition at the back west-corner that apparently was added subsequent to the reconstruction.

The roof framing consisting of light frame wood trusses (from 2x and 1x material) placed at 2'-0" spacing, spans the full width of the building. These trusses are supported by the perimeter masonry wall at each end . The asphalt shingle roofing is supported by 1x lumber sheathing nailed to the truss top chords.

The second floor framing consists of 1x wood floor sheathing supported on 2x12 wood joists placed at 16" spacing. The joists are supported by steel I-beams which in turn are supported by reinforced concrete columns at the basement that also support the steel columns from the second floor. The concrete columns transfer the load to the ground through reinforced concrete footings. The concrete slab on grade at the basement is placed directly above concrete footings. The floor opening at the second floor for the stair is framed with steel C-beams.

It is should be noted that except for the roof framing, no other gravity loads are being supported by the perimeter masonry walls. It appears that prior to the reconstruction, the floor loads were supported by the perimeter masonry walls, but when new floors were added during the reconstruction, the structural system was changed, and a new and independent system consisting of steel beams, steel and concrete columns, and concrete footings were added.

Preliminary Assessment

With due consideration to its age, the building appears to be in a good physical condition. Most of the structural elements of the building, if reasonably maintained, should continue to perform adequately and provide the service they are intended for. At the moment only a limited amount of structural repair and replacement work is required to continue its present use.

(continues)

The visible structural damage to the building structure is limited to minor corrosion of a few structural steel beams, some termite damage to floor decking, and a small amount of cracks, spalling, and rebar corrosion at some of the reinforced concrete components. The structural repair work for these elements, thus, will be limited to the repair or replacement of these damage components of the structure.

Some spalling of plaster at the unreinforced masonry walls at the second floor was observed. This appears to be non-structural damage. This certainly requires further investigation as there may be some corresponding effect on the condition of the mortar and coral blocks.

The building contains a fairly adequate structural system to support gravity loads (dead and live loads). However, the capability of the building structure to safely withstand lateral forces, seismic forces especially, is very limited and questionable. This is due to the fact that the building does not contain an adequate structural system intended to withstand lateral forces. The perimeter of the building consists of 21" thick unreinforced masonry walls. These walls due to their massiveness are capable of generating large inertial forces during an earthquake. The possibility of a partial or complete collapse of these walls during an earthquake represents the most serious structural safety hazard associated with this building.

Addition Of New Elevator

The enclosed Details SK-1.1 and SK-1.2 provide the information regarding the available superimposed load capacity of the existing floor framing. The values shown represent approximate estimates and should be used as such.

Addition Of New Elevator

Addition of a new hydraulic elevator is under consideration. The elevator will service the first and second floor. The basement story of elevator shaft will serve as elevator pit, and the elevator machine room will be located in the basement adjacent to the elevator shaft. The elevator shaft will run between the basement floor and the second floor ceiling. The addition of this elevator will require cutting openings in the framing at the first and second floor. This can be accomplished by cutting the floor sheathing and joists only. The impact of the new elevator addition on the existing structure is considered to be relatively insignificant.

The shaft for the new elevator will be constructed with structural steel frame consisting of steel tube columns (TS 4x4x1/4), one in each corner, and steel tube beams (TS 4x10x1/4) at floor level. The beams will support the existing floor joists that are cut to create elevator shaft opening. The elevator shafts will be constructed with infill walls of steel studs and gyp. board sheathing. The elevator shaft and the elevator machine room will be supported on new reinforced concrete footings. The elevator shaft will be laterally supported at the floors and second floor ceiling.

(continues)

Conclusions And Recommendations

Since no significant structural changes or occupancy changes are planned for the building, the building code does not mandate structural strengthening of the building. This provides the building owners with options ranging from undertaking "no structural strengthening" to "full structural upgrading".

Full structural upgrading of the building structure to a level required by the code for new building, though theoretically possible, is generally not considered very practical. This is particularly true when dealing with buildings of historic importance due to potentially significant and usually adverse impacts it has on the historic elements of the building. In addition, such upgrading is usually very expensive.

Due to the potential risk to the building itself and to its occupants, the "No strengthening" approach may also be equally undesirable.

Therefore it is our recommendation that a pragmatic approach be taken that would achieve a practical balance between competing issues like the cost of upgrading, preservation objectives, safety of building, and safety of the building occupants. Such an approach would suggest reducing the risk of damage to the building and to increase the safety for its occupants by strengthening only the most critical structural elements and components of the building.

To meet these objective of such approach the following structural work will be required :

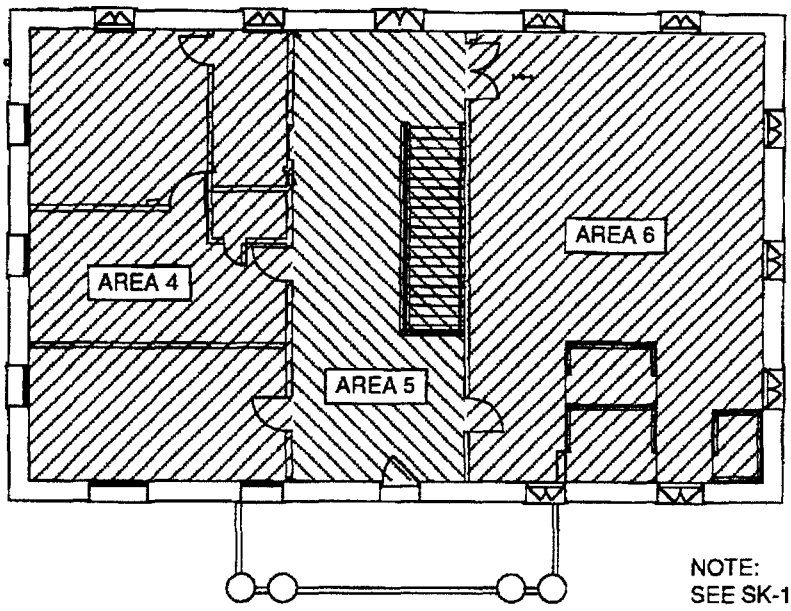
1. Install adequate structural diaphragm at the roof at roof and second floor level. This can be accomplished by adding appropriately designed and fastened plywood sheathing to the roof framing (see Details SK-2 And SK-3).

2. Fasten unreinforced masonry perimeter wall to the new diaphragm with grouted anchors or tension ties (see Details SK-2 And SK-3).

3. Repair damaged structural elements.

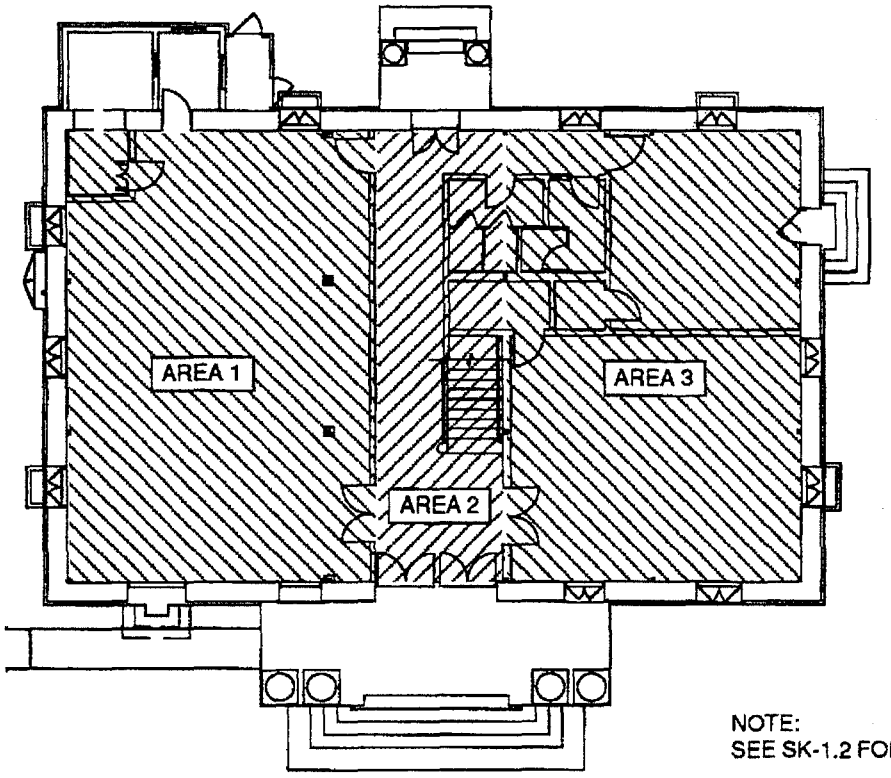
4. Undertake a more detailed structural investigation and evaluation to obtain the necessary information that is presently not known, but is necessary for the development of the adequate structural design and construction documents.

The impact of the new elevator addition on the existing structure is considered to be relatively insignificant. Other than the addition of new structural work to accommodate the new elevator, no structural strengthening of the existing structure is required to support the proposed new elevator.



NOTE:
SEE SK-1.2 FOR LOAD TABLE

SECOND FLOOR FRAMING PLAN



NOTE:
SEE SK-1.2 FOR LOAD TABLE

FIRST FLOOR FRAMING PLAN

STRUCTURAL UPGRADING
LAHAINA COURTHOUSE BUILDING

SK-1.1

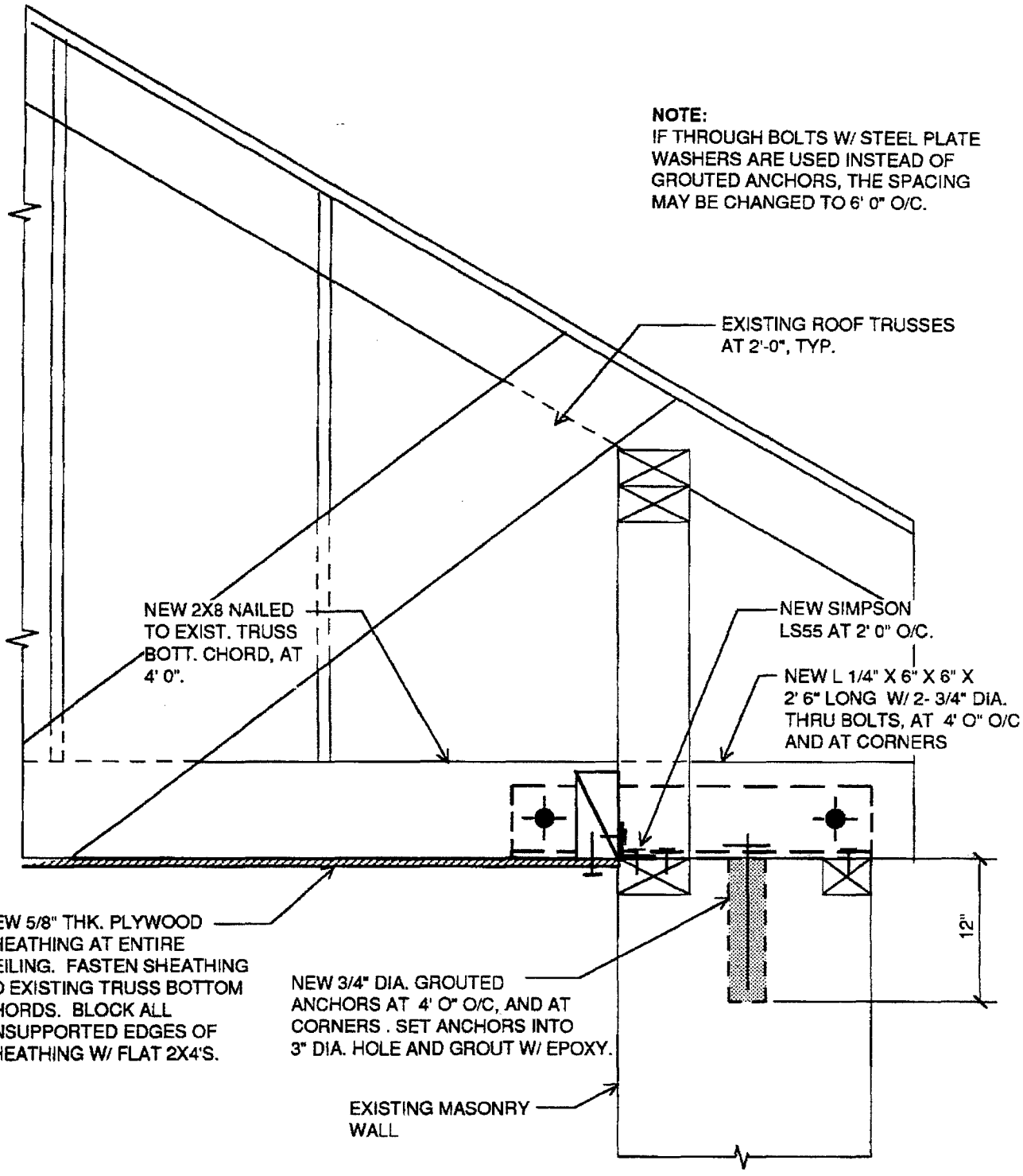
Architect : Spencer Mason Architects
Structural Engineer : Sarwar Structural Engineering

10/28/96

UNIFORM LOAD CAPACITY OF EXISTING FLOOR FRAMING		
AREA	TOTAL LOAD CAPACITY, PSF	LIVE LOAD CAPACITY, PSF
1	90	70
2	110	90
3	110	90
4	110	90
5	110	90
6	110	90

NOTE:

THE TOTAL LOAD CAPACITY INCLUDES A 20 PSF ALLOWANCE FOR THE SELF WEIGHT OF STRUCTURE, CEILINGS, AND MISC. PIPING AND MECH. EQUIPMENT. NO ALLOWANCE FOR PARTITIONS IS MADE AND SHOULD BE DEDUCTED FROM THE LIVE LOAD CAPACITY.



ROOF DIAPHRAGM / WALL SUPPORT DETAIL

STRUCTURAL UPGRADING
LAHAINA COURTHOUSE BUILDING

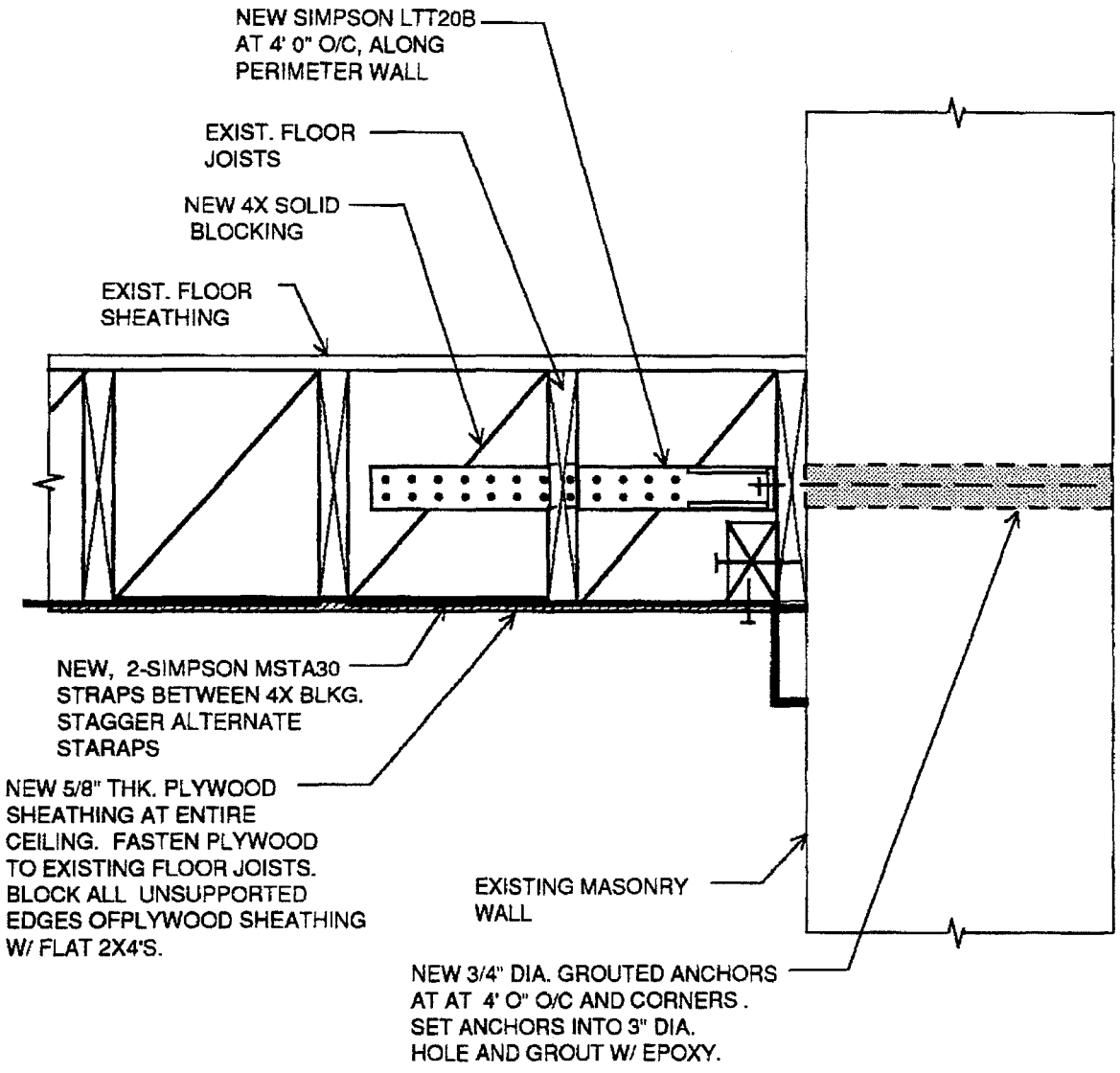
SK-2

Architect : Spencer Mason Architects
Structural Engineer : Sarwar Structural Engineering

10/28/96

SHEET 1 OF 1

NOTE:
IF THROUGH BOLTS W/ STEEL PLATE WASHERS ARE USED INSTEAD OF GROUTED ANCHORS, THE SPACING MAY BE CHANGED TO 6' 0" O/C.



2ND. FLOOR DIAPHRAGM / WALL SUPPORT DETAIL

STRUCTURAL UPGRADING
LAHAINA COURTHOUSE BUILDING

SK-3

Architect : Spencer Mason Architects
Structural Engineer : Sarwar Structural Engineering

10/28/96
SHEET 3 OF 3

TOTAL P.11

APPENDIX B

PHOTO ILLUSTRATIONS

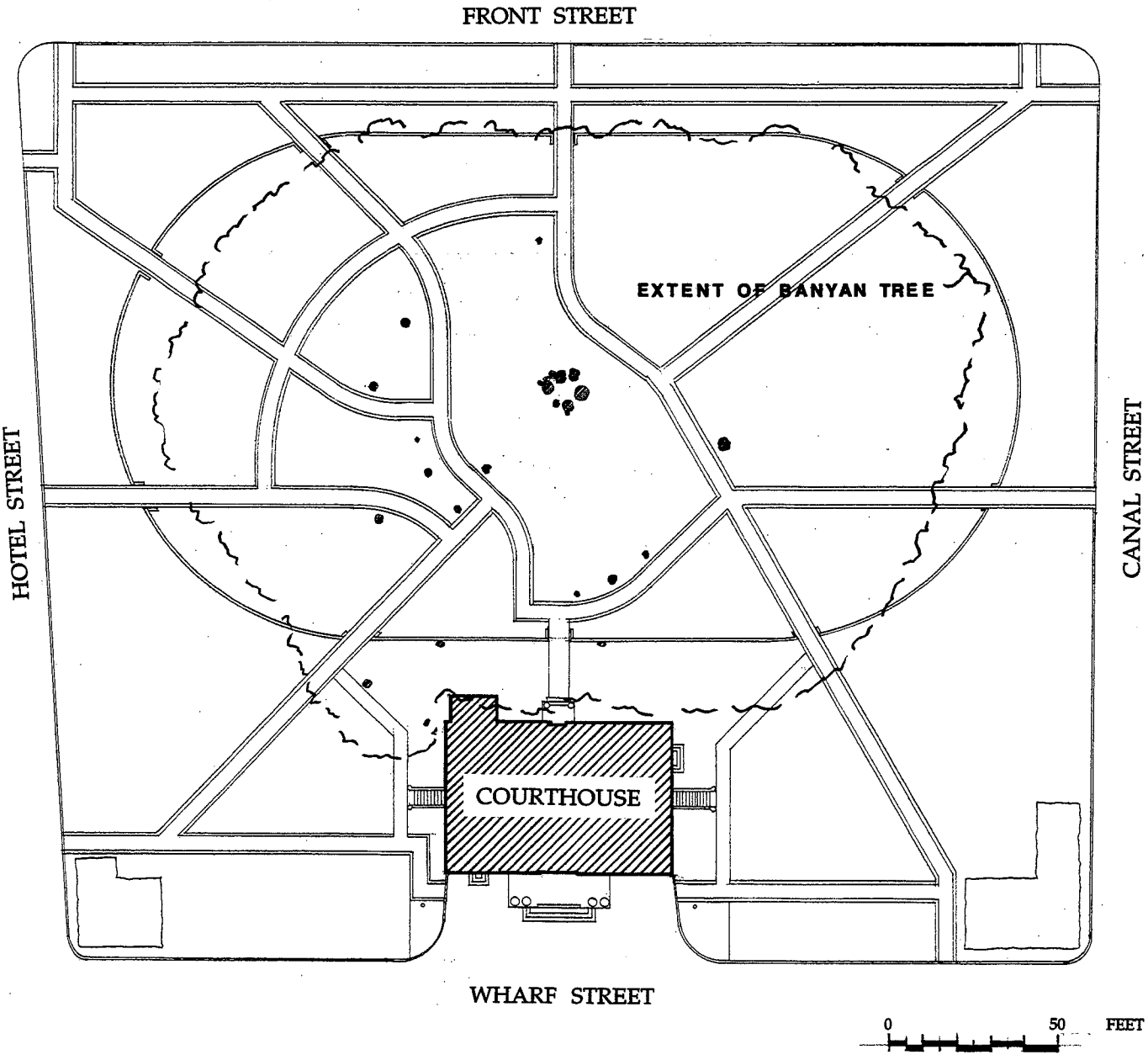


Figure 1. Map of park

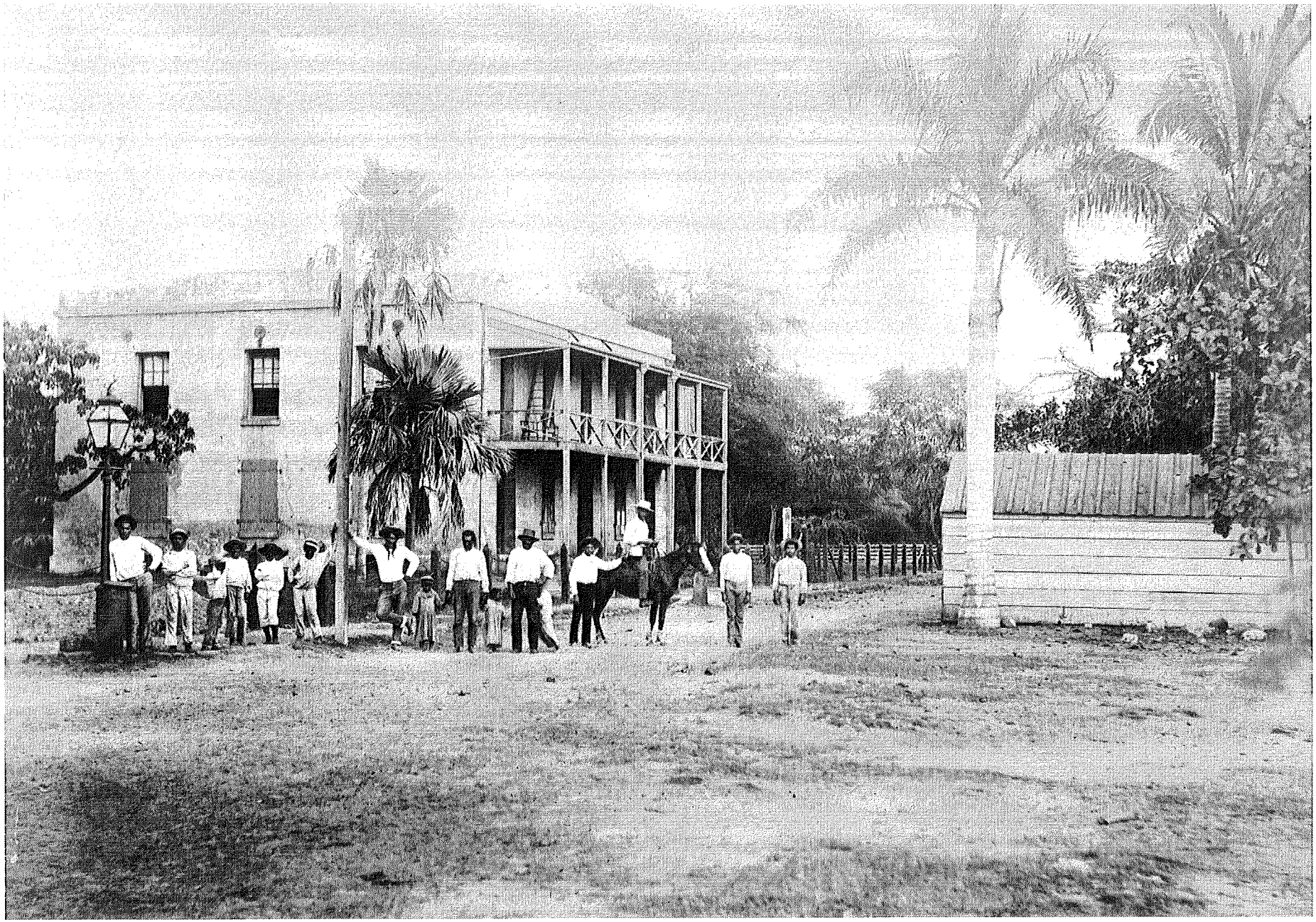


Figure 2. Lahaina Courthouse exterior, c. 1900 - *(Bishop Museum)*

Figure 3. Lahaina Courthouse exterior, 1935 - *(State Archives)*

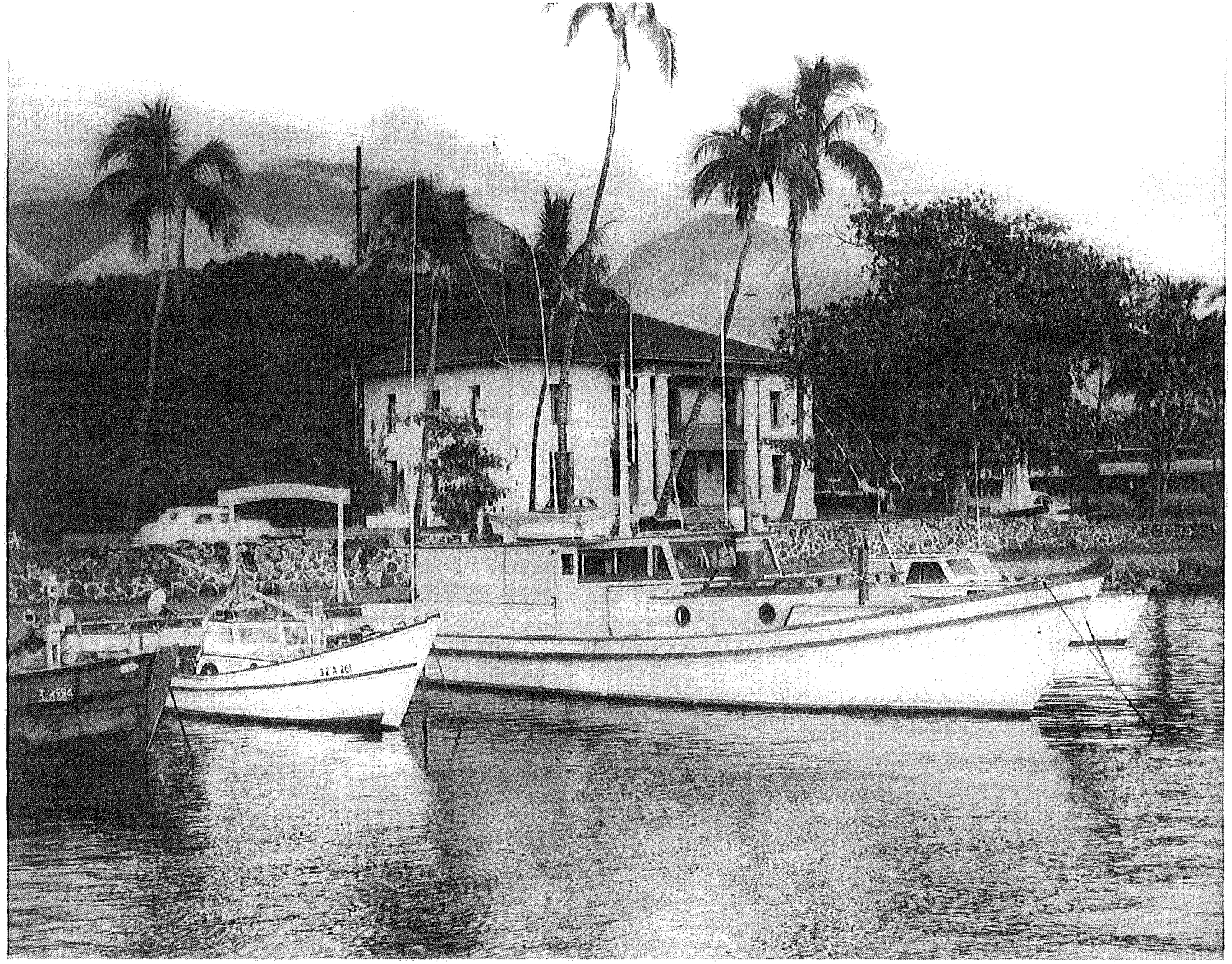


Figure 4. Lahaina Courthouse exterior, 1958 - *(State Archives)*

Figure 5. Makai Elevation

Figure 6. Kihei Elevation

Figure 9. Stair and Hallway, 1966 - *(State Archives)*

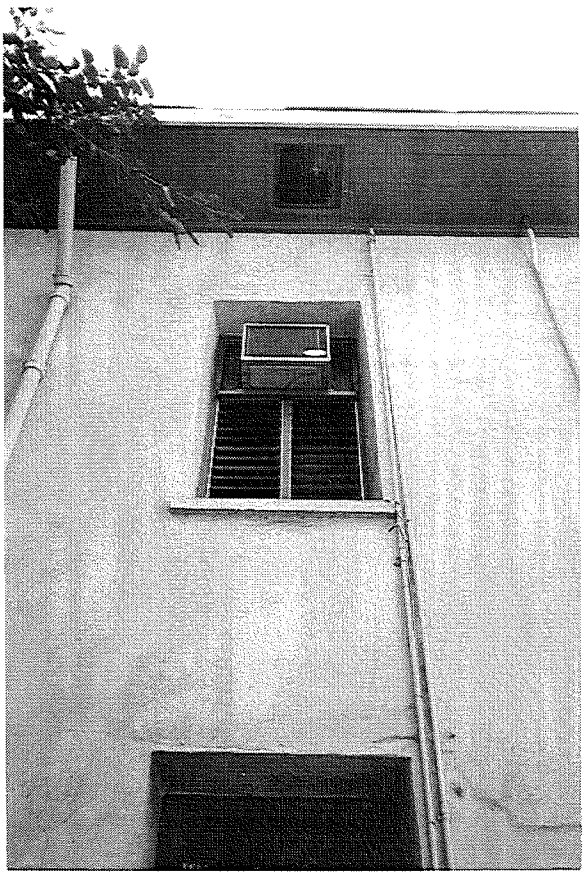


Figure 10. Broken eave screen

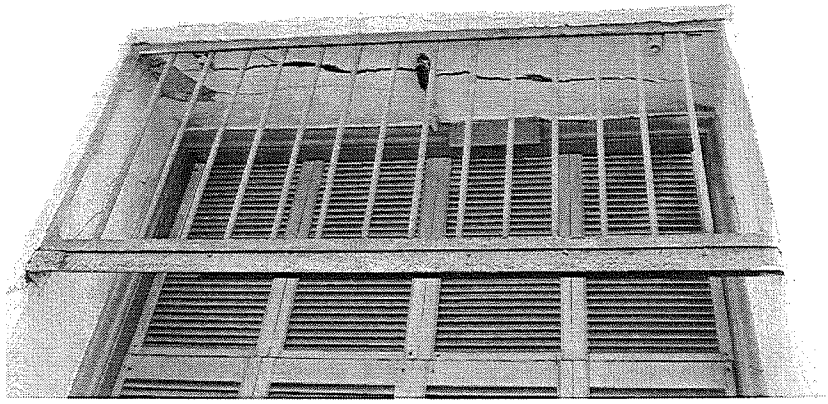


Figure 11. Crack at window lintel

Figure 12. Crack at basement door lintel

Figure 13. Existing ramp

Figure 14. North stair to basement

Figure 15. Balcony floor

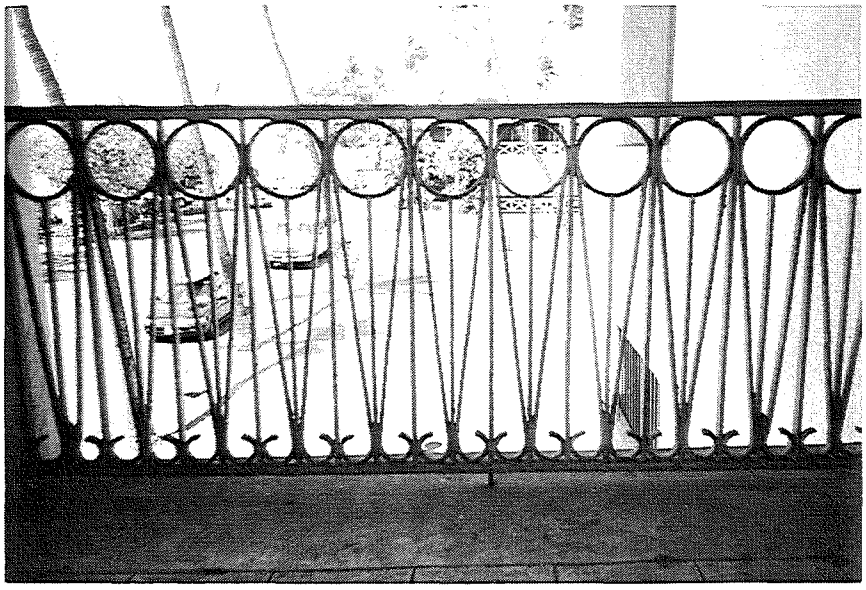


Figure 16. Balcony railing

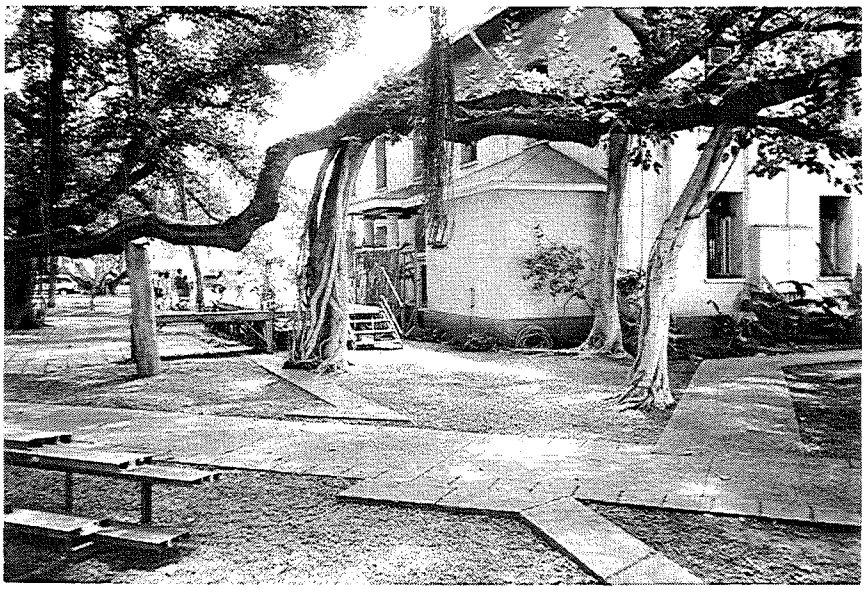


Figure 17. One story addition

Figure 18. Opening to addition

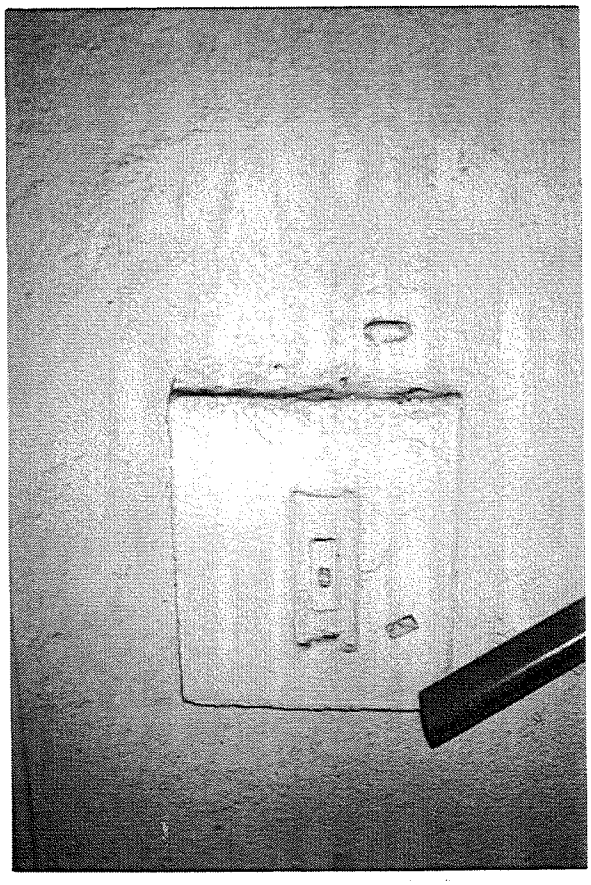


Figure 19. Latch strike at basement entrance

Figure 20. Vent opening to basement

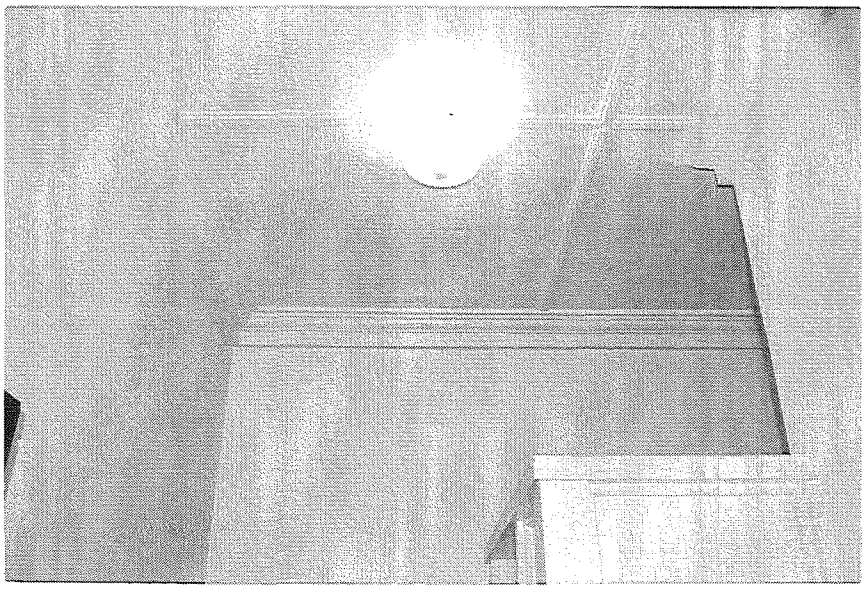


Figure 21. Ceiling in toilet room

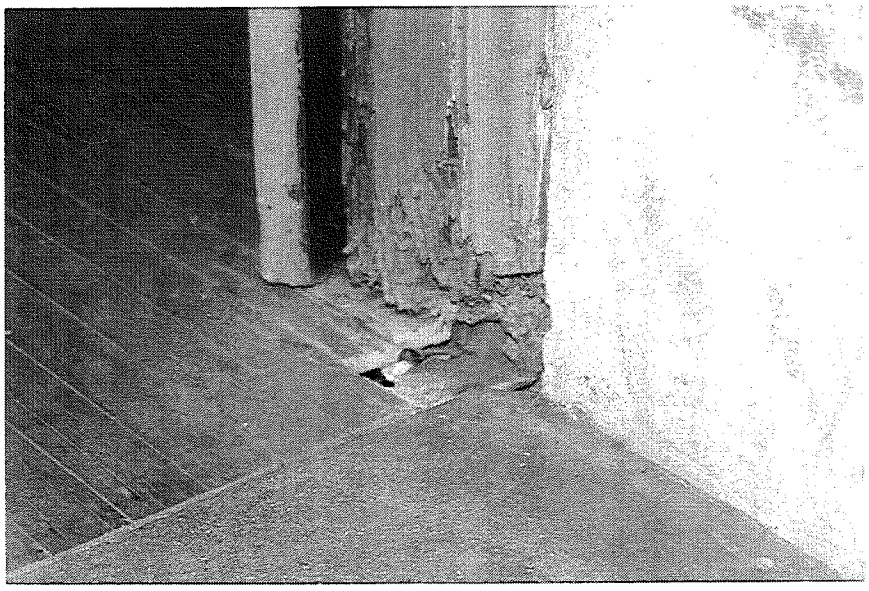


Figure 22. Termite damaged jambs

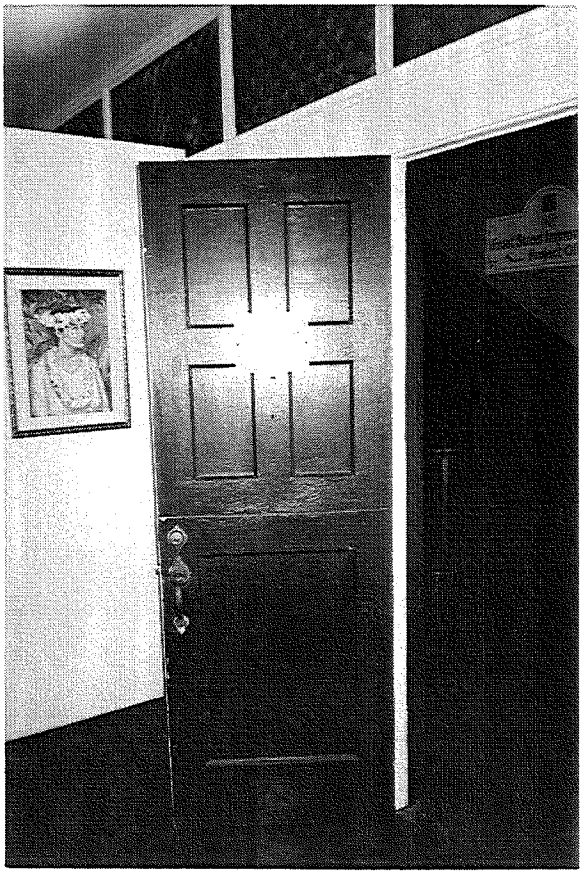


Figure 23. Double dutch door at existing opening D26

Figure 24. Typical exterior hardware

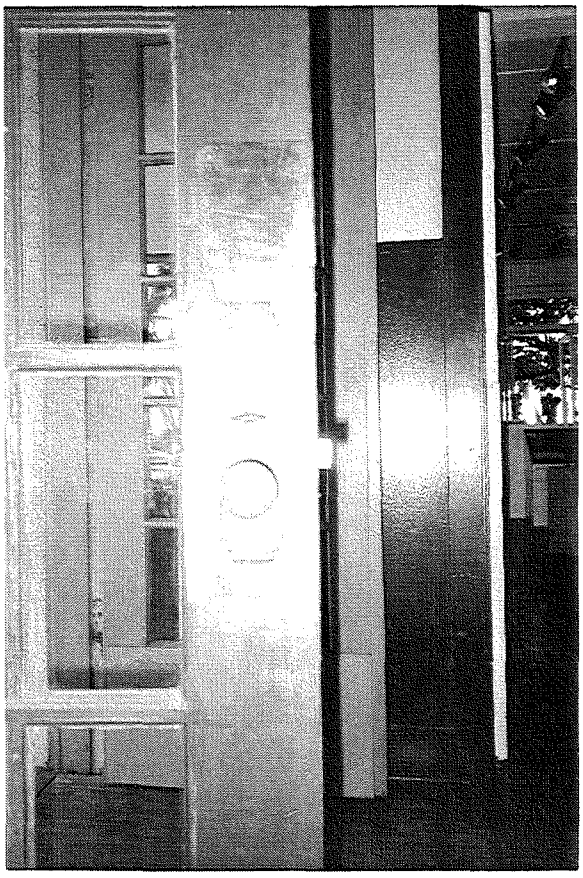


Figure 25. Typical interior hardware, first floor

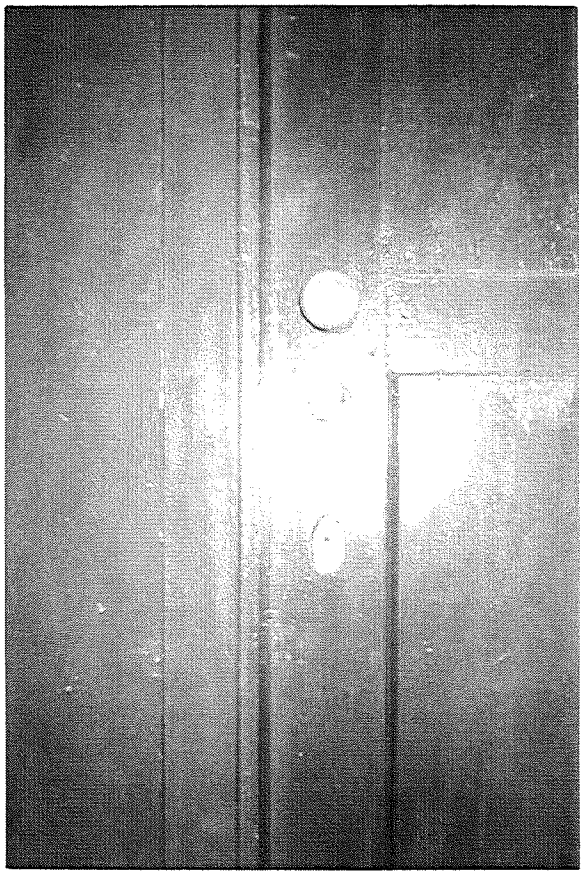


Figure 26. Typical interior hardware, second floor

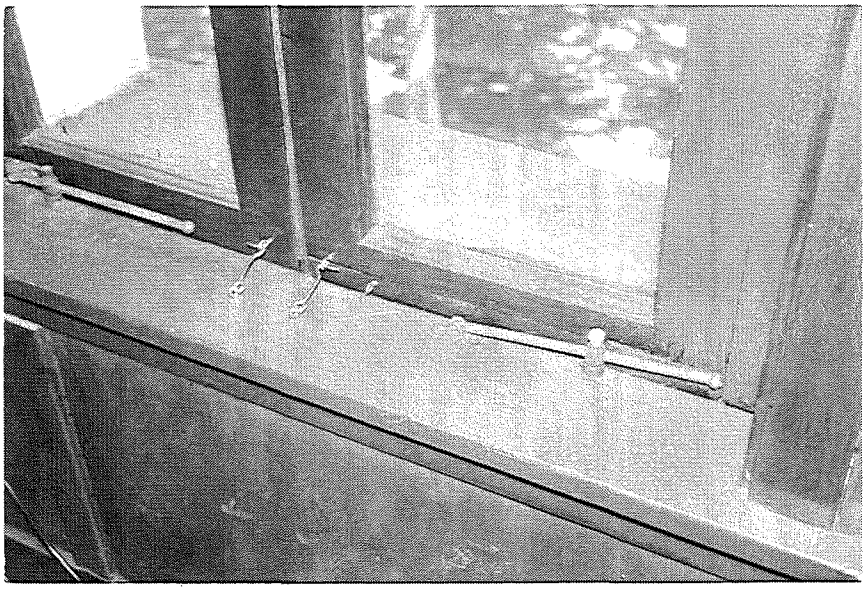


Figure 27. Window sill showing hardware

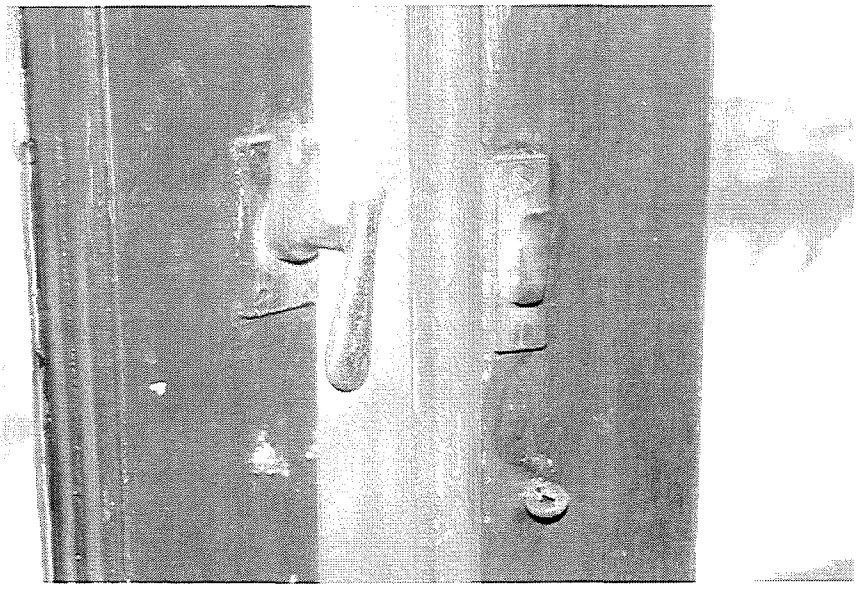


Figure 28. Latch set hardware

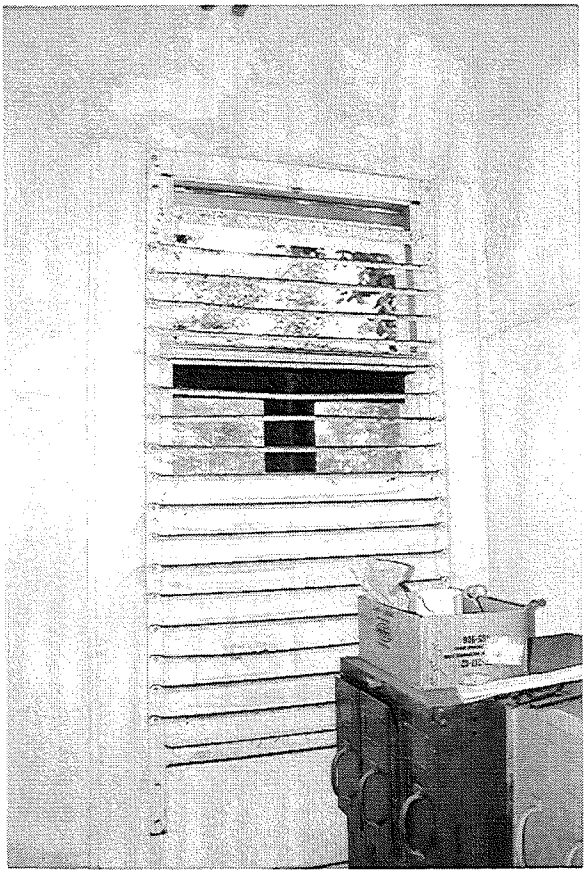


Figure 29. Bars on window in later holding cell

Figure 30. Stair at first floor

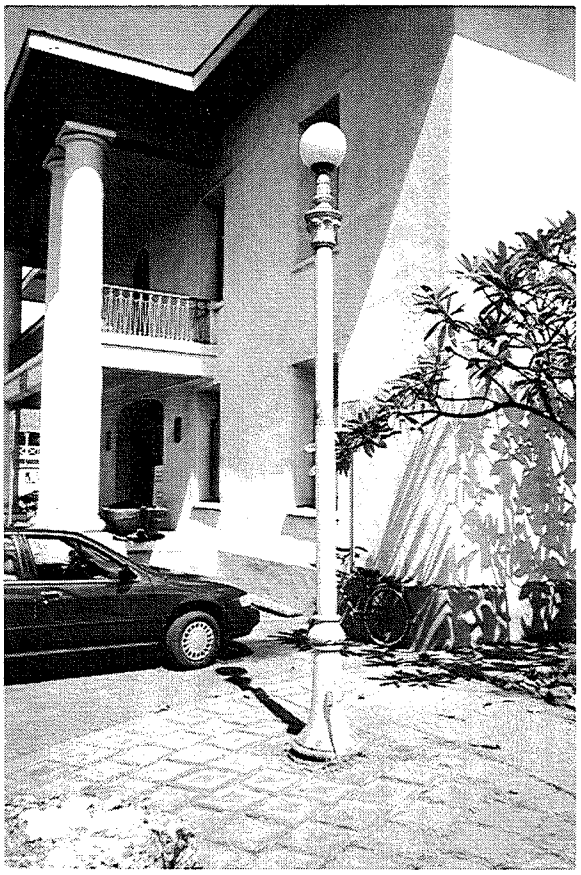
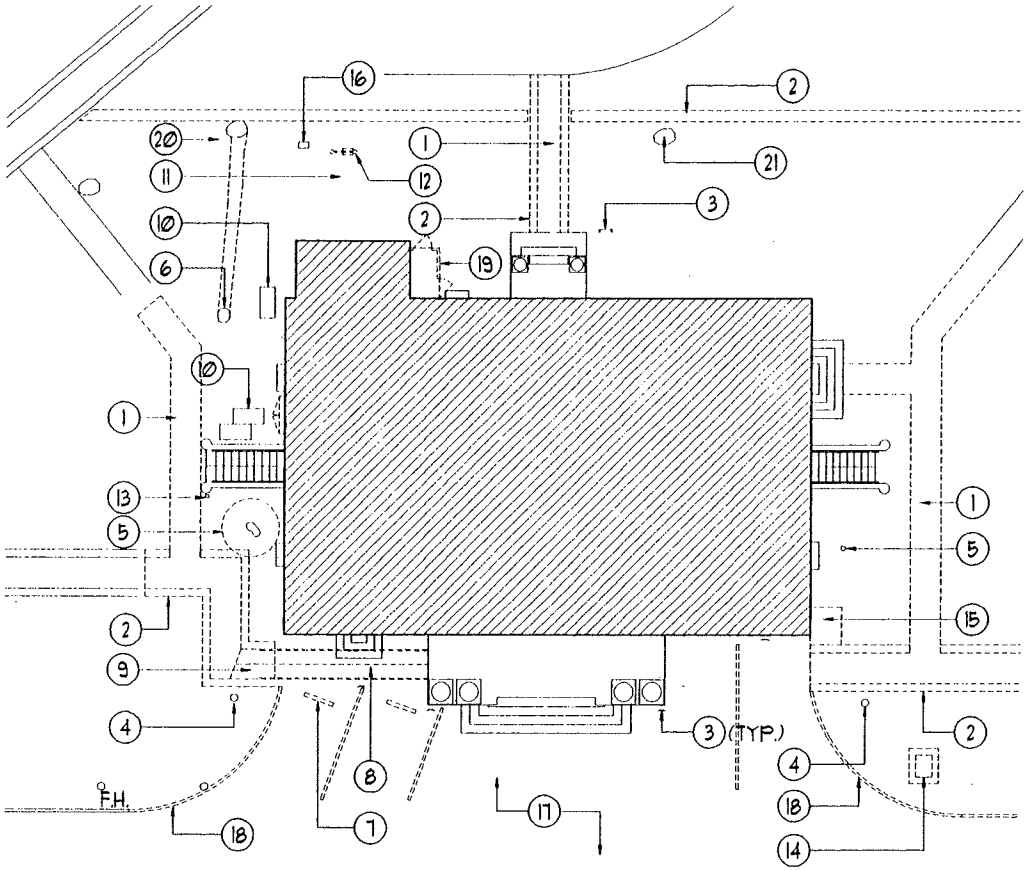


Figure 31. Historic light pole

Figure 32. Marker on stone pedestal

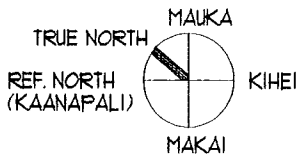
APPENDIX C

EXISTING CONDITION/DEMOLITION DRAWINGS
PROPOSED RESTORATION PLANS



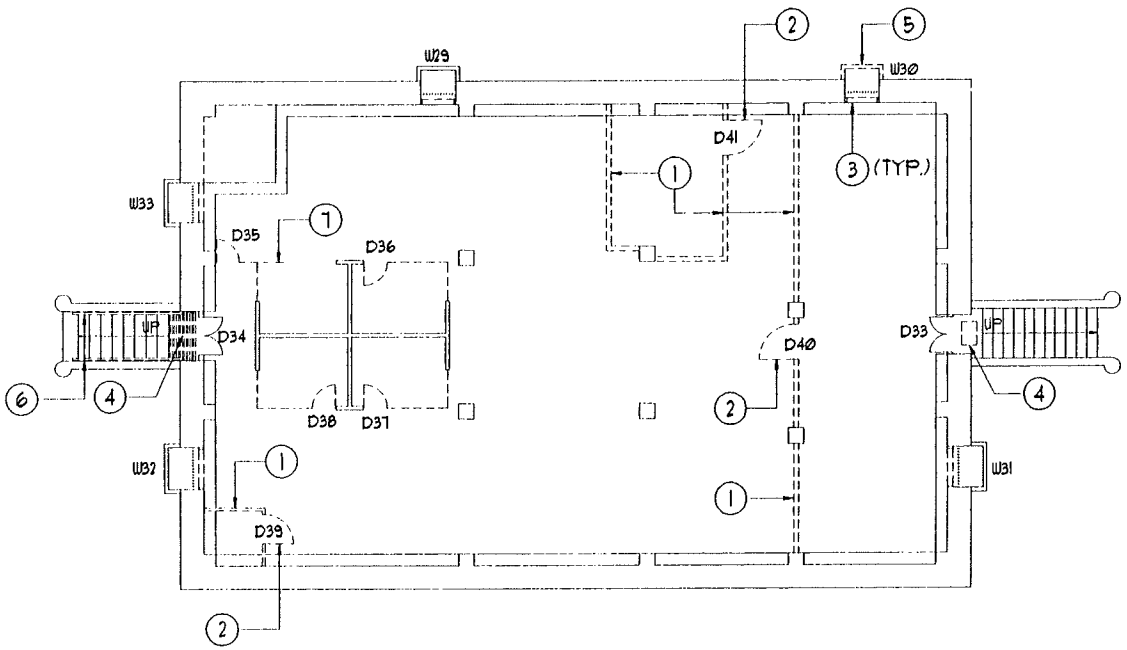
1. DEMOLISH EXST. CONC. WALKWAY AS INDICATED IN DASHED LINE.
2. REMOVE EXST. 12" SQ. PAVERS
3. REMOVE EXST. SIGNAGE (6 TOTAL)
4. EXST. LIGHT POLE
5. REMOVE EXST. TREE
6. REMOVE EXST. BANYAN TREE BRANCH ROOT
7. REMOVE EXST. CAR BUMPER
8. DEMOLISH EXST. WOOD HANDICAP RAMP
9. DEMOLISH EXST. CONC. RAMP
10. EXST. ELEC. BOX
11. EXST. CLEAN OUT
12. REMOVE EXST. BACKFLOW PREVENTOR
13. REMOVE EXST. WOOD POST W/ LIGHT FIXT. MOUNTED
14. DISMANTLE & SALVAGE EXST. PLAQUE
15. REMOVE EXST. CONC. SLAB
16. EXST. IRRIGATION VALVE SHUT-OFF PANEL
17. EXST. ASPHALT
18. DEMOLISH EXST. CURB AS INDICATED IN DASHED LINE.
19. REMOVE EXST. COMPRESSOR AND DEMOLISH EXST. ENCLOSURE.
20. SAW-CUT & REMOVE BRANCH ABOVE
21. EXST. TREE ROOT

0 5' 10' 15' 20' 25'



OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing El: EXISTING SITE PLAN



(1) DEMOLISH EXST. WALL

(2) REMOVE EXST. DOOR, FRAME AND HARDWARE

(3) REMOVE EXST. WINDOW

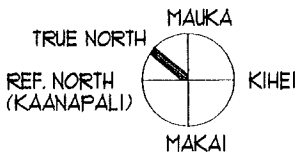
(4) REMOVE EXST. COVER AND SUMP PUMP BELOW

(5) DEMOLISH EXST. AREAWAY

(6) REMOVE EXST. HANDRAILS.

(7) REMOVE EXST. BARS, DOOR AND RELOCATE.

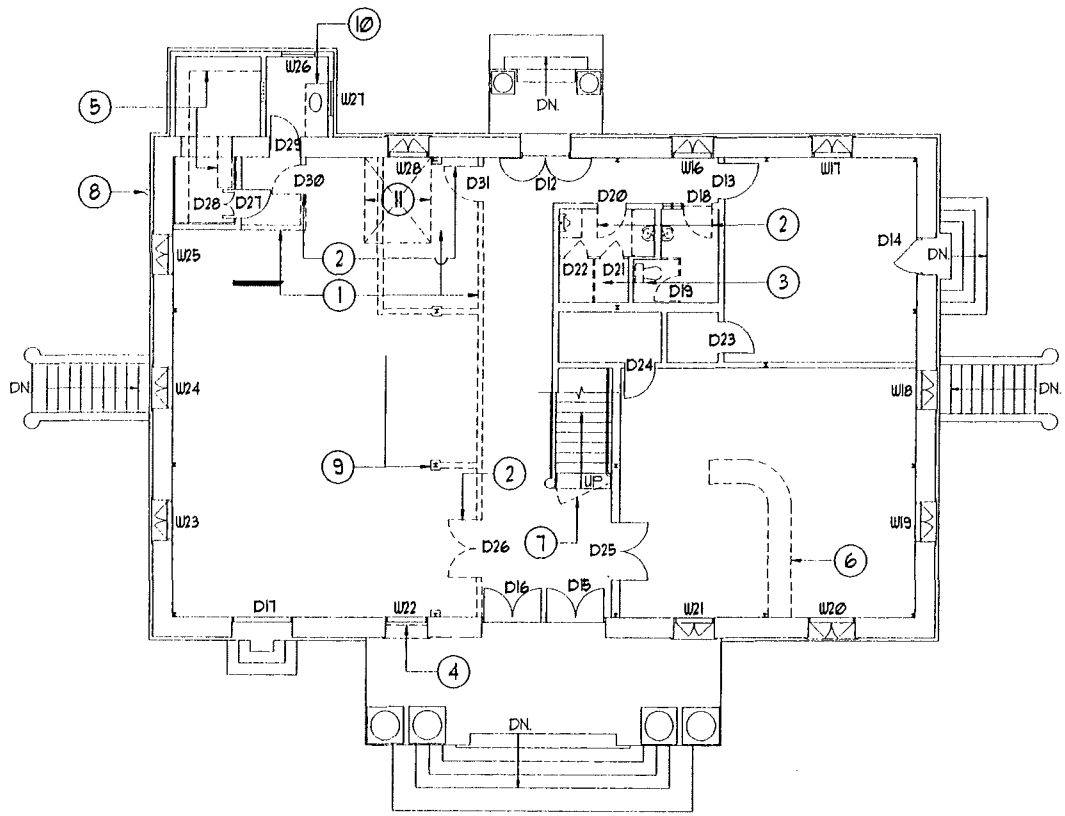
0 5' 10' 15' 20'



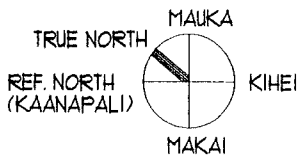
OLD LAHAINA COURTHOUSE

Date: December 1996

Drawing E2: EXISTING BASEMENT PLAN

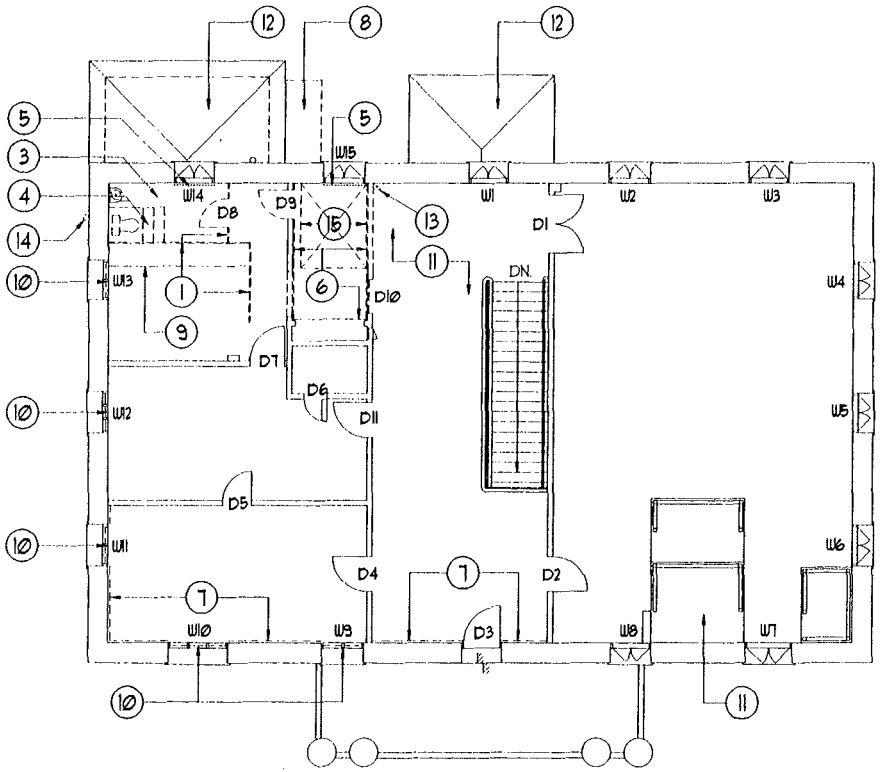


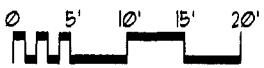
1. DEMOLISH EXST. WALL
2. REMOVE EXST. DOOR, FRAME, HARDWARE.
3. REMOVE ALL PLUMBING FIXTURES, PARTITIONS, FLOORINGS AND DOORS
4. REMOVE EXST. SHUTTER.
5. REMOVE ALL SHELVING.
6. REMOVE EXST. COUNTER, SAVE AND RELOCATE.
7. REMOVE EXST. GATE AND WOOD FRAME.
8. REMOVE EXST. VENT PIPE
9. REMOVE EXST. WALL FINISH OVER EXST. STEEL COLUMN.
10. REMOVE EXST. SINK, COUNTER AND CABINET.
11. SAW-CUT AND REMOVE FLOOR FOR NEW ELEVATOR SHAFT.

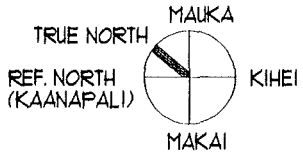


OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing E3: EXISTING FIRST FLOOR PLAN







(1) DEMOLISH EXST. WALL

(2) REMOVE EXST. DOOR, FRAME AND HARDWARE

(3) REMOVE ALL PLUMBING FIXTURES.

(4) DEMOLISH EXST. RAISED PLATFORM AND STAIR

(5) REMOVE EXST. SECURITY GRILLE.

(6) REMOVE EXST. WOOD PLANK WALL LINING AND FURRINGS.

(7) REMOVE EXST. MASONITE WALL LINING AND FURRINGS.

(8) DEMOLISH EXST. ROOF.

(9) REMOVE EXST. COUNTER

(10) REMOVE EXST. JALOUSIE WINDOW.

(11) REMOVE ALL METAL PLATES, REMOVE DETERIORATED FLOORING, INSTALL NEW.

(12) REMOVE EXST. ROOFING.

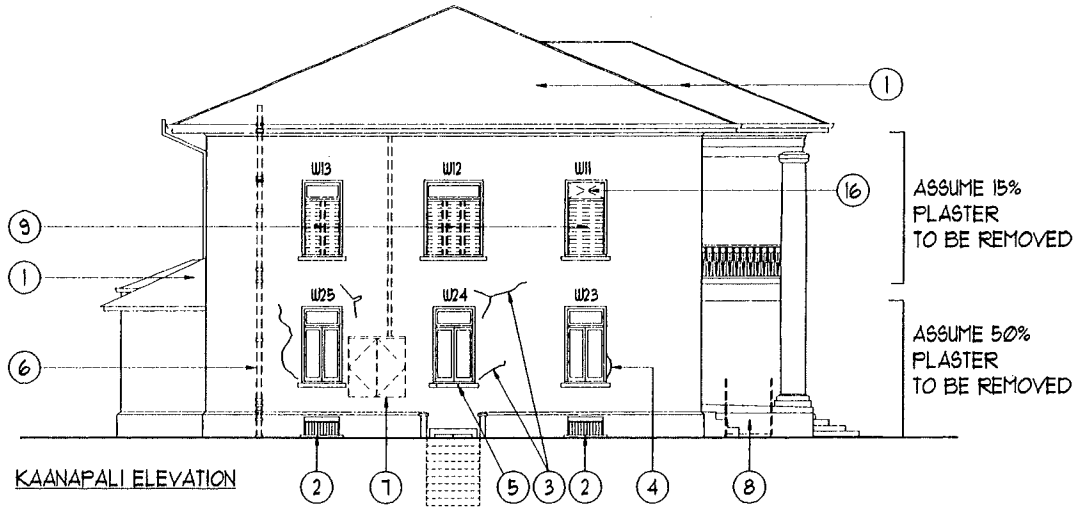
(13) REMOVE EXST. WATER AND DRAIN PIPE.

(14) REMOVE EXST. VENT PIPE.

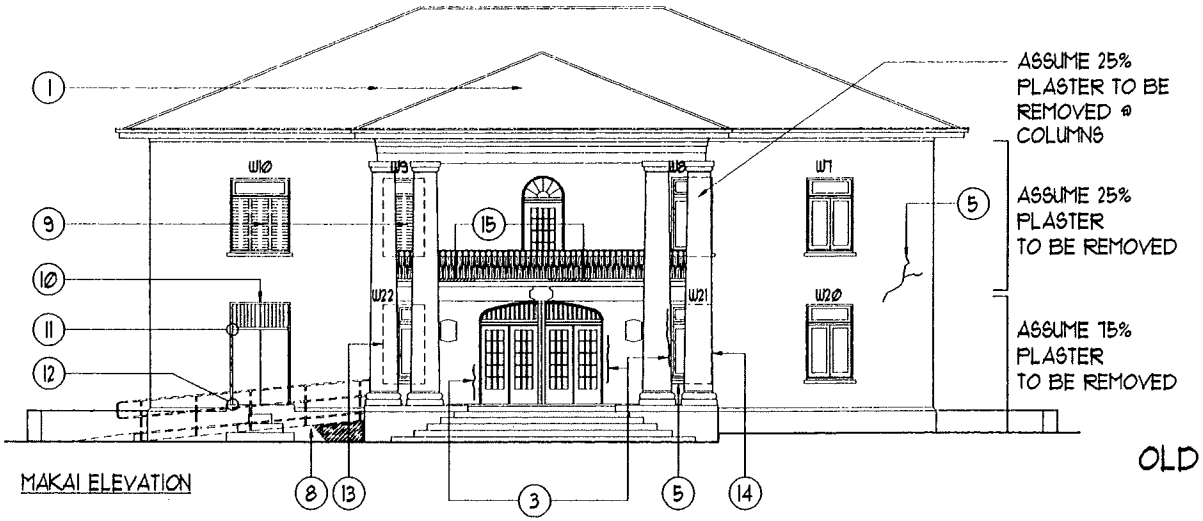
(15) SAW-CUT AND REMOVE FLOOR FOR NEW ELEVATOR SHAFT.

OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing E4: EXISTING SECOND FLOOR PLAN



KAANAPALI ELEVATION



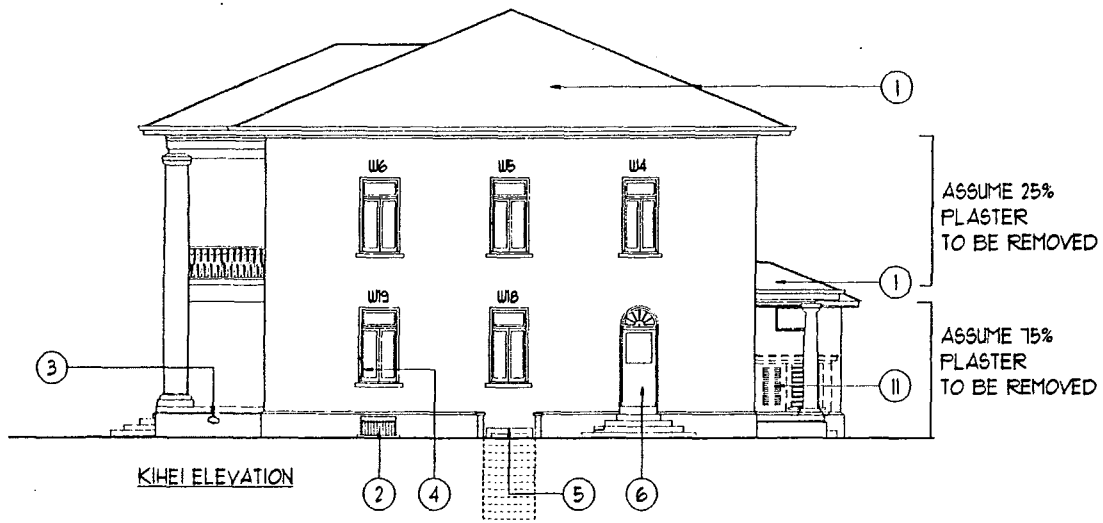
MAKAI ELEVATION

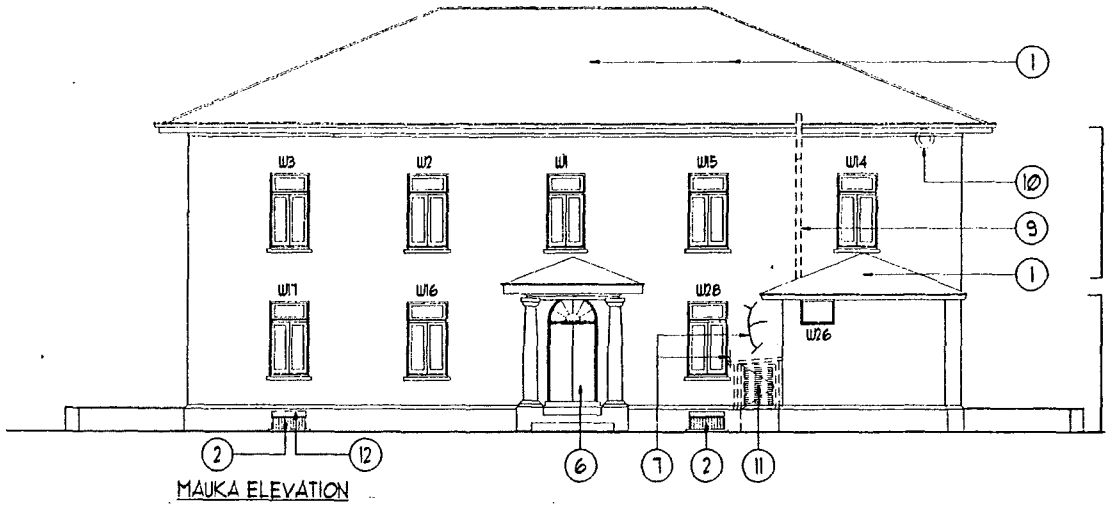
0 5' 10' 15' 20'

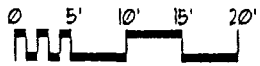
(1) REMOVE EXST. ASPHALT SHINGLES ROOFING.
(2) REMOVE EXST. WINDOW.
(3) CRACKS
(4) MINOR CRACKS
(5) CRACKS IN SILL
(6) REMOVE EXST. VENT PIPE
(7) REMOVE EXST. ELEC. CABINET
(8) DEMOLISH WOOD HANDICAP RAMP.
(9) REMOVE EXST. JALOSIE WINDOW.
(10) SPALLING AND CRACKS @ LINTEL
(11) CRACKS @ FIXING
(12) SPALLING @ NESTED METAL @ SILL
(13) CRACKS @ JAMB AND INGO.
(14) CRACKS @ WINDOW INGO.
(15) EDGE BADLY SPALLING.
(16) REMOVE EXST. AIR CONDITIONER.

OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing E5: EXISTING EXTERIOR ELEVATIONS



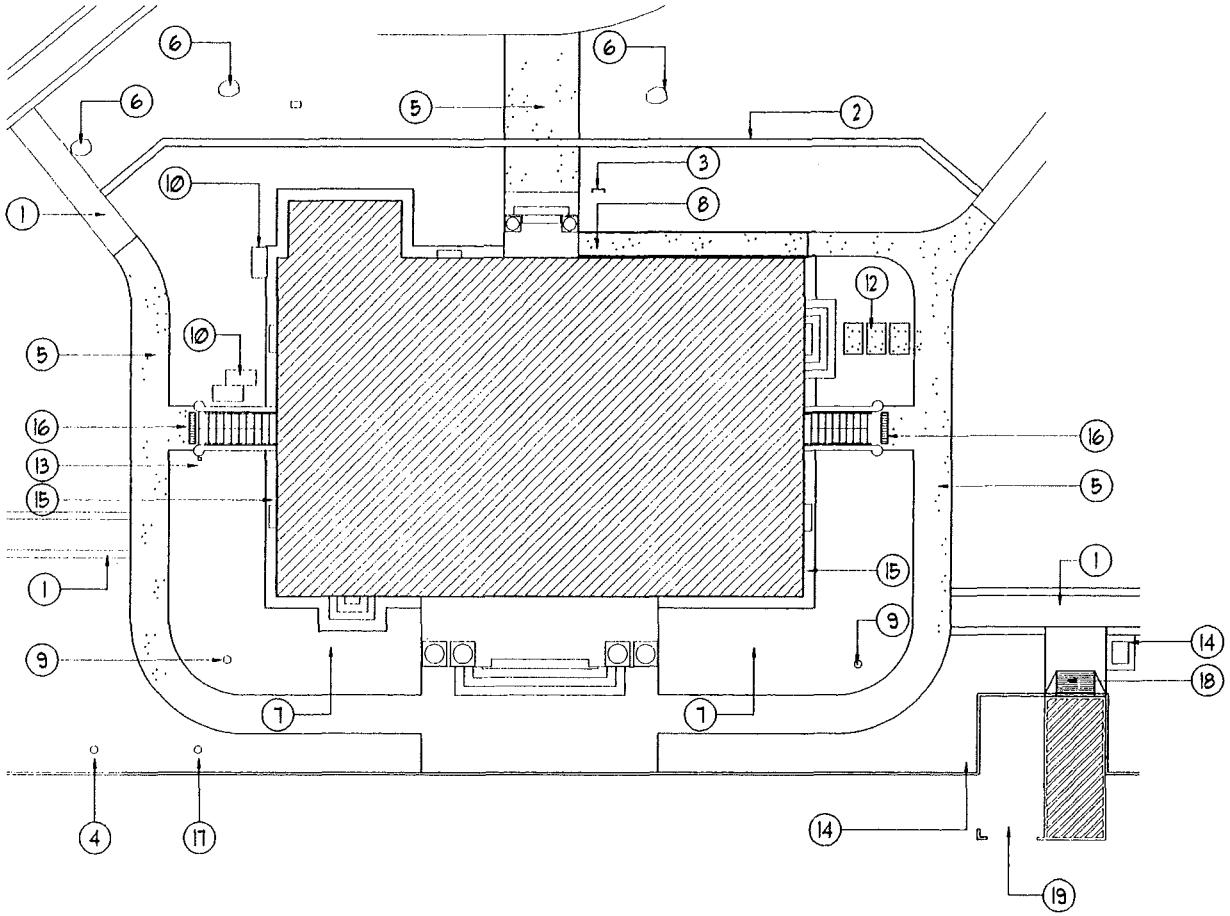




1. REMOVE EXST. ASPHALT SHINGLES ROOFING.
2. REMOVE EXST. WINDOW.
3. SPALLING PLASTER.
4. PLASTER BULGING.
5. LINTEL BADLY SPALLED.
6. RETAIN EXST. DOOR.
7. CRACKS.
8. MINOR CRACKS.
9. REMOVE VENT PIPE.
10. REMOVE SIREN.
11. REMOVE EXST. COMPRESSOR AND DEMOLISH ENCLOSURE.
12. CRACKS @ UNDERSIDE OF LINTEL.

OLD LAHAINA COURTHOUSE

Drawing E6: EXISTING EXTERIOR ELEVATIONS



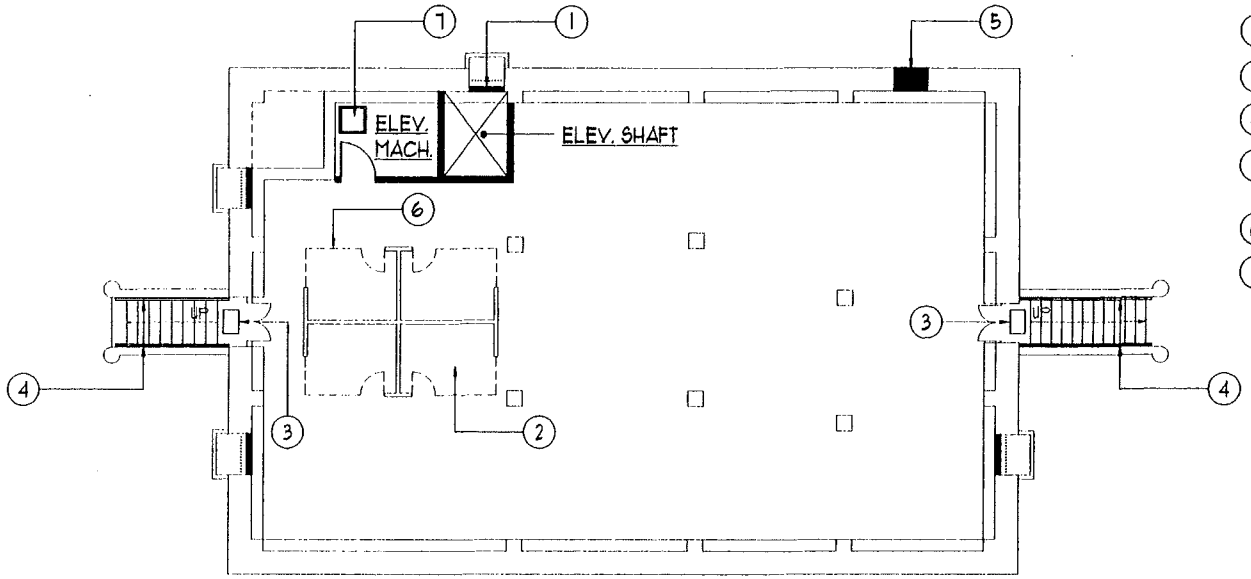
1. EXST. CONC. WALKWAY
2. NEW CONCRETE ROOT BARRIER
3. NEW SIGNAGE
4. EXST. FIRE HYDRANT
5. NEW CONC. WALKWAY
6. EXST. BANYAN TREE BRANCH ROOT
7. NEW PLANTING
8. NEW HANDICAP RAMP
9. RESTORE EXST. HISTORIC LAMP POLE
10. EXST. ELEC. BOX
11. EXST. CLEAN OUT
12. NEW CONC. PADS
13. NEW LAMP
14. RELOCATED PLAQUE REORIENT TO FACE NORTH
15. CONCRETE EDGING
16. NEW TRENCH DRAIN
17. EXST. PALM TREE
18. NEW CURB RAMP
19. NEW HANDICAP PARKING STALL & ACCESS AISLE

Ø 5' 10' 15' 20' 25'

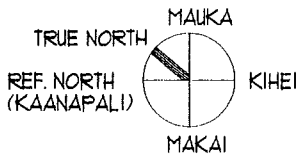
MAUKA
TRUE NORTH
REF. NORTH (KAANAPALI)
KIHEI
MAKAI

OLD LAHAINA COURTHOUSE

Drawing P1: PROPOSED SITE PLAN

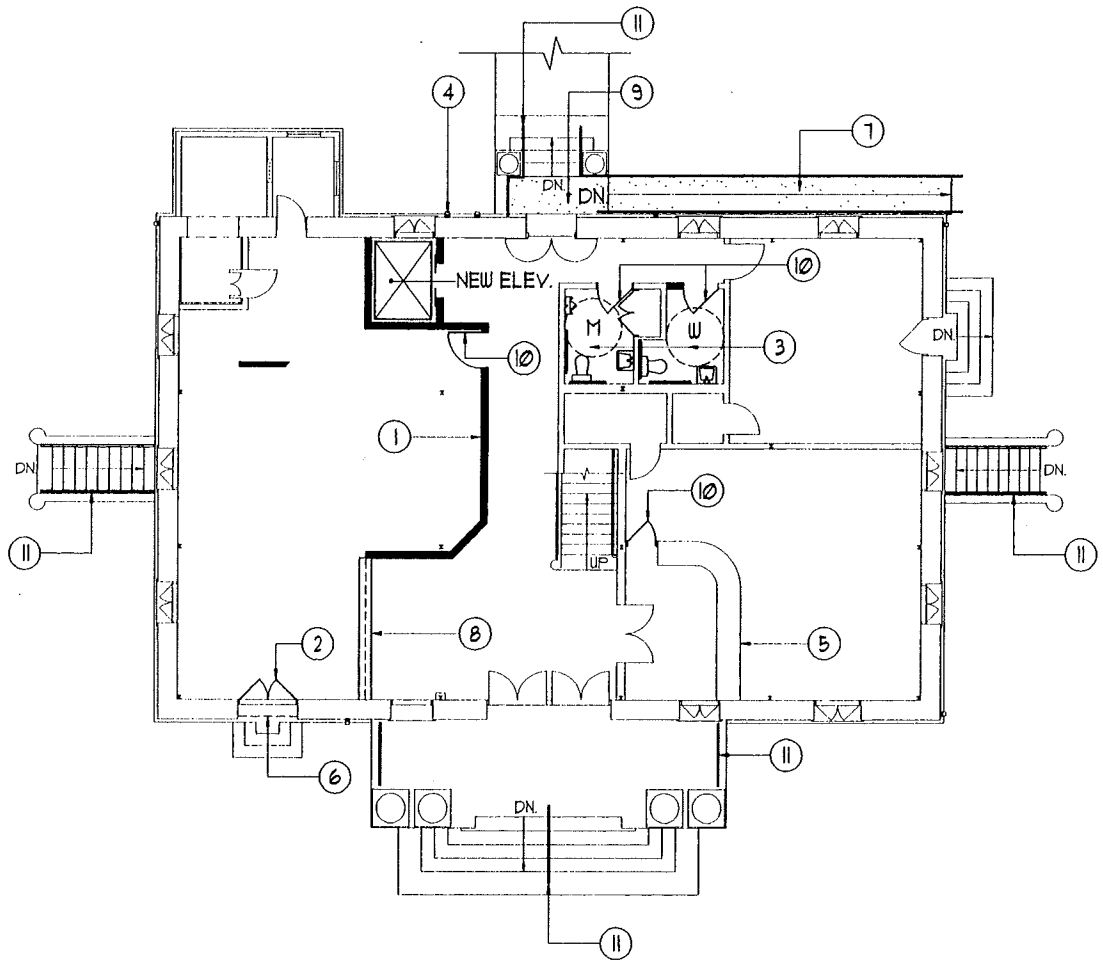


1. INFILL EXST. WDW. (TYP. FOR 5)
2. EXST. JAIL CELLS (TYP. FOR 4)
3. NEW GRATE AND SUMP BELOW
4. NEW HANDRAIL
5. INFILL EXST. OPENING, FLUSH W/ ADJACENT
6. RELOCATED BARS & DOOR
7. NEW SUMP WITH SUMP PUMP

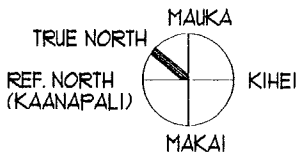


OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing P2: PROPOSED BASEMENT PLAN

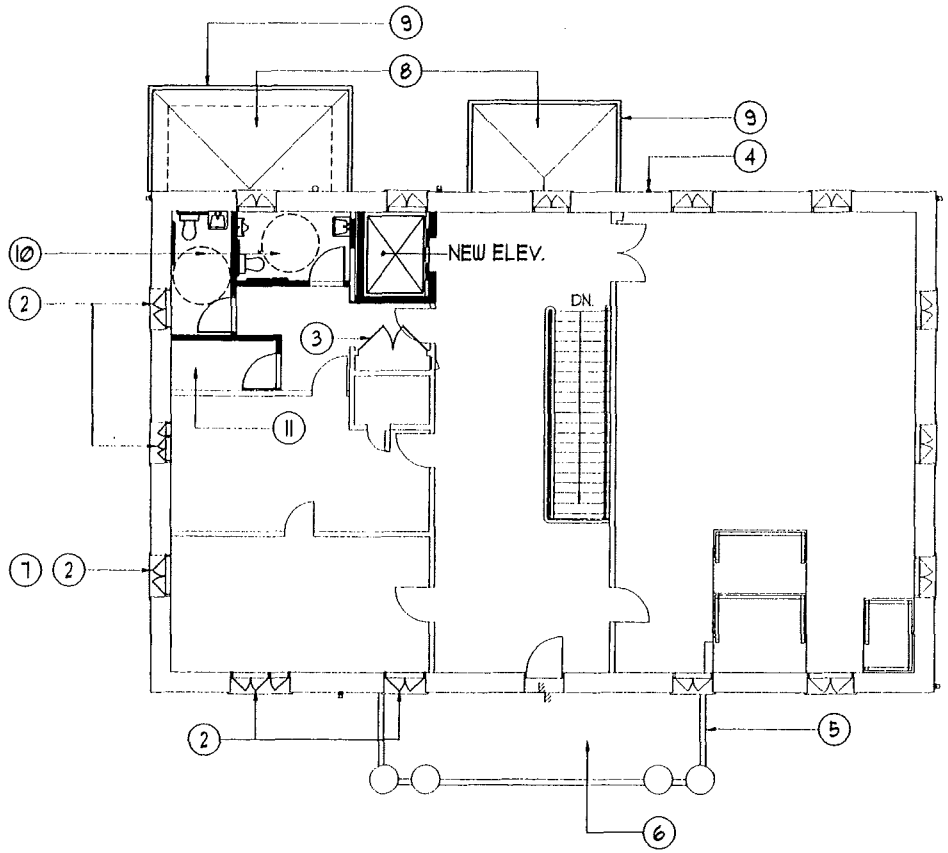


1. NEW WALL
2. RELOCATED DOOR D26
3. NEW RENOVATED HANDICAP ACCESSIBLE RESTROOMS.
4. NEW DOWNSPOUT, TYP.
5. RELOCATED COUNTER
6. INSTALL FOLDING GATE.
7. NEW HANDICAP RAMP
8. NEW PASS THROUGH COUNTER
9. NEW RAISED CONC. LANDING.
10. NEW DOOR
11. NEW HANDRAIL(S)

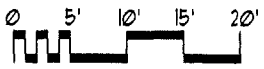


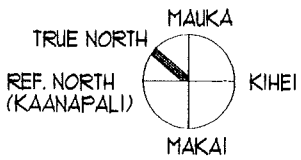
OLD LAHAINA COURTHOUSE

Date: December 1996
Drawing P3: PROPOSED FIRST FLOOR PLAN



1. NEW WALL
2. NEW WINDOW
3. NEW STEEL PLATE DOOR(S)
4. NEW DOWNSPOUT, TYP.
5. SANDBLAST AND REPAINT RAIL.
6. CLEAN AND RESEAL FLOOR.
7. NEW TRANSOM WINDOW.
8. NEW MISSION TILE ROOFING.
9. NEW GUTTER.
10. NEW RENOVATED HANDICAP ACCESSIBLE RESTROOMS.
11. NEW TRASH ROOM

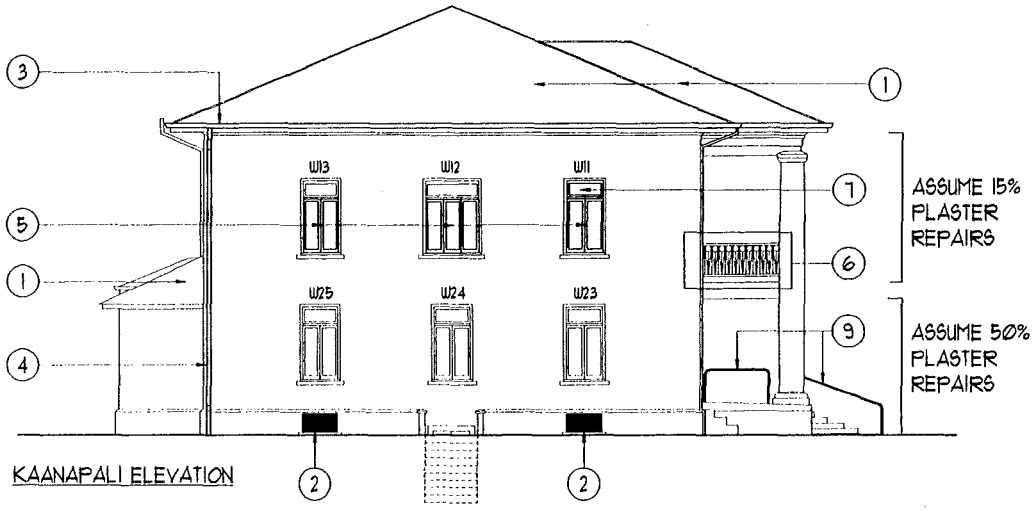




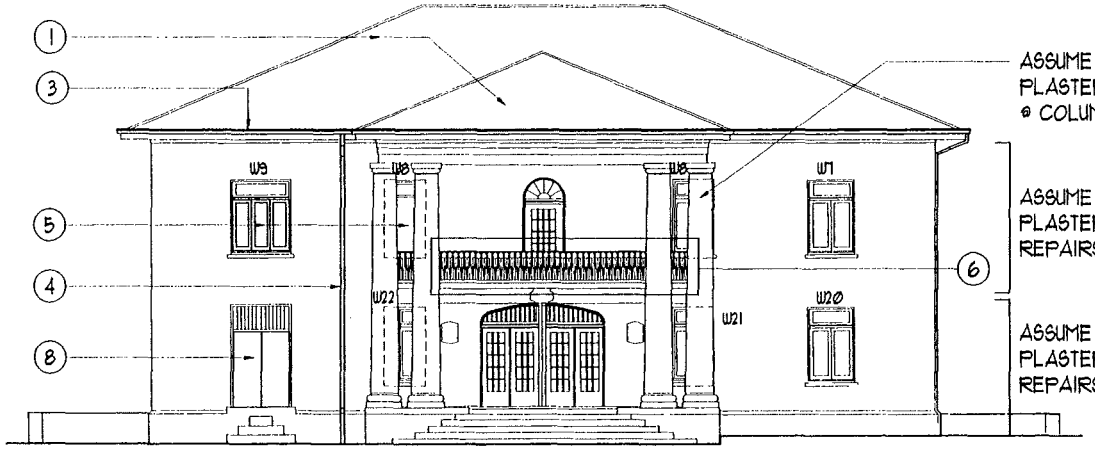
OLD LAHAINA COURTHOUSE

Date: December 1996

Drawing P4: PROPOSED SECOND FLOOR PLAN



KAANAPALI ELEVATION



MAKAI ELEVATION

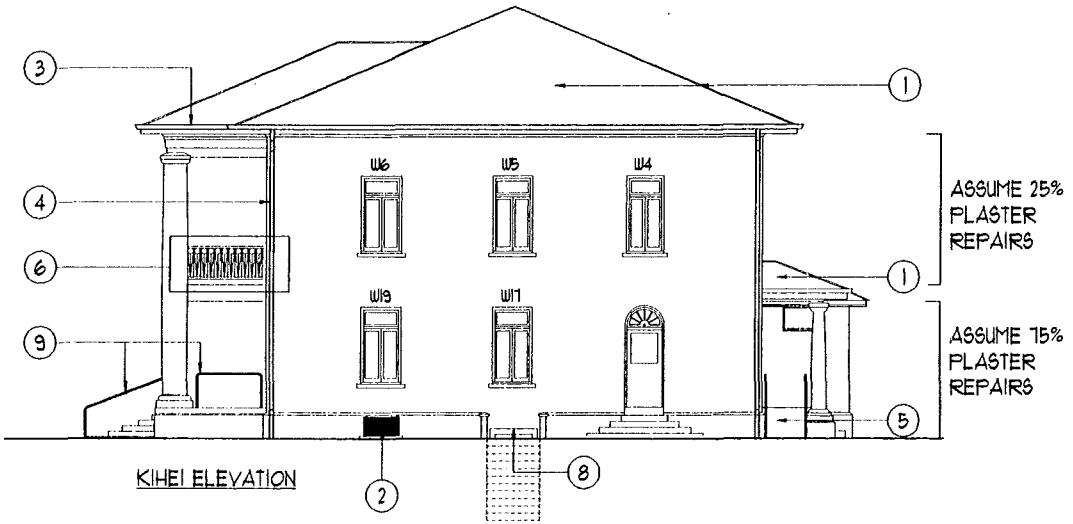
0 5' 10' 15' 20'

1. NEW MISSION TILE ROOFING.
2. INFILL WINDOW OPENING WITH MASONRY BEHIND EXIST. BARS
3. NEW GUTTER
4. NEW 2.5"x4" DOWNSPOUT, TYP.
5. NEW WINDOW TO MATCH ORIGINAL
6. SANDBLAST AND REPAIR RAIL
7. NEW TRANSOM WINDOW TO MATCH ORIGINAL
8. NEW FOLDING GATE AND DOORS.
9. NEW RAIL

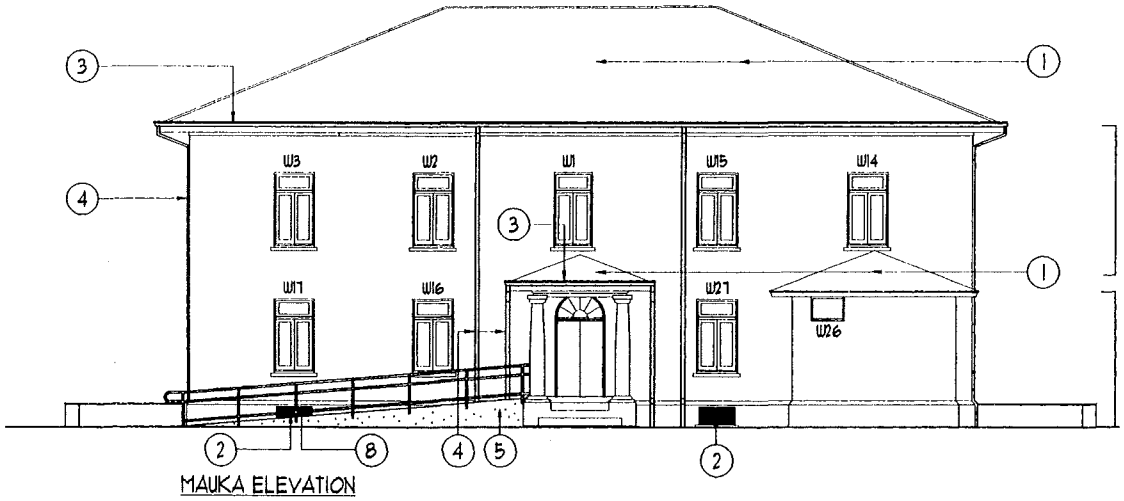
OLD LAHAINA COURTHOUSE

Date: December 1996

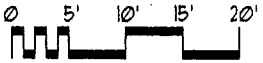
Drawing P5: PROPOSED EXTERIOR ELEVATIONS



KIHEI ELEVATION



MAUKA ELEVATION

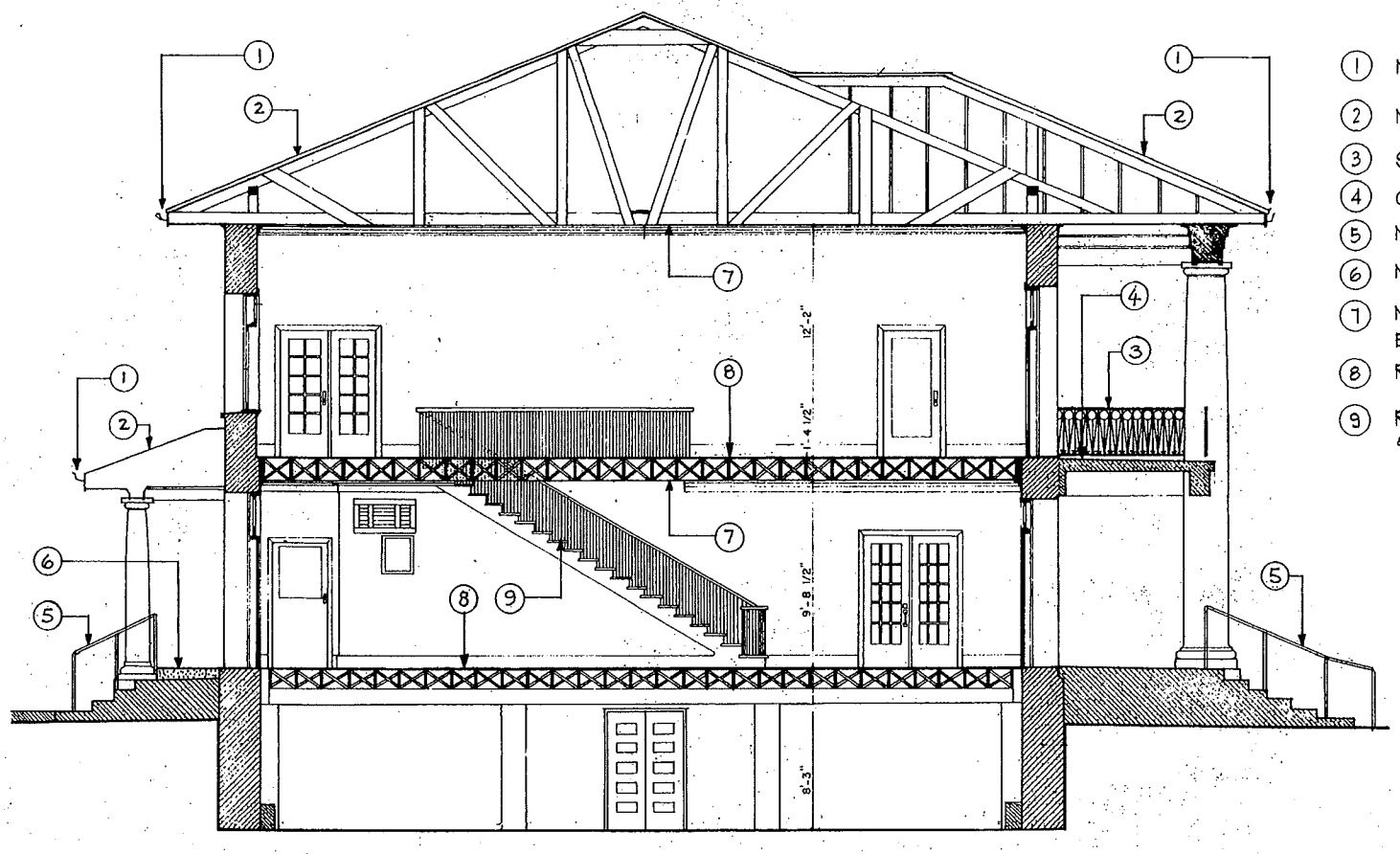


1. NEW MISSION TILE ROOFING.
2. INFILL WINDOW OPENING WITH MASONRY BEHIND EXST.BARS
3. NEW GUTTER
4. NEW 2.5"x4" DOWNSPOUT, TYP.
5. NEW CONCRETE HANDICAP RAMP
6. SANDBLAST AND REPAIR RAIL
7. NEW TRANSOM WINDOW TO MATCH ORIGINAL
8. REMOVE LOOSE PLASTER AND REPAIR LINTEL.
9. NEW RAIL

OLD LAHAINA COURTHOUSE

Date: December 1996

Drawing P6: PROPOSED EXTERIOR ELEVATIONS

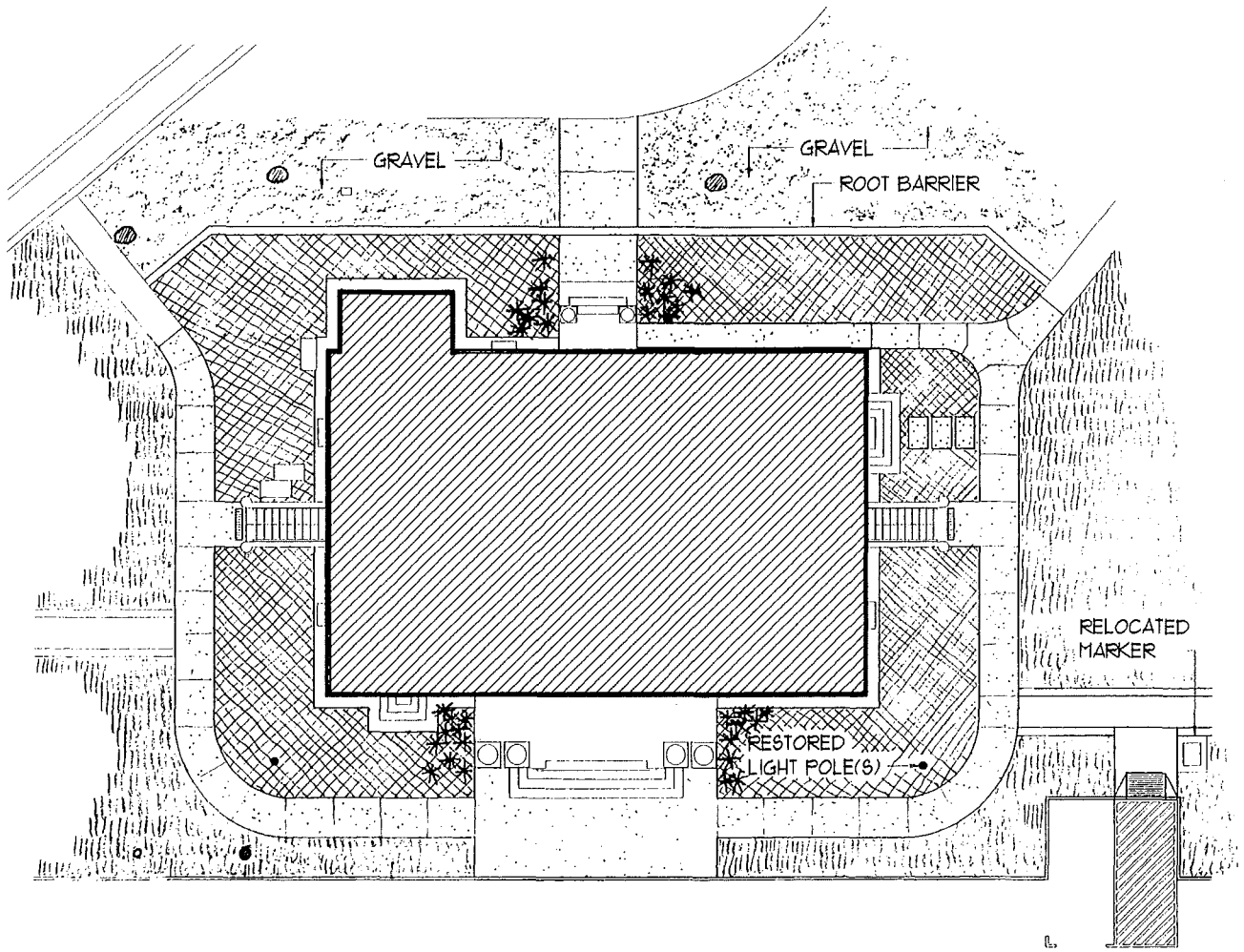


1. NEW MISSION TILE ROOFING
2. NEW GUTTER & DOWNSPOUTS
3. SANDBLAST AND REPAINT RAIL
4. CLEAN AND RESEAL FLOOR
5. NEW HANDRAIL
6. NEW RAISED CONCRETE LANDING
7. NEW PLYWOOD AND GYPSUM BOARD CEILING
8. REPAIR AND REFINISH WOOD FLOOR
9. REPAIR AND REFINISH STAIR & HANDRAIL

0 5' 10'

OLD LAHAINA COURTHOUSE
HISTORIC STRUCTURES REPORT

Drawing P1: PROPOSED SECTION



PLANT SELECTIONS

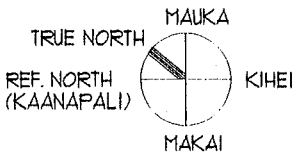
GROUNDCOVERS
AKIA (MOLOKAI OSMANTHUS)
POHUEHUE (BEACH MORNING GLORY)
LAU'AE
ILIMA

ACCENTS

RED TI
COMMON HIBUSCUS

GRASS

MATCH EXISTING



OLD LAHAINA COURTHOUSE
HISTORIC STRUCTURES REPORT

Date: December 1996

Drawing P8: PROPOSED LANDSCAPE PLAN

APPENDIX D

DOOR AND WINDOW SCHEDULES

DOOR SCHEDULE

Door No.	Description and Condition	Repair Recommendations	Hardware Notes
1	Double doors	Strip and refinish	Restore existing hardware
2	Single panel door	Strip and refinish. Reswing door to match original swing	Restore existing hardware
3	Exterior glazed 20 lite, semi-circular segmental fanlight above. (fig.) Paint finishes are in poor condition, paint at interior is peeling.	Repair putty glazing as required, strip and refinish	Replace rusted hinges to match existing
4	Single panel door. Stile has termite damage.	Replace door to match existing.	Reuse existing hardware
5	Single panel door	Strip and refinish	Restore existing hardware
6	Strong room door	Refinish	Crack the lockset combination to make operable
7	Single-panel door	Strip and refinish	Restore latchset
8		Demolish	
9	Existing metal bars	Demolish	
10	Single panel door. This door is currently closed up and built over on the 'jail' room side	Strip and refinish	Refurbish hardware. Install new knobs to match originals
11	Flush door with glass panel	Demolish. Replace with new door to match the doors at D2 and D4	Duplicate original hardware.
12	Exterior double door glazed with 10 lites in each leaf, semi-circular segmental fan light above. Base of the frame at both jambs is termite damaged. There is no threshold.	Repair frames by patching in new wood. Repair putty glazing, repaint	Restore existing hardware
13	Panel door with glass light	Keep, refinish.	See note for doors 15 & 16.
14	Panel door with fan light above.	Keep, refinish.	See note for doors 15 & 16
15, 16	Doors 15 & 16 are exterior double doors glazed with 15 lites in each leaf, each door has half of an ellipsoidal fan light above it.	Repair muntins. Repaint.	Replace hinges with bronze hinges to match existing. Refurbish remaining hardware.
17	No door in this current opening.	Remove shutters. Use lower parts of dutch doors at D26 here and build new upper doors with glass lites to match HABS drawings and other existing doors. Provide new steel security grille as shown in the HABS drawings.	Refurbish existing hardware at D26

18	2 panel door	Remove and save. Replace with new 36-inch wide door to match original 30" door.	Reuse existing hardware.
19	Toilet compartment door	Demolish	
20	2 panel door	Remove and save. Replace with new 36-inch wide door to match original 30" door.	Reuse existing hardware.
21	Toilet compartment door	Demolish	
22	Toilet compartment door	Demolish	
23	Single panel door.	Repaint.	Refurbish original hardware
24	Single panel door.	Repaint	Refurbish original hardware
25	Double doors, glazed with bevelled glass. These are the only doors with bevelled glass lites.	Repair and repaint.	Hardware in good shape
26	Double dutch doors	Remove. See note for D17.	
27		Demolish	
28	Existing steel doors		
29	Door to remain.		Install new hardware of compatible finish to original in building.
30		Demolish	
31		Demolish	
32	Not used.		
33	Double door, 5 panels each leaf. The bottom of the frame is damaged. One of the panels is damaged.	Replace bottom 2 feet of frame on both sides. Replace damaged panel.	Install new hardware to match original to building.
34	Double door, 5 panels each leaf, currently hinged as a bifold. There is rot and termite damage to the bottom panels and to the bottom of the stile and frame at the hinge side.	Replace one leaf. Replace bottom 2 feet of frame.	Install new hardware to match original to building.
35	jail cell door	Relocate to adjacent cell, repaint.	No work.
36	jail cell door	Paint only	No work.
37	jail cell door	Paint only	No work.
38	jail cell door	Paint only	No work.
39		Demolish	
40	flush door	Demolish	
41	flush door	Demolish	

WINDOW SCHEDULE

In general, refurbish all existing window hardware, except catches which shall be new, unless otherwise noted.

Wdw. No.	Description and Condition	Repair Recommendations	Hardware Notes
1		Refinish existing.	
2		Refinish existing.	
3		Replace sashes	
4		Refinish existing.	
5		Refinish existing.	
6		Refinish existing.	
7		Refinish existing.	
8		Refinish existing.	
9		Replace sashes. Reinstall existing transom sash.	New hardware for all sash.
10		Replace sashes. Reinstall existing transom sash.	New hardware for all sash.
11		Replace sashes. Reinstall existing transom sash.	New hardware for all sash.
12		Replace sashes. Reinstall existing transom sash.	Use hardware from window 28.
13		Replace sashes. Reinstall existing transom sash.	Use hardware from window 15.
14		Remove bars. Install new sash.	
15		Remove bars. Reinstall existing transom sash. Fix window in place and block up opening behind.	Salvage hardware for use on window 13.
16		Refinish existing.	
17		Refinish existing.	
18		Refinish existing.	
19		Refinish existing.	
20		Refinish existing.	
21		Refinish existing.	
22		Remove exterior shutters. Install new sashes	Install new hardware.
23		Remove security grille from transom	
24		Remove security grille from transom	
25		Remove security grille from transom	
26		Refinish existing.	
27		Refinish existing.	
28		Fix window in place. Block up opening to hide elevator.	Salvage hardware for use on window 12.

29	Vent opening to basement, with bars.	Block up opening on inside, leave bars.	Not applicable.
30	Vent opening to basement, with bars.	Block up opening on both sides, leave bars.	Not applicable.
31	Vent opening to basement, with bars.	Block up opening on inside, leave bars.	Not applicable.
32	Vent opening to basement, with bars.	Block up opening on inside, leave bars.	Not applicable.
33	Vent opening to basement, with bars.	Block up opening on inside, leave bars.	Not applicable.