DRAFT ENVIRONMENTAL ASSESSMENT

Proposed
West Maui Community
Federal Credit Union

TMK: (2) 4-6-010: 025
Lahaina, Maui, Hawai`i

CHRIS HART & PARTNERS

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Prepared for:
WEST MAUI COMMUNITY FEDERAL CREDIT UNION
349 Lahainaluna Road
LAHAINA, HAWAI`I 96761

July 2010

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I. PROJECT INFORMATION

A. Overview of the Request

The West Maui Community Federal Credit Union (WMCFCU or Credit Union) is proposing to construct a new two-story commercial building on a 23,907 sq. ft. (0.549 acre) site in Lahaina, Maui, Hawai`i. The parcel is owned by the WMCFCU and is located at the southeast corner of Lahainaluna Road and Honoapi`ilani Highway.

The subject property (TMK 4-6-010: 025) is currently undeveloped and contains several large mango trees and a small paved parking area. Access to the site is provided by Alika Place, a "dead end" County road.

In addition to the construction of the new 8,581 sq. ft. building (net floor area), the proposed project will involve minor site work; utility connections, and access, drainage, landscape, and parking improvements.

The estimated cost of constructing the project is approximately $3.5 million, while the anticipated time frame for construction is about 12 to 16 months. The construction of the project will commence after all applicable environmental review and construction approvals have been obtained.

The subject parcel is located in the *State Urban District* and is designated for *Business/Commercial and B-2, Community Business District* uses by the West Maui Community Plan and Maui County zoning, respectively. The property also lies within the Lahaina National Historic Landmark District. **See** Appendix A, Lahaina Historic Districts Map.

Since the proposed project is located in the Lahaina National Historic Landmark District, an Environmental Assessment (EA) has been prepared

pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 11-200, Hawaii Administrative Rules (HAR) for the State Department of Health. The EA describes the project, evaluates the potential impacts the project may have on the environment, public services, and infrastructure, and discusses appropriate measures to minimize harm to the environment. The Maui Planning Department is serving as the approving agency for the environmental review process.

B. Project Profile

District:	Lahaina District, Island of Maui
Tax Map Key:	(2) 4-6-010: 025
Project Name:	Proposed West Maui Community Federal Credit Union
Street Address:	270 Lahainaluna Road
Location:	At the southeast corner of Lahainaluna Road and Honoapi`ilani Highway
Land Area:	23,907 square feet
Land Owner:	West Maui Community Federal Credit Union 349 Lahainaluna Road Lahaina, HI 96761
(Contact):	Michelle Hee, Manager/CEO Phone: (808) 661-4825 Fax: (808) 661-4826
Planning Consultant:	Chris Hart & Partners, Inc. 115 N. Market Street Wailuku, HI 96793
(Contact):	Glenn Tadaki, Land Planner

	Phone: (808) 242-1955 Fax: (808) 242-1956
State Land Use District:	Urban
West Maui Community Plan:	Business/Commercial
Maui County Zoning:	B-2, Community Business District
Flood Insurance Rate Map:	Zone "X", area outside the 0.2% annual chance flood plain
Other Designations:	Lahaina National Historic Landmark District
Existing Land Uses:	Vacant and undeveloped
Proposed Land Use:	A new two-story commercial building with a net floor area of 8,581 sq. ft. is proposed, as well as paved parking areas; a subsurface drainage system; landscape plantings; perimeter fencing; access and driveway improvements; and water, sewer, electrical, telephone, and CATV connections
Access:	Alika Place via Mill Street

C. Chapter 343, HRS Approving Agency

Agency:	Maui Planning Department County of Maui 250 S. High Street Wailuku, HI 96793 Phone: (808) 270-7735 Fax: (808) 270-7634

D. Required Permits and Approvals

The proposed project will require the following permits and approvals prior to the commencement of construction.

1. Community Noise Permit from the State Department of Health, Indoor and Radiological Health Branch (if necessary).

2. National Pollutant Discharge Elimination System (NPDES) Permit from the State Department of Health, Clean Water Branch (if necessary).

3. Finding of No Significant Impact from the Maui Planning Department (for the Final Environmental Assessment).

4. Grubbing, Grading, Building, Driveway, Plumbing, and Electrical Permits from the Maui Department of Public Works (DPW).

5. Approval to Perform Work in the County Right-of-Way from the Maui DPW.

E. Early Consultation

During the early consultation phase for the preparation of the Draft Environmental Assessment (EA), letters requesting written comments about the proposed project were mailed to the following parties on February 3, 2009. Later, on February 11, 2009, early consultation letters were mailed to owners/lessees of parcels within a 500 ft. radius of the subject property. A typical consultation letter, as well as written comments and responses to substantive comments are included in Appendix K, Early Consultation Letters.

CONSULTED PARTIES:

Federal Agencies

1 Department of the Interior, National Park Service

State Agencies

2. Department of Health
3. Office of Hawaiian Affairs
4. Department of Transportation
5. State Historic Preservation Division
6. Department of Land and Natural Resources

County Agencies

7. Fire Department
8. Police Department
9. Department of Planning
10. Department of Public Works

11. Department of Water Supply
12. Department of Environmental Management

Others

13. Maui Electric Company, Ltd.
14. LahainaTown Action Committee

II. DESCRIPTION OF THE PROPERTY AND PROPOSED PROJECT

A. PROPERTY LOCATION

The subject parcel (TMK 4-6-010: 025) is located at the southeast corner of Lahainaluna Road and Honoapiilani Highway and encompasses 23,907 sq. ft. of land area. .**See** Figure 1, Regional Location Map, Figure 2, Parcel Location Map, Figure 3, Site Photographs, and Figure 4, Topographic Survey Map. The parcel is located in the town of Lahaina and is bounded by Lahainaluna Road to the north, a First Assembly of God Church on the east, the David Malo Circle Apartments to the south, and Honoapi`ilani Highway on the west.

B. EXISTING SITE CONDITIONS AND LAND USE

The subject property (TMK 4-6-010: 025) is presently undeveloped and contains several large mango trees and a small paved parking area. The vast majority of the site consists of bare, hard-packed earth covered with sparse patches of weeds. Access to the site is provided by Alika Place, a “dead end" County road. An existing 12-ft. wide sewer easement and a 5-ft. wide water easement cross the center and south end of the parcel on an east-west axis. Site 6660, a boundary or retaining wall, is located in the adjacent State highway right-of-way along Lahainaluna Road (north) and Honoapiilani Highway (west). All land and improvements in the State highway right-of-way fall under the jurisdiction of the State Department of Transportation.

Site 6661, another boundary or retaining wall, lies along the eastern boundary of the subject parcel. Remnants of a parking lot and an old wooden fence lie along a portion of the parcel's southern boundary.

The subject parcel lies in the *State Urban District* and is designated for *Business/Commercial* uses by the West Maui Community Plan. **See** Figure 10, State Land Use Districts and Figure 11, West Maui Community Plan. The property is also zoned for *Community Business* uses by the County of Maui. **See** Figure 12, Maui County Zoning and Appendix B, B-2, Community Business District Zoning.

C. HISTORY OF THE WMCFCU

On January 18, 1938, 18 employees of Pioneer Mill Company, Ltd. (PMCo) petitioned the National Credit Union Administration (NCUA) to allow them to organize a credit union which would provide plantation workers with a way to pool their savings and create a source of credit for loans. The employees received their approval on January 28, 1938 and became a federally-chartered credit union under the name Pioneer Mill Federal Credit Union (PMCFCU). The Credit Union's membership included employees of Pioneer Mill and Lahaina Ice Company, as well as their immediate family members. During that time, the Credit Union was a part-time operation based in the office of the Lahaina Ice Company, which was a PMCo subsidiary.

In 1976, the Credit Union moved to their current site at the corner of Kuhua Street and Lahainaluna Road. By 1978, PMCFCU had over 1,790 members and $6 million in assets and played a vital and increasing role in their members' lives.

In December 1999, PMCo announced the termination of its sugar operations due to low-cost, foreign competition in the global sugar market. Realizing this would eventually lead to its demise, the Credit Union's Board of Directors asked the NCUA to allow them to expand their field of membership to encompass the entire West Maui community and include all persons who live and work in the region, as well as those who attend school and worship in the district. NCUA approval of the charter amendment was granted in July 2000 followed by a change in the Credit Union's name to West Maui Community Federal Credit Union (WMCFCU) in August that year. At that time the Credit Union had $17.9 million in assets and 1,816 members.

Because its present site (at 349 Lahainaluna Road) is zoned for residential use, the Credit Union sought and obtained a Conditional Permit (from the Maui County Council) to continue operations in the R-1, Residential District. The Conditional Permit went into effect on November 9, 2004 through the adoption of Ordinance No. 3224. **See** Appendix C, Ordinance No. 3224 (Conditional Permit). The Conditional Permit is valid for a period of 10 years (until 11/9/14) from the effective date of the Ordinance. Although the Conditional Permit could be extended beyond this 10-year period, the Credit Union plans to complete and occupy its new facility prior to the expiration of the permit.

It has been nine years since the Credit Union opened its membership to the community and the Credit Union now has $7.7 million in net assets and 2,538 members. The WMCFCU has four full-time employees, five Board members, and three Supervisory Committee members. The Credit Union has four

full-time employees and is open on weekdays from 8:00 a.m. to 4:30 p.m. except on holidays.

Over the years, the Credit Union has earned a trustworthy reputation. Most of the Credit Union's members are former PMCo employees who were born and raised in Lahaina. This connection has fostered a close relationship among its members and the Credit Union staff and instilled a strong sense of loyalty and support as the Credit Union has always been there to help them with their needs.

E. DESCRIPTION OF THE PROPOSED PROJECT

1. Background

In August 1998, a change in zoning (from the *R-2, Residential District* to the *B-2, Community Business District*) for TMK parcels 4-6-010: 025, 026, and 032 was granted to Barry L. Brown and David B. Rosen (the land owners) for the proposed development of the Mango Manor Commercial Complex

Since the property is located in the Lahaina National Historic Landmark District (LNHLD), an Environmental Assessment (EA) was prepared for the change in zoning. The publication of the Final EA and Finding of No Significant Impact for the Mango Manor Commercial Complex appeared in the June 23, 1999 edition of the OEQC Bulletin. It should be noted that the rezoning of the property was subject to certain specified conditions including the prohibition of high intensity land uses. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning).

The zoning change was followed by the consolidation of the preceding parcels in 1998 which resulted in the creation of a single 23,907 sq. ft. lot now known as TMK 4-6-010: 025 (the subject parcel).

The land owners then planned to build the Mango Manor Commercial Complex after demolishing the three dwellings that existed on the site at the time (the structures were demolished later in 1999). The two-story commercial complex would consist of three connected buildings with approximately 13,115 sq. ft. under roof. **See** Figure 6, Earlier Conceptual Development Plans. For unknown reasons, the land owners did not develop the Mango Manor Commercial Complex but opted to utilize the site for a gift and craft fair until they ceased operations in November 2006. The land owners subsequently sold the property to the WMCFCU in September 2006.

Since the subject parcel is located in the Lahaina National Historic Landmark District, and because the WMCFCU has no plans to implement the original Mango Manor Commercial Complex, this EA has been prepared to describe the proposed project, evaluate the potential impacts the project may have on the environment, public services, and infrastructure, and discuss appropriate measures to minimize impacts to the environment. It should also be noted that the Maui Planning Department has stated that the proposed project is an acceptable land use and complies with the conditional zoning for the subject property. **See** Appendix D-1, Maui Planning Department Letters.

2. Proposed Improvements

As previously stated, the Conditional Permit for the Credit Union's existing facility at 349 Lahainaluna Road expires on November 9, 2014. In light of this time frame, the

WMCFCU proposes to build a new facility on the subject parcel which will address the current and long-term needs of its membership.

The proposed project is an in-fill development and involves the relocation of the Credit Union's operations to a new site. The WMCFCU has outgrown its existing facility at the corner of Lahainaluna Road and Kuhua Street – the existing building (1,770 sq. ft.) is too small and parking space is inadequate.

Prior to construction, minor site clearing and grading will be undertaken. After this work has been completed, a new two-story commercial building with 8,581 sq. ft. of net floor area will be constructed on the site.

The new building will be air conditioned and measure approximately 73 ft. in length, 76 ft. in width, and 35 ft. in height. The exterior walls of the building will be constructed with 1" x 3" wood battens on 5/16" fiber cement siding over 8" concrete masonry units (CMU). The ground floor of the building will be concrete (slab on grade), while the second floor will have concrete topping over metal decking. Interior walls will be built with 5/8"gypsum boards over 3-5/8" metal studs. A single-ply roofing system (over tapered insulation) will be used for the roof of the building, while corrugated metal roofing (over plywood sheathing) will be utilized for the roof overhang. In addition to a large photo-voltaic skylight on the roof, natural light will be provided through the use of double-glazed, fiberglass windows. **See** Figure 5, Preliminary Development Plans.

The first floor (4,542 sq. ft.) of the new building will house and support the WMCFCU's operations. The second floor (4,039 sq. ft.) may be

used as a future expansion area for the WMCFCU or leased to others as tenant space. Should the second floor be leased to others, the use of this space shall comply with the terms of the Conditional Zoning for the property. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning).

Other proposed improvements include an access driveway with a sliding, electronically-controlled metal gate, a paved parking area, and a subsurface drainage system, as well as landscape plantings, outdoor light standards, and water, sewer, electrical, telephone, and cable television (CATV) connections. The subject property's street frontage along Alika Place will be improved with a curb, gutter, and sidewalk if required by the County of Maui.

The County parking requirement for the *B-2, Community Business District* calls for one parking space for every 500 sq. ft. of a building's floor area, with three stalls required as a minimum. Therefore, a total of 18 parking spaces are required for the proposed project (8,581 SF ÷ 1 space/500 SF = 17.162 or 18 spaces). Because second floor uses are unknown at this time, a conservative parking ratio of one parking space for every 300 square feet of floor area has been used to provide a total of 29 parking spaces (8,581 SF ÷ 1 space/300 SF = 28.603 rounded up to 29 spaces). The total number of parking spaces being provided (29) is more than the number of spaces that are required (18).

Site 6660, the boundary or retaining wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel on the *mauka* side of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. The new wall will extend along the western and southern boundaries of the subject parcel. Remnants of the

parking lot and the old wooden fence lying along a portion of the parcel's southern boundary will be demolished to accommodate the new wall. Site 6661 is the boundary or retaining wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place. **See** Figure 5, Preliminary Development Plans.

Prior to construction, all existing trees will be removed from the site. Native, drought-tolerant plant materials that are being considered for site landscaping include *naio* or *lonomea* for large shrubs/small trees; *ilie`e*, *pohinahina*, *`aukulikuli*, or *nehe* for ground cover; *na`u* or beach *naupaka* for shrubs; *`ulei*, *`ohai*, *`uki`uki* or *alula* for accent planting; *ma`o hau hele*, *ma`o*, or *`akia* for low shrub planting; *kou* or *milo* for parking lot canopy trees, and *a`ali`i* for screen hedge planting. Introduced species include Joannis palms for single-trunk trees and hibiscus for screen hedge planting. **See** Figure 5, Preliminary Development Plans. In addition to being low shrub plantings, landscaping along the Honoapi`ilani Highway and Lahainaluna Road intersection will be regularly maintained so as not to impede vehicle sight distance.

The landscaped areas will be watered by an automatic irrigation system. Lawn areas will be watered using low-volume (sprinkler) spray heads, while ground cover and shrub areas shall utilize drip irrigation or low-volume spray heads. To conserve water use and enhance efficiency, the automatic irrigation system will be equipped with time controllers and rain sensors. The irrigation demand for the proposed project is estimated to be 350 gallons per day (18 gallons per minute).

Appropriate energy and water conservation features will be incorporated into the project. Examples of these types of measures include, but are not limited to, the following: an automatic drip irrigation system with time controller and rain sensors, drought-tolerant landscape plantings, an opaque skylight, energy-efficient lighting and appliances, low-flow plumbing fixtures, fiberglass insulation, double-glazed windows, and extended (roof) eaves to minimize heat gain through windows.

After completion, the first floor of the new commercial building will house the WMCFCU. The building's second floor could be used as a future WMCFCU expansion area or leased to others as tenant space. If leased, the use of this space must comply with the terms of the Conditional Zoning for the property. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning). Although land uses for the second floor cannot be determined at this time, it is anticipated that tenants would have business hours similar to other commercial enterprises.

The estimated construction cost for the project is approximately $3.5 million. The construction of the project is anticipated to commence after all required permits and approvals have been obtained, a process which could take up to eight months. Completion of the project is expected to occur about 12 to 16 months after the start of construction.

The subject parcel lies in the Lahaina National Historic Landmark District but is not located in Lahaina Historic District 1 or 2. Although the land owner is not required to comply with the requirements for Lahaina Historic District 1 or 2, the proposed project is designed to be consistent with the historic district standards for Lahaina including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design*

Guidelines (2003). In doing so, the architectural style and character which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment.

F. ALTERNATIVES

1. No Action

Analysis. Under this alternative, the present physical condition of the site would be maintained. The "no action" alternative is not a viable option and was dropped from consideration.

2. Deferred Action Alternative

Analysis. This option would have a similar effect as the "no action" alternative in that the development of the project would be deferred until some point in the future. However, future market conditions can potentially affect the implementation of a project depending on the state of the local economy. For example, an economic recession, high interest loan rates, and marked increases in material and labor costs would affect the feasibility and timing for the development of a project. The "deferred action" alternative was dropped from consideration due to the window of opportunity which is provided by current market conditions and the land owner's desire to utilize the property for its highest and best use.

3. Alternative Development Plans

Analysis. The preliminary plans for the Mango Manor Commercial Complex called for a two-story structure with three (3) interconnected buildings containing 13,115 sq. ft. of total floor area which would be

leased to businesses for use as retail or office space. **See** Figure 6, Earlier Conceptual Development Plans.

The plans, however, do not comport with the needs of the WMCFCU. As such, the planning process for the proposed WMCFCU building considered existing topography, soils, drainage patterns, and infrastructure. Spatial relationships and adjacencies; infrastructure requirements; lot size and shape; building height and setbacks; and engineering requirements for access and utilities were examined during this process as well. While there are other plans that could be examined, the preliminary development plans for the proposed project adequately addresses the land owner's desire for a project that meets their needs and is balanced, functional, well designed, and complies with development standards.

4. Alternative Land Uses

Analysis. While it may be possible for the land owner to seek community plan and zoning reclassifications for higher or different levels of land use such as light industrial or hotel, such a change would change the fabric of the community and surrounding area and was not deemed feasible by the land owner.

III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

Existing Conditions. The subject property is situated in the town of Lahaina at the southeast corner of Lahainaluna Road and Honoapi`ilani Highway. While the site is located in the Lahaina National Historic Landmark District, , it does not lie within the limits of Lahaina's Historic Districts 1 and 2 (**See** Appendix A, Lahaina Historic Districts Map), which are regulated by Article III of the Maui County Code (*Maui County Historic Districts*).

Best known for its plantation past and whaling heritage, the town's compact scale is conducive to bicycle and pedestrian traffic. Lahaina is the civic and commercial core of the West Maui region and is host to various business, hotel, light industrial and public/quasi-public activities, as well as single- and multi-family residential uses. The town's significant features – its historic character and small-town atmosphere are embodied along Front Street and contribute to its sense of place.

Properties in the immediate vicinity of the subject parcel reflect a mixture of business, residential, and heavy industrial land uses.

North: across Lahainaluna Road (a gas station and former Pioneer Mill site)

East: adjacent parcel (First of Assembly of God Church)

South: adjacent parcel (David Malo Circle Apartments)

West: across Honoapi`ilani Highway (various businesses)

Potential Impacts and Mitigation Measures. The subject property is zoned *for B-2, Community Business District* uses subject to certain specified conditions. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning). The Maui Planning Department has indicated that the proposed project complies with the conditional zoning for the subject property and is an acceptable land use. **See** Appendix D-1, Maui Planning Department Letters.

The proposed project will not adversely impact land uses in the surrounding area nor will it have a significant effect upon public services and infrastructure. In the context of the West Maui Community Plan, which guides future growth and development in the region, the proposed project is consistent with existing land uses in the area. From a long-term perspective, the proposed project will not adversely impact neighboring land uses, as the existing character of the surrounding area will be maintained.

2. Topography and Soils

Existing Conditions. The subject property is relatively level with onsite elevations ranging from approximately 26 feet to 25 feet above mean sea level (amsl) along its eastern and western extent. The parcel slopes approximately one percent in *mauka* to *makai* direction. With the exception of several large mango trees and a small paved parking area, the vast majority of the site is hard-packed ground covered with sparse patches of weeds.

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, April 1972*, prepared by the United States Department of Agriculture, the soil associated with the subject

property is Ewa silty clay loam (EaA), 0 to 3 percent slopes. **See** Figure 7, Soil Classifications. This soil is from the Ewa Series which consists of well-drained soils in basins and on alluvial fans on the islands of Maui and Oahu. Runoff is very slow, and the erosion hazard is no more than slight. This soil is used for sugar cane and home sites.

According to a 1992 re-evaluation by the United States Geological Service, the seismic hazard for Maui County is classified as Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.

Potential Impacts and Mitigation Measures. Due to its flat topography, site work will be minimal. Modifications to the existing landform will unavoidably occur due to the construction of the proposed improvements. These alterations, however, are not expected to have a significant impact. To the extent possible, earthwork will be kept to a minimum and cut and fill quantities will be balanced to reduce site work costs and maintain the existing drainage pattern.

If warranted, a National Pollutant Discharge Elimination System (NPDES) Permit will be obtained from the State Department of Health, Clean Water Branch for the discharge of storm water associated with construction activities such as clearing, grading, and excavation.

Best Management Practices (BMPs) will be implemented during construction activities to control fugitive dust, soil erosion, storm water runoff, and non-point source pollution. The BMPs will be prepared in accordance with Chapter 20.08, Maui County Code (*Soil Erosion and Sedimentation Control*).

3. Flood and Tsunami Hazards

Existing Conditions. The flood insurance rate map (Panel Number . 150003/0362E, September 25, 2009) prepared by the Federal Emergency Management Agency, reveals that the subject parcel is located in Zone "X", an area determined to be outside the 0.2% annual chance flood plain (i.e., a low risk flood hazard area). **See** Figure 8, Flood Hazard Areas. Within the town of Lahaina, the Civil Defense evacuation map identifies Waine`e Street and Honoapi`ilani Highway as the *mauka* boundary for areas requiring tsunami evacuation. Because of its location *mauka* of Waine`e Street and between Kenui Street and Shaw Street, the subject parcel does not lie in an area which is subject to tsunami evacuation. **See** Figure 9, Tsunami Evacuation Areas.

Potential Impacts and Mitigation Measures. The subject parcel lies in a low risk flood hazard area and is situated well beyond the *mauka* boundary of the tsunami evacuation zone. The proposed project will not alter any parameters for defining flood hazard areas or tsunami evacuation zones nor will it contribute toward inland or coastal flooding or impact downstream and adjacent properties.

4. Flora and Fauna

Existing Conditions. The subject parcel is mostly level and slopes about 0.001 percent in an easterly to westerly direction. There are no important or critical wildlife habitats such as ponds, streams or wetlands located on the site. Due to its urban location and development, the subject property does not provide a natural habitat for rare, threatened or endangered species of flora and fauna. Plant life on the subject property is minimal and consists of scattered patches of grass and weeds. Avifauna that is typically found in the area

includes the common myna, several species of dove, cardinal, house finch, and house sparrow. Mammals common to this area include cats, dogs, rats, mice, and mongoose.

Potential Impacts and Mitigation Measures. The proposed project will not have an adverse impact upon plant and animal life. There are no known rare, threatened, or endangered species of flora or fauna on the site neither are there any species that are candidates for Federal listing nor any important wildlife habitats such as ponds, streams, or wetlands. As such, the proposed project will not have a significant impact upon plant and animal life.

5. Noise Characteristics

Existing Conditions. The level of ambient noise is an important indicator of environmental quality. In an urban setting, industrial and construction activities, as well as aircraft and automotive traffic can result in adverse noise impacts. In a rural environment, traffic noise, surrounding land uses, and construction activities can impact noise levels based on their proximity to noise-sensitive receptors. Chronically high noise levels can impact personal health and the ambience and aesthetic appeal of an area. Noise in the project area is attributable to traffic on surrounding roads.

Potential Impacts and Mitigation Measures. During the short-term, ambient noise levels will temporarily increase during construction of the project. Noise from construction vehicles and equipment, such as tractor-trailers, front-end loaders, excavators, bulldozers, dump trucks, graders, generators, jackhammers, and power tools would be the dominant source of noise during the construction phase.

To minimize noise impacts during the construction of the project, the land owner will limit construction to normal daylight hours. According to Chapter 11-46, HAR (*Community Noise Control*), the maximum permissible sound level for construction activities in areas zoned for multi-family, apartment, business, commercial, hotel, resort, or similar type uses is (60 dBA). Should construction noise exceed this threshold, a Community Noise Permit will be obtained from the State Department of Health (DOH) DOH in accordance with the applicable provisions of Chapter 11-46, HAR.

In the long-term, noise from business/commercial activities on the site is not expected to have an adverse impact on ambient noise levels. In addition, no adverse traffic-related noise impacts are anticipated.

6. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power-generating plants). Generally, the impact of a development upon air quality depends upon the type of project (e.g., residential, commercial, industrial) and its stage of progress (e.g., site preparation, infrastructure development, building construction).

The air quality in the West Maui is relatively good. Non-point source vehicle emissions do not generate a significant or high concentration of pollutants, as prevailing winds help to disperse emissions quickly. The West Maui region is currently in attainment of all Federal and State air quality standards.

Potential Impacts and Mitigation Measures. Minimal grading will be required for the project. As necessary, dust control measures that comply with the provisions of Chapter 11-60.1, HAR (*Pollution Control)* and Section 11-60.1-33, HAR (*Fugitive Dust)*, will be implemented during construction to minimize the effects of fugitive dust. Examples of such measures include but are not limited to the following:

- Ensure that an adequate source of water is available for dust control before the start of construction.
- Use dust fences, water sprinklers, and water wagons to prevent airborne dust from leaving the site.
- Temporarily cover exposed areas with plastic sheeting material.
- Phase site work to limit the exposure of bare areas and leave existing vegetation in place for as long as possible prior to clearing.
- Place soil stockpiles away from adjacent properties and cover the stockpiles with plastic sheeting or similar material when not in use.
- Limit the areas of disturbance and hydro-mulch or grass finished areas on a timely basis.
- Water loose soil until damp and spray water during grading to control airborne dust.
- Control dust from shoulders, project entrances and other access roads by temporarily covering these areas with crushed rock.
- Use dust control measures during weekends, after hours and prior to daily start-up of construction activities.
- After completion of site work, replant exposed areas with grass or ground cover as soon as possible.

If feasible, non-potable water will be used for dust control purposes during construction activities.

From a long-term perspective, the proposed project will not generate adverse air quality impacts after build out. Vehicle exhaust attributable to business-related traffic is not expected to have an adverse effect upon air quality.

7. Archaeological / Historical Resources

Existing Conditions. The subject property is located in the Lahaina National Historic Landmark District. The site does not fall within the limits of Lahaina's Historic Districts 1 and 2, which have special standards that govern building design and uses. **See** Appendix A, Lahaina Historic Districts Map.

There are two historic (over 50 years old) boundary or retaining walls in the project area. Both walls have a probable age of Post-contact Historic. **See** Appendix F, Cultural Impact Assessment.

Site 6660, a single-feature rock wall, is located in the adjacent State highway right-of-way along Lahainaluna Road (on the north) and Honoapiilani Highway (on the west). All land and improvements within the State highway right-of-way (including Site 6660) fall under the jurisdiction of the State Department of Transportation. Site 6660 is approximately 131 feet long, 17 inches wide, and 24 to 49 inches high. The wall is in fair to good condition and has been repaired numerous times over the years. Along the Honoapiilani Highway right-of-way, the wall is only 24 inches high on the interior. Stone steps are built into the portion of the wall along the Lahainaluna Road.

Site 6661 is another single-feature rock wall. This wall is located along the eastern boundary of the subject parcel. Site 6661 is about 197 feet long, 25 inches wide, and 22 inches high. The wall is in fair to poor condition and has been repaired many times, while other areas area

collapsed. There is an opening built into the wall which may have been a driveway at some point.

In correspondence dated April 24, 2009, the State Historic Preservation Division (SHPD) has determined that given the nature of the proposed project, "*anything other than precautionary archaeological monitoring during ground-altering disturbance would be impractical*". In addition, the SHPD recommended that a qualified archaeological monitor be present during all ground-altering activities to document any inadvertent finds and to provide mitigation measures if necessary. **See** SHPD Letters in Appendix K, Early Consultation Letters.

Potential Impacts and Mitigation Measures. Site 6660, the rock wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel *mauka* of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. Site 6661 is the rock wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place.

In accordance with the SHPD's recommendation, an archaeological monitoring plan (AMP) was prepared for the propose project and submitted to the SHPD for their review and approval. **See** Appendix E, Archaeological Monitoring Plan.

As noted in the AMP, one archaeological monitor shall be present on the site (at all times) for each piece of major earth-moving equipment that is in use in sandy or other culturally sensitive locations. The

archaeologist will explain monitoring procedures to all pertinent parties and shall have the authority to stop work in the vicinity of a find until it has been evaluated by the SHPD and appropriate mitigation measures have been determined. In the event human remains are inadvertently unearthed, the SHPD and the Maui/Lana`i Islands Burial Council will be promptly notified and procedures for the treatment of the remains will be implemented in accordance with Chapter 6E, Hawaii Revised Statutes (*Historic Preservation*). A report documenting the findings of the monitoring work shall be prepared and submitted to the SHPD for review with 180 days from the completion of the project.

In its letter dated July 8, 2009, the monitoring plan was accepted by the SHPD. **See** Appendix E-1, SHPD Approval Letter. In light of the foregoing, the proposed project is not expected to result in adverse impacts to archaeological and historical resources.

8. Cultural Resources

Existing Conditions. Because the proposed action triggers an environmental assessment, a cultural impact assessment (CIA) has been prepared to assess the effects of the proposed action on cultural practices of the community and State.

The CIA was prepared in accordance with the methodology and content protocol set forth by the State Office of Environmental Quality Control in their "Guidelines for Assessing Cultural Impacts". The preparation of the CIA involved archival and documentary research, as well as consultation with government agencies, community organizations, and individuals having knowledge of the project area and its cultural resources, practices, and beliefs. For example, the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs, and Na

Kupuna of Maui were contacted and provided assistance and recommendations for the CIA. Persons with cultural knowledge of the project area were contacted and their interviews are included in the CIA. **See** Appendix F, Cultural Impact Assessment.

The CIA indicates that the subject parcel and surrounding area have been heavily impacted by plantation-era activities during the 19th and 20th centuries. If traditional Hawaiian cultural sites were present prior to the Plantation Era, they were either destroyed or buried by previous ground-altering activities. The historic dwellings (over 50 years old) that were located on the subject parcel were demolished by a former land owner in 1999.

The CIA also notes that ancient Hawaiian or subsurface historical habitation or agricultural sites could lie beneath (underground) the subject parcel. However, the likelihood of finding intact portions of cultural deposits is lessened as the subject parcel may have been filled in during the early to mid-1900s. Because the subject parcel was also used during the post-contact period, cultural deposits such as refuse pits and other features associated with residential or commercial activities could be found.

As previously noted, there are two historic (over 50 years old) boundary or retaining walls in the project area. Both walls have a probable age of Post-contact Historic. Site 6660 is a single-feature rock wall located in the adjacent State highway right-of-way, while Site 6661, another rock wall, is located along the eastern boundary of the subject parcel.

Potential Impacts and Mitigation Measures. Given its location in the Lahaina National Historic Landmark District, the State Historic

Preservation Division (SHPD) recommended precautionary archaeological monitoring during construction of the project. The archaeological monitoring plan (AMP) for the proposed project has been accepted by the SHPD and will cover all onsite and offsite construction work associated with the project. **See** Appendix E-1, SHPD Approval Letter.

Site 6660, the rock wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel *mauka* of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. Site 6661 is the rock wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place.

Based on the findings of the CIA, there are no specific traditional Hawaiian cultural uses associated with the subject parcel nor were those interviewed aware of any specific cultural uses. No known or traditional beach and mountain access trails were observed on the subject parcel nor did the CIA find any such features.

In light of the foregoing, the proposed action is not expected to have an adverse impact upon traditional cultural beliefs, practices, and resources.

9. Scenic Resources

Existing Conditions. In the Lahaina area, views of the Pacific Ocean, Lana`i, Moloka`i, and the West Maui Mountains can seen from various

sections of Honoapi`ilani Highway. **See:** Appendix G, Scenic Resources Map.

There are no significant natural or scenic features and resources associated with the subject property. The parcel contains several large mango trees which will be removed prior to the start of construction. The vast majority of the site consists of bare, hard-packed earth covered with sparse patches of weeds. Access to the site is provided by Alika Place, a "dead end" County road. In addition, due to its location and distance from the shoreline, the subject parcel does not provide for any scenic *mauka* or *makai* views.

Potential Impacts and Mitigation Measures. The subject property is not located within a scenic view corridor nor does it possess any natural or scenic features and resources. While the existing streetscape will be modified by the proposed project, the project will not have an adverse or significant impact upon *mauka* and *makai* facing views from Honoapi`ilani Highway.

Although the subject parcel is not located in Lahaina Historic District 1 or 2, the proposed project is designed to be consistent with the historic district standards for Lahaina including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design Guidelines (2003)*. In doing so, the architectural style and character which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment.

The proposed two-story commercial building will be 35 feet in height which is considerably less than the six-story height limit allowed by *B-2, Community Business District* zoning and complies with the *Urban Design* standards set forth by the West Maui Community Plan for

buildings in the Lahaina Historic District. After maturing, landscape plantings will help integrate the new building with its surroundings.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions. The island of Maui experienced relatively strong population growth during the past decade with the 2000 resident population reaching 117,644, a 29 percent increase over the 1990 population of 91,361. Population growth is expected to continue as the resident population for the year 2020 is projected to reach 160,090, an increase of 36 percent (SMS Research and Marketing Services, Inc., June 2002).

From 1990 to 2000, the West Maui region experienced a similar growth rate as evidenced by a 23 percent increase in its resident population. During this period, the population increased from 14,574 in 1990 to 17,967 in 2000. For the year 2020, the resident population in the region is projected to increase to 25,431, a 41 percent gain over the 2000 population (SMS Research and Marketing Services, Inc., June 2002).

Potential Impacts and Mitigation Measures. The proposed project does not include a housing component nor will it generate a new or secondary demand for housing or result in an increase in population.

2. Economy

Existing Conditions. The visitor industry is a major component of the island's economy and the dominant economic force in the West Maui region. Visitor accommodations and facilities are situated in the

town of Lahaina and the outlying areas of Kaanapali, Honokowai, Kahana, Napili, and Kapalua. The Kaanapali and Kapalua Resorts are popular visitor destinations in West Maui, while the historic town of Lahaina is the visitor, civic, commercial, and residential center of the region.

Since Maui Pineapple Company shut down its operations at the end of 2009, agriculture plays a less significant role in the region's economy. Small-scale diversified agriculture (e.g., coffee, seed corn) occurs on lands *mauka* of Honoapi`ilani Highway in the area between Kaanapali and Honokowai.

The unemployment rate for the island of Maui grew from 7.7 percent in February 2009 to 8.4 percent in February 2010, an increase of 0.7 percent. During the same period, the unemployment rate for Maui County increased from 7.8 percent to 8.5 percent (State Department of Labor and Industrial Relations, April 2010).

Potential Impacts and Mitigation Measures. On a short-term basis, the construction of the proposed project will support the economy via direct and indirect construction-related employment, as well as through the purchase of construction materials and building-related services.

In the long term, the WMCFCU will help support the local economy by providing its members with a means of pooling their savings and creating a source of credit for loans. In addition, WMCFCU employees and any future tenants of the commercial building will contribute to the economy through the payment of income, sales, and property taxes and the purchase and sales of goods and services.

C. PUBLIC SERVICES AND FACILITIES

1. Recreational Facilities

Existing Conditions. The Maui Department of Parks and Recreation (DPR) operates and maintains a total of 19 parks in the West Maui region, as well as several community recreational facilities such as the Lahaina Civic Center, Lahaina Aquatic Center, and the Lahaina Recreation Center. In addition, privately-owned golf courses and tennis courts in the Kaanapali and Kapalua Resorts are open to the public.

***Potential Impacts and Mitigation* Measures.** The proposed project will not have a significant impact upon recreational facilities nor will it trigger any County requirements for park dedication or assessment fees pursuant to Section 18.16.320, Maui County Code (*Parks and Playgrounds*).

2. Police and Fire Protection

Existing Conditions. The Maui Police Department is responsible for the preservation of the public peace, prevention of crime, and protection of life and property. Headquartered at the Lahaina Civic Center, the departments' Lahaina Patrol District is one of six such districts in Maui County. In addition to regular patrol duties, the Lahaina Patrol District has programs for a bike detail, citizen's patrol, parks patrol officer, school resource officer, parking enforcement officer, and visitor- and community-oriented policing. The district also has its own criminal investigation division.

The mandate of the Maui Department of Fire and Public Safety is to protect life, property, and the environment from fires, hazardous material releases and other life-threatening emergencies. The department has 14 stations throughout the County including ten

stations on the island of Maui. In West Maui, the department has two stations, one in Napili and another at the Lahaina Civic Center.

Potential Impacts and Mitigation Measures. From a long-term perspective, the proposed project will not impact the current service area limits for police and fire protection. Fire flow requirements for the project will comply with County fire code standards.

3. Schools

Existing Conditions. The State Department of Education (DOE) is responsible for several public schools in the West Maui area. Located in the town of Lahaina, these schools include King Kamehameha III Elementary School, Princess Nahienaena Elementary School, Lahaina Intermediate School, and Lahainaluna High School.

Potential Impacts and Mitigation Measures. The proposed project is not a population generator and will not impact existing educational facilities, programs, and services.

4. Medical Facilities

Existing Conditions. Located in Wailuku, the approximately 200-bed Maui Memorial Medical Center provides acute and emergency health care services for the County of Maui. Various private care physicians and clinics in the West Maui region also provide medical care and out patient services. In addition, American Medical Response (AMR) provides 24-hour emergency medical service through ten ambulance facilities stationed throughout the County, including eight facilities on the island of Maui. Of the two ambulance facilities located in West Maui, one facility is situated in Lahaina, while the other facility is located in Napili.

Potential Impacts and Mitigation Measures. The proposed project is will not generate a demand for new or additional health care facilities or services or have an adverse impact upon existing medical facilities and emergency medical response.

5. Solid Waste

Existing Conditions. The Solid Waste Division of the Maui Department of Environmental Management is responsible for the collection and disposal of single-family residential refuse on the island of Maui. County landfills located in Hana, Central Maui, Lanai, and Molokai accepts residential and commercial solid waste for disposal. In addition to the disposal of solid waste, the Central Maui Landfill, which is located near Pu`unene, contains recycling, and composting facilities and also accepts green waste and used motor oil. In the Lahaina area, a solid waste transfer station at Olowalu receives self-hauled residential refuse for transfer to the Central Maui Landfill. The Maui Demolition and Construction Landfill, a commercial facility near Ma`alaea, accepts construction and demolition waste for disposal.

Potential Impacts and Mitigation Measures. During the construction of the proposed project, cleared vegetation will be transported to the County's green waste recycling facility at the Central Maui Landfill for disposal. Construction waste will be hauled to the Maui Demolition and Construction Landfill for disposal.

After build out, a private waste disposal service will handle general refuse collection and disposal. Procedures for the long-term disposition of recyclable materials will be evaluated by the land owner for implementation if feasible. From a long-range perspective, waste generated by the proposed project is not expected to have an adverse effect upon solid waste collection and disposal services and facilities.

D. INFRASTRUCTURE

1. Water

Existing Conditions. The Maui Department of Water Supply (DWS) provides public water service for the West Maui region. In addition to the County, private water utilities such as the Kapalua Water Company and the Hawaii Water Service Company provide domestic water service for the Kapalua Resort and Kaanapali Resort, respectively.

In addition to a well near Lahainaluna High School, potable water for Lahaina is provided by the Alaeloa System which conveys water into town via a 16-inch transmission line.

The existing County water system in the project area includes a 12-inch water line along the highway, an 8-inch water line along Lahainaluna Road, and a 3-inch water line that lies within a 5-foot wide easement on the subject parcel. Water service for the site is provided by two existing 5/8-inch water meters at the end of Alika Place which connect to the existing 3-inch water line.

Fire hydrants located closest to the site include Fire Hydrant No. 5 on Lahainaluna Road and Fire Hydrant No. 22 which is located at the intersection of Mill Street and Alika Place. Both hydrants are approximately 200 feet from the project site. **See** Appendix H, Preliminary Engineering Report & Drainage Report.

Potential Impacts and Mitigation Measures. The anticipated water demands for the proposed project are 25 gallons per minute (gpm) for domestic use and 1,250 gpm for fire flow purposes. The domestic demand was based on the use of low-flow plumbing fixtures, while fire flow was determined by using guidelines set forth in the

Guide for Determination of Required Fire flow (1974. The estimated irrigation water demand for the proposed project is approximately 18 gpm. **See** Appendix H, Preliminary Engineering & Drainage Report.

The proposed project will require upgrading the two existing 5/8-inch water meters to meet the total estimated water demand of 43 gpm (25 gpm + 18 gpm = 43 gpm). Both existing water meters have a combined rated capacity of 40 gpm and cannot meet the projected demand. As such, it is proposed that the existing meters be replaced by a 1-inch water meter with a rated capacity of 50 gpm.

It is recommended that a separate irrigation water meter be considered during the construction drawings phase of the project. The estimated domestic water demand of 25 gpm could be handled by an existing ¾-inch water meter while the other ¾-inch meter could be used for irrigation purposes if the irrigation flow were reduced to 15 gpm. By providing a separate water meter for irrigation purposes, irrigation usage would be excluded in the calculation of bi-monthly sewer fees.

Both Fire Hydrant No. 5 (Lahainaluna Road) and Fire Hydrant No. 22 (Mill Street) connect to the existing 8-inch water line on Lahainaluna Road and can provide the required 1,250 gpm fire flow for the proposed project. Both hydrants are approximately 200 feet away from the subject parcel. An additional fire hydrant could be installed along the Lahainaluna Road if the DWS and Fire Prevention Bureau require a fire hydrant to be installed closer to the project site.

Domestic, irrigation, and fire flow calculations will be submitted to the DWS and Fire Prevention Bureau during the building permit application review and approval process.

Water conservation measures will be utilized for the proposed project. Examples of such measures include, but are not limited to the following: automatic drip and sprinkler irrigation systems with time controllers and rain sensors, drought-tolerant landscape plantings, and low-flow plumbing fixtures.

2. Wastewater

Existing Conditions. The County of Maui operates and maintains a public sewer system that serves the developed areas of West Maui.

The collection, transmission, treatment, and disposal of the sewage fall under the jurisdiction of the Wastewater Reclamation Division (WWRD), a branch of the Maui Department of Environmental Management. The WWRD operates a network of sewer lines and pump stations that conveys sewage to the Lahaina Wastewater Reclamation Facility (LWRF) at Honokowai for treatment and disposal. R-1 effluent, a by-product of the facility's treatment process, is used for golf course irrigation at the Kaanapali Resort.

Existing gravity sewer lines serve the subject parcel and surrounding area. A private 12-inch sewer line traverses the middle of the site via a 12-foot wide easement. The 12-inch line serves the *mauka* properties in the vicinity and formerly served the homes that were located on the site. An existing 8-inch sewer line on the *mauka* side of Honoapi`ilani Highway connects to the existing 12-inch sewer line. The 12-inch sewer line also connects to an existing 21-inch sewer line located on the *makai* side of Honoapi`ilani Highway. The 21-inch line is part of the Lahaina sewer system that transports wastewater flows to the LWRF which is located about 5 miles to the north of the project site. **See** Appendix H, Preliminary Engineering & Drainage Report.

Potential Impacts and Mitigation Measures. Preliminary average sewage flow is estimated to be 970 gallons per day (gpd). The onsite sewer system for the proposed project will connect to the existing 8-inch sewer line serving the subject parcel. In accordance with WWRD standards, a new service manhole will be installed at the property line. **See** Appendix H, Preliminary Engineering & Drainage Report.

The land owner acknowledges that sewer assessment fees may be required for treatment plant expansion costs and for funding (on a pro-rata basis) any necessary offsite improvements to the collection system and pump stations.

Wastewater contribution calculations will be submitted to the WWRD as part of the building permit application review and approval process. The proposed project is not expected to have an adverse impact upon County wastewater collection systems and treatment facilities.

3. Drainage

Existing Conditions. Ground elevations on the subject parcel range from approximately 26 feet to 25 feet above mean sea level (amsl). With a downward slope of about one percent, storm water runoff basically flows in a *mauka* to *makai* direction.

With the exception of several large mango trees and a small paved parking area, the vast majority of the site is hard-packed ground covered with sparse patches of weeds. Surface runoff collects and ponds to a depth of two feet (at its deepest point) on the project site and then flows along the *mauka* side of Honoapi`ilani Highway before entering a drainage culvert about 120 feet south of the site. A 24-inch culvert then transports the runoff beneath the highway. **See** Appendix H, Preliminary Engineering & Drainage Report.

The criterion used for hydrologic calculations is from the *Rules for the Design of Storm Drainage Facilities in the County of Maui*. Based on these standards, the 10-year, 1-hour storm is used for determining the rate of surface runoff, while the 50-year, 1-hour storm is used for designing drainage culverts and subsurface retention basins. The rate of runoff is measured in cubic feet per second (cfs), while the volume of runoff is measured in terms of cubic feet (cf).

Based on preliminary drainage calculations, the proposed project could generate the following 1-hour storm water discharges:

10-yr. runoff peak rate	
Existing Condition:	0.6 cfs
Developed Condition:	1.8 cfs
Amount of Increase:	1.2 cfs
50-yr. runoff peak rate	
Existing Condition:	0.8 cfs
Developed Condition:	2.2 cfs
Amount of Increase:	1.4 cfs
50-yr. runoff volume	
Existing Condition:	1,494 cf
Developed Condition:	3,636 cf
Amount of Increase:	2,142 cf

Maui County drainage standards allow the additional runoff generated by a project to be retained on site when there is no existing drainage system or if there is no adequate outlet to connect to a project's drainage system.

Potential Impacts and Mitigation Measures. The drainage system for the proposed project will consist of subsurface retention basins to impound the increase in runoff volume that will be generated by the proposed project. The storage capacity of the retention basins must be equal to the runoff volume increase of a 50-year, 1-hour storm as

required by County drainage standards. To ensure that proposed project will not result in any adverse drainage impacts, the retention basins will be sized to retain more than the runoff volume increase of 2,142 cf. **See** Appendix H, Preliminary Engineering & Drainage Report.

Preliminarily, the retention basins will consist of 68.5 linear feet of three (3) lengths of 42-inch perforated pipes that are placed within a crushed rock envelope. The retention basins will have a combined storage capacity of 2,740 cf which is approximately 600 cf greater than the 2,142 cf runoff volume increase of the 50-year, 1-hour storm.

The proposed drainage system will also provide grated drain inlets to collect onsite runoff, non-perforated pipes to convey the runoff to the retention basins, and drain manholes.

As previously noted, the combined storage capacity of the retention basins will significantly exceed the runoff volume increase of the 50-year, 1-hour storm thereby reducing the present amount of runoff to downstream properties. Based on the 50-year, 1-hour storm, the existing runoff volume of 1,494 cf will drop to 896 cf, a decrease of 40 percent.

The reduction in the overall volume of runoff is illustrated by the following:

New Volume to Downstream Properties

3,636 cf (post-development runoff volume)
– 2,740 cf (total capacity of the retention basins)
896 cf

Volume Reduction

1,494 cf (existing volume)
– 896 cf (new volume)
598 cf

Percentage of Volume Reduction
598 cf ÷ 1,494 cf = 40 percent

The retention basins will also have the effect of reducing the potential of sediment-laden runoff from entering neighboring properties and the ocean. During high intensity storms, water will pond in the parking area and in some areas around the building. If overflow occurs, storm water will flow southward to the existing 24-inch culvert along the highway.

The proposed drainage system will be designed in accordance with the *Rules for the Design of Storm Drainage Facilities in the County of Maui*. In accordance with Chapter 20.08, Maui County Code (*Soil Erosion and Sedimentation Control*), an erosion control plan and a drainage plan and report will be submitted to the Maui Department of Public Works for review and approval prior to the issuance of grubbing and grading permits for the proposed project.

The land owner will be responsible for the operation and maintenance of the onsite drainage system. Guidelines for the operation and maintenance of the drainage system include, but are not limited to, the following.

- Inspect the drainage system on an annual basis and after major storms. Repair any damage and remove debris from grated drain inlets to allow unimpeded flow.
- Periodically inspect the drainage system. Remove debris and sediment build up as necessary especially inside grated drain inlets upstream of the subsurface retention basins.
- Prevent grass and landscape cuttings from entering the drainage system as they could cause blockages.
- Clean all parking areas as often as possible in order to keep debris and sediments from entering the drainage system.

- Keep lawns and landscaping in healthy condition to prevent soil erosion and reduce the possibility of sediments entering the drainage system.

Although post-development runoff will increase due to the addition of impervious surfaces such as roof areas, asphalt pavement, and concrete walkways, the proposed project is not expected to have an adverse impact on downstream properties and drainage facilities.

In light of the foregoing, the proposed project is not expected to have an adverse effect on adjacent and downstream properties.

4. Roadways

Existing Conditions. Honoapi`ilani is the only arterial roadway linking West Maui and Central Maui and falls under the jurisdiction of the State Department of Transportation (DOT). In West Maui, the highway generally follows a coastal alignment and is configured as a two-lane facility except for a four-lane segment between Lahaina and Honokowai. Work on a new highway that will bypass the town of Lahaina (aka, Lahaina Bypass) began in early 2009. Phase IA of this project (aka, mini bypass) will provide a two-lane road and a bridge across Kahoma Stream that will extend from Lahainaluna Road to the future Keawe Street extension. In addition, work to widen Honoapi`ilani Highway from two to four lanes (between Aholo Road and Lahainaluna Road) began in November 2009.

Lahainaluna Road provides the only access to Princess Nahienaena Elementary School, Lahaina Intermediate School, and Lahainaluna High School, as well as homes that lie *mauka* of the highway. After completion, the mini-bypass will provide an alternate travel route to these schools and homes which will help relieve traffic congestion and improve traffic circulation in the town of Lahaina. The widening of

Honoapi`ilani Highway (between Aholo Road and Lahainaluna Road), will help improve traffic conditions in the Lahaina area as well.

Lahainaluna Road, Mill Street, Dickenson Street, and Alika Place are local roads that fall under the control of the Maui Department of Public Works (DPW) and provide access to the subject property.

In the project area, Honoapi`ilani Highway has a posted speed limit of 35 miles per hour (mph), while Lahainaluna Road, Mill Street, and Dickenson Street have a speed limit of 20 mph.

Access to the subject parcel will be provided by Alika Place via Mill Street. Alika Place is about 100 ft. in length and is unimproved except for a paved surface which is fractured in areas and varies in width from 17 feet to 20 feet.

Alika Place is approximately 250 feet south of the intersection of Mill Street and Lahainaluna Road, which in turn lies about 270 feet *mauka* of the intersection of Lahainaluna Road and Honoapi`ilani Highway.

A total of 29 parking spaces and one loading zone will be provided for the new commercial building in accordance with Chapter 19.36 of the Maui County Code (*Off-Street Parking and Loading*). Lahaina is a pedestrian-friendly town and most activities within its central business core are within convenient walking distance of one another. The nearest Maui County bus stop is located at the northwest corner of Lahainaluna Road and Kuhua Street, about one block east of the subject parcel.

A traffic management plan will be utilized during construction to safely and effectively manage vehicle and pedestrian traffic along Mill Street during this phase of the project. The plan would also guide the

delivery of construction materials and the arrival and departure of construction workers so as not to add to peak hour traffic volumes. If feasible, construction workers should park offsite and be shuttled to the project site to reduce the amount of trips and the number of vehicles on the site during construction. At no time should construction vehicles be allowed to interfere with the flow of traffic along Mill Street or Lahainaluna Road. The traffic management control plan will be submitted to the DPW for review and approval as part of the building permit process.

Chapter 14.62 of the Maui County Code pertaining to Impact Fees for Traffic and Roadway Improvements in West Maui implements a system of financing regional roadway improvements on a pro-rata, fair share basis in order to upgrade or expand roadway facilities required by new land development. Chapter 14.68 states that "*Impact fees shall be charged and assessed for all new land development activities which create a need for additional roadway capacities. Impact fees shall be assessed in accordance with Section 14.68.070* (Cost Recovery)*, and shall be paid to the County upon issuance of any building permit or final subdivision approval, whichever comes first*."

In November 2006, the Maui County Council approved on first reading, the proposed traffic impact fees for the South and West Maui community plan regions. Final reading by the Council has been deferred to allow further discussion on how the traffic impact fees for these regions were calculated and is expected to occur later this year.

Based on the (draft) fee schedule for the West Maui community plan region, the proposed fee for retail and office projects is approximately $6,460 per 1,000 square feet (David Raatz, Council Planning Committee, June 21, 2007). For the proposed project, the fee would

be approximately $55,433 (8,581 SF ÷ 1,000 SF = 8.581 x $6,460 = $55,433 rounded).

Potential Impacts and Mitigation Measures. To address the requirements of Chapter 14.62, Maui County Code (*Impact Fees for Traffic and Roadway Improvements in West Maui*), the land owner's pro-rata, fair share contribution toward regional roadway improvements would be made prior to the issuance of the building permit for the project.

A traffic study has been prepared for the proposed project. **See** Appendix I, Traffic Impact Assessment Report.

Background traffic conditions are defined as future traffic conditions without the proposed project. The design or horizon year of a project is a date for which future background traffic projections have been estimated and does not necessarily represent its completion date. For the proposed project, the design or horizon year is 2015.

Intersections in the vicinity of the subject property (aka, study intersections) were evaluated for the traffic study and included the following:

- Honoapi`ilani Highway at Lahainaluna Road (signalized).
- Honoapi`ilani Highway at Dickenson Street (signalized).
- Lahainaluna Road at Mill Street (unsignalized; stop sign).
- Mill Street at Alika Place (unsignalized; stop sign).

These intersections were analyzed using the appropriate methodology for signalized and unsignalized intersections. Average traffic delays were then computed and a level-of-service was identified for each

controlled movement. Level-of-Service (LOS) is a qualitative measure which reflects traffic operations at a given roadway or intersection. Ratings range from Level-of-Service "A" for free-flowing traffic and no congestion to Level-of-Service "F" for severe congestion with stop-and-go conditions. Level-of-Service "D" is considered acceptable for peak hour traffic in urban environments (Institute of Traffic Engineers, *Transportation Impact Analysis for Site Development: A Recommended Practice*, 2006).

The number of peak-hour trips that the proposed project will generate was estimated using standard trip generation procedures outlined in the *Trip Generation Handbook* (Institute of Traffic Engineers, 1998) and data provided in *Trip Generation* (Institute of Traffic Engineers, 2003).

Trip Generation does not provide traffic generation data for credit unions; therefore, a traffic survey of the Credit Union's existing facility at 349 Lahainaluna Road was conducted to obtain data that can be used to estimate the amount of traffic that their new facility will generate. The results of the survey indicate that the Credit Union's existing facility generates 25 trips (13 inbound, 12 outbound) during the morning peak hour and 43 trips (20 inbound, 23 outbound) during the afternoon peak hour.

The Credit Union is not planning to expand its services or increase its membership at this time. As such, the results of the traffic survey for the Credit Union's existing facility were used to estimate the trips generated by their operations on the first floor of their new facility. Since the second floor of the new Credit Union facility will be leased to other businesses as office space, the trip generation rates for general office buildings were used to estimate the trips generated by this office use.

It is estimated that the proposed project will generate 31 trips (18 inbound, 13 outbound) in the morning peak hour and 49 trips (21 inbound, 28 outbound) in the afternoon peak hour.

The estimated traffic generated by the proposed project was then added to the background traffic to determine the incremental difference in traffic volume and identify potential traffic impacts.

For horizon year 2015, the levels-of-service for traffic conditions at the study intersections are summarized below.

Honoapi`ilani Highway at Lahainaluna Road: The results of the Level-of-Service analysis for this intersection indicate that it will operate at Level-of-Service "D" during both morning and afternoon peak hours, without and with the project. Level-of-Service "D" is considered acceptable for peak hour traffic in urban environments. The major northbound and southbound movements will operate at Level-of-Service "D" and Level-of-Service "C", respectively. Project-generated traffic did not change the level-of-service of any lane group.

Honoapi`ilani Highway at Dickenson Street: The results of the Level-of-Service analysis for this intersection indicate that it will operate at Level-of-Service "C" during both peak hours, without and with the project. The major northbound and southbound movements will operate at Level-of-Service "A" during the morning peak hour and Level-of-Service "B" during the afternoon peak hour. Project-generated traffic did not change the level-of-service of any lane group.

Lahainaluna Road at Mill Street: The results of the Level-of-Service analysis for this intersection indicate that the major eastbound and westbound approaches will operate at Level-of-Service "A" during the

morning and afternoon peak hours without and with the project. The level-of-service of the northbound approach will change from Level-of-Service "C" to Level-of-Service "E" during the morning peak hour and from Level-of-Service "C" to Level-of-Service "D" during the afternoon peak hour. The southbound approach will operate at Level-of-Service "F" during the morning peak hour and Level-of-Service "D" during the afternoon peak hour without and with the project. It should be noted, however, that the peak hourly volume of the southbound approach is only 9 vehicles during the morning peak hour and 29 vehicles during the afternoon peak hour and that the proposed project will add no traffic to the southbound approach.

Mill Street at Alika Place: All controlled movements at this intersection will operate at Level-of-Service "A" without or with the project.

The traffic study employs the Institute of Traffic Engineers standard that Level-of-Service "D" is the minimum acceptable level-of-service and that this criteria is applicable to the overall intersection. It is generally accepted that side street approaches and minor movements, such as left-turn lanes may operate at Level-of-Service "E" or Level-of-Service "F" for short periods if the volume-to-capacity ratio indicates a higher level-of-service as this implies that the long delay and therefore, the low level-of-service is a result of the traffic signal cycle length rather than a lane deficiency. In addition, the *Highway Capacity Manual* (Transportation Research Board, 2000) states that, "*Level-of-Service "E" is sometimes tolerated for minor movements such as left turns when there are no feasible mitigating measures or if it helps maintain the main through movements at acceptable levels-of-service*".

Based on the preceding, the traffic study finds that no mitigation is required at the study intersections as a result of project generated traffic.

5. Electrical, Telephone, and CATV Systems

Existing Conditions. Maui Electric Company, Hawaiian Telcom, and Oceanic Time Warner Cable provide electrical, telephone, and cable television (CATV) service to the West Maui region. In the area around the project site, electrical, phone, and CATV lines are placed on utility poles along Honoapi`ilani Highway and Lahainaluna Road. These facilities currently serve nearby homes and businesses.

Potential Impacts and Mitigation Measures. Existing overhead lines will be tapped to provide electrical, telephone, and CATV service for the proposed project. **See** Appendix H, Preliminary Engineering & Drainage Report.

Any project-related upgrades or adjustments to existing facilities will be coordinated with the appropriate utility companies. All onsite utility lines will be placed underground in accordance with the installation requirements of the utility companies and the County of Maui.

Exterior lighting will be appropriately shielded or directed downward to minimize impacts to seabirds (e.g., Newell shearwater, dark rumped petrel) which may become disoriented when traversing the project area.

Energy conservation measure will be utilized for the proposed project. Examples of such measures include, but are not limited to the following: solar water heating system, energy-efficient lighting and

appliances, fiberglass insulation, double-glazed windows, a photo-voltaic skylight, and extended (roof) eaves to minimize heat gain through windows.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE LAW

The rules of the State Land Use Commission are set forth in Chapter 205, HRS. These rules establish four land use districts in the State of Hawaii into which all lands in the State are placed: Urban, Rural, Agricultural, and Conservation. The subject property is located in the *State Urban District*. **See** Figure 10, State Land Use Districts. The proposed use of the subject parcel is a permissible land use in the State Urban District.

B. GENERAL PLAN OF THE COUNTY

The 1990 update of the General Plan for the County of Maui provided long-term goals, objectives, and policies directed toward improving living conditions in the County. As stated in the Maui County Charter:

> *"The purpose of the General Plan is to recognize and state major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development."*

As part of the decennial update of the General Plan, the Countywide Policy Plan for the 2030 General Plan was adopted by the County of Maui on March 19, 2010. The Countywide Policy Plan is the keystone for the General Plan update and establishes an over-arching statement of values while providing policy support for the Maui Island Plan and the regional community plans.

Key components of the Countywide Policy Plan include:

1. A vision statement and core values for the County to the year 2030.
2. An explanation of the plan-making process.
3. A description and background information of Maui County today.
4. Identification of guiding principles.
5. A list of Countywide goals, objectives, policies, and implementing actions relating to various core themes.

In addition, the following core principles are contained in the Countywide Policy Plan:

1. Excellence in the stewardship of the natural environment and cultural resources.
2. Compassion for and understanding of others.
3. Respect for diversity.
4. Engagement and empowerment of Maui County residents.
5. Honor for all cultural traditions and histories.
6. Consideration of the contributions of past generations as well as the needs of future generations.
7. Commitment to self-sufficiency.
8. Wisdom and balance in decision making.
9. Thoughtful, island-appropriate innovation.
10. Nurturance of the health and well-being of our families and our communities.

The Maui County Council is in the process of reviewing the (draft) Maui Island Plan. Once approved, the Maui Island Plan will be used by the

County Council, Maui Planning Commission, County staff, and the community as policy support for day-to-day decision making. As it relates to the (draft) Maui Island Plan, the subject parcel lies within the proposed Urban Growth Boundaries for Lahaina Town. **See** Appendix J, Proposed Directed Growth Map (Lahaina Town).

The Countywide Policy Plan sets forth broad goals, objectives, policies, and actions that reflect the desired direction of future growth in the County. In terms of context, those that relate to the proposed action are listed below:

Goal: A. Protect the Natural Environment

Objective: 3. Improve the stewardship of the natural environment.

Policy: 3c. Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

***Analysis*:** Potential short and long-term impacts to the natural environment have been evaluated in the environmental assessment (EA).

Goal: B. Preserve Local Cultures and Traditions

Objective: 4. Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.

Policy: 4f. Perpetuate the authentic character and historic integrity of rural communities and small towns.

***Analysis*:** Although the subject parcel is not located in Lahaina Historic District 1 or 2, the proposed project is designed to be consistent with the historic district standards for Lahaina including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design Guidelines (2003)*. The authentic character and historic integrity of

Lahaina will be preserved and perpetuated by the building's architecture and theme.

Goal: E. Expand Housing Opportunities

Objective: 1. Reduce the affordable housing deficit for residents.

Policy: 1o. Work with lending institutions to expand housing options and safeguard the financial security of home owners.

Analysis: The services provided by the Credit Union provides its members with the opportunity to pursue and expand their housing opportunities.

Goal: F. Strengthen the Local Economy

Objective: 1. Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of growth.

Policies: 1a. Support economic decisions that create long-term benefits.

1b. Promote lifelong education, career development, and technical training for existing and emerging industries.

1d. Support and promote locally-produced products and locally-owned operations and businesses that benefit local communities and meet local demand.

1f. Encourage work environments that are safe, rewarding, and fulfilling to employees.

1j. Support efforts to improve conditions that foster economic vitality in our historic small towns.

Analysis: The services provided by the Credit Union helps its members make long-term economic decisions. The WMCFCU promotes job training, education, and development for its employees. In addition to supporting members with ties to locally-owned businesses through its services, the Credit Union helps its members improve the economic vitality of Lahaina.

Objective: 3. Support a visitor industry that respects the resident culture and the environment.

Policy: 3n. Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.

Analysis: By way of its services, the Credit Union supports its members with ties to the visitor industry.

Goal: I. Improve Physical Infrastructure

Objective: 1. Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.

Policy: 1a. Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.

Analysis: Domestic water service is currently available to the subject parcel. The two existing 5/8-inch water meters on the site will be upgraded for the proposed project.

Objective: 3. Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.

Policy: 3i. Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.

Analysis: Energy conservation measures such as an opaque skylight, energy-efficient lighting and appliances, low-flow plumbing fixtures, fiberglass insulation, double-glazed windows, and extended (roof) eaves to minimize heat gain through windows will be incorporated into the proposed project.

Objective: 4. Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies: 4a. Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.

4d. Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.

Analysis: The subject parcel is located within an area of existing urban development and contains the infrastructure and public services to support new and existing development.

Objective: 5. Improve the planning and management of infrastructure systems.

Policy: 5b. Require new developments to contribute their *pro rata* share of local and regional infrastructure costs.

Analysis: The Credit Union will provide its pro rata contribution toward local and regional infrastructure costs as necessary.

Goal: J. Promote Sustainable Land Use and Growth Management

Objective: 1. Improve land use management and implement a directed-growth strategy.

Policies: 1b. Direct urban and rural growth to designated areas.

1e. Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open space resources.

1h. Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.

Analysis: The proposed project is an infill development located in a developed urban area with existing infrastructure and service capacity. The proposed project will not impact natural, scenic, shoreline, and cultural resources.

Objective: 3. Design all developments to be in harmony with the environment and to protect each community's sense of place.

Policies: 3c. Protect and enhance the unique architectural and landscape characteristics of each community plan area, small town, and neighborhood.

3j. Protect rural communities and traditional small towns by regulating the footprint, locations, site planning, and design of structures.

3k. Support small town revitalization and preservation.

Analysis: As previously noted, the proposed project is designed to be consistent with the historic district standards for Lahaina including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design Guidelines (2003)*. In doing so, the original character, historic integrity, and architectural style which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment.

Objective: 4. Improve and increase efficiency in land use planning and management.

Policy: 4b. Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.

Analysis: The proposed project involves the relocation of the Credit Union's operations to a new site. The WMCFCU has outgrown its existing facility which is too small and does not have enough parking. The proposed project will meet the current and future needs of the Credit Union and its members. The subject parcel has the appropriate land use designations for the proposed project. An assessment of potential impacts is included in the environmental assessment (EA).

In light of the foregoing, the proposed project is deemed to be consistent with the Countywide Policy Plan for the 2030 General Plan.

C. WEST MAUI COMMUNITY PLAN

Maui County has adopted nine community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the broad General Plan themes, objectives and policies.

As with the other community plans, the West Maui Community Plan (WMCP) reflects current and anticipated conditions in the region and sets forth goals, objectives, policies, and implementing actions to guide growth and development in the region. The subject parcel is designated for *Business/Commercial* use by the community plan. **See** Figure 11, West Maui Community Plan. The Community Plan was adopted by Ordinance No. 2476 and went into effect on February 27, 1996.

The process to update the existing WMCP is expected to begin in 2010. Maui County Council approval of the updated community plan, which will undergo a review process similar to the General Plan update, is anticipated in approximately 2-1/2 years. Given this time frame, the current community plan designation for the subject parcel (*Business/Commercial*) is being used for purposes of this assessment.

The following Community Plan objectives and policies are applicable to the proposed project.

Land Use

Objectives and Policies for Lahaina Town

1. The area bounded by Honoapi`ilani Highway and Front Street define Lahaina town. Within this core, allow higher density commercial and civic activities with lower density residential uses on the periphery to emphasize the importance of Lahaina town as the regional service center and attraction to residents and visitors alike.

3. Provide resident-oriented commercial uses along Waine`e Street from Baker to Dickenson Streets.

12. Provide parking that is adequately marked or assigned and conveniently located in retail commercial shopping areas, at public parking sites, and at major commercial purposes.

Economic Activity

Objectives and Policies:

1. Promote a diversified economic base which offers long-term employment to West Maui residents, and maintains overall stability in economic activity in the areas of:

    b. Visitor-related service/commercial services.

    d. Resident-related service/commercial services.

3. Expand light industrial and service commercial activities in appropriate locations to accommodate the region's needs.

    a. Enhance Lahaina town's role as the regional center for resident-related commercial and professional services.

    b. Encourage neighborhood commercial activities and professional services to serve existing and future residents.

    c. Encourage a diversity of visitor-oriented commercial offerings at the resort destinations and as a major component of Lahaina town.

1. Promote the use of local products, and encourage the employment of local residents.

Urban Design

Objectives and Policies for Lahaina Town

1. Maintain the scale, building massing, and architectural character of historic Lahaina town.

2. Landscape Character

   d. Landscaping along Waine`e Street and other interior streets should be designed to soften the effects of the built environment and to provide buffers for parking areas.

3. Building Character

   a. New building and renovation of existing buildings in Lahaina town should respect the scale, texture, materials, and facades of existing structures in the Lahaina Historic District.

   b. Building heights should reflect the context of existing building heights and massing in the Lahaina Historic District. The maximum building heights shall be two stories or 35 feet with a mixture of one- to two-story building heights encouraged.

   d. Building design should complement the pedestrian character of Lahaina town. Restraint and harmonious relationships with natural and man-made surroundings should characterize building form; harsh forms or shapes should be avoided; sloped roofs should be encouraged. Design elements which relate to human scale should be emphasized. Design features should reflect prevalent town themes through traditional or contemporary means. Such themes may include:

      1) First story awnings or covered walkways.
      2) Transom openings above windows and doorways.
      3) Multiple panes in storefront windows.
      4) Second story balconies.

   e. Emphasize contrasting earth-tone color schemes for buildings.

   f. Design of signs should be restrained and in keeping with requirements of the Lahaina Historic District.

i. Encourage underground installation of utilities in Lahaina town and in all residential communities to enhance streetscape environments with the possible exception of the commercial section of Front Street to retain the flavor of old Lahaina.

C. Planning Standards

1. Land Use Standards

a. All zoning and land use approvals shall be consistent with the West Maui Community Plan and its land use policies.

3. Building Standards

a. Insure that new buildings and renovations in areas within or adjacent to the Historic District respect the massing, scale, texture, and appearance of old Lahaina and a maximum building height of 35 feet.

Although the subject parcel is not located in Lahaina Historic District 1 or 2, the proposed commercial building has been designed to be consistent with their historic district standards including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design Guidelines (2003)*. In doing so, the architectural style and character which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment.

D. MAUI COUNTY ZONING

The subject parcel was reclassified from the *R-2, Residential District* to the *B-2, Community Business District* in August 1999. The land use, lot area, building height, and yard setback regulations under this zoning are set forth in Appendix B, B-2, Community Business District Zoning.

The rezoning of the property was subject to certain specified conditions including the prohibition of high intensity land uses. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning).

The zoning change was followed by the consolidation of the preceding parcels in 1998 which resulted in the creation of a single 23,907 sq. ft. lot now known as TMK 4-6-010: 025 (the subject parcel).

The proposed project will be developed in accordance with Ordinance No. 2793 and the zoning performance standards for the *B-2, Community Business District* except that the building's height will be limited to 35 feet in accordance with the *Urban Design* standards of the West Maui Community Plan. Land uses for the building's second floor cannot be determined at this time. The second floor could be used for future Credit Union expansion or leased to others as tenant space. If leased, the use of this space must comply with the terms of the Conditional Zoning for the property. **See** Appendix D, Ordinance No. 2793 (Conditional Zoning).

As previously indicated, the Maui Planning Department has stated that the proposed project is an acceptable land use and complies with the conditional zoning for the subject property. **See** Appendix D-1, Maui Planning Department Letters.

E. HAWAII COASTAL ZONE MANAGEMENT PROGRAM

The federal Coastal Zone Management Act of 1972 was adopted in response to competing development and preservation interests in U.S. coastal areas. Population growth and development in coastal areas were impacting marine resources, open space, view sheds, wildlife, and other important ecological, cultural, and historic resources. In response to this concern, Congress created a framework for managing and regulating the coastal zone and appropriated funds for State-run coastal zone management programs (CZMP). The State's acceptance

of the Federal funds necessitated compliance with federal CZMP standards.

The boundaries of Hawaii's coastal zone management program are defined by coastal waters and adjacent, coastlands that are strongly influenced by each other. Coastal areas which require special consideration due to their unique values or characteristics are called Special Management Areas (SMA) and must be designated by a management plan. Any development within these areas is subject to a special assessment process. This protocol provides a means to preserve, protect, and when possible, restore the natural resources of the coastal zone by controlling development with shoreline areas in order to avoid the permanent loss of valuable resources. As required by State law, maps showing the limits of the SMA have been prepared by each County. In Lahaina, Honoapiilani Highway serves as the SMA boundary for this part of the island.

As shown in Figure 13, Special Management Area, the subject property does not lie within the SMA. In the Lahaina area, the SMA extends from the shoreline to the *makai* side of Honoapiilani Highway. Notwithstanding this, the following section discusses the relationship of the proposed project to the objectives and policies of the Hawaii Coastal Zone Management Program pursuant to Chapter 205A, HRS.

1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

(A) Improve coordination and funding of coastal recreation planning and management; and

(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring placement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or require reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing;

(viii) Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such

dedication against the requirements of Section 46-6, HRS.

Analysis. The subject property does not abut the shoreline and will not impact coastal recreational resources. Existing public shoreline access and uses will be unaffected.

2. Historical/Cultural Resources

Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

(a) Identify and analyze significant archeological resources;

(b) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(c) Support state goals for protection, restoration, interpretation, and display of historic structures.

Analysis. Site 6660, the boundary or retaining wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel *mauka* of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. Site 6661 is the boundary or retaining wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place. Based on the findings of the cultural impact assessment (CIA), there are no specific traditional Hawaiian cultural uses associated with the subject parcel nor were those interviewed aware of any specific cultural uses. As discussed in

Section III of this report, the State Historic Preservation Division (SHPD) has indicated that given the nature of the proposed project, "*anything other than precautionary archaeological monitoring during ground-altering disturbance would be impractical*". As such, an archaeological monitoring plan was prepared and submitted to the SHPD which approved the plan on July 8, 2009. **See** Appendix E-1, SHPD Approval Letter. In light of the foregoing, the proposed project is not expected to result in adverse impacts to historical and cultural resources.

3. Scenic and Open Space Resources

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

(a) Identify valued scenic resources in the coastal zone management area;

(b) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

(c) Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources; and

(d) Encourage those developments that are not coastal dependent to locate in inland areas.

Analysis. As discussed in Section III of this report, the new building will modify the existing landscape by replacing an existing one-story structure with a new two-story commercial building. Notwithstanding this, no significant impacts to scenic and open space resources are anticipated, as the subject parcel is not located within a scenic view

corridor nor does it contain scenic features. Although the land owner is not required to comply with Lahaina Historic District 1 and 2 requirements, the design of the proposed commercial building is consistent with historic district standards. In addition, the proposed building will be 35 feet in height which complies with the *Urban Design* standards of the West Maui Community Plan for buildings in the Lahaina Historic District and is significantly less than the six-story height limit allowed by *B-2, Community Business District* zoning. By doing so, the architectural style and character which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment.

4. Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

(a) Improve the technical basis for natural resource management;

(b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(c) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(d) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Analysis. As described in Section III of this report, the proposed project is not expected to have an adverse effect upon the region's coastal ecosystem. With the use of Best Management Practices and

appropriate mitigation measures during construction, no adverse impacts to near shore waters from non-point sources of pollution are expected.

5. Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

(a) Concentrate coastal dependent development in appropriate areas;

(b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area;

(c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental impacts are minimized; and

(iii) The development is important to the State's economy.

Analysis. The subject property is located in the *State Urban District* and is designated for *Business/Commercial* uses by the West Maui Community Plan. The site received conditional zoning for uses by the County of Maui. As previously noted, the Maui Planning Department has stated that the proposed project is an acceptable land use and complies with the conditional *B-2, Community Business District* zoning

for the subject property. **See** Appendix D-1, Maui Planning Department Letters. The proposed project conforms to and is consistent with the State land use, community plan, and zoning designations for the subject property.

6. Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies:

(a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

(b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;

(c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;

(d) Prevent coastal flooding from inland projects; and

(e) Develop a coastal point and non-point source pollution control program.

Analysis. As discussed in Section III of this report, the subject property is located in Zone "X", an area determined to be outside the 0.2% annual chance flood plain (i.e., a low risk flood hazard area). **See**: Figure 8, Flood Hazard Areas. In addition, the project site does not lie in an area which is subject to tsunami evacuation. **See** Figure 9, Tsunami Evacuation Areas. In light of the foregoing, the proposed project is not expected to be impacted by flood or tsunami hazards.

7. Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources hazards.

Policies:

(a) Use, implement, and enforce existing laws effectively to the maximum extent possible in managing present and future coastal zone development;

(b) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and

(c) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning process and review process.

Analysis. Since the subject parcel is located in the Lahaina National Historic Landmark District, and because the WMCFCU has no plans to implement the original Mango Manor Commercial Complex, this EA has been prepared for the proposed project. It should be noted that the Maui Planning Department has stated that the proposed project is an acceptable land use and complies with the conditional zoning for the subject property. **See** Appendix D-1, Maui Planning Department Letters. The Planning Department is serving as the approving agency for the environmental review process.

8. Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

(a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.

(b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and

(c) Organize workshops, policy dialogues, and site-specific medications to respond to coastal issues and conflicts.

Analysis. As part of the early consultation process for the preparation of the Draft Environmental Assessment (EA), a letter describing the proposed project and requesting comments on the project was sent to government agencies and owners and lessees of property located within 500 ft. of the subject parcel. A typical early consultation letter, as well as written comments and responses to substantive comments are included in Appendix K, Early Consultation Letters. The general public and government agencies will have another opportunity to comment on the proposed project during the 30-day comment period following the publication and notice of availability of the Draft EA.

9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

(a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

(b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Analysis. The subject parcel is located approximately 1,700 feet (0.32 mile) from the shoreline. As such, no adverse impacts to public beach use and recreation are expected to occur.

10. Marine Resources

Objective: Implement the State's ocean resources management plan.

Policies:

(a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;

(d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;

(e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and

(f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Analysis. The proposed project does not involve the direct use or development of marine resources. By incorporating site-specific

erosion and sedimentation control measures during and after construction, adverse impacts to near shore waters from runoff and pollution are not expected. From this perspective, the proposed project is not expected to have a significant impact on coastal or marine resources.

V. CHAPTER 343, HRS SIGNIFICANCE CRITERIA

Since the subject parcel is located in the Lahaina National Historic Landmark District, an Environmental Assessment (EA) has been prepared in order to describe the proposed project, evaluate the potential impacts the project may have on the environment, public services, and infrastructure, and discuss appropriate measures to minimize impacts to the environment.

A Finding of No Significant Impact (FONSI) is anticipated; therefore, an environmental impact statement will not be required for the proposed project. This determination has been made in accordance with the following significance criteria outlined in Section 11-200-12 (Environmental Impact Statements) of the Hawaii Administrative Rules for the State Department of Health.

A. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

Site 6660, the boundary or retaining wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel *mauka* of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. Site 6661 is the boundary or retaining wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place.

B. *Curtails the range of beneficial uses of the environment.*

The range of beneficial uses of the environment will not be curtailed by the proposed project. The reclassification of the subject property will provide a suitable location for business/commercial uses that is consistent with the existing State land use and community plan designations for the site.

C. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The proposed project is not contrary to the State's long-term environmental policies or goals. As documented in this report, mitigation measures will be implemented to minimize potentially adverse impacts to the environment.

D. *Substantially affects the economic or social welfare of the community or State.*

The proposed project will generate beneficial socio-economic effects that will accrue to the community. The occupants of the new commercial building will contribute to the economic well being of the community through the purchase and sale of goods and services and the payment of sales and real property taxes. As documented in this report, the proposed project is not expected to result in any significant adverse impacts to the socio-economic environment.

E. *Substantially affects public health.*

The proposed project does not involve any circumstances or conditions that will adversely affect public health.

F. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

Based upon the findings in this report, including an assessment of the proposed project and socio-economic factors and resources such as population, housing, employment, and public services, the proposed project is not expected to result in any adverse secondary impacts. Beneficial secondary effects generated by the proposed project include providing a commercial building that will serve the long term needs of the community, and increase the inventory of business space that is available for leasing purposes.

G. *Involves a substantial degradation of environmental quality.*

Mitigation measures to minimize degradation of environmental quality will be implemented to minimize short-term construction-related impacts such as soil erosion and sedimentation, non-point source pollution, and fugitive dust. The drainage system for the proposed project will be designed to effectively manage storm water runoff and to ensure that runoff will not have an adverse impact upon adjacent and downstream properties.

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

In the West Maui region, subjects such as water quality, land use, population, public services, and infrastructure represent environmental resources, which would be affected by cumulative impacts that are potentially adverse, but are capable of being mitigated.

Water quality will be impacted if the cumulative effects of surface runoff and other non-point source pollutants are not mitigated. Construction activities, including clearing, grading, and excavation, that involves one or more acres, are subject to the National Pollutant and Discharge Elimination System (NPDES) permit process (if necessary), which requires that Best Management Practices be implemented to control soil erosion and sedimentation.

New development projects are subject to the regulatory review and approval process in which potentially adverse impacts are identified and evaluated, and appropriate mitigation measures are prescribed. Specific compliance standards may also be established depending on the potential severity of the impacts. While development projects have the potential to impact water quality, the preceding measures can minimize the effects of non-point source pollution.

The cumulative effect of development upon public services is evidenced by the need for additional personnel, equipment, and/or facilities in order to maintain adequate service levels for police/fire protection and solid waste disposal. Depending on the degree of population growth, public park and school systems will need to be upgraded as well. Impacts to public services can be mitigated through the dedication of land and/or the payment of assessment fees. If public services were deemed inadequate, new or additional services would have to be provided concurrent with or prior to the implementation of new development projects. If public services cannot be provided in a timely manner, the implementation of new projects would be delayed.

New development projects will create additional infrastructure demands for public water, sewer, roadway, and drainage improvements unless they are privately constructed and maintained. If the infrastructure is inadequate, upgrading and expanding the necessary systems would be required prior to or concurrent with new development. If infrastructure cannot be provided on a timely manner, the implementation of new projects would be delayed. Land use patterns also affect transportation behavior, as well as the planning, phasing, and budgeting of infrastructure development projects. As such, new development projects proposed by private entities must be fully coordinated with all appropriate government agencies.

I. *Substantially affects a rare, threatened, or endangered species, or its habitat.*

There are no ponds, wetlands, streams or important plant or animal habitats on the subject property nor are there any rare, threatened or endangered species of flora and fauna on the site or any species that are eligible candidates for Federal listing.

J. *Detrimentally affects air or water quality or ambient noise levels.*

Short-term impacts upon air and water quality and ambient noise levels will occur during construction. These effects, however, will be minimized through the use of appropriate mitigation measures. Adverse long-term impacts to these environmental components are not anticipated.

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

The subject property lies within Zone “X”, an area outside the 0.2% annual chance flood plain, and is not situated within the limits of tsunami inundation. As such, no adverse impacts from flood or tsunami hazards are anticipated.

L. *Substantially affects scenic vistas and view planes identified in county or state plans or studies.*

The subject property does not lie within a scenic view corridor nor does it contain any scenic features. As such, no significant impacts to scenic vistas and view planes are anticipated.

M. *Requires substantial energy consumption.*

After full occupancy, energy consumption will increase; however, given existing usage levels in the West Maui region, the incremental increase in energy use is considered insignificant.

VI. CONCLUSIONS

This document has been prepared in accordance with the State Department of Health criteria contained in Title 11, Chapter 200, HAR, which sets forth requirements for the preparation of an Environmental Assessment (EA) and an Environmental Impact Statement (EIS).

The West Maui Community Federal Credit Union (WMCFCU) is proposing to construct a new two-story commercial building on a 23,907 sq. ft. site in Lahaina, Maui, Hawai`i. In addition to the construction of the new 8,581 sq. ft. building (net floor area), the proposed project will involve minor site work; utility connections, and access, drainage, landscape, and parking improvements.

Although the subject parcel is not located in Lahaina Historic District 1 or 2, the proposed project is designed to be consistent with the historic district standards for Lahaina including the *Architectural Style Book for Lahaina* (1969) and the *Lahaina Design Guidelines (2003)*. In doing so, the architectural style and character which make Lahaina unique and contribute to its charm and sense of place will be maintained and preserved for the public's benefit and enjoyment. Site 6660, the boundary or retaining wall located in the adjacent State highway right-of-way will be preserved in place. A new plastered masonry wall will be constructed on the subject parcel *mauka* of Site 6660. Appropriate measures will be undertaken during the implementation of the project to ensure that Site 6660 is not impacted by construction activities. Site 6661 is the boundary or retaining wall located along the eastern boundary of the subject parcel. Since Site 6661 has been documented and has already yielded information about the site, the existing rock wall will be demolished and a new plastered masonry wall will be constructed in its place.

In the context of the proposed project, this document assesses the natural and manmade environment, evaluates potential environmental impacts, and examines measures to minimize harm to the environment

The proposed project will not significantly affect the physical environment at the subject property and in the surrounding area. Public services and infrastructure are either adequate or will be improved to accommodate the proposed project.

In light of the foregoing, the proposed project is not expected to result in any significant environmental impacts and therefore, a Finding of No Significant Impact (FONSI) is warranted.

VII. REFERENCES

Chris Hart & Partners, Inc.; *Final Environmental Assessment – Mango Manor Commercial Complex;* June 1999.

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Honolulu Advertiser article, *West Maui Bypass Really "For Real"*; April 23, 2007.

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State of Hawaii, Department of Labor and Industrial Relations, *Hawaii Workforce informer*, April 2010.

State of Hawaii, Department of Transportation; *Statewide Transportation Improvement Program (Revised);* May 4, 2009.

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U.S. Department of Agriculture, Soil Conservation Service in Cooperation with the University of Hawaii, Agricultural Experiment Station; *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii;* 1972.

FIGURES

FIGURES

Figure 1	*Regional Location Map*
Figure 2	*Parcel Location Map*
Figure 3	*Site Photographs*
Figure 4	*Topographic Survey Map*
Figure 5	*Preliminary Development Plans*
Figure 6	*Earlier Conceptual Development Plans*
Figure 7	*Soil Classifications*
Figure 8	*Flood Hazard Areas*
Figure 9	*Tsunami Evacuation Areas*
Figure 10	*State Land Use Districts*
Figure 11	*West Maui Community Plan*
Figure 12	*Maui County Zoning*
Figure 13	*Special Management Area Limits*

FIGURE 1

Not to Scale

REGIONAL LOCATION MAP

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

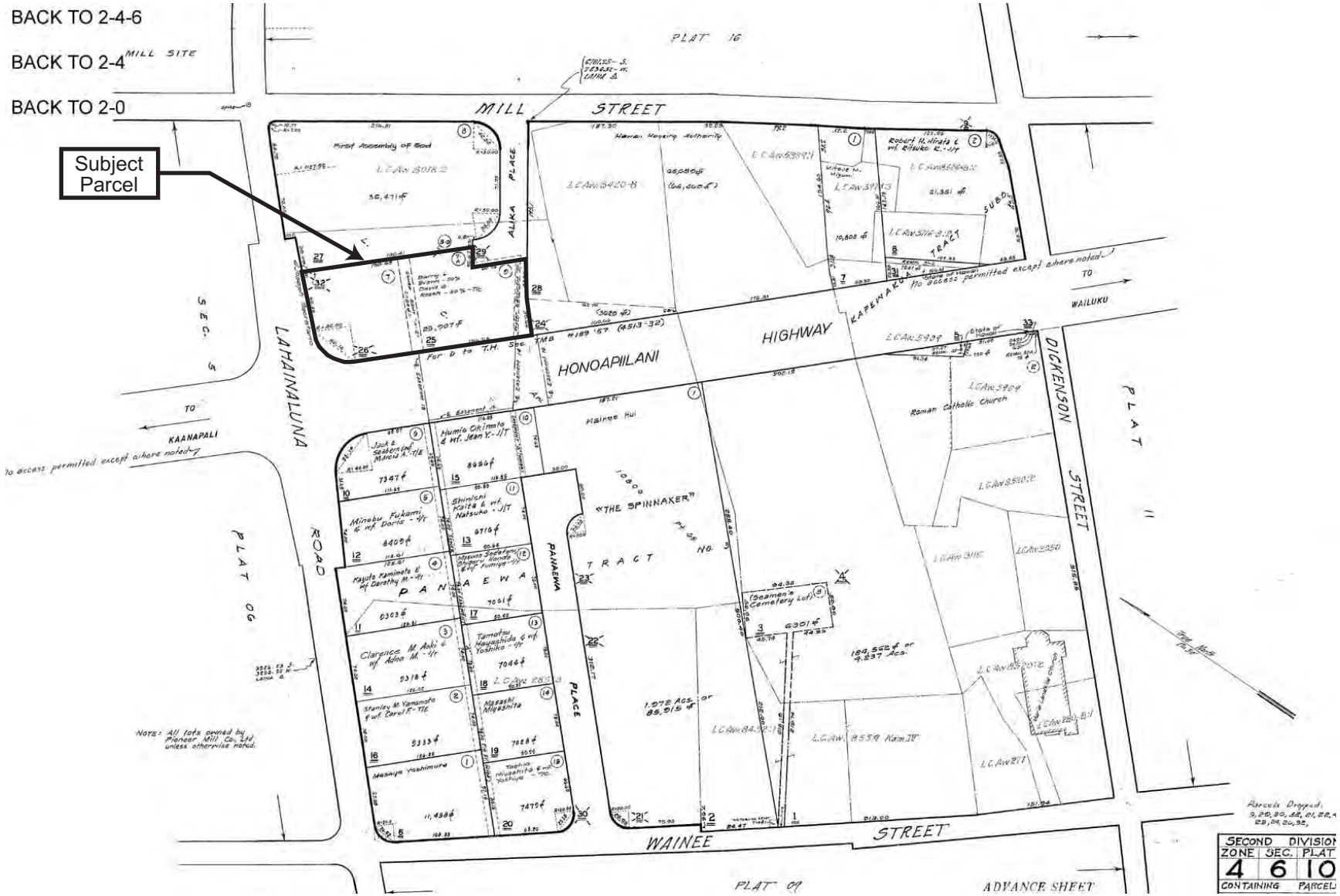


FIGURE 2

Not to Scale

PARCEL LOCATION MAP

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

FIGURE 3

SITE PHOTOGRAPHS

FIGURE 3

Not to Scale

AERIAL SITE PHOTO

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

Photo 1: View along Mill Street toward the adjacent David Malo Circle Apartments (camera facing southeast)

Photo 2: Alika Place and the adjacent First of Assembly of God Church as seen from Mill Street (camera facing southwest)

FIGURE 3

SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

Photo 3: View from Alika Place showing the land located on the mauka side of Mill Street (camera facing northeast)

Photo 4: View of the subject parcel (camera facing west-southwest)

FIGURE 3

SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

Photo 5: View of the subject parcel (camera facing east-northeast)

Photo 6: View of the subject parcel (camera facing southeast)

FIGURE 3

SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

Photo 7: View of the subject parcel (camera facing southeast to southwest)

Photo 8: View from the intersection of Honoapi`ilani Highway and Lahainaluna Road showing land uses on the makai side of the highway (camera facing west-southwest)

FIGURE 3

SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

Photo 9: View along Lahainaluna Road of land uses across the street from the subject parcel (camera facing north-northwest)

Photo 10: View along Honoapi`ilani Highway of land uses across the street from the subject parcel (camera facing south-southwest)

FIGURE 3

SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

Photo 11: View of Alika Place from the subject parcel (camera facing northeast)

Photo 12: Existing paved parking area located at the southeast end of the site (camera facing southwest)

Photo 13: Existing West Maui Community Federal Credit Union building at 349 Lahainaluna Road (camera facing northwest)

Photo 14: View toward the subject parcel (see large mango tree in the background) from the existing credit union site (camera facing southwest)

FIGURE 3

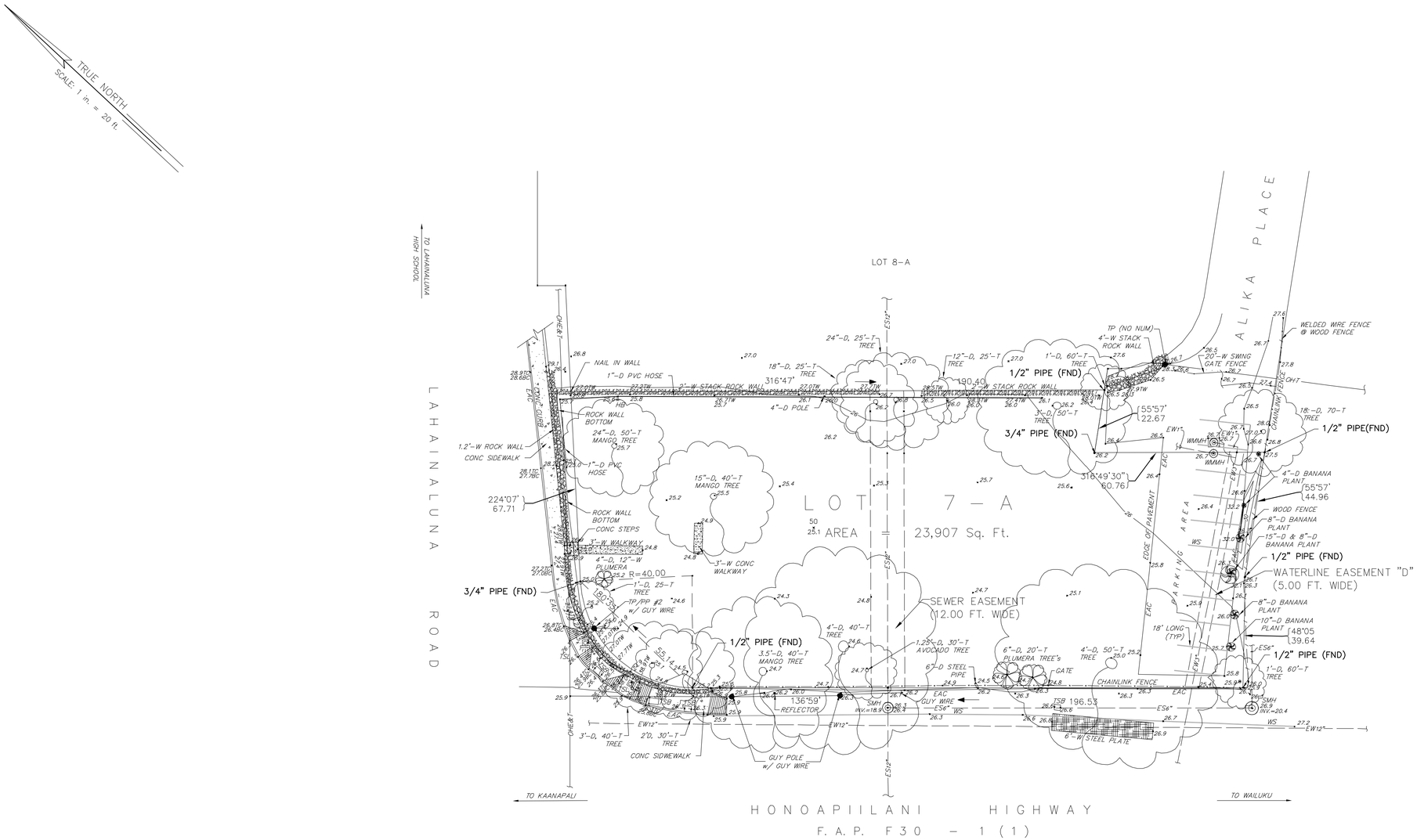
SITE PHOTOGRAPHS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

FIGURE 4

TOPOGRAPHIC
SURVEY MAP



TOPOGRAPHIC SURVEY WORKSHEET
LOT 7-A
PANAEWA TRACT
AT PANAEWA, LAHAINA, MAUI, HAWAII
T.M.K. (2) 4-6-10 : 25

NOTES FOR TOPOGRAPHIC FEATURES:

1. ELEVATION DATUM = MEAN SEA LEVEL.
2. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA. UNDERGROUND UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES, BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY. THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.

LEGEND AND ABBREVIATIONS:

•98.2	SPOT ELEVATION
26	CONTOUR
EW3"	WATERLINE (APPROX. LOCATION)
ES12"	SEWERLINE (APPROX. LOCATION)
OHE&T	OVERHEAD ELEC. AND TEL. LINE
OHT	OVERHEAD TELEPHONE LINE
SMH	SEWER MANHOLE
WMMH	WATER METER MANHOLE
EAC	EDGE A.C. PAVEMENT
TSL	TRAFFIC SIGNAL LIGHT
TSB	TRAFFIC SIGNAL BOX

20 10 0 20 40
GRAPHIC SCALE IN FEET

Z:\2008\08-068\WMFCU.dwg - Date: 03-NOV-2008
DRAWN BY: JOY L. _F.B._No.# 933p-42 \ PACSOFT FILE :WMFCU.crd

TAX MAP KEY :(2) 4-6-10 : 25

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

OCTOBER 30, 2008
JOB NO. 08-68

FIGURE 5

PRELIMINARY DEVELOPMENT PLANS

■ ARCHITECTURAL DATA

1. CODES

A. MAUI COUNTY CODE, 1980

B. UNIFORM BUILDING CODE, 1997 EDITION WITH 1994 MAUI COUNTY AMMENDMENTS.

2. SITE DATA

A.	T.M.K.:	(2) 4-6-010:025
B.	LOT AREA:	23,907 SF
C.	ZONING:	B-2 CONDITIONAL ZONING
D.	COMMUNITY PLAN:	B - BUSINESS/COMMERCIAL
E.	STATE LAND USE DESIGNATION:	URBAN
F.	FLOOD HAZARD ZONE AREA:	C
G.	BASE FLOOD ELEVATION:	N/A
H.	SPECIAL DISTRICT(S):	NHLD - NATIONAL HISTORIC LANDMARK DISTRICT

3. PLANNING DATA

		ALLOWABLE/REQUIRED	PROPOSED (ACTUAL)
A.	FLOOR AREA RATIO:	N/A	N/A
B.	% LOT COVERAGE:	N/A	N/A
C.	YARD SPACING:		
	FRONT:	15'-0" MIN.	15'-0"
	SIDE (NORTH EAST):	10'-0" MIN.	10'-9"
	SIDE (SOUTH EAST):	10'-0" MIN.	133'-11"
D.	BUILDING HEIGHT:		
	BUILDING	35'-0" MAX.	35'-0"
E.	PARKING STALLS:		
	1. CREDIT UNION GROUND FLOOR 5,119 S.F. (GROSS) - 434 S.F. (STAIR 1 & 2) - 143 S.F. (HALLWAY) = 4,542 S.F. 4,542 S.F. x 1 STALL/300 S.F. =	15 STALLS	15 STALLS
	2. CREDIT UNION SECOND FLOOR 5,119 S.F. (GROSS) - 434 S.F. (STAIR 1 & 2) - 646 S.F. (SKYLIGHT) = 4,039 S.F. 4,039 S.F. x 1 STALL/300 S.F. =	13 STALLS	15 STALLS
	TOTAL STALLS	28 STALLS	30 STALLS
	ACCESSIBLE STALLS	2 STALLS	2 STALLS
	LOADING ZONES	1 STALL	1 STALL

4. BUILDING CODE DATA

		ALLOWABLE/REQUIRED	PROPOSED(ACTUAL)
A.	BUILDING		
1.	OCCUPANCY:	B	B
2.	SEPARATION:	NONE	NONE
3.	TYPE OF CONSTRUCTION:	TYPE V-N	TYPE V-N
4.	MAX. FLOOR AREA: TABLE 5-B	8,000 S.F. X 2 = 16,000 S.F.	FIRST FLOOR: 5,119 S.F. < 8,000 S.F. SECOND FLOOR: 5,119 S.F. - 646 S.F. (SKYLIGHT) = 4,473 S.F. 4,473 S.F. < 8,000 S.F. TOTAL: 9,592 S.F. < 16,000 S.F. (UBC 504.2)
5.	MAX. BLDG. HEIGHT:		
	A. STORIES	2 STORIES	2 STORIES

■ GENERAL NOTES

1. CONTRACTOR AND SUBCONTRACTOR SHALL VISIT THE SITE AND MAKE DUE ALLOWANCES FOR DIFFICULTIES AND CONTINGENCIES TO BE ENCOUNTERED. COMPARE CONTRACT DOCUMENTS WITH WORK IN PLACE. BECOME FAMILIAR WITH EXISTING CONDITIONS, THE CONDITIONS TO BE ENCOUNTERED IN PERFORMING THE WORK, AND THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO COMMENCEMENT OF WORK.

2. COMMENCEMENT OF WORK BY ANY TRADE WILL BE CONSTRUED AS ACCEPTANCE OF EXISTING CONDITION AND SURFACES AS BEING SATISFACTORY FOR APPLICATION OF SUBSEQUENT WORK, AND FULL RESPONSIBILITY FOR FINISHED RESULTS AND ASSUMPTION OF WARRANTY OBLIGATIONS UNDER THE CONTRACT.

3. CONTRACTOR SHALL PROTECT EXISTING WORK IN A MANNER TO PREVENT DAMAGE INCLUDING INTERIOR WORK FROM DAMAGE BY VANDALS OR THE ELEMENTS. PROVIDE TEMPORARY PROTECTION. USE CURTAINS, BARRICADES, OR OTHER APPROPRIATE METHODS. TAKE POSITIVE MEASURES TO PREVENT BREAKAGE OF GLASS AND DAMAGE TO PLASTIC, ALUMINUM AND OTHER FINISHES.

4. CONTRACTOR SHALL VERIFY CONSTRUCTION LINES, GRADES, DIMENSIONS AND ELEVATIONS INDICATED ON THE DRAWINGS BEFORE ANY CLEARING, EXCAVATION OR CONSTRUCTION BEGINS. BRING ANY DISCREPANCY TO THE ATTENTION OF THE OFFICER IN CHARGE, AND MAKE ANY CHANGE IN ACCORDANCE WITH THE OFFICER IN CHARGE.

5. CONTRACTOR SHALL OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR THE ACCURATE FABRICATION AND INSTALLATION OF WORK INCLUDED IN THIS CONTRACT. VERIFY GOVERNING DIMENSIONS AND EXAMINE ADJOINING WORK ON WHICH THE CONTRACTOR OR SUBCONTRACTOR'S WORK IS IN ANY WAY DEPENDENT. DIFFERENCES DISCOVERED DURING SITE VERIFICATION SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT FOR INTERPRETATIONS BEFORE PROCEEDING WITH THE ASSOCIATED WORK. EXACT MEASUREMENTS ARE THE CONTRACTOR'S RESPONSIBILITY.

6. FURNISH OR OBTAIN TEMPLATES, PATTERNS, AND SETTING INSTRUCTIONS AS REQUIRED FOR THE INSTALLATION OF ALL WORK. VERIFY DIMENSIONS IN THE FIELD.

7. CONTRACTOR SHALL ACCEPT THE SITE AND EXISTING STRUCTURES IN THE CONDITIONS THAT EXIST AT THE TIME ACCESS IS GRANTED TO BEGIN THE WORK. VERIFY EXISTING CONDITIONS AND DIMENSIONS SHOWN AND OTHER DIMENSIONS NOT INDICATED AS NECESSARY TO ACCOMPLISH THE WORK.

8. CONTRACTOR SHALL LOCATE ALL GENERAL REFERENCE POINTS AND TAKE ACTION TO PREVENT THEIR DESTRUCTION. LAYOUT WORK AND BE RESPONSIBLE FOR LINES, ELEVATIONS AND MEASUREMENTS WITH THE WORK BEING EXECUTED. EXERCISE PRECAUTIONS TO VERIFY FIGURES AND CONDITIONS SHOWN ON DRAWINGS BEFORE LAYOUT OF WORK.

GYA ARCHITECTS, INC.
A DESIGN CORPORATION

MAUI
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Phone (808) 626-0811
Fax (808) 626-0812
Email oahu@gyaarchitects.com

WEST MAUI COMMUNITY FEDERAL CREDIT UNION
270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAI'I
TMK: (2) 4-6-010: 025

ARCHITECTURAL DATA
GENERAL NOTES

STAMP

This work was prepared by me or under my supervision and construction of this project will be under my observation. ("Observation of construction" as defined under Section 16-115-2 of Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)

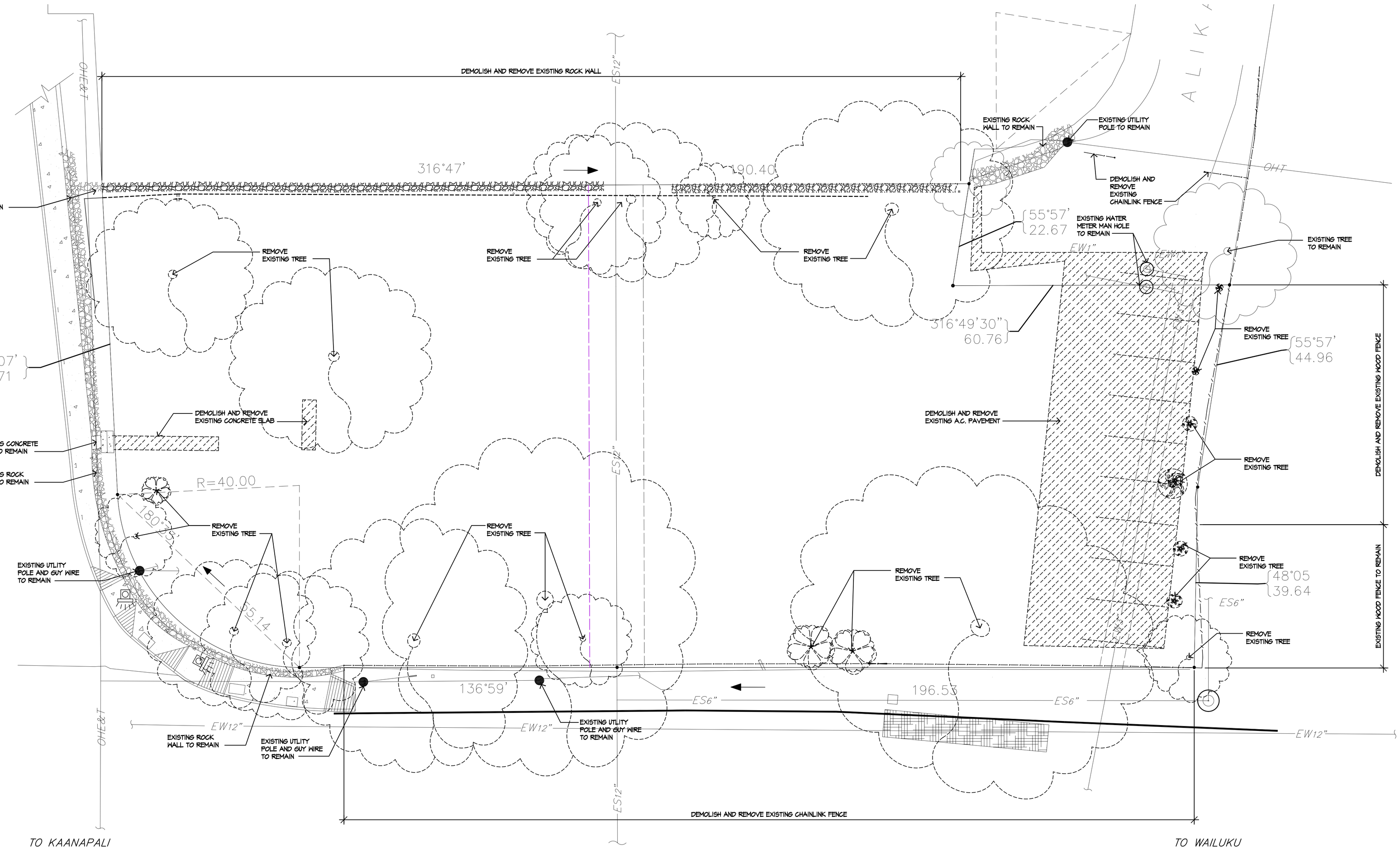
Signature

Note: Contractor shall check and verify all dimensions at job before proceeding with work.

Designed by
Drawn by ES/MK
Project No. 08127.0
Date AUGUST 2009
Sheet No.

T-3

of sheets



N

A / A-1 **SITE - DEMOLITION PLAN**

SCALE: 3/32"=1'-0"

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270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAI'I
TMK: (2) 4-6-010: 025

SITE DEMO PLAN

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Signature

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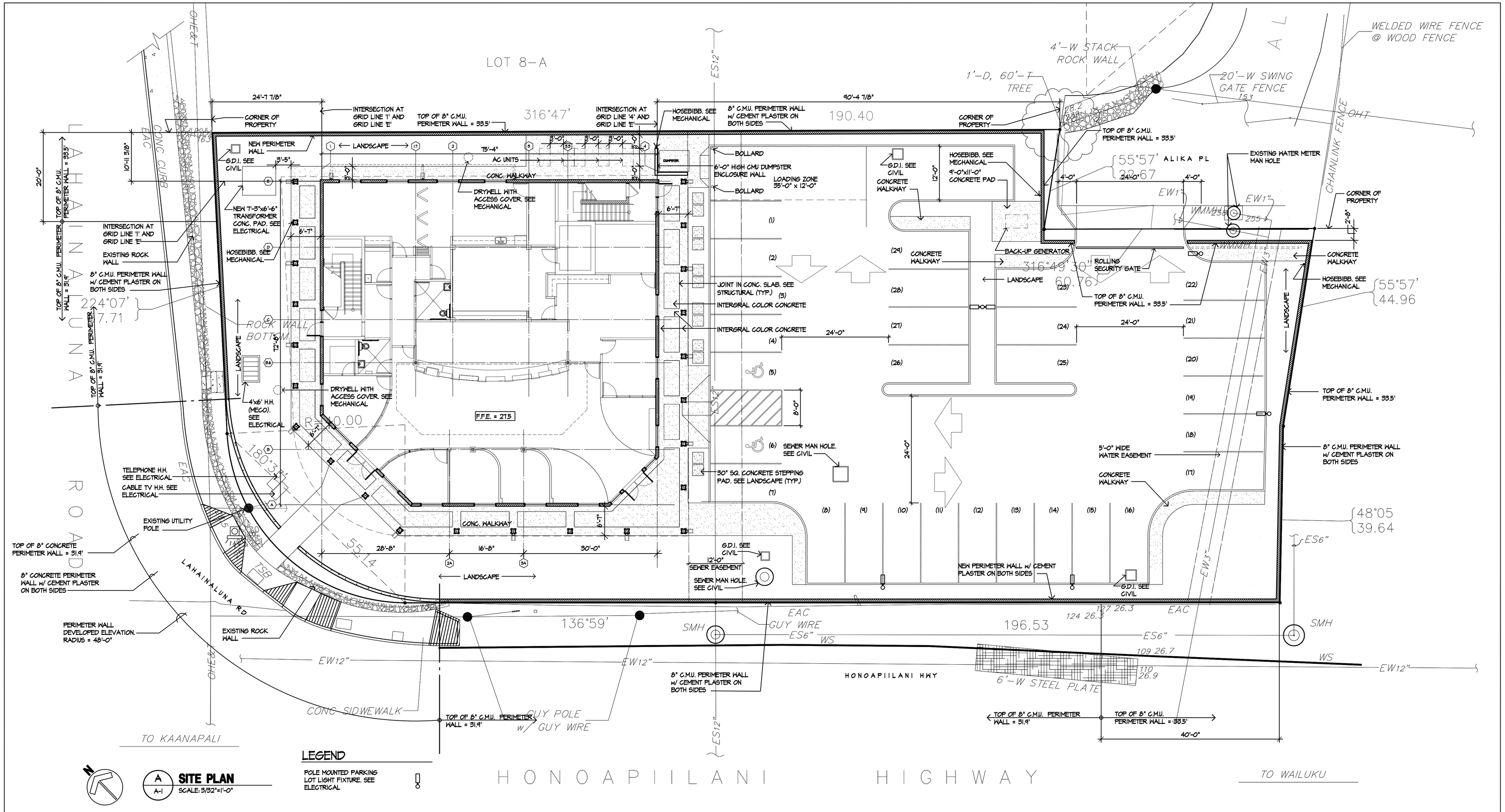
Drawn by	ES
Project No.	08127.0
Date	DEC. 2009
Sheet No.	

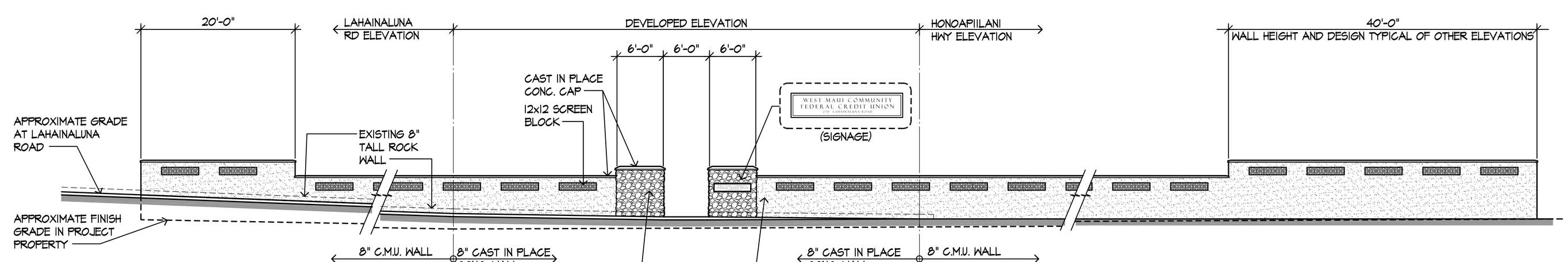
A-1

of sheets

S:



SITE PLAN (A / A-1)
SCALE: 3/32"=1'-0"



PERIMETER WALL ELEVATION
SCALE: 1/8"=1'-0"

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P.O. Box 894823
Mililani, Hawaii 96789
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Fax (808) 626-0812
Email oahu@gyaarchitects.com

WEST MAUI COMMUNITY FEDERAL CREDIT UNION

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SITE PLAN

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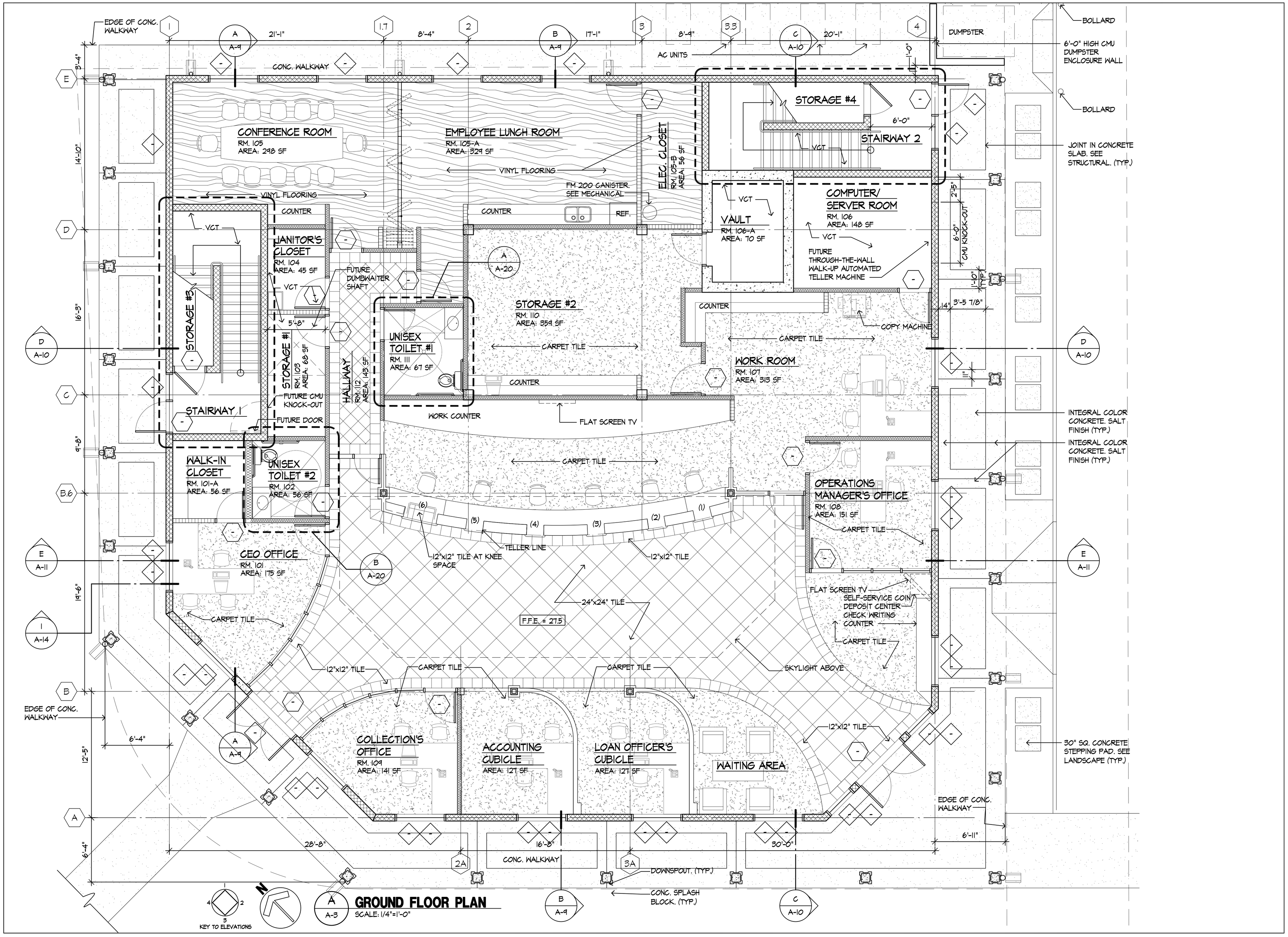

GROUND FLOOR PLAN

SCALE: 1/4"=1'-0"

WMCFCU S: 1/4" = 1'-0"

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GROUND FLOOR PLAN

STAMP

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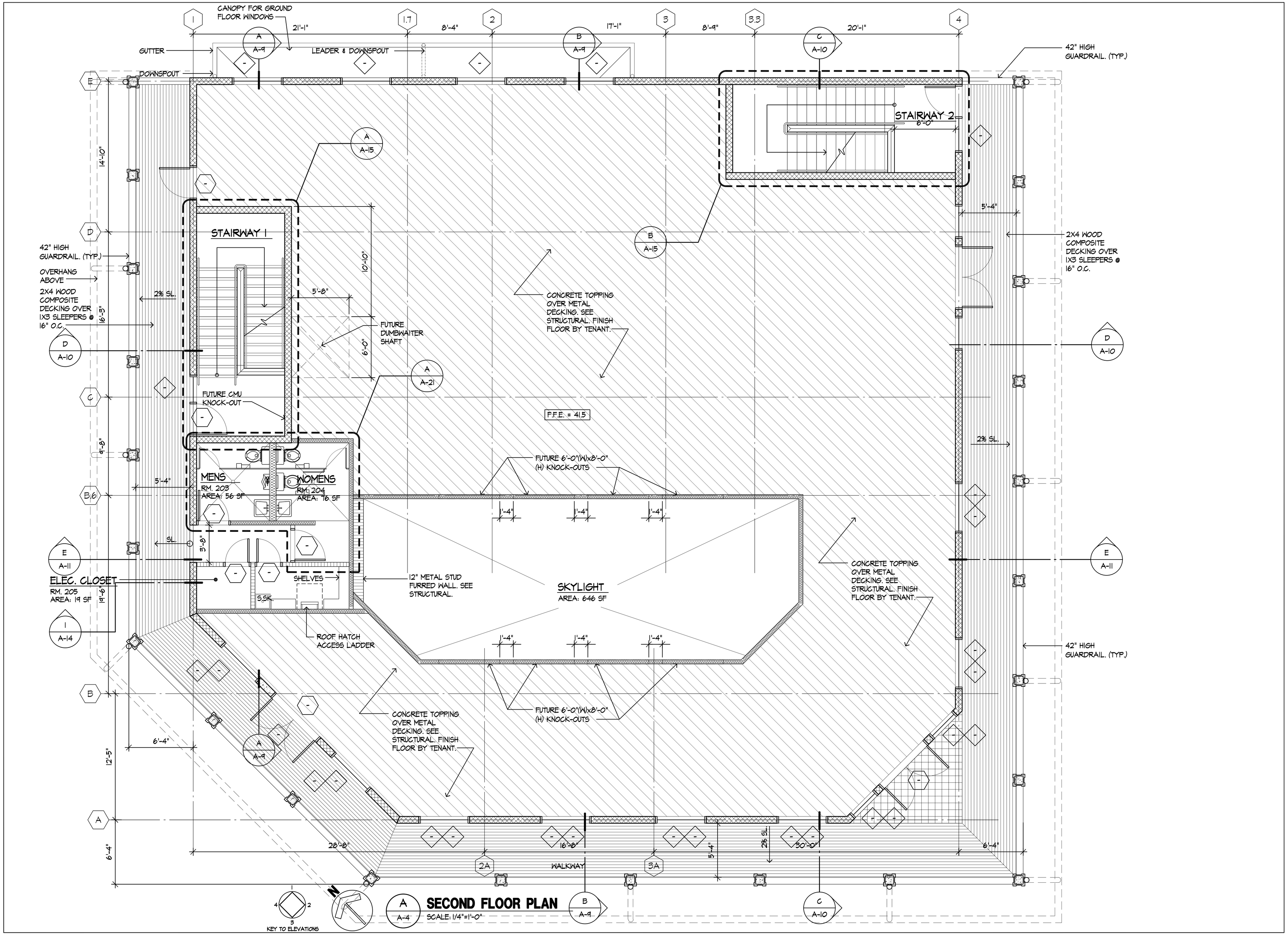
A-3

of sheets



SECOND FLOOR PLAN

SCALE: 1/4"=1'-0"

WMCFCU S: 1/4" = 1'-0"

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A DESIGN CORPORATION

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SECOND FLOOR PLAN

STAMP

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Designed by

Drawn by ES, CH

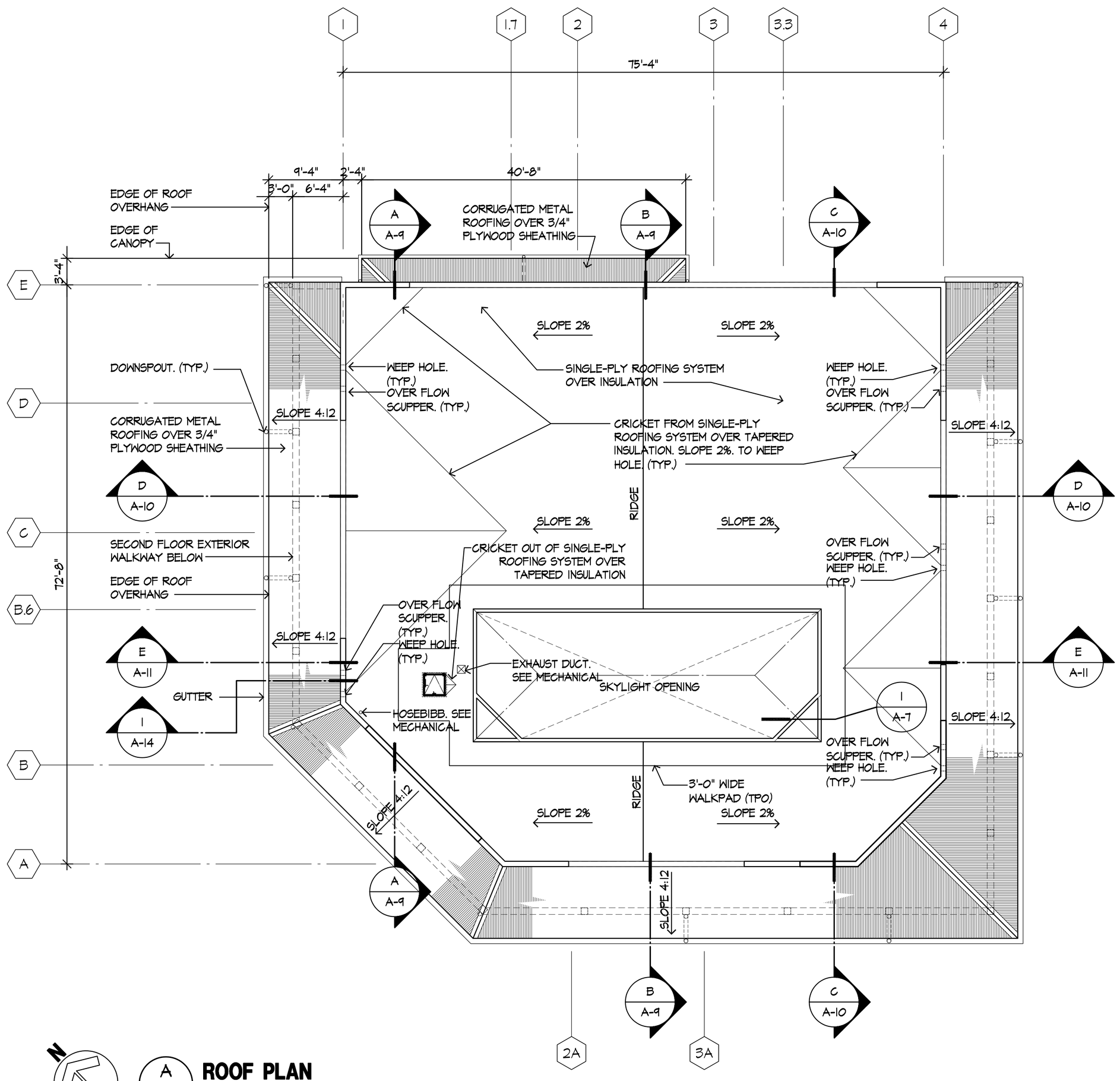
Project No. 08127.0

Date OCTOBER 2009

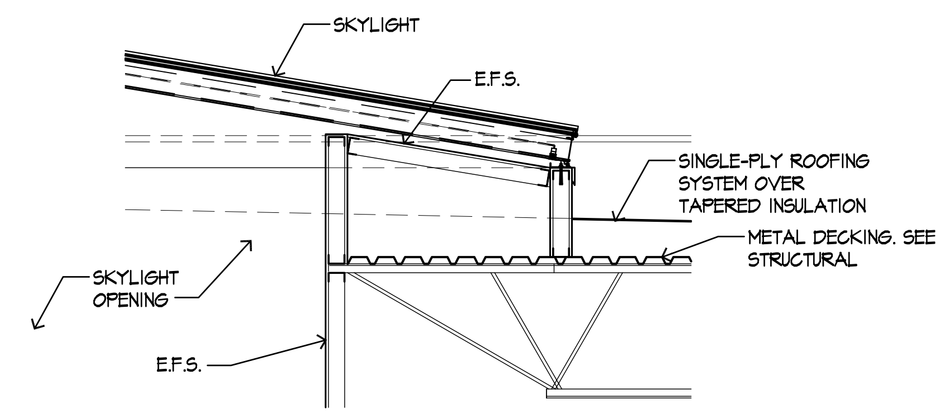
Sheet No.

A-4

of sheets



A / A-7 **ROOF PLAN**
SCALE: 1/4"=1'-0"



1 / A-7 **SKYLIGHT CORNER DETAIL**
SCALE: 1/2"=1'-0"

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ROOF PLAN

STAMP

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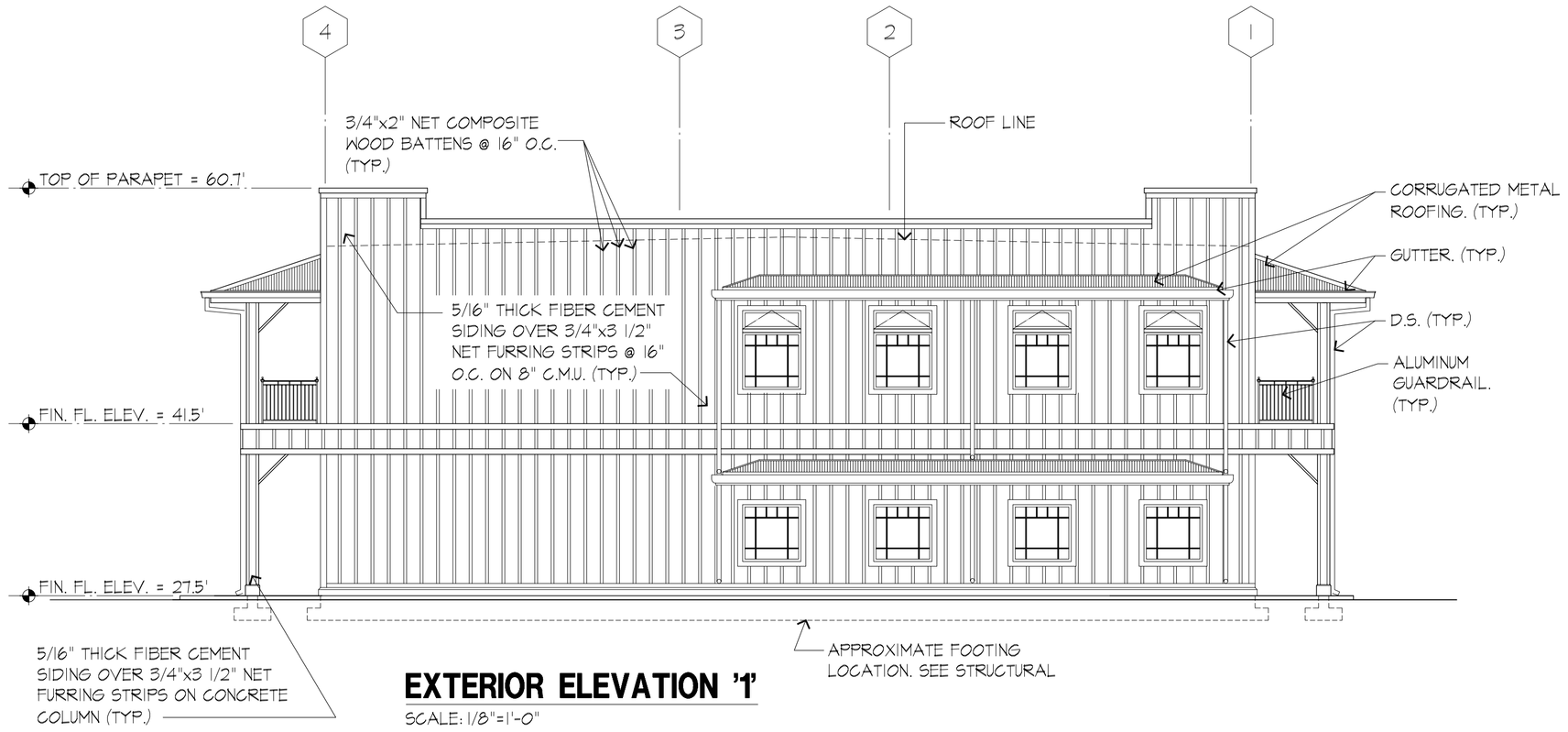
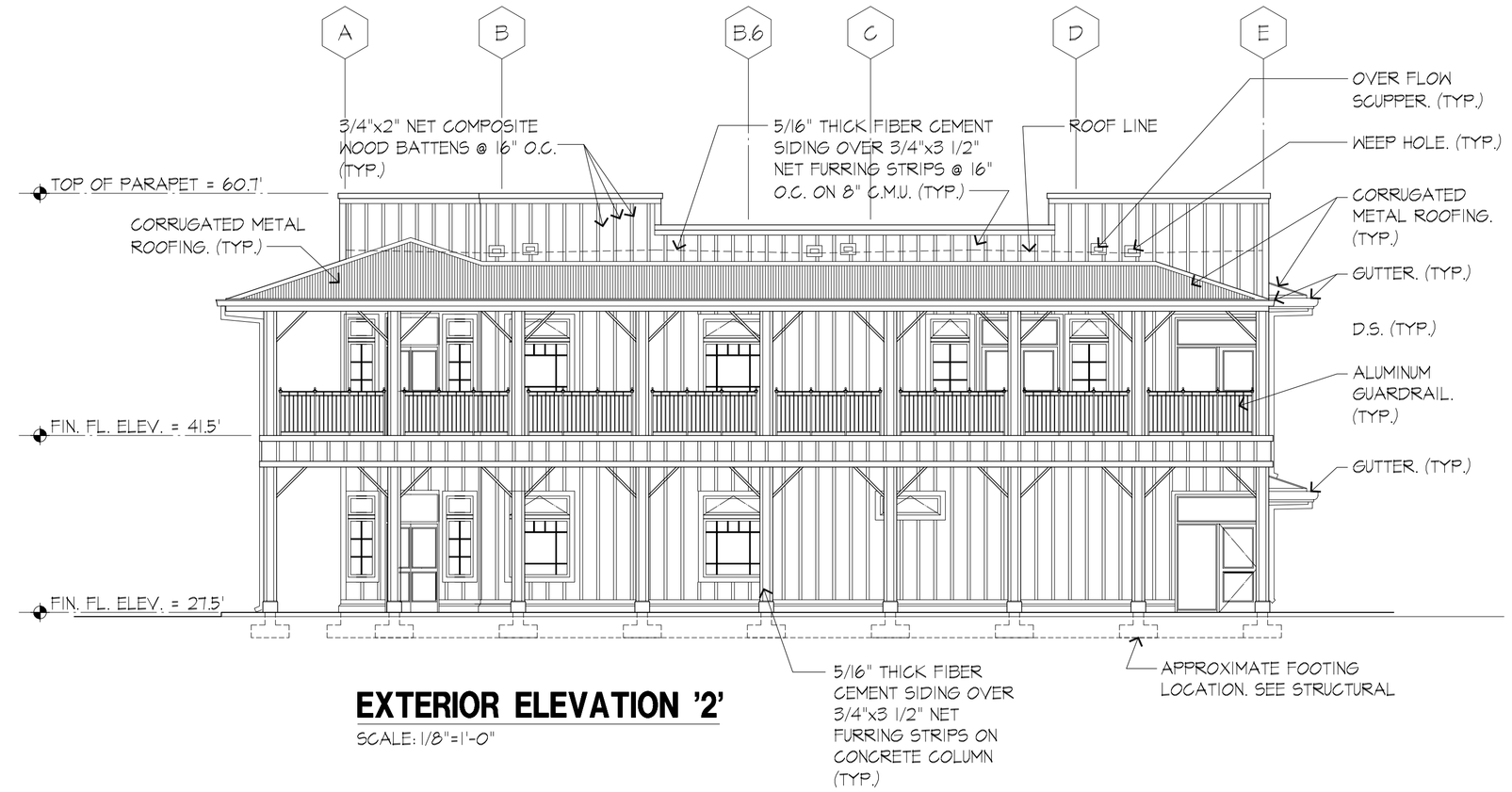
of sheets

WMCFCU S: 1/4"



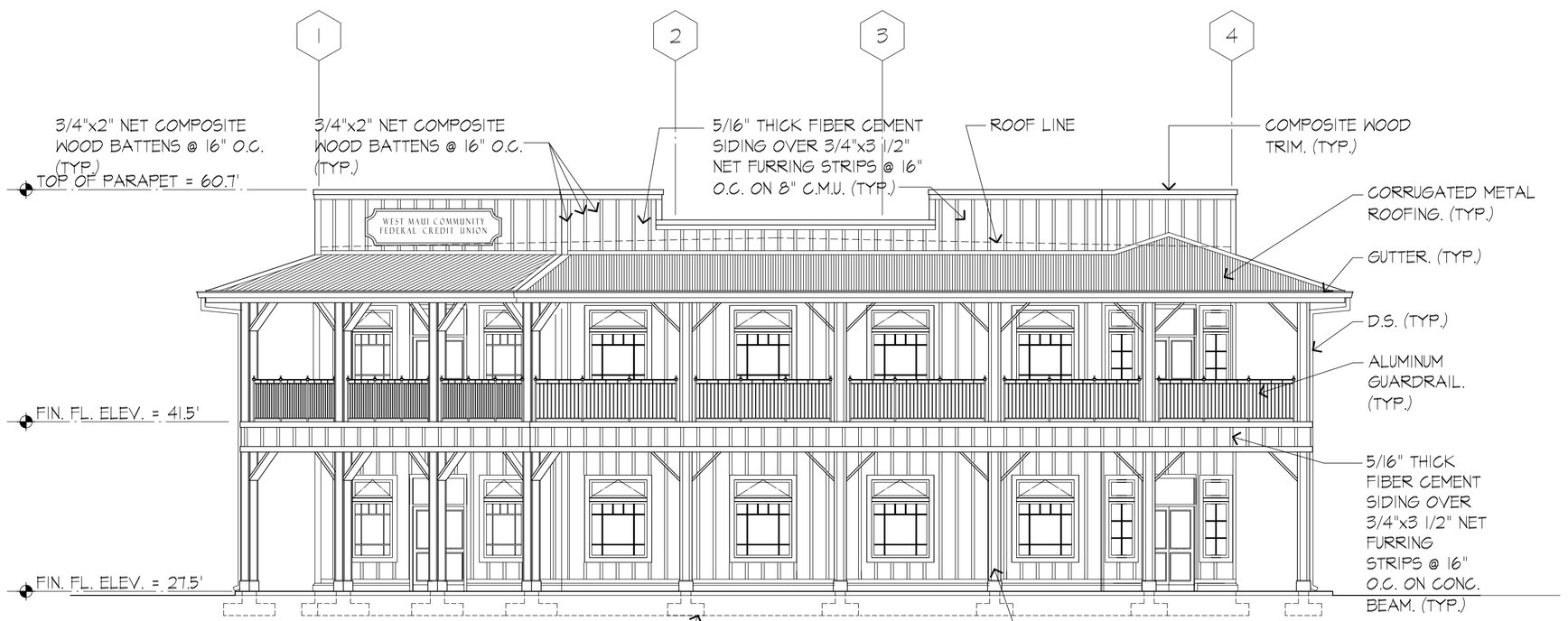
EXTERIOR ELEVATION '1'

SCALE: 1/8"=1'-0"



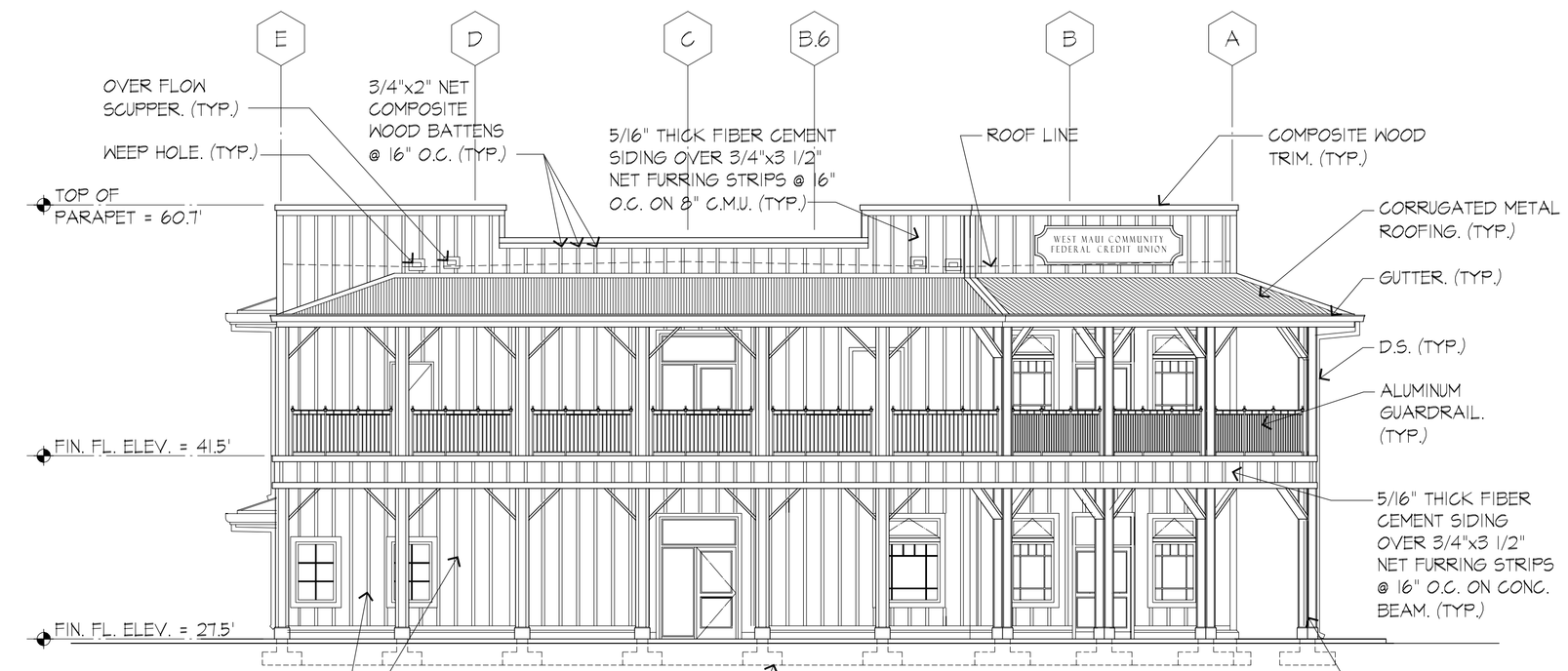
EXTERIOR ELEVATION '2'

SCALE: 1/8"=1'-0"



EXTERIOR ELEVATION '3'

SCALE: 1/8"=1'-0"



EXTERIOR ELEVATION '4'

SCALE: 1/8"=1'-0"

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EXTERIOR ELEVATIONS

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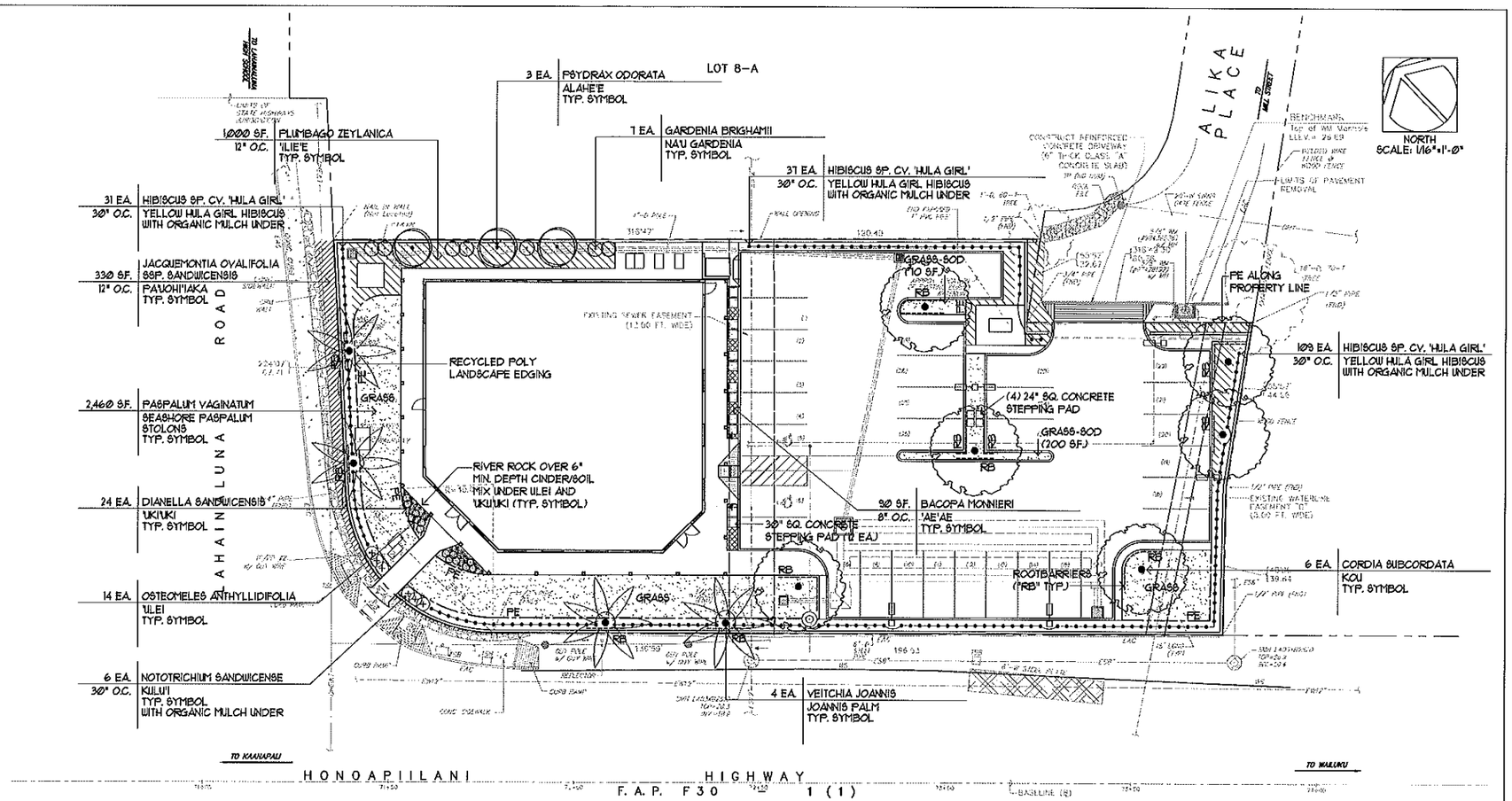
Designed by
Drawn by ES/MK
Project No. 08127.0
Date AUGUST 2009
Sheet No.

A-8

of sheets

WMCFCU S: 1/8"



LANDSCAPE PLANTING PLAN

SCALE: 1/16"=1'-0"

SPECIAL NOTE - COQUI FROG (ELEUTHERODACTYLUS COQUI AND/OR ELEUTHERODACTYLUS PLANIROSTRIS):

1. PRIOR TO TRANSPORT TO THE PROJECT, THE CONTRACTOR SHALL INSPECT, TAKE ALL PRECAUTIONS AND CERTIFY THAT ALL PLANT MATERIALS, EQUIPMENT AND VEHICLES ARE FREE OF COQUI FROGS AND/OR THEIR EGGS. COQUI FROGS ARE NOCTURNAL AND INSPECTIONS ARE RECOMMENDED TO TAKE PLACE DURING THE EVENING.
2. IN THE EVENT OF THE PRESENCE OF COQUI FROGS AND/OR THEIR EGGS, THEY SHALL BE COMPLETELY DESTROYED AND REMOVED AND THE PLANT MATERIAL, EQUIPMENT, OR VEHICLE TREATED AS RECOMMENDED BY THE STATE, INCLUDING APPLICATION OF CITRIC ACID AND HOT SOAPY WATER.
3. PRESENCE OF COQUI FROGS OR EGGS SHALL BE REPORTED TO THE HI DEPT. OF AG. PEST HOTLINE AT (808) 643-PEST (7378) OR FOR INDIVIDUAL ISLAND INFORMATION:
   MAUI
   MAUI INVASIVE SPECIES COMMITTEE (MISC) PH: (808) 573-6472 OR EMAIL: MISCPR@HAWAII.EDU

PLANTING NOTES

1. EXCAVATE AND PREPARE SUBGRADE AS NECESSARY TO INSTALL A MINIMUM DEPTH OF 6 INCHES OF TOPSOIL WITHIN ALL EXPOSED AREAS. EXPOSED AREAS SHALL BE DEFINED AS THOSE AREAS WHERE DISTURBANCE OCCURS DUE TO DEMOLITION, REMOVAL, OR TRENCHING AND WHERE NO STRUCTURES OR PAVEMENTS ARE TO BE CONSTRUCTED. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE AND PROVIDE ADEQUATE QUANTITIES OF TOPSOIL. CAREFULLY COORDINATE TO INSURE PLACEMENT TO FINISH GRADES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN FINISH GRADES AS DESIGNED, OR TO MAINTAIN EXISTING DRAINAGE PATTERNS.
2. PLANT QUANTITIES ARE APPROXIMATE . THE CONTRACTOR SHALL VERIFY QUANTITIES AND PROVIDE THE QUANTITY OF PLANT MATERIALS REQUIRED AT THE SIZES AND SPACING SHOWN OR NOTED.

PLANT LIST

QUANTITY	BOTANICAL NAME	COMMON NAME	ROOTBALL	HEIGHT	SPREAD	CALIPER
	TREES AND PALMS					
6 EA.	CORDIA SUBCORDATA	KOU	25 GAL.	8' CLR. TRUNK	6'	2"
3 EA.	PSYDRAX ODORATA	ALAHE'E	5 GAL.	6'	4'	1"
4 EA.	VEITCHIA JOANNIS	JOANNIS PALM	65 GAL.	8' BROWN TRUNK		
	SHRUBS AND HERBACEOUS		(AS = AS SHOWN ON PLAN)			SPACING O.C.
7 EA.	GARDENIA BRIGHAMII	NAU GARDENIA	3 GAL	24"	18"	AS
111 EA.	HIBISCUS SP. CV. 'HULA GIRL'	YELLOW HULA GIRL HIBISCUS	1 GAL	18"	12"	30"
6 EA.	NOTOTRICHIUM SANDWICENSE	KULU'I	1 GAL.	18"	12"	30"
24 EA.	DIANELLA SANDWICENSIS	'UKIUKI	6" POT	12"	12"	AS
14 EA.	OSTEOMELES ANTHYLLIDIFOLIA	'ULEI	6" POT	12"	12"	AS
	GROUND COVERS					
90 SF.	BACOPA MONNIERI	'AE'AE	4" POT	2"	6"	12"
1,000 SF.	PLUMBAGO ZEYLANICA	'ILIE'E	4" POT	4"	6"	12"
330 SF.	JACQUEMONTIA OVALIFOLIA VAR. SANDWICENSIS	PA'UOHI'IAKA	4" POT	2"	6"	12"
	GRASS					
270 SF.	PASPALUM VAGINATUM	SEASHORE PASPALUM	SOD	--	--	--
2,460 SF.	PASPALUM VAGINATUM	SEASHORE PASPALUM	STOLONS	--	--	--
295 L.F.	RECYCLED PLASTIC EDGING. COMMERCIAL GRADE, WITH STAKES AND SPLICERS. FOR SEPARATION BETWEEN MAINTENANCE STRIP AND PLANTING, AND BETWEEN GRASS AND GROUND COVER. TREX LANDSCAPE EDGING, 1"x4", OR AN APPROVED SUBSTITUTE.					
160 L.F.	ROOT BARRIER WHERE INDICATED ON THE DRAWINGS. ROOT BARRIERS SHALL BE HERBICIDE IMPREGNATED GEOTEXTILE FABRIC, MIN. 15 L.F. LONG AND 18.5" DEEP, SUCH AS TYPAR BIOBARRIER, OR AN ACCEPTABLE SUBSTITUTE.					
1,430 SF.	ORGANIC MULCH, 2" DEPTH.					
100 SF.	GRAY RIVER ROCK, 2" TO 3" DIA., INSURE COMPLETE COVERAGE OF UNDERLYING SOIL.					
100 SF.	CINDER/SOIL MIX. MINIMUM 6" DEPTH.					

S: 1/16"=1'-0"

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TMK: (2) 4-6-010: 025

LANDSCAPE PLANTING PLAN

STAMP

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Project No. 08127.0
Date 12-01-09
Sheet No. L-2
of sheets

West Maui Federal
Credit Union Building Est. 2008

ELEVATION FROM PARKING LOT - SCHEME 4

SCALE: 1/16"=1'-0"

ELEVATION FROM LAHAINALUNA ROAD - SCHEME 4

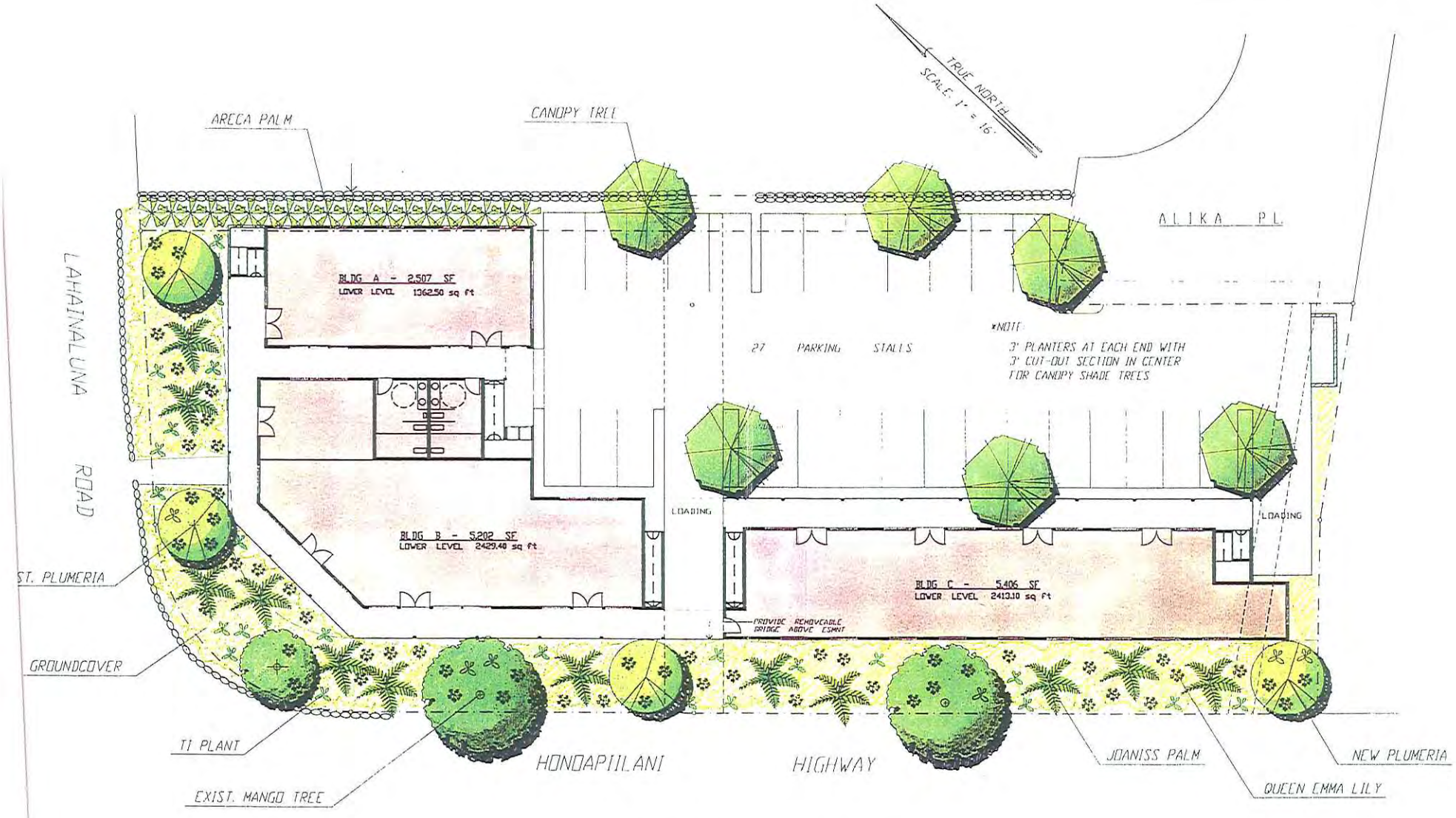
SCALE: 1/16"=1'-0"

ELEVATION FROM HONOAPIILANI HIGHWAY - SCHEME 4

SCALE: 1/8"=1'-0"

FIGURE 6

EARLIER CONCEPTUAL DEVELOPMENT PLANS



MANGO MANOR

LANDSCAPE CONCEPT PLAN

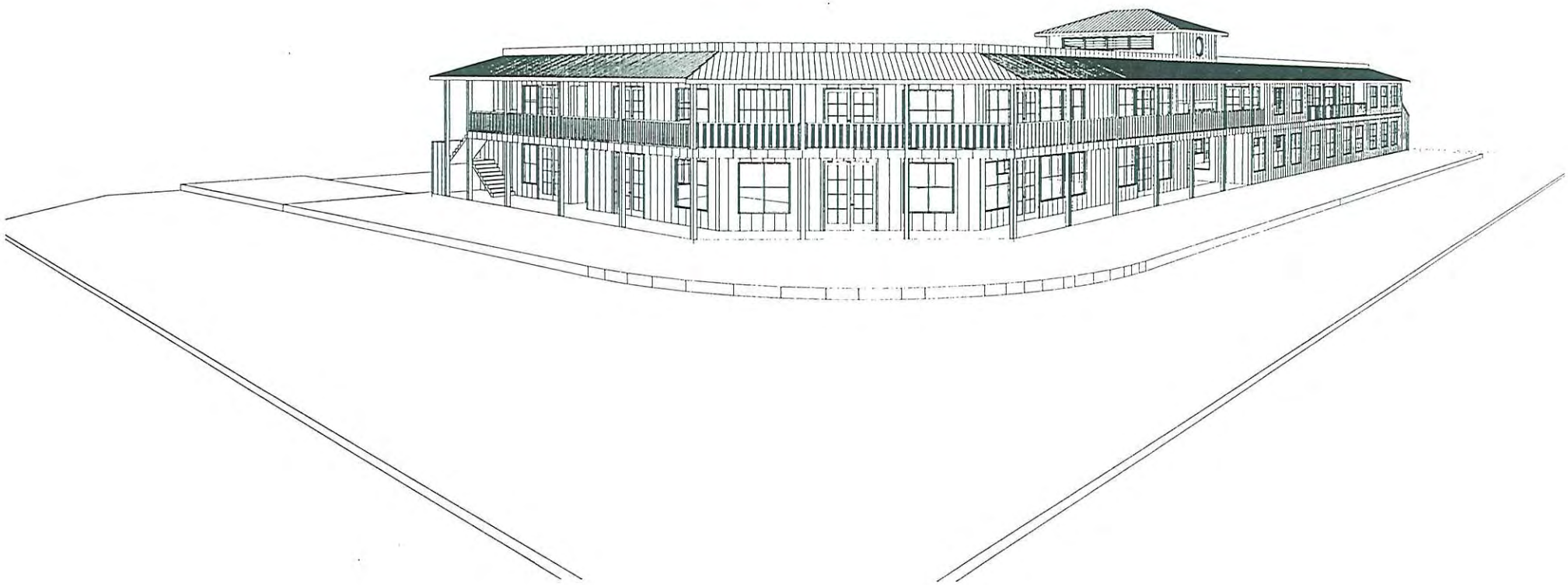
T.M.K. : (2) 4 - 6 - 10 : 25, 26 & 32

*NOTE
LANDSCAPE TO BE WATERED
BY NEW AUTOMATIC SYTEM

Figure No. 4a

CHRIS HART

11 AUGUST 1998



Project Perspective from Honoapiilani Highway
Mango Manor Commercial Complex
Lahaina, Maui, Hawai`i

Figure No. 4b

CHRIS HART & PARTNERS

FIGURE 7

Not to Scale

SOIL CLASSIFICATIONS

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

bd Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

50 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0362E

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 362 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0362	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
1500030362E

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

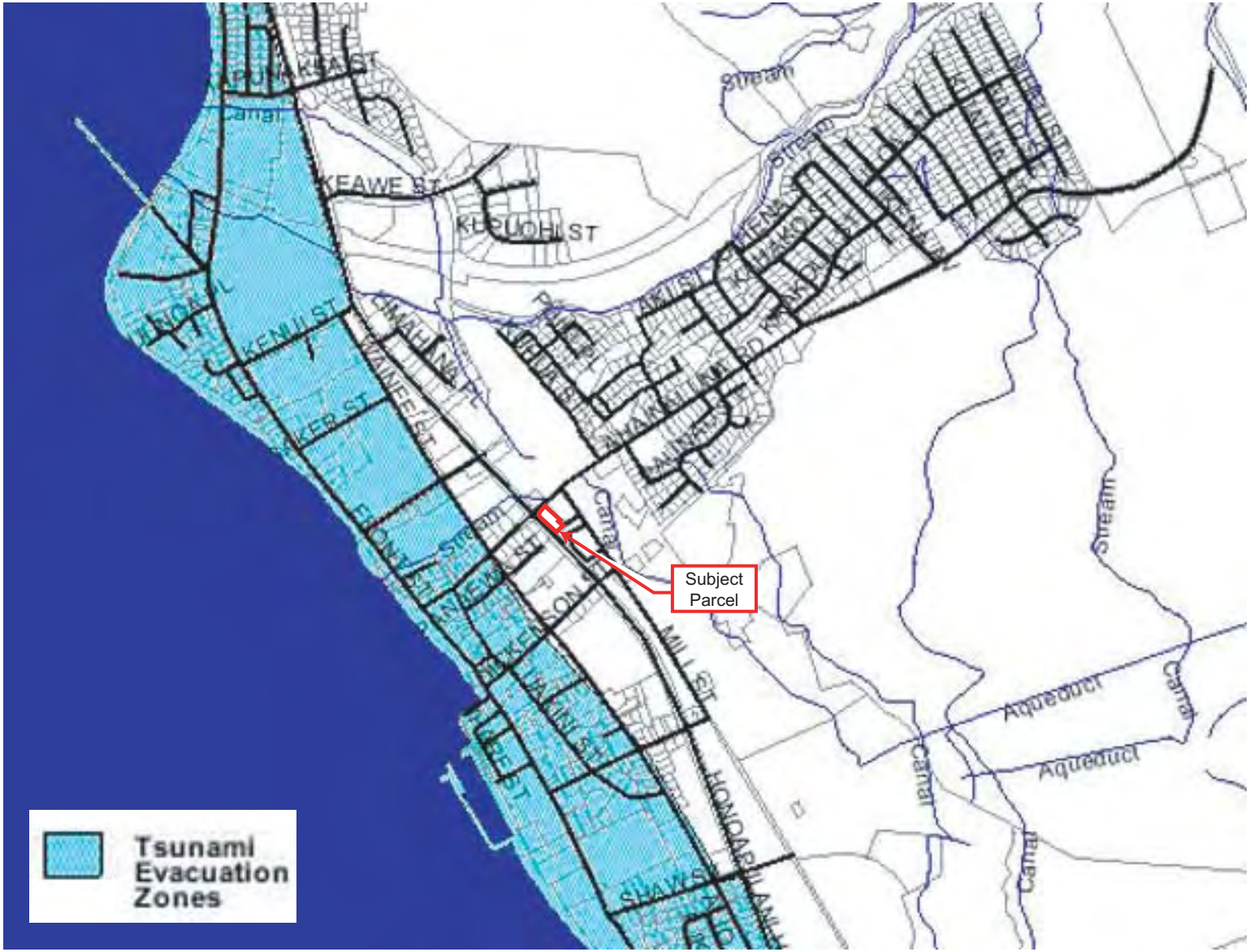


FIGURE 9

Not to Scale

TSUNAMI EVACUATION AREAS

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

FIGURE 10

Not to Scale

STATE LAND USE DISTRICTS

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

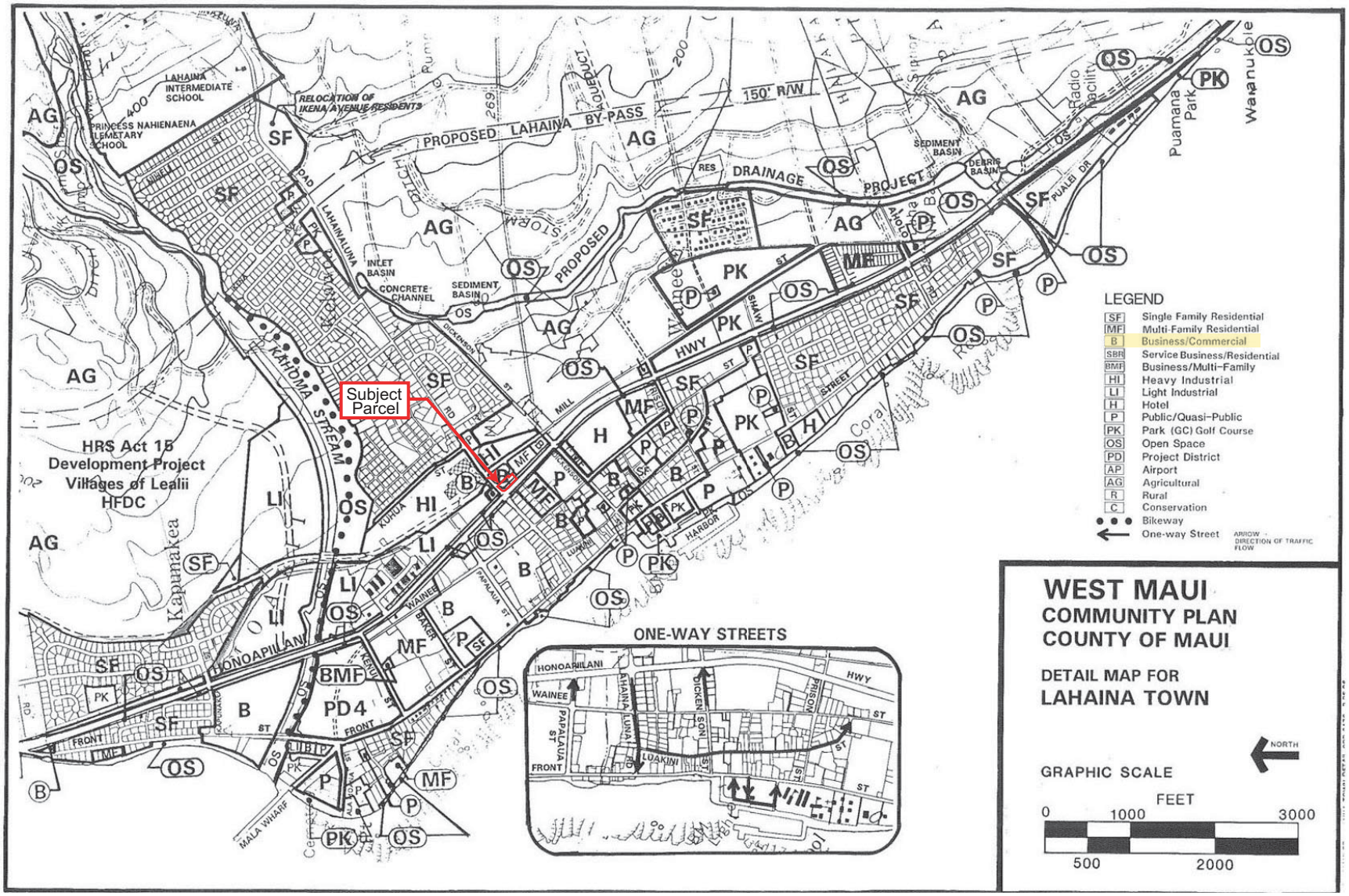


FIGURE 11

Not to Scale

WEST MAUI COMMUNITY PLAN

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

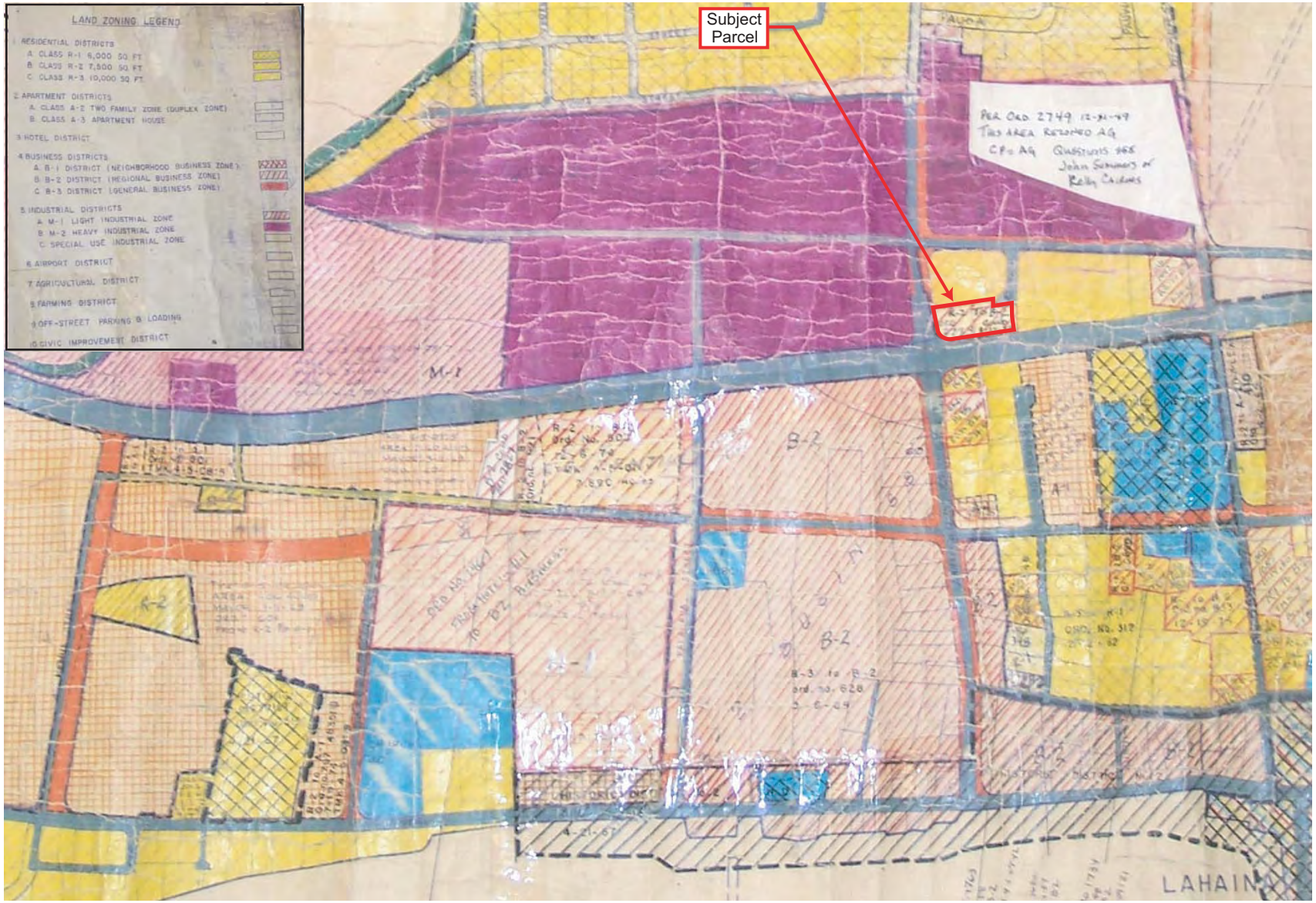


FIGURE 12

Not to Scale

MAUI COUNTY ZONING

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

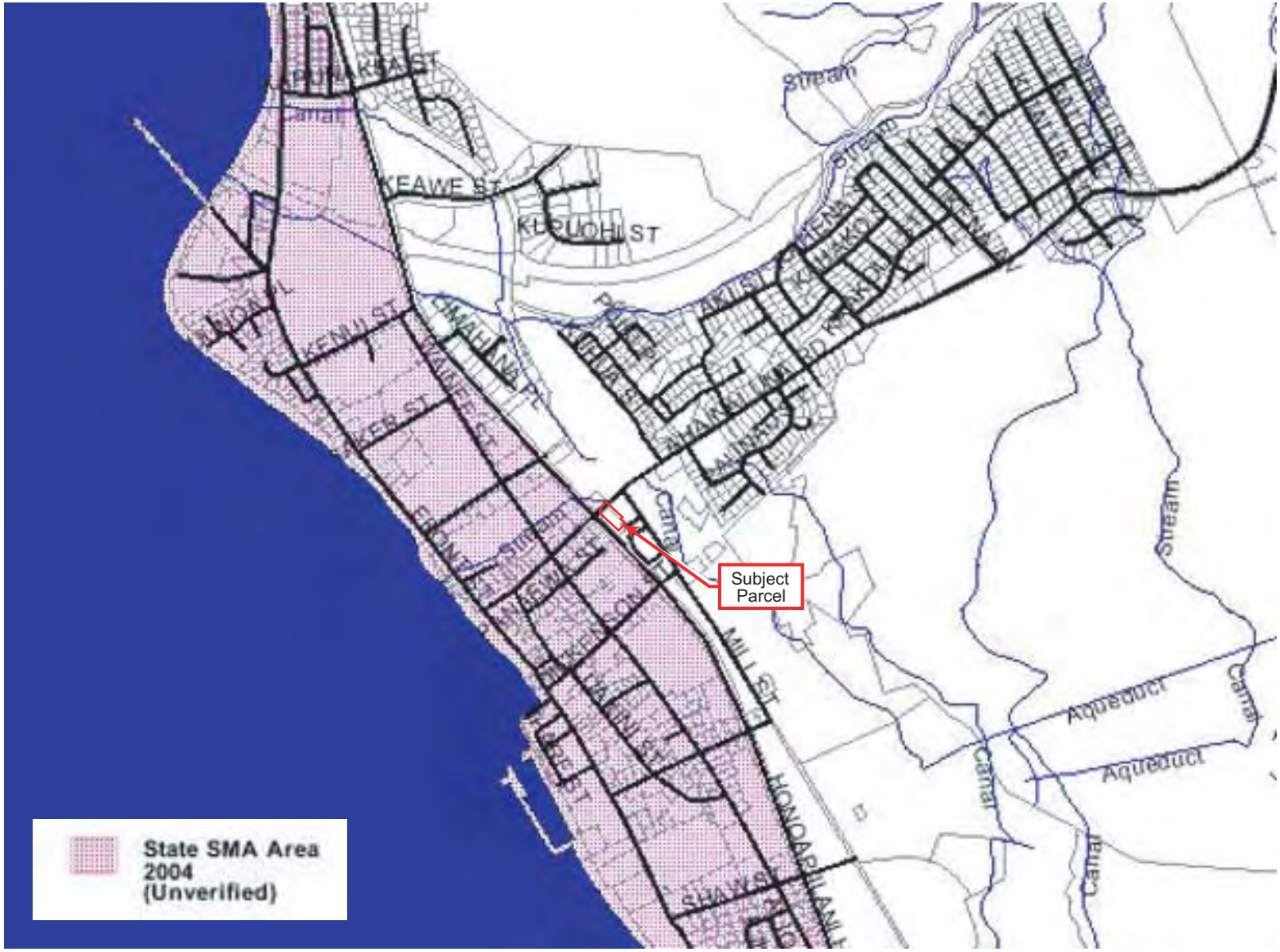


FIGURE 13

Not to Scale

SPECIAL MANAGEMENT AREA

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS

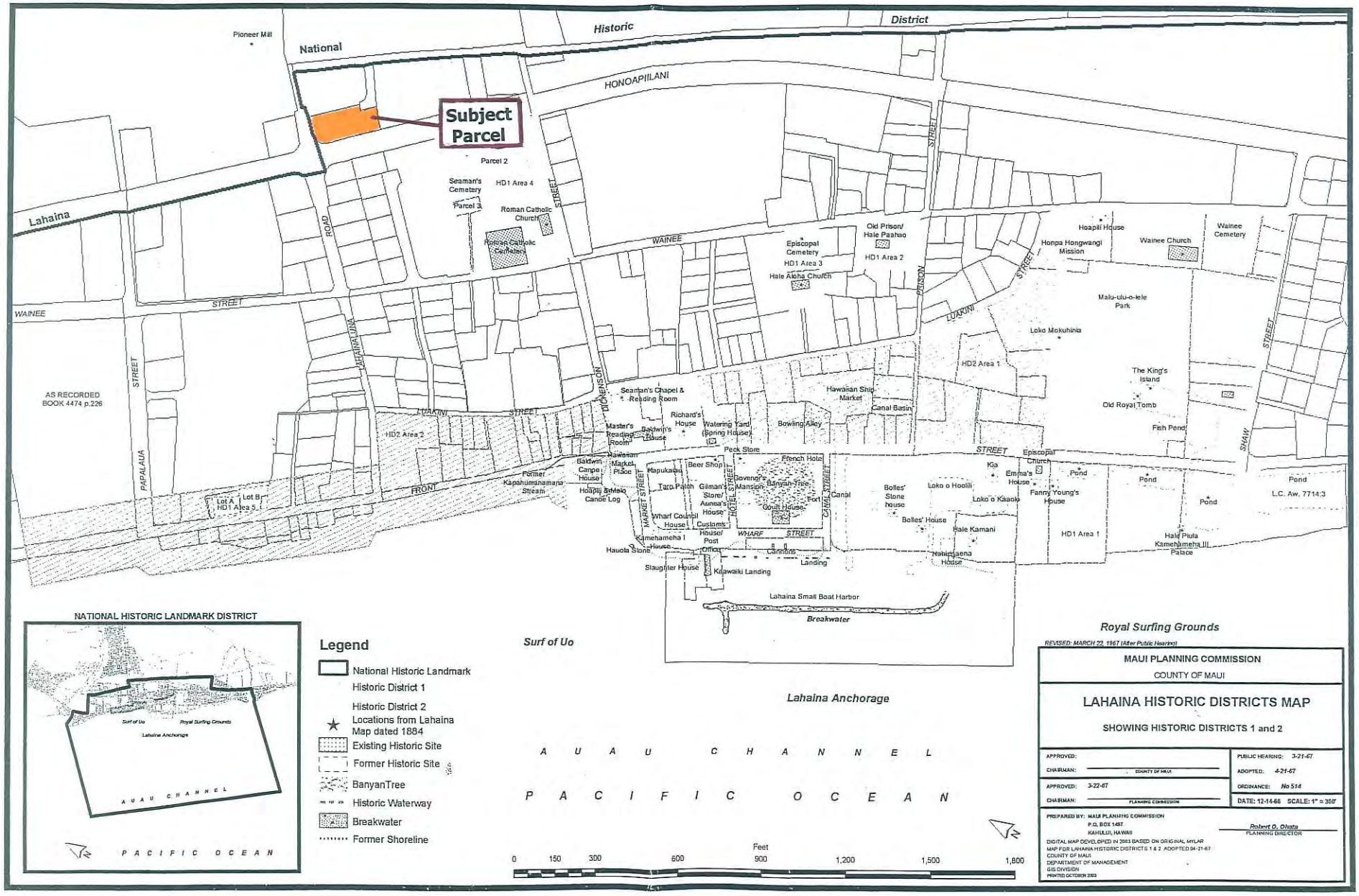
APPENDICES

APPENDICES

Appendix A	*Lahaina Historic Districts Map*
Appendix B	*Zoning and Flood Confirmation Form*
Appendix B-1	*B-2, Community Business District Zoning*
Appendix C	*Ordinance No. 3224 (Conditional Permit)*
Appendix D	*Ordinance No. 2793 (Conditional Zoning)*
Appendix D-1	*Maui Planning Department Letters*
Appendix E	*Archaeological Monitoring Plan*
Appendix E-1	*SHPD Approval Letter*
Appendix F	*Cultural Impact Assessment*
Appendix G	*Scenic Resources Map*
Appendix H	*Preliminary Engineering & Drainage Report*
Appendix I	*Traffic Impact Assessment Report*
Appendix J	*Proposed Directed Growth Map (Lahaina Town)*
Appendix K	*Early Consultation Letters*

APPENDIX A

Lahaina Historic
Districts Map


Subject Parcel
Parcel 2
Parcel 3
Pioneer Mill
National
Historic
District
HONOAPIILANI
Lahaina
WAINEE
STREET
ROAD
PAPALAUA
DICKENSON
PRISON
LUAKINI
FRONT
MARKET STREET
HOTEL STREET
CANAL STREET
WHARF
SHAW
Seaman's Cemetery
HD1 Area 4
Roman Catholic Church
Roman Catholic Cemetery
Episcopal Cemetery
HD1 Area 3
Hale Aloha Church
Old Prison/ Hale Paahao
HD1 Area 2
Hoapili House
Honpa Hongwangi Mission
Wainee Church
Wainee Cemetery
Malu-ulu-o-lele Park
Loko Mokuhinia
HD2 Area 1
The King's Island
Old Royal Tomb
Fish Pond
AS RECORDED BOOK 4474 p.226
HD2 Area 2
Seaman's Chapel & Reading Room
Richard's House
Watering Yard (Spring House)
Bowling Alley
Hawaiian Ship Market
Canal Basin
Master's Reading Room
Baldwin's House
Peck Store
Baldwin Canoe House
Hawaiian Market Place
Former Kapahumanamana Stream
Hoapili & Malo Canoe Log
Mapukaoni
Beer Shop
Taro Patch
Gilman's Store/ Aunea's House
Wharf Council House
Customs House/ Post Office
Kamehameha I House
Hauola Stone
Slaughter House
Kalawaiki Landing
Lanilons Landing
Government Mansion
Banyan Tree
Court House
French Hole
Fort
Canal
Bolles' Stone house
Bolles' House
Loko o Hoolili
Loko o Kaaoko
Hale Kamani
Kalanipaena House
Kia
Emma's House
Episcopal Church
Fanny Young's House
Pond
HD1 Area 1
Hale Piula Kamehameha III Palace
L.C. Aw. 7714:3
Lot A HD1 Area 5
Lot B
Lahaina Small Boat Harbor
Breakwater
Surf of Uo
Royal Surfing Grounds
Lahaina Anchorage
A U A U C H A N N E L
P A C I F I C O C E A N
Feet
0 150 300 600 900 1,200 1,500 1,800
NATIONAL HISTORIC LANDMARK DISTRICT
Legend
National Historic Landmark
Historic District 1
Historic District 2
Locations from Lahaina Map dated 1884
Existing Historic Site
Former Historic Site
BanyanTree
Historic Waterway
Breakwater
Former Shoreline
REVISED: MARCH 22, 1967 (After Public Hearing)
MAUI PLANNING COMMISSION
COUNTY OF MAUI
LAHAINA HISTORIC DISTRICTS MAP
SHOWING HISTORIC DISTRICTS 1 and 2
APPROVED:
CHAIRMAN: COUNTY OF MAUI
APPROVED: 3-22-67
CHAIRMAN: PLANNING COMMISSION
PUBLIC HEARING: 3-21-67
ADOPTED: 4-21-67
ORDINANCE: No 514
DATE: 12-14-66 SCALE: 1" = 300'
PREPARED BY: MAUI PLANNING COMMISSION
P.O. BOX 1487
KAHULUI, HAWAII
DIGITAL MAP DEVELOPED IN 2003 BASED ON ORIGINAL MYLAR MAP FOR LAHAINA HISTORIC DISTRICTS 1 & 2 ADOPTED 04-21-67
COUNTY OF MAUI
DEPARTMENT OF MANAGEMENT
GIS DIVISION
PRINTED OCTOBER 2003
Robert O. Ohsato
PLANNING DIRECTOR

APPENDIX B

Zoning and Flood
Confirmation Form

COUNTY OF MAUI
DEPARTMENT OF PLANNING
Kalana Paku`i Building
250 South High Street
Wailuku, Hawaii 96793

Zoning Administration
and Enforcement Division
Telephone: (808) 270-7253
Facsimile: (808) 270 7634
E-mail: planning@mauicounty.gov

ZONING AND FLOOD CONFIRMATION

APPLICANT INFORMATION			
APPLICANT'S NAME	Chris Hart & Partners		
PHONE	242-1955	**E-MAIL**	
PROJECT NAME	West Maui Community Federal Credit Union		
TAX MAP KEY NO	(2) 4-6-010:025		
PROPERTY ADDRESS	270 LAHAINALUNA RD LAHAINA HI 96761		
ZONING INFORMATION			
COMMUNITY PLAN	B-BUSINESS/COMMERCIAL		
ZONING	SMA NONE-NOT IN THE SPECIAL MANAGEMENT AREA STATE URB-STATE URBAN DISTRICT B-2-COUNTY'S B-2 COMMUNITY BUSINESS DISTRICT NHLD-NATIONAL HISTORIC LANDMARK DISTRICT		
FLOOD INFORMATION			
FLOOD HAZARD AREA ZONE(S):	X-AREAS DET.TO BE OUTSIDE THE .2% ANN. FLD		
BASE FLOOD ELEVATION:	N/A	mean sea level, 1929 National Geodetic Vertical Datum.	
FLOODWAY	Yes	or	X No
FLOOD DEVELOPMENT PERMIT IS REQUIRED:	Yes	or	X No

* For flood hazard area zones X or XS, a flood development permit would be required if any work is done in any drainage facility or stream area that would reduce the capacity of the drainage facility, river, or stream, or adversely affect downstream property.

FOR COUNTY USE ONLY

REMARKS/COMMENTS:

☐ Additional information required ☐ Information submitted is correct

☐ Required for Agricultural Subdivisions ☐ Correction has been made and initialed

Reviewed and Confirmed by:

Sharon Matsunaga-Berdel 11/19/09 (Date)

For AARON SHINMOTO, Planning Program Administrator
Zoning Administration and Enforcement Division

(10.09)

APPENDIX B-1

B-2, Community
Business District
Zoning

Chapter 19.18

B-2 COMMUNITY BUSINESS DISTRICT

Sections:

19.18.010	**Generally.**
19.18.020	**Permitted uses.**
19.18.030	**Area regulations.**
19.18.040	**Height regulations.**
19.18.850	**Yards.**

19.18.010 Generally.

A community business district is intended to provide all types of goods and services for the community, with the exception of those uses more generally associated with industrial district, but at a lower intensity of use than in the central business district. (Prior code § 8-1.9(a))

19.18.020 Permitted uses.

Within the B-2 district, the following uses shall be permitted:

1. Any use permitted in a B-1 neighborhood business district; however, no living or sleeping quarters shall be permitted in any detached accessory building or structure on the same lot;
2. Amusement enterprises, including billiard or pool halls;
3. Antique shops;
4. Apartments;
5. Art galleries;
6. Auctioneer establishments;
7. Auditoriums and theaters;
8. Automobile parking lots and/or buildings;
9. Automobile parts stores;
10. Automobile service stations, with or without auto repairing; provided all auto repairing operations are conducted in enclosed buildings; and provided further, that tire rebuilding or battery manufacturing shall not be permitted within this district;
11. Automobile upholstery shops;
12. Awning or canvas shops;
13. Banks;
14. Baseball or football stadiums and other sport activities and amusements;
15. Bath houses, commercial (plunge);
16. Baths, Turkish and the like, including masseurs;
17. Block-printing establishments;
18. Bowling alleys;
19. Business offices and agencies;
20. Catering establishments employing not more than five persons;
21. Charity relief organizations;
22. Clinics, medical or dental;
23. Custom dressmaking or millinery shops;
24. Dancehalls;
25. Dancing and hula studios;
26. Dressmaking shops;
27. Dry goods and/or department stores;
28. Equipment rental and sales yards;
29. Feed stores;
30. Gymnasiums;
31. Haberdasheries and women's apparel shops;
32. Hardware and garden supply stores;
33. Ice cream and milk manufacturing plants employing not more than twenty-five persons;
34. Jewelry stores or fine art shops, including interior decorating;
35. Libraries;
36. Marinas;
37. Miniature golf courses;
38. Museums;
39. Music conservatories or music studios;
40. News and magazine stands;
41. Nurseries (flower or plants); provided, that all incidental equipment and supplies, including fertilizers and empty cans, are kept within enclosed buildings;
42. Nursing and convalescent homes;
43. Parcel delivery stations;
44. Pet shops, not involving the treatment or boarding of animals;
45. Photo studios;
46. Physical culture studios;
47. Plumbing shops within wholly enclosed buildings and employing not more than five persons;
48. Printing, lithography or publishing shops;
49. Private clubs or fraternal organizations;
50. Private schools or business colleges;
51. Professional and financial buildings;
52. Public parking areas;
53. Radio and television stations;
54. Religious, benevolent, and philanthropic societies;
55. Restaurants, cafes or bars, including drive-ins;
56. Sanitariums;
57. Shoe stores;
58. Sign-painting shops within wholly enclosed buildings and employing not more than five persons;
59. Skating shops;
60. Tailor shops;
61. Trade schools;
62. Used car lots; provided all repair and maintenance is conducted within a wholly enclosed building;
63. Mortuaries, subject to the approval of the commission;

64. Warehouses and yards which are adjunct to, and part of, the operation of the permitted uses listed above may be permitted by the commission, provided such uses are determined to conform to the intent of this article, and subject to such terms and conditions as may be warranted. Such uses shall be conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected;

65. Bed and breakfast homes, subject to the restrictions and standards of section 19.64.030 of this title;

66. Any other retail businesses or commercial enterprises which are similar in character of rendering sales of commodities or performance of services to the community and not detrimental to the welfare of the surrounding area; provided, however, that such uses shall be approved by the commission as conforming to the intent of this article. (Ord. 2609 § 6, 1997: Ord. 1960 § 1, 1990: prior code § 8-1.9(b))

19.18.030 Area regulations.

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet. (Prior code § 8-1.9(c))

19.18.040 Height regulations.

The maximum height of any building shall be limited by the total floor area which shall not exceed in square feet two hundred percent of the total lot area; and provided further, that no building be more than six stories in height. (Prior code § 8-1.9(d))

19.18.050 Yards.

No yard spacing shall be required, except such areas that shall be required for off-street parking; with the exception that where the side or rear of a lot in a B-2 community business district abuts a lot in any residential, apartment house or hotel district, the abutting side or rear yard shall have the same yard spacing as that required in the abutting residential, apartment house or hotel district, respectively; and provided further, that any apartment shall provide yard space in accordance with the requirements of the apartment district. (Ord. 1960 § 2, 1990: prior code § 8-1.9(e))

Chapter 19.16

B-1 NEIGHBORHOOD BUSINESS DISTRICT

Sections:

19.16.010	**Generally.**
19.16.020	**Permitted uses.**
19.16.030	**Required conditions.**
19.16.040	**Area regulations.**
19.16.050	**Height regulations.**
19.16.060	**Yards.**

19.16.010 Generally.

A neighborhood business district is one wherein retail businesses or service establishments supply commodities or perform services to meet the daily needs of the neighborhood. (Prior code § 8-1.8(a))

19.16.020 Permitted uses.

Within the B-1 district, the following uses shall be permitted:

A. Barber or beauty shops;
B. Baker goods stores;
C. Book, stationery or gift stores;
D. Candy stores;
E. Churches;
F. Day care centers and nurseries;
G. Delicatessen stores;
H. Drugstores;
I. Florist shops;
J. Grocery stores and meat markets;
K. Ice cream or snack counters;
L. Laundromats;
M. Liquor stores (package only);
N. Gasoline retailing, provided it is owned and operated as an adjunct to a neighborhood store; and provided further, that no servicing, repairing, storing, washing, or maintenance of vehicles will be permitted on the premises;
O. Other similar retail businesses or service establishments which supply commodities or perform services primarily for residents of the surrounding neighborhood; provided, however, such uses shall be approved by the commission as conforming to the intent of this title;
P. One single-family dwelling per lot, provided the lot is sufficiently large to provide a lot area six thousand square feet for the dwelling after the area for the business, parking and other accessory areas for the business have been subtracted; or living and sleeping quarters for a single family constructed above the ground floor of the business building;
Q. Bed and breakfast homes, subject to the restrictions and standards of section 19.64.030 of this title. (Ord. 2609 § 5, 1997: prior code § 8-1.8(b))

19.16.030 Required conditions.

A. All business, services, or processing shall be conducted wholly within completely enclosed buildings, except for day care centers, nurseries, automobile parking, and/or off-street loading.
B. All goods produced on the premises, whether primary or incidental, shall be sold at retail and only on the premises where produced. (Prior code § 8-1.8(c))

19.16.040 Area regulations.

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet. (Prior code § 8-1.8(d))

19.16.050 Height regulations.

No building shall exceed two stories and thirty feet in height. (Prior code § 8-1.8(e))

19.16.060 Yards.

There shall be a front yard of fifteen feet, side yard of six feet, and a rear yard of six feet; except that for any two-story building, a side yard of ten feet, and a rear yard of ten feet shall be required. (Prior code § 8-1.8(f))

APPENDIX C

Ordinance No. 3224
(Conditional Permit)

NOV 1 7 2004
For: Mayor's Office
ORDINANCE NO. 3224
Effective Date: Nov. 9, 2004
Clayton

RECEIVED
2004 NOV 12 PM 12:50
OFFICE OF THE MAYOR

'04 NOV 15 P2:14
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

ORDINANCE NO. 3224

BILL NO. 73 (2004)

Corp C
Finance
Hsg&HC
Liquor
Parks&R
Personne
Planning
Police
Prosects
Public W
Transptn
Water S
Mgmt
Mayor
Mile

A BILL FOR AN ORDINANCE GRANTING WEST MAUI COMMUNITY FEDERAL CREDIT UNION A CONDITIONAL PERMIT FOR THE CONTINUED USE OF THE BUILDING LOCATED ON THE CORNER OF LAHAINALUNA ROAD AND KUHUA STREET, FOR THE OPERATION OF THE WEST MAUI COMMUNITY FEDERAL CREDIT UNION WITHIN THE COUNTY R-1 RESIDENTIAL DISTRICT, FOR PROPERTY SITUATED AT 349 LAHAINALUNA ROAD, LAHAINA, MAUI, HAWAII

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Pursuant to Chapter 19.40, Maui County Code, and subject to the conditions imposed in Section 2 of this ordinance, a Conditional Permit is hereby granted to West Maui Community Federal Credit Union for the continued use of the building located on the corner of Lahainaluna Road and Kuhua Street, for the operation of the West Maui Community Federal Credit Union within the County R-1 Residential District. The site is identified for real property tax purposes by Tax Map Key Number: (2)4-5-025:005, comprising approximately 6,874 square feet of land situated at 349 Lahainaluna Road, Lahaina, Maui, Hawaii.

SECTION 2. The granting of this Conditional Permit is subject to the following conditions:

1. That full compliance with all applicable governmental requirements shall be rendered.

2. That the Conditional Permit shall be valid for a period of ten (10) years from the effective date of this ordinance; provided that, an extension of this Conditional Permit beyond this ten (10) year period may be granted pursuant to Section 19.40.090, Maui County Code.

3. That the Conditional Permit shall be nontransferable unless the Council approves the transfer by ordinance.

4. That West Maui Community Federal Credit Union, its successors and permitted assigns, shall exercise reasonable due care as to third parties with respect to all areas affected by subject Conditional Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this Conditional Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS ($1,000,000) naming the County of Maui as a named

additional insured, insuring and defending West Maui Community Federal Credit Union and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this Conditional Permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by West Maui Community Federal Credit Union, of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of any of the terms and conditions of this Conditional Permit. A copy of the certificate of insurance naming County of Maui as a named additional insured shall be submitted to the Department of Planning within ninety (90) calendar days from the date of approval of this Conditional Permit.

5. That West Maui Community Federal Credit Union shall develop the property in substantial compliance with the representations made to the Maui County Council in obtaining the Conditional Permit. Failure to so develop the property may result in the revocation of the Conditional Permit pursuant to Section 19.40.080, Maui County Code.

6. That a certificate of occupancy shall be obtained for the building.

7. That full compliance with Chapter 19.36, Off-street Parking and Loading, shall be rendered.

8. That biennial reports addressing compliance with the permit conditions shall be submitted to the Department of Planning for review and approval.

SECTION 3. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

JAMES A. GIROUX
Deputy Corporation Counsel
County of Maui
S:\GENERAL\LGN\GHO\CP\49025005cp.wpd

WE HEREBY CERTIFY that the foregoing BILL NO. 73 (2004)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on 5th day of November, 2004, by the following votes:

Dain P. KANE Chair	Robert CARROLL Vice-Chair	G. Riki HOKAMA	Jo Anne JOHNSON	Dennis A. MATEO	Michael J. MOLINA	Wayne K. NISHIKI	Joseph PONTANILLA	Charmaine TAVARES
Aye	Aye	Aye	Aye	Aye	Aye	Excused	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 5th day of November, 2004.

DATED AT WAILUKU, MAUI, HAWAII, this 5th day of November, 2004.

RECEIVED
2004 NOV -5 PM 2:25
OFFICE OF THE MAYOR

DAIN P. KANE, CHAIR
Council of the County of Maui

ROY T. HIRAGA, COUNTY CLERK
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 9 DAY OF NOVEMBER, 2004.

ALAN M. ARAKAWA, MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 3224 of the County of Maui, State of Hawaii.

ROY T. HIRAGA, COUNTY CLERK
County of Maui

Passed First Reading on October 15, 2004.
Effective date of Ordinance November 9, 2004.

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 3224, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui

APPENDIX D

Ordinance No. 2793
(Conditional
Zoning)

ORDINANCE NO. 2793

BILL NO. 47 (1999)

A BILL FOR AN ORDINANCE TO CHANGE ZONING FROM R-2 RESIDENTIAL DISTRICT TO B-2 COMMUNITY BUSINESS DISTRICT (CONDITIONAL ZONING) FOR PROPERTY SITUATED AT LAHAINA, MAUI, HAWAII

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Pursuant to Chapters 19.18 and 19.510, Maui County Code, a change in zoning from R-2 Residential District to B-2 Community Business District (conditional zoning) is hereby granted for property situated at Lahaina, Maui, Hawaii, and identified by Tax Map Key No. 4-6-010: 025, comprised of approximately 23,907 square feet, and more particularly described in Exhibit "A", attached hereto and by this reference made a part hereof, and in Land Zoning Map No. L-863, which is on file in the Office of the County Clerk of the County of Maui, and which is by this reference made a part hereof.

SECTION 2. Pursuant to Section 19.510.050, Maui County Code, the zoning established by this ordinance is subject to the conditions set forth in Exhibit "B", attached hereto and by this reference made a part hereof, and the Unilateral Agreement and Declaration for Conditional Zoning, attached hereto as Exhibit "C" and by this reference made a part hereof.

SECTION 3. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

Kelly A. Cairns

KELLY A. CAIRNS
Deputy Corporation Counsel
County of Maui
S:\CLERICAL\LJN\ORD\MANGOMAN.

LAND DESCRIPTION
Lot 7-A

All that certain parcel of land known as Lot 7-A of the Panaewa Tract (L.U.C.A. File No. 4.739), being a portion of Royal Patent 8363, Land Commission Award 10806, Part 65 to Kamehameha III.

Situate at
Panaewa, Lahaina, Maui, Hawaii
Tax Map Key: (2) 4-6-10: 25, 26 and 32

Beginning at a point on the southwesterly property boundary line of Lot 7-A of the Panaewa Tract (L.U.C.A. File No. 4.739), being a point on the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)], the coordinates of said point of beginning referred to Government Survey Triangulation Station "LAINA" being 6,824.70 feet south and 2,914.87 feet west and running by azimuths measured clockwise from true south; thence,

1.	136°59'00"	69.77	feet along the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)] to a ½ inch pipe (found); thence,
2.	Following along the same, along the arc of a curve concave to the right, having a radius of 40.00 feet, the chord azimuth and distance being 180°33'00" for 55.14 feet to a 3/4 inch pipe (found); thence,		
3.	224°07'00"	67.71	feet along the southeasterly right-of-way of Lahainaluna Road to a concrete nail in wall (found); thence,
4.	316°47'00"	190.40	feet along the southwesterly property boundary line of Lot 8 of the Panaewa Tract No. 3 [Tax Map Key: (2) 4-6-10: 27] to a ½ inch pipe (found); thence,
5.	55°57'00"	22.67	feet along the northwesterly right-of-way line of Alika Place to a 3/4 inch pipe (found); thence,
6.	316°49'30"	60.76	feet along the southwesterly right-of-way line of Alika Place to a ½ inch pipe (found); thence,
7.	55°57'00"	44.96	feet along the remainder of Royal Patent 8363, Land Commission Award 10806, Part 65 to Kamehameha [Tax Map Key: (2) 4-6-10: 28] to a ½ inch pipe (found); thence,
8.	48°05'00"	39.64	feet along the same to a ½ inch pipe (found); thence,
9.	136°59'00"	126.76	feet along the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)] to the point of beginning and containing an area of 23,907 square feet or 0.549 acre.

This work was done by me
or under my direct supervision.

AKAMAI LAND SURVEYING, INC.

15 Oct 98

Sherman Dudley DePonte
Licensed Professional Land Surveyor
State of Hawaii Certificate No. 6960

SHERMAN DUDLEY DEPONTE
LICENSED LAND SURVEYOR
No. 6960
HAWAII, U.S.A.

EXHIBIT "A"

EXHIBIT "B"

CONDITIONAL ZONING - TMK 4-6-010:025

1. The height of the structures cannot be higher than 35 feet above the grade of the Honoapiilani Highway and Lahainaluna Road.

2. That the architectural design of the structures shall be compatible with Historic Lahaina Town.

3. That the following high intensity uses permitted in Chapter 19.18 of the Maui County Code are prohibited:
   a. Baker goods stores;
   b. Candy stores;
   c. Day care centers and nurseries;
   d. Delicatessen stores;
   e. Grocery stores and meat markets;
   f. Ice cream or snack counters;
   g. Laundromats;
   h. Liquor stores (package only);
   i. Gasoline retailing;
   j. Single-family dwelling, detached accessory building or structure on the same lot;
   k. Amusement enterprises, including billiard or pool halls;
   l. Apartments;
   m. Auditoriums and theaters;
   n. Automobile parking lots and/or buildings;
   o. Automobile service stations, with or without auto repairing
   p. Banks;
   q. Baseball or football stadiums and other sport activities or amusements;
   r. Bowling alleys;
   s. Charity relief organizations (excluding general office);
   t. Clinics, medical, or dental;
   u. Dancehalls, dancing and hula studios;
   v Dry goods and department stores;
   w. Equipment rental and sales yards;
   x. Feed stores;
   y. Gymnasiums;
   z. Hardware and garden supply store;
   aa. Ice cream and milk manufacturing plants;
   bb. Libraries;
   cc. Marinas;
   dd. Miniature golf courses;
   ee. Museums;
   ff. Music conservatories or music studios;

gg. News and magazine stands;
hh. Nurseries (flowers or plants);
ii. Nursing and convalescent homes;
jj.. Parcel delivery stations;
kk. Pet shops;
ll. Physical culture studios;
mm. Plumbing shops;
nn. Private clubs or fraternal organizations;
oo. Private schools or business colleges;
pp. Public parking areas;
qq. Religious, benevolent, and philanthropic societies;
rr. Restaurants, cafes or bars, including drive-ins;
ss. Sanitariums;
tt. Trade schools;
uu. Used car lots;
vv. Mortuaries; and
ww. Warehouses and yards.

4. That a 15-foot setback area along Honoapiilani Highway and Lahainaluna Road shall be maintained and the irrigation and landscape plans shall be integrated with the irrigation and landscape plans for the parking area. The plans shall be in accordance with the Maui County Planting Plan and shall be reviewed and approved by the Department of Planning.

5. That should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor and/or landowner shall immediately contact the State Historic Preservation Division, which shall assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

6. That at the time of demolition and construction, traffic control and site traffic personnel shall be hired to aid in the smooth flow of traffic.

7. That no certificate of occupancy shall be issued until a traffic signal is installed at Dickenson Street and Honoapiilani Highway.

LAND COURT SYSTEM REGULAR SYSTEM

Return by Mail ( ) Pickup ( ): To:
Office of the County Clerk
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Affects Tax Map Key (Maui) 4-6-010:25

UNILATERAL AGREEMENT AND DECLARATION FOR CONDITIONAL ZONING

THIS INDENTURE, made this ____ day of _____ 1999, by Barry L. Brown and David B. Rosen, whose mailing address is P.O. Box 11782, Lahaina, Maui, Hawaii, 96761, hereinafter referred to as "DECLARANTS", and who are the owners of that certain property located at Lahaina, Maui, Hawaii, comprised of approximately 23,907 square feet, and identified for real property tax purposes by Tax Map Key No. 4-6-010:25 hereinafter referred to as "PARCEL".

W I T N E S S E T H:

WHEREAS, the Council of the County of Maui, State of Hawaii, hereinafter referred to as "Council", is considering the establishment of zoning for the Parcel, comprised of approximately 23,907 square feet, which is more particularly described in Exhibit "1", which is attached hereto and made a part of hereof, and which is more particularly identified in Land Zoning Map No.

EXHIBIT "C"

L-863, which is on file in the Office of the County Clerk of the County of Maui, and

WHEREAS, the Council recommends through its Land Use Committee, Committee Report No. _____, that said establishment of zoning be approved for passage on first reading subject to certain conditions pursuant to Section 19.510.050, Maui County Code;

WHEREAS, the DECLARANTS have agreed to execute this instrument pursuant to the conditional zoning provisions of Section 19.510.050, Maui County Code.

NOW, THEREFORE, the DECLARANTS make the following Declaration:

1. That this Declaration is made pursuant to the provisions of Section 19.510.050, Maui County Code relating to conditional zoning;

2. That until written release by the County of Maui, the Parcel, and all parts thereof, is and shall be held subject to the covenants, conditions and restrictions which shall be effective as to and shall run with the land as to the Parcel, from and after the recording of this Declaration with the Bureau of Conveyances or the Land Court of the State of Hawaii, without the execution, delivery or recordation of any further deed, instrument, document, agreement, declaration, covenant or the like with respect thereto by the DECLARANTS, the County of Maui, or any heir, devisee, executor, administrator, personal representative, successor, and assign; that the acquisition of any right, title of interest in or with respect to the Parcel by any person or persons, entity or entities, whomsoever, shall be deemed to constitute the acceptance of all of the covenants, conditions and restrictions of this Declaration by such person or persons, entity and entities, and that upon any transfer of any right, title or interest in or with respect to the Parcel the same shall be subject to, and the transferee shall assume and be bound and obligated to observe and perform, all of the covenants, conditions and restrictions of this Declaration;

3. That this Declaration and all of the covenants, conditions and restrictions contained herein shall continue to be effective as to and run with the land in perpetuity, or until DECLARANTS notify the appropriate County Department that any of said covenants, conditions and restrictions are satisfied by DECLARANTS and the appropriate County Department verifies the satisfaction and provides a written release of the conditions, covenants or restrictions.

4. That the term "DECLARANTS" and any pronoun in reference thereto, wherever used herein, shall be construed to mean the singular or the plural, the masculine or the feminine, or the neuter, and vice versa, and shall include any corporation, and shall be held to mean and include the "DECLARANTS", the Delcarants' heirs, devisees, executors, administrators, and personal representatives, successors, and assigns;

5. That the Declaration shall become fully effective on the effective date of the zoning ordinance approving the establishment of B-2 Business District Zoning and this Declaration shall be recorded in the Bureau of Conveyances or Land Court of the State of Hawaii, as the case may be;

6. That the DECLARANTS agree to develop said Parcel in conformance with the conditions set forth in Exhibit "2", which is attached hereto and made a part hereof and which shall be made a part of the zoning ordinance;

7. That the conditions imposed are reasonable and rationally relate to the objective of preserving the public health, safety and general welfare and such conditions fulfill the need for the public service demands created by the proposed use;

AND IT IS EXPRESSLY UNDERSTOOD AND AGREED that until released in writing by the County, the conditions imposed in this Declaration shall run with the land identified hereinabove and shall bind and constitute notice to all subsequent lessees, grantees, assignees, mortgagees, lienors and any other persons who claim an interest in said land, and the County of Maui shall have the right to enforce this Declaration by appropriate action at law or suit in equity against all such persons, provided that the

DECLARANTS or its successors and assigns may at the time file a petition for the removal of the conditions and terminate this Unilateral Agreement, such petition to be processed in the same manner as petitions for change in zoning.

IN WITNESS WHEREOF, the undersigned has executed this Declaration the day and year first above written.

DECLARANTS:

Barry L. Brown

Name: Barry L. Brown
Title: Property Owner

David B. Rosen by Barry L. Brown his power of attorney

Name: David B. Rosen
Title: Property Owner

APPROVED AS TO FORM AND LEGALITY:

Kelly A. Cairns

Kelly Cairns
Deputy Corporation Counsel
County of Maui

STATE OF HAWAII_____)
) SS
COUNTY OF MAUI_____)

On this 28th_____ day of July_____, 19__99before me personally appeared BARRY L. BROWN
_____to me known to be the person (s) described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

Diane Wanner

Diane Wanner
Notary Public, State of Hawaii_____

My Commission Expires: July 17, 2003_____

STATE OF HAWAII_____)
) SS
COUNTY OF MAUI_____)

On this 28th_____ day of July_____, 1999
before me personally appeared BARRY L. BROWN_____
as Attorney in Fact for DAVID B. ROSEN_____
to me known to be the person described in and who executed the foregoing instrument, as Attorney in Fact for said DAVID B. ROSEN_____
and acknowledged that he executed the same as hisr free act and deed.

Diane Wanner
Notary Public, State of Hawaii_____

My Commission Expires: July 17, 2003_____

LAND DESCRIPTION
Lot 7-A

All that certain parcel of land known as Lot 7-A of the Panaewa Tract (L.U.C.A. File No. 4.739), being a portion of Royal Patent 8363, Land Commission Award 10806, Part 65 to Kamehameha III.

Situate at
Panaewa, Lahaina, Maui, Hawaii
Tax Map Key: (2) 4-6-10: 25, 26 and 32

Beginning at a point on the southwesterly property boundary line of Lot 7-A of the Panaewa Tract (L.U.C.A. File No. 4.739), being a point on the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)], the coordinates of said point of beginning referred to Government Survey Triangulation Station "LAINA" being 6,824.70 feet south and 2,914.87 feet west and running by azimuths measured clockwise from true south; thence,

1.	136°59'00"	69.77	feet along the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)] to a ½ inch pipe (found); thence,
2.	Following along the same, along the arc of a curve concave to the right, having a radius of 40.00 feet, the chord azimuth and distance being 180°33'00" for 55.14 feet to a 3/4 inch pipe (found); thence,		
3.	224°07'00"	67.71	feet along the southeasterly right-of-way of Lahainaluna Road to a concrete nail in wall (found); thence,
4.	316°47'00"	190.40	feet along the southwesterly property boundary line of Lot 8 of the Panaewa Tract No. 3 [Tax Map Key: (2) 4-6-10: 27] to a ½ inch pipe (found); thence,
5.	55°57'00"	22.67	feet along the northwesterly right-of-way line of Alika Place to a 3/4 inch pipe (found); thence,
6.	316°49'30"	60.76	feet along the southwesterly right-of-way line of Alika Place to a ½ inch pipe (found); thence,
7.	55°57'00"	44.96	feet along the remainder of Royal Patent 8363, Land Commission Award 10806, Part 65 to Kamehameha [Tax Map Key: (2) 4-6-10: 28] to a ½ inch pipe (found); thence,
8.	48°05'00"	39.64	feet along the same to a ½ inch pipe (found); thence,
9.	136°59'00"	126.76	feet along the northeasterly right-of-way line of Honoapiilani Highway [F.A.P. No. F30-1(1)] to the point of beginning and containing an area of 23,907 square feet or 0.549 acre.

This work was done by me
or under my direct supervision.

AKAMAI LAND SURVEYING, INC.

Sherman Dudley DePonte
Licensed Professional Land Surveyor
State of Hawaii Certificate No. 6960

SHERMAN DUDLEY DEPONTE
LICENSED LAND SURVEYOR
No. 6960
HAWAII, U.S.A.

Exhibit "1"

1. The height of the structures cannot be higher than 35 feet above the grade of the Honoapiilani Highway and Lahainaluna Road.

2. That the architectural design of the structures shall be compatible with Historic Lahaina Town.

3. That the following high intensity uses permitted in Chapter 19.18 of the Maui County Code are prohibited:
   a. Baker goods stores;
   b. Candy stores;
   c. Day care centers and nurseries;
   d. Delicatessen stores;
   e. Grocery stores and meat markets;
   f. Ice cream or snack counters;
   g. Laundromats;
   h. Liquor stores (package only);
   i. Gasoline retailing;
   j. Single-family dwelling, detached accessory building or structure on the same lot;
   k. Amusement enterprises, including billiard or pool halls;
   l. Apartments;
   m. Auditoriums and theaters;
   n. Automobile parking lots and/or buildings;
   o. Automobile service stations, with or without auto repairing
   p. Banks;
   q. Baseball or football stadiums and other sport activities or amusements;
   r. Bowling alleys;
   s. Charity relief organizations (excluding general office);
   t. Clinics, medical, or dental;
   u. Dancehalls, dancing and hula studios;
   v Dry goods and department stores;
   w. Equipment rental and sales yards;
   x. Feed stores;
   y. Gymnasiums;
   z. Hardware and garden supply store;
   aa. Ice cream and milk manufacturing plants;
   bb. Libraries;
   cc. Marinas;
   dd. Miniature golf courses;
   ee. Museums;
   ff. Music conservatories or music studios;
   gg. News and magazine stands;

EXHIBIT "2"

hh. Nurseries (flowers or plants);
ii. Nursing and convalescent homes;
jj.. Parcel delivery stations;
kk. Pet shops;
ll. Physical culture studios;
mm. Plumbing shops;
nn. Private clubs or fraternal organizations;
oo. Private schools or business colleges;
pp. Public parking areas;
qq. Religious, benevolent, and philanthropic societies;
rr. Restaurants, cafes or bars, including drive-ins;
ss. Sanitariums;
tt. Trade schools;
uu. Used car lots;
vv. Mortuaries; and
ww. Warehouses and yards.

4. That a 15-foot setback area along Honoapiilani Highway and Lahainaluna Road shall be maintained and the irrigation and landscape plans shall be integrated with the irrigation and landscape plans for the parking area. The plans shall be in accordance with the Maui County Planting Plan and shall be reviewed and approved by the Department of Planning.

5. That should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor and/or landowner shall immediately contact the State Historic Preservation Division, which shall assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

6. That at the time of demolition and construction, traffic control and site traffic personnel shall be hired to aid in the smooth flow of traffic.

7. That no certificate of occupancy shall be issued until a traffic signal is installed at Dickenson Street and Honoapiilani Highway.

WE HEREBY CERTIFY that the foregoing BILL NO. 47 (1999)

1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 24th day of August, 1999, by the following votes:

Patrick S. KAWANO Chair	Dain P. KANE Vice-Chair	Michael A. DAVIS	J. Kalani ENGLISH	John Wayne ENRIQUES	G. Riki HOKAMA	Dennis Y. NAKAMURA	Wayne K. NISHIKI	Charmaine TAVARES
Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 24th day of August, 1999.

DATED AT WAILUKU, MAUI, HAWAII, this 24th day of August, 1999.

PATRICK S. KAWANO, CHAIR
Council of the County of Maui

DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 25th DAY OF August, 1999.

JAMES H. APANA JR., MAYOR
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. **2793** of the County of Maui, State of Hawaii.

DARYL T. YAMAMOTO, COUNTY CLERK
County of Maui

Passed First Reading on August 6, 1999.
Effective date of Ordinance August 25, 1999.

RECEIVED
1999 AUG 25 AM 11:23
COUNTY CLERK

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. **2793**, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

County Clerk, County of Maui

APPENDIX D-1

Maui Planning
Department Letters

ALAN M. ARAKAWA
Mayor
MICHAEL W. FOLEY
Director
ONALD G. COUCH
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

August 30, 2006

Mr. Ronald Kawahara
841 Alua Street, Suite 102
Wailuku, Hawaii 96793

Dear Mr. Kawahara:

SUBJECT: **270 ALIKA PLACE, LAHAINA, HAWAII; TMK: 2-4-6-010:025**

This letter is sent in response to your letter dated August 7, 2006, and my meeting with you on August 9, 2006, concerning the proposal for the West Maui Community Federal Credit Union to be located at the southeast corner of Honoapiilani Highway and Lahainaluna Road.

Based upon the description of the proposed use in your letter and at our meeting, we feel that the credit union will comply with the condition zoning approved for the subject property in 1999. We recognize that the West Maui Community Credit Union will not operate as intensively as a bank and is therefore an acceptable use.

Please feel free to contact me should you have any questions.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:atw
c: Aaron Shinmoto, PE, Planning Program Administrator
Clayton Yoshida, AICP, Planning Program Administrator
File
P:\LETTER\RKawahara- WM Credit Union 083006.wpd

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

DON COUCH
Deputy Director

RE 10/11/06
Fwd to WMCFCU

COUNTY OF MAUI
DEPARTMENT OF PLANNING

October 5, 2006

Mr. Ronald A. Kawahara
Destination Maui, Inc.
841 Alua Street, Suite 102
Wailuku, Hawai`i 96793

Dear Mr. Kawahara:

RE: PROPOSED WEST MAUI COMMUNITY FEDERAL CREDIT UNION WITHIN THE CONDITIONAL B-2 COMMUNITY BUSINESS DISTRICT LOCATED AT 270 ALIKA PLACE, AT THE CORNER OF HONOAPI`ILANI HIGHWAY AND LAHAINALUNA ROAD, LAHAINA, MAUI, HAWAII; TMK: (2) 4-6-010:025

We aplologize for our late response to your letter dated August 7, 2006.

The subject property is located within the County's B-2 Community Business District, as approved by the Maui County Council with conditions on August 25, 1999 (Ordinance No. 2793, Bill No. 47). Pursuant to Ordinance No. 2793 and Maui County Code, Chapter 19.18, "banks" are prohibited, however "financial buildings" are permitted. Because a credit union, by definition, differs from that of a bank, your proposed use will be permitted, without obtaining any land use permits.

Should you have any questions regarding this letter, you may contact Trisha Kapua`ala, Staff Planner, at 270-8008 or by email at Trisha.Kapuaala@co.maui.hi.us.

Sincerely,

MICHAEL W. FOLEY
Planning Director

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

AHS:JKS:FAC:TMLK:gan
xc: Jesse Souki, Esq., Deputy Corporation Counsel
Francis Cerizo, Staff Planner
Avelina Cabais, Land Use Plans Examiner
Clayton Yoshida, Planning Program Administrator
06/General File
06/ZAED TMK File
K:\WP_DOCS\PLANNING\LTR\2006\WMauiCommFedCrdtUnion\ResponseLtr.wpd

APPENDIX E

Archaeological
Monitoring Plan

An Archaeological Monitoring Plan for the Planned West Maui Community Federal Credit Union Building Paunau *Ahupua'a*, Lahaina District, Maui Island
(TMK: [2] 4-6-010: 025)

Prepared on behalf of:

Ms. Michele Hee Manager/CEO
West Maui Community Federal Credit Union
Lahaina, Maui

Prepared by:

Xamanek Researches, LLC
Pukalani, Maui

Jennifer J. Frey
Erik M. Fredericksen

5 June 2009(FINAL)

INTRODUCTION

Xamanek Researches, LLC was contacted in the late summer of 2008 about a proposed project in Lahaina, Maui. Project plans called for the construction of West Maui Community Federal Credit Union (WMCFCU). The proposed project is located on a portion of land at the corner of Honoapi`ilani Highway and Lahainaluna Road. The overall project is to occupy this 23,907 square foot portion of land (TMK: (2) 4-6-010: 025). The proposed WMCFCU property is located in Paunau *Ahupua`a*, Lahaina District, Island of Maui (Figures 1 through 5).

The State Historic Preservation Division (SHPD) was contacted about necessary scope of work. Given that the parcel had been previously impacted during the construction and subsequent demolition of at least two houses and a club house, it was determined during early consultation that archaeological monitoring would be necessary (DOC No. 0904PC50, Appendix A). We were subsequently contracted to carry out this monitoring project in Lahaina on behalf of the West Maui Community Federal Credit Union.

The following monitoring plan has been prepared on behalf of the Federal Credit Union per the direction of Ms. Michele Hee, Manager/CEO. This plan presents the procedures to be followed during monitoring work carried out in conjunction with this project.

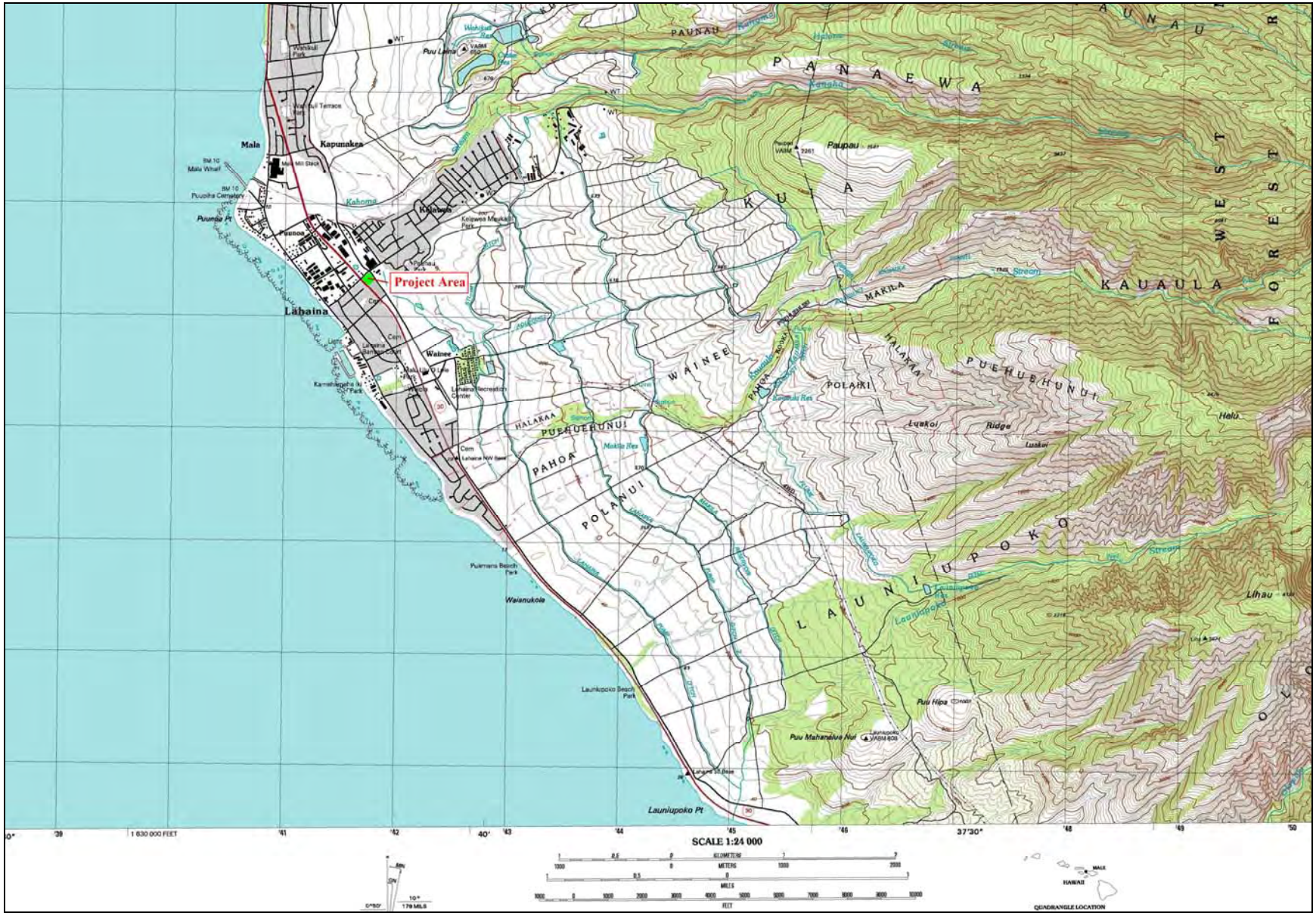


Figure 1. Portion of topographic map of Lahaina Quad showing the project area.

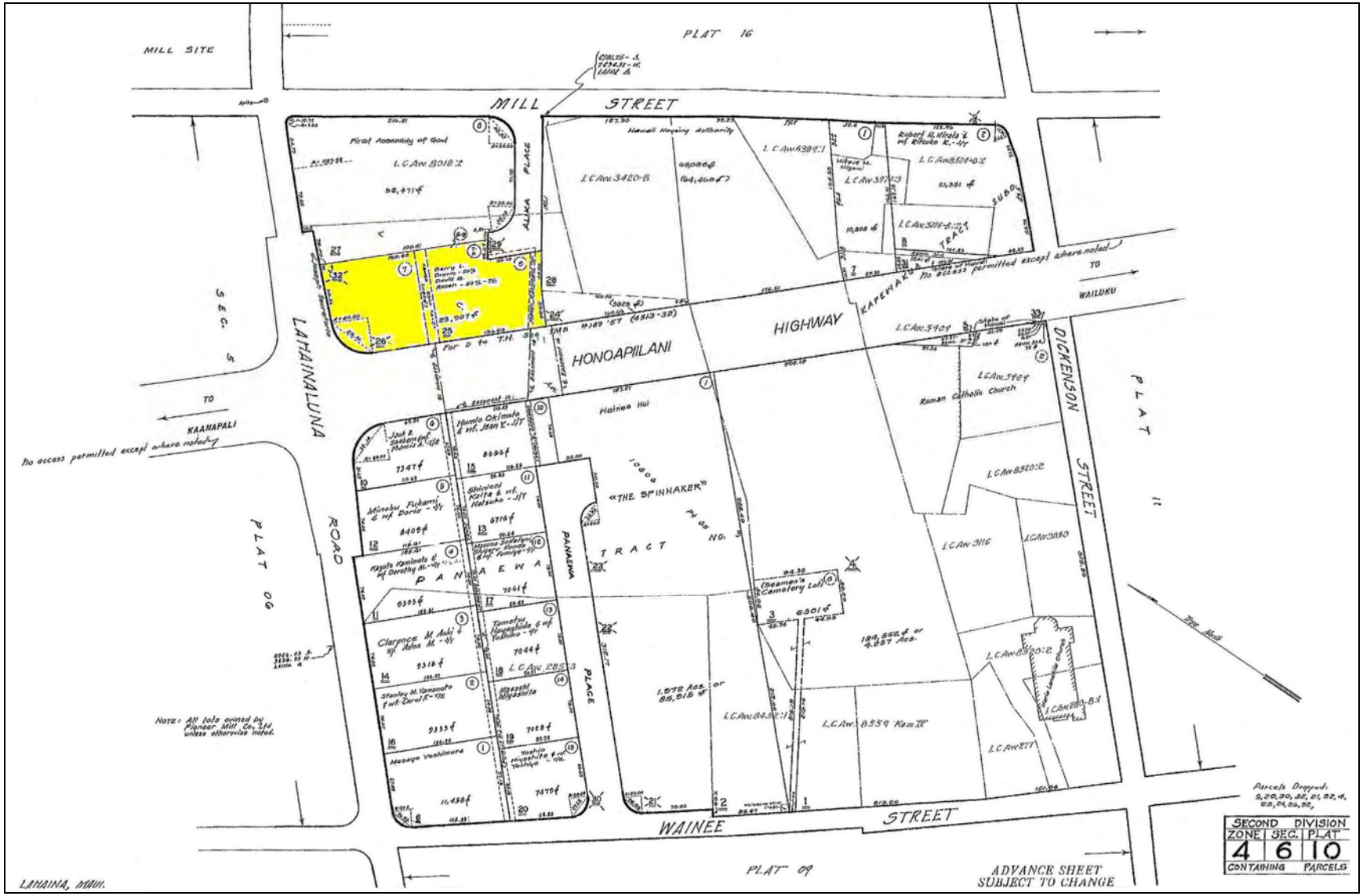


Figure 2. Tax Map Key showing location of current project area in yellow.

EXHIBIT "A"

Proposed West Maui Community Federal Credit Union
Aerial Location Map

Figure 3: Aerial photograph of a portion of Lahaina, including the subject parcel.

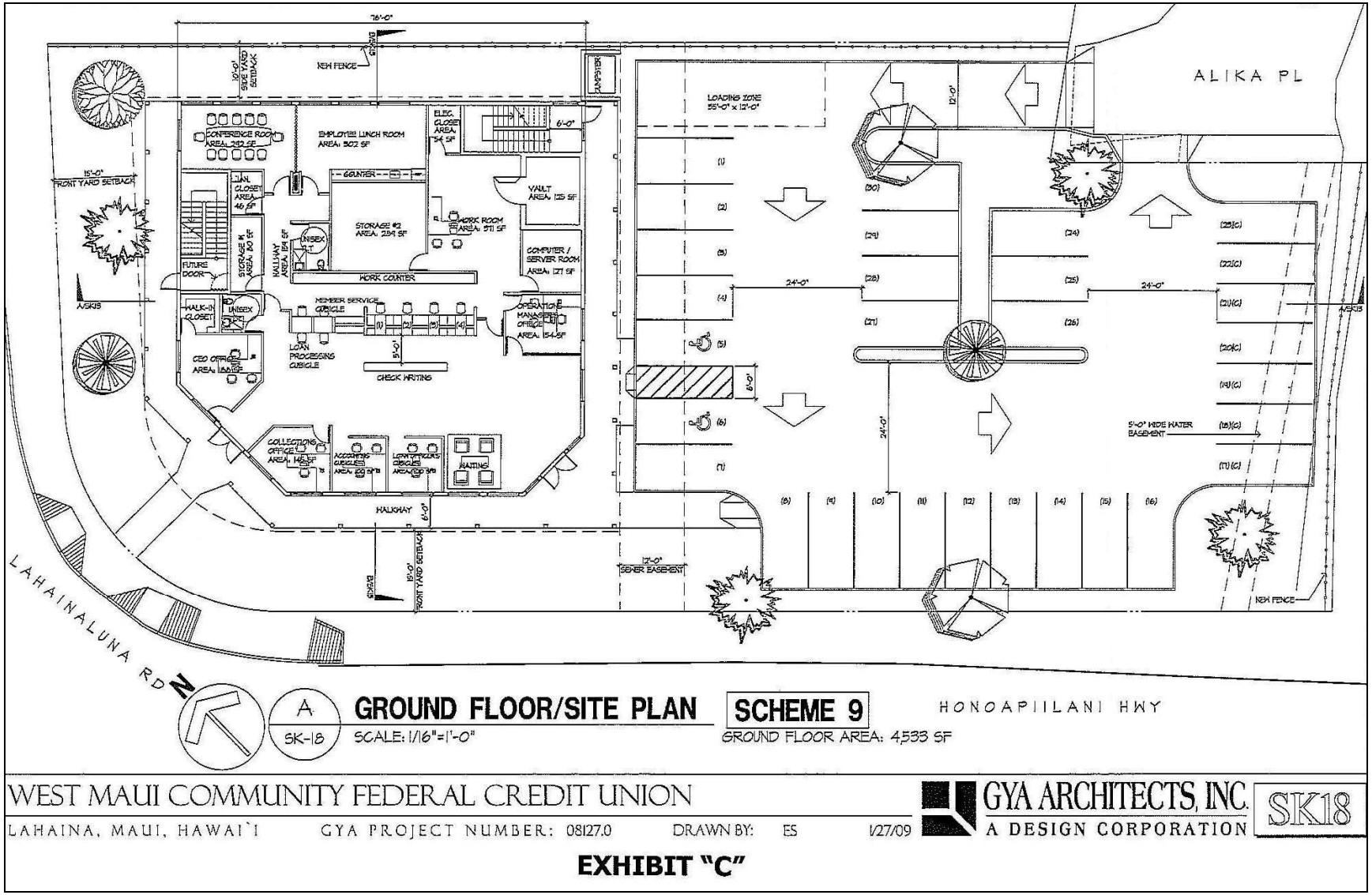


Figure 4: West Maui Community Federal Credit Union Plan view map.

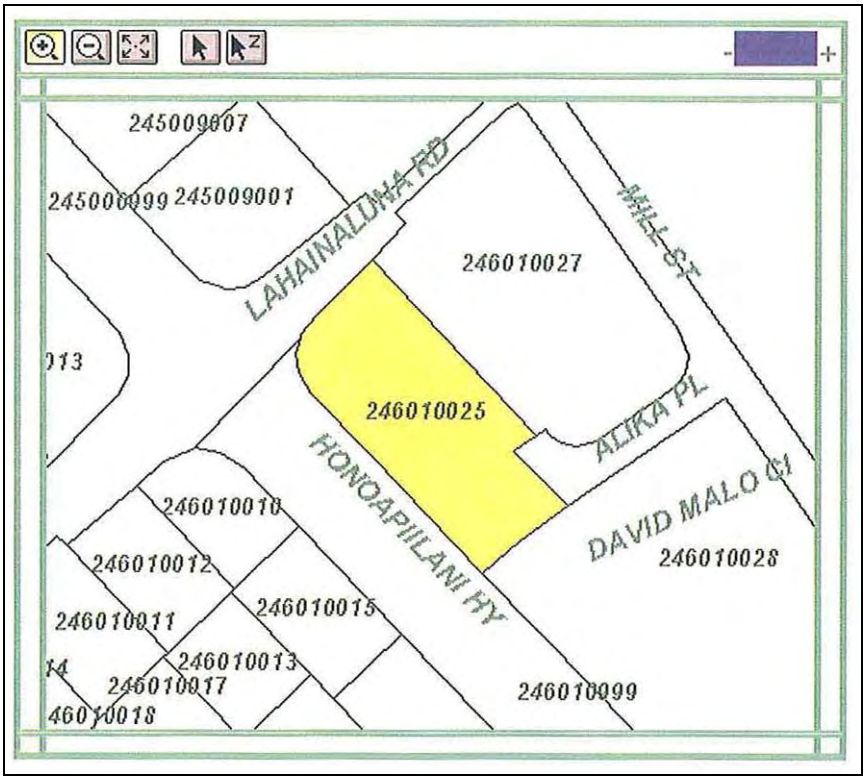


Figure 5: West Maui Community Federal Credit Union site area.

BACKGROUND INFORMATION

Study area

The project area is composed of a 23,907 square foot portion of land (TMK: (2) 4-6-010: 025) that is situated on the Corner of the intersection of Honoapi`ilani Highway and Lahainaluna Road. The proposed West Maui Community Federal Credit Union building will occupy about half of this parcel, while the parking lot will cover the other half. The study area is bounded by Lahainaluna Road on the north and Honoapi`ilani Highway on the *mauka* (east) side. The proposed site of the West Maui FCU is located in Paunau *Ahupua‘a*, Lahaina District, Island of Maui. The project area is approximately 25 ft. AMSL and lies c. 260 m. (850 ft) inland from the coast. The former Pioneer Mill occupied the parcel directly *mauka* of this location. This parcel once contained plantation era homes which remained on site until recent years when they were demolished and the property was used for the Lahaina Swap Meet.

Natural History

Commonly observed vegetation included mango (Mangifera indica) trees and landscaping bushes and plants. Annual precipitation for this arid portion of leeward Maui is typically less than 15-20 inches.

The soils in the general vicinity of the study area are classified as Pulehu series. The particular soil type Pulehu silt loam (PpA) is a type of soil similar to Pulehu clay loam- 0 to 3 percent slopes, except that the texture is silt loam. This soil is used for sugarcane and small acreages are used for home sites. Plants typically have trouble establishing themselves in these soils unless they are irrigated (Foote et al., 1972, p. 169).

Previous archaeological work near the project area

A corridor southeast of the current project area was surveyed by Xamanek Researches in 2003 (Fredericksen and Fredericksen 2003) during the Lahaina Watershed Flood Control Project (Figure 6). During that survey one previously unidentified Native Hawaiian burial was located on LCA 5832 to Kaaumaiewa just south of a dirt road leading up the hillside to occupied homes. This find was subsequently designated SIHP No. 50-50-03-5239. The Site 5239 burial retains its significance under Criterion “d” and Criterion “e” of Federal and State historic preservation guidelines. Passive “as is” preservation was recommended for this burial site, and precautionary monitoring was recommended for the forthcoming project.

Xamanek Researches, LLC conducted an inventory survey on a c. 480 portion of land in the Waine`e area in 2006-2007 (Frey and Fredericksen, March 2009 [Draft]) [Figure 7]. The Waine`e project area is east and southeast of the current project location. During this AIS eight new sites and one previously identified site were located, including human remains. The sites were associated with late precontact to post-contact periods. Three surface site remnants were located. These included the previously identified Waine`e Village (Site 50-50-03-5042), and newly identified Sites 6477 (a linear wall remnant), and 6478 (a remnant of an old railroad bed associated with Pioneer Mill). The former Waine`e Village site was also located in the Lahaina Watershed Flood Control project. This site was in existence until 2000 when it was demolished. This village was directly related to the Pioneer Mill operations. There were six subsurface site remnants identified during the survey, which were also evaluated with manual excavation. Sites 50-50-03-6472, 6474, 6475 and 6476 consist of subsurface agricultural site remnants. Site 6471 is a post-contact refuse pit. All the sites were in generally poor condition and had been impacted by sugarcane cultivation during the plantation era. One previously unidentified burial was located during testing in Backhoe Trench 26 (Site 6473). While excavation was undertaken on Site 6473, it was minimized in order to reduce impacts on the find. The human remains were contained in what appeared to be the remnants of a coffin. This burial appeared to have been previously impacted by the plow zone. While this report is in draft form, it is anticipated that the SHPD will concur with the recommendations to preserve the human burial *in situ*, and that precautionary monitoring be undertaken.

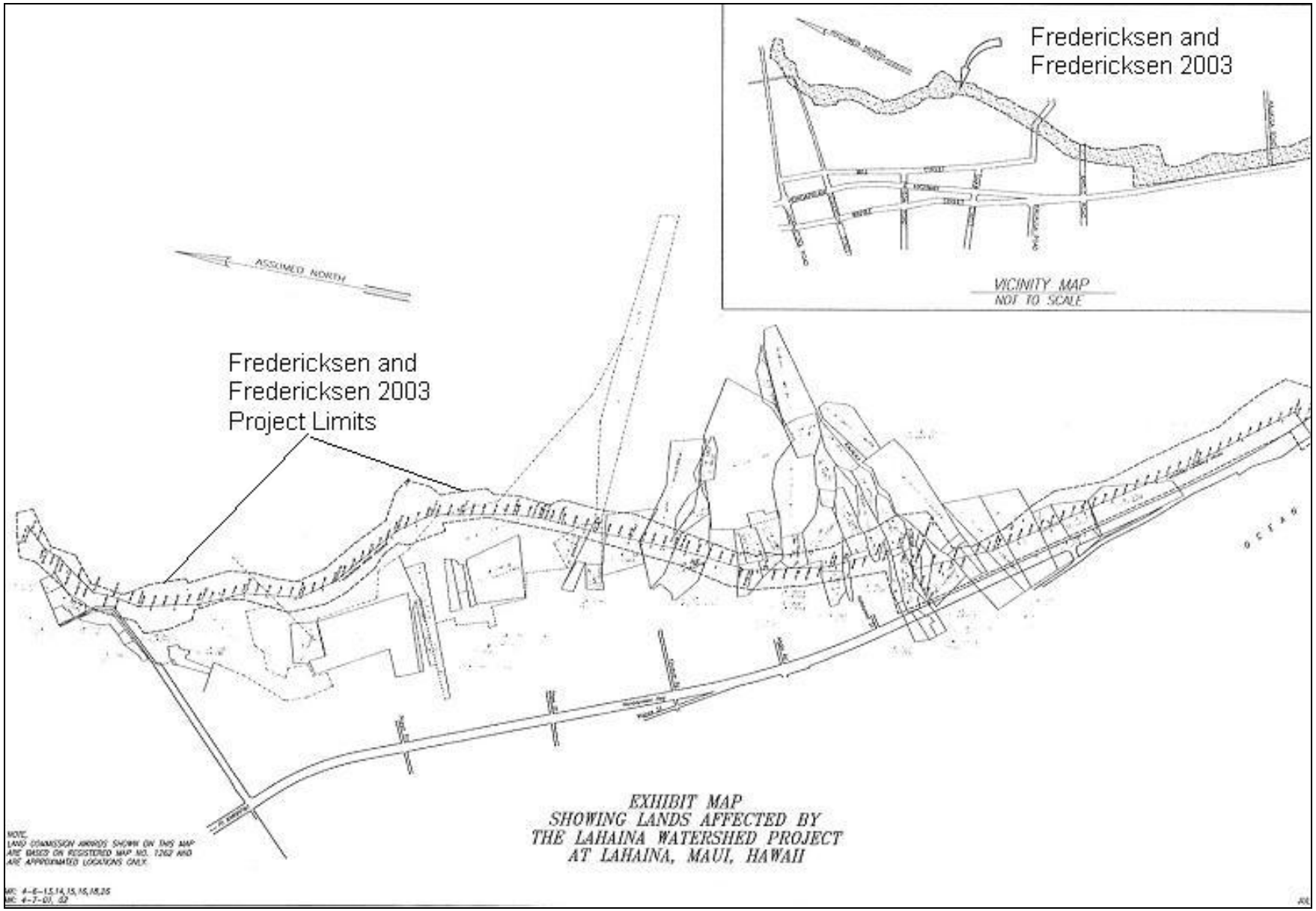


Figure 6: Lahaina Watershed and Flood Control Project (Fredericksen and Fredericksen, March 2003), runs across a portion of the Waine`e project area.

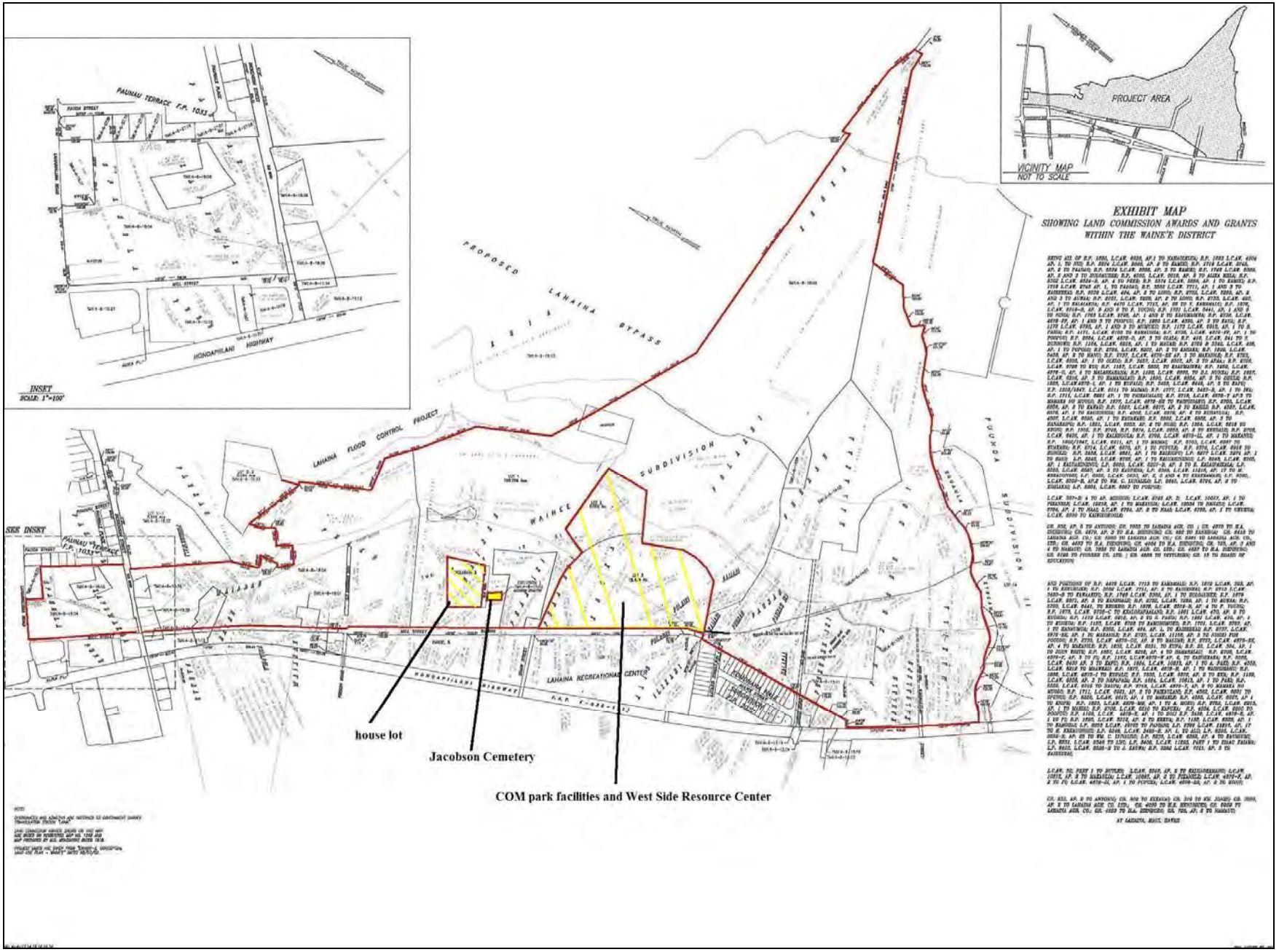


Figure 7: Waine`e project area map (Frey and Fredericksen, 2009[Draft]). Note: current project area is at lower left at intersection.

ARCHAEOLOGICAL MONITORING PLAN

Scope of monitoring

The scope of this monitoring plan includes having an archaeological monitor present during all subsurface earthmoving activities scheduled for the West Maui Federal Credit Union project. Actual on-site time and specific actions to be followed in the event of inadvertent discoveries will be discussed and agreed upon by the general contractor and the archaeological consultant at a pre-construction meeting held for this purpose. Additional meetings may be called, if either the monitoring archaeologist or contractor believes that other relevant information should be disseminated. This plan covers on-site or off-site improvements for the overall project area (TMK: (2) 4-6-010: 025).

Monitoring methodology

Close cooperation between the monitoring archaeologist and construction personnel is important to a successful monitoring program. The monitoring program will follow the 12 conditions listed below:

1) The contractor shall be responsible for ensuring that the archaeological consultant is aware of all pertinent construction schedules and that the monitor is present for <u>all</u> subsurface excavation activities on this parcel.

2) Both the archaeological consultant and the contractor are responsible for ensuring that on-site work is halted in an area of significant findings and to protect any such find from any further damage (i.e., construction fencing, protective covering, etc.). The State Historic Preservation Division (SHPD) Maui office will recommend appropriate mitigation actions. The SHPD Burial Sites Program, the SHPD Maui office, and the Maui/Lana`i Islands Burial Council (MLIBC) will be consulted in the event that human remains are found. (Change work order)

3) In the event of the discovery of human remains, work shall cease in the immediate find area. *In situ* human remains will be left in place and any previously disturbed human remains will only be removed with written consent from SHPD. If at all possible, provisions for secure on-site storage will be made. The monitoring archaeologist will be responsible for notifying the SHPD Maui office and the Historic Preservation Division Burial Sites Program, which, in consultation with the

Maui/Lana`i Islands Burial Council, will determine the appropriate mitigation measures. This notification will include accurate information regarding the context and composition of the find. (Change work order)

4) The monitoring archaeologist will work in compliance with Hawai`i Revised Statutes Chapter 6E (procedures Relating to Inadvertent Discoveries).

5) The monitoring archaeologist will have the authority to halt construction activities in areas where potentially significant discoveries have been made until they have been properly evaluated. Normally, construction activities may continue in unaffected portions of the project area. (Change work order)

6) Field procedures to be followed for documentation of discovered cultural features or human skeletal remains: a) standard field methods including recordation of profiles showing stratigraphy, cultural layers, etc.; b) mapping and photographing of finds other than human remains; c) and excavation of cultural materials and/or exposed features.

7) The SHPD Maui archaeologist shall be notified and consulted with regarding treatment of identified features such as cultural layers, artifact or midden concentrations, structural remains, etc., considered to be of significance under S13-279-2 (definitions).

8) The contractor should take into account the necessity for machine excavation at a speed slow enough to allow for reasonable visual inspection of the work. The monitoring archaeologist must make a "best effort" to search for significant material culture remains (i.e. artifacts, features, midden, skeletal remains, etc.). Machine excavation speed will need to be slowed in an area where significant material culture remains have been identified. (Change work order)

9) Significant archaeological discoveries, if they occur, shall be protected and identified by construction "caution" tape, fencing, or other reasonable means, until the SHPD Maui office and the archaeological consultant decide appropriate mitigation actions. All recovered material culture remains—with the possible exception of charcoal samples for radiometric analysis—will remain on Maui. Standard laboratory methods shall be utilized by the archaeological consultant in the event that cultural materials are recovered during monitoring and/or mitigation work. Cultural materials will be curated by the archaeological consultant. (Change work order)

10) One monitor in most instances will carry out the necessary fieldwork. Tasks will include observation of grubbing and earth-moving activities. However, the SHPD and the MLIBC require that one archaeological monitor be assigned to each piece of major earth-moving equipment in sand dune areas or other culturally sensitive locations. (Change work order if more than one piece of machinery is to be utilized).

11) In the event of night work, the general contractor shall supply adequate lighting for the onsite monitor (s).

12) Chapter 6E-11 (a) specifies the following "It shall be unlawful for any person or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property or aviation artifact located on the private lands of any owner thereof without the owner's written permission being first obtained. It shall be unlawful for any person, natural or corporate, to take, appropriate, excavate, injure, destroy, or alter any historic property located upon lands owned or controlled by the State or any of its political subdivisions, except as permitted by the department."

Field methods utilized shall include photographic recordation (where appropriate), artifact excavation (recovery and recordation), profile documentation of cultural layers and stratigraphy, excavation and recordation of exposed features, and mapping of all pertinent features on an appropriate site map. A daily log (field notes) of activities and findings will also be kept. Gathered information shall be utilized in the preparation of the monitoring report to be submitted to the SHPD.

In the event human skeletal remains are inadvertently disturbed, the SHPD Maui office (including the Cultural Historian), the SHPD Burial Sites Program, and the Maui/Lana`i Islands Burial Council shall be notified, and appropriate mitigation actions determined (photographs of human skeletal remains will not be taken).

A supervisory archaeologist may periodically visit the monitoring site as often as is necessitated by the nature of the construction activities and archaeological findings. If significant discoveries are made, appropriate mitigation measures will be discussed with the SHPD Maui office.

The archaeological consultant shall curate all cultural materials recovered from this monitoring project on Maui, with the exception of human remains. When analysis is completed, recovered material culture remains will be turned over to the appropriate parties. Long-term curation arrangements of such materials will be approved by the SHPD.

A draft monitoring report detailing the results of the monitoring program will be prepared. This draft report shall be submitted to the State Historic Preservation Division within 180 days of the completion of fieldwork, for comment and approval. Approved changes and corrections will result in the final monitoring report for the proposed West Maui Federal Credit Union (TMK: (2) 4-6- 010: 025).

REFERENCES

Foote, D., E. Hill, S. Nakamura, F. Stephens
1972 Soil Survey of Kauai, Oahu, Maui, Molokai, and Lanai State of Hawaii, U.S. Dept. of Agriculture, Government Printing Office, Washington, D.C.

Fredericksen, Erik and Demaris Fredericksen
March 2003 *Archaeological Inventory Survey Lahaina Watershed Flood Control Project Area, Polanui, Pahoa, Puehuehunui, Halaka`a, Waine`e, and Puako Ahupua`a, Lahaina District, Maui (TMK: 2-3-11: 03)*, prepared for Colin Chun by Xamanek Researches, Pukalani, Maui.

Frey, Jennifer and Erik Fredericksen.
March 2009 *An Archaeological Inventory Survey of a c. 480-acre parcel of Land in Waine`e and Various Ahupua`a, Lahaina District, Island of Maui (TMK: [2] 4-6-13, 14, 15, 16, 18, 25 AND 4-6-01, 02).* Prepared on behalf of Ka`anapali Management Corp., Lahaina, by Xamanek Researches, LLC, Pukalani, Maui.

APPENDIX A: SHPD LETTER

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 24, 2009

Mr. Glenn Tadaki, Staff Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawai'i 96793

LOG NO: 2009.0316
DOC NO: 0904PC50
Archaeology

Dear Mr. Tadaki:

SUBJECT: Chapter 6E-42 Historic Preservation Review – REVISED Draft EA Consultation Request for Proposed West Maui Community Federal Credit Union Paunau Ahupua'a, Lahaina District, Island of Maui TMK: (2) 4-6-010:025

This letter serves as a correction to a March 28, 2009 comment letter (SHPD LOG NO: 2009.0289; DOC NO: 0903PC73) for the abovementioned project in which an incorrect date for an earlier transmittal on the same subject was noted (SHPD LOG 2009.0245; DOC NO: 0902PC39). The correct date of the letter referenced in the first paragraph of the March 28, 2009 letter should be February 23, 2009.

Upon further review, we have concluded that because the area of proposed effect is the location of a building with a ground surface mostly covered in asphalt, that anything other than precautionary archaeological monitoring during ground altering disturbance would be impractical.

Because we believe archaeological sites may be present in subsurface deposits exposed during the proposed work, we will recommend that a qualified archaeological monitor shall be present during all ground altering disturbance within the subject parcel for the proposed project in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

CC: Glenn 08 072

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Landscape Architecture and Planning

APPENDIX E-1

SHPD Approval Letter

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

July 8, 2009

Erik M. Fredericksen, M.A.
Xamanek Researches, LLC
P.O. Box 880131
Pukalani, Hawai'i 96768
xamanekresearchesllc@hawaii.rr.com

LOG NO: 2009.2906
DOC NO: 0907PC19
Archaeology

SUBJECT: Chapter 6E-42 Historic Preservation Review – Archaeological Monitoring Plan for the Planned West Maui Federal Credit Union Building
Paunau Ahupua'a, Lahaina District, Island of Maui
(2) 4-6-010:025

Thank you for the opportunity to review this plan, which our staff received in hardcopy format on June 8, 2009 (Frey and Fredericksen 2009): *An Archaeological Monitoring Plan for the Planned West Maui Federal Credit Union*...Xamanek Researches, LLC.

The plan was prepared upon this office's review of Draft Environmental Assessment consultation and recommendation that precautionary archaeological monitoring be undertaken during ground altering disturbance (SHPD LOG NO: 2009.0316; DOC NO: 0904PC50). Known historic properties in the area include traditional period human burials and other late pre-Contact to post-Contact period sites.

As stated in the monitoring plan, there will be one archaeological monitor on site at all times for each piece of ground disturbing equipment in use, as recommended by the MLIBC in sandy or other culturally sensitive locales. Coordination with the construction crew and all other pertinent parties to explain monitoring procedures and that the monitoring archaeologist has the authority to halt work in the vicinity of a culturally significant find will be undertaken, and should anything of cultural significance be identified, appropriate SHPD personnel will be consulted for mitigation recommendations. The plan further states that in the event human remains are inadvertently exposed, both the SHPD and Maui/Lana'i Islands Burial Council (MLIBC) will be notified and appropriate burial protocol followed. A report detailing the findings of the monitoring will be prepared and submitted to our office for review within 180 days after the completion of the project.

The plan contains the required information as specified in HAR §13-279-4(a) regarding the contents of monitoring plans in general and is acceptable. *However, we would appreciate the inclusion of SIHP numbers for the sites known to be in the vicinity of the project area.*

Now that the monitoring plan has been accepted pursuant to HAR §13-279, please send one hardcopy, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF file on CD to the attention of "**SHPD Library**" at the Kapolei SHPD office.

If you have any questions or comments regarding this letter, please contact the SHPD's Lead Maui Archaeologist, Ms. Patty Conte (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jeff Hunt, Director, Dept. of Planning, FAX (808) 270-7634
Maui CRC, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

APPENDIX F

Cultural Impact Assessment

Cultural Impact Assessment for the Proposed West Maui Community Federal Credit Union Complex Paunau *Ahupua`a*, Lāhaina District, Maui Island TMK: [2] 4-6-010:025

Prepared for:

The State Historic Preservation Division

On behalf of:

Ms. Michele Hee, Manager/CEO
West Maui Community Federal Credit Union
Lāhaina, Maui

Prepared by:

Xamanek Researches LLC
Pukalani, Maui

Jenny L. Pickett
Jennifer J. Frey
Erik M. Fredericksen

15 May 2010

ABSTRACT

Xamanek Researches, LLC was contacted regarding proposed plans for the West Maui Community Federal Credit Union (WMCFCU). Construction plans include a commercial building and parking area. Based on Hawai`i Revised Statutes and Chapter 200 of Title 11, Department of Health, Hawai`i Administrative Rules, Environmental Impact Statement rules, in accordance with the provisions of Chapter 343; an Environmental Assessment is required for the planned project since it is located in the Lāhaina National Historic Landmark District (LNHLD).

As a result of the foregoing, the compilation of this Cultural Impact Assessment is required. The 23,907 square foot subject area is located at the corner of Honoapi`ilani Highway and Lāhainaluna Road, in the historic Lāhaina District within Paunau *Ahupua`a*, Maui Island (TMK: [2] 4-6-010:025). Sections of a state highway right-of-way are adjacent to the proposed work. Mr. Hinano Rodrigues of the State Historic Preservation Division (SHPD) and Mr. Keola Lindsey of the Office of Hawaiian Affairs (OHA) were contacted, who kindly provided recommendations regarding this Cultural Impact Assessment.

ACKNOWLEDEMENTS

The authors wish to express their gratitude for the assistance given to them by *Na Kupuna O Maui* and those individuals who agreed to tell us their stories. We offer a special thank you to Annie Kekona, Keoki Freeland, Charles Makekau, and William Waiohu Jr., who graciously shared their time with us. We are grateful they were willing to share their cultural knowledge of the study area and the surrounding environs.

We would also like to express appreciation to cultural specialist Patty Nishiyama, who provided guidance and organization with respect to the interviews, or *talk story* sessions, of which she helped arrange. Out of respect for our informants, we utilized the information they shared with us to help create the background information and the foundation for this report. A complete summary of the interviews is located in Appendix A of this report. The participation of the individual interviewees in this Cultural Impact Assessment does not imply support for the proposed West Maui Community Federal Credit Union (WMCFCU) project.

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INTRODUCTION

Xamanek Researches, LLC was originally contacted in the late summer of 2008 regarding the proposed construction plans for the West Maui Community Federal Credit Union (WMCFCU). An Environmental Assessment is required for the proposed WMCFCU project due to its location in the LNHLD. As such, the compilation of this Cultural Impact Assessment is required. The State Historic Preservation Division, Archaeology Section, provided recommendations for the revised Draft Environmental Assessment Consultation request that include archaeological monitoring (refer to Appendix C). Xamanek Researches, LLC has prepared an archaeological monitoring plan for the proposed project (Frey and Fredericksen, 2009). This plan was accepted in an 8 July 2009 SHPD review letter (DOC NO: 0907PC19).

The subject area is located at the corner of Honoapi`ilani Highway and Lāhainaluna Road on a 23,907 square foot portion of land in Lāhaina town (TMK: [2] 4-6-010:025). Projected plans call for a commercial building and a parking lot, which will occupy the entire 23,907 square foot parcel. Sections of a state highway right-of-way are adjacent to the proposed work. The subject parcel is located in the historic Lāhaina District within Paunau *Ahupua`a*, Maui Island.

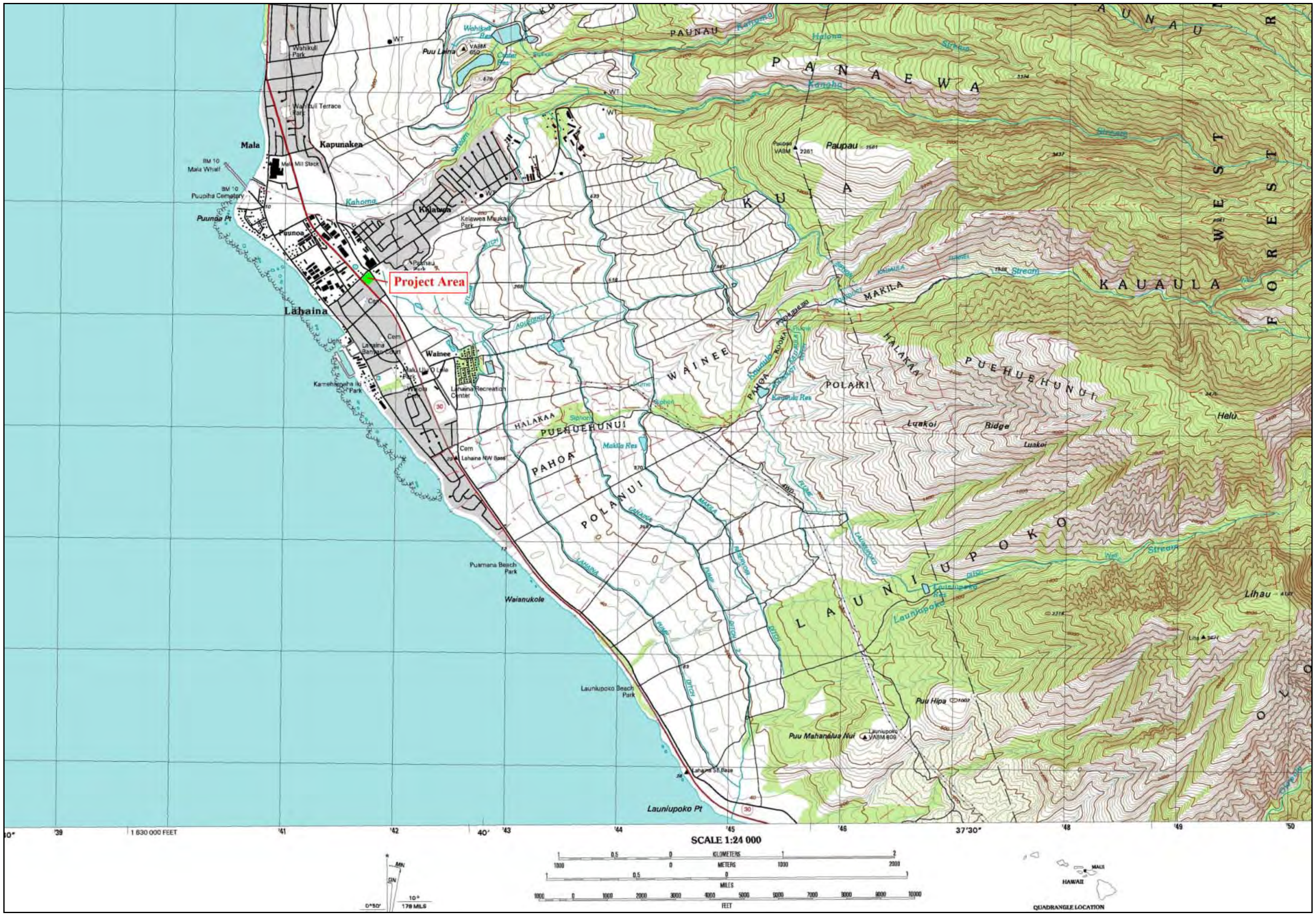

Figure 1: Portion of topographic map of the Lāhaina Quadrangle map depicting the project area.

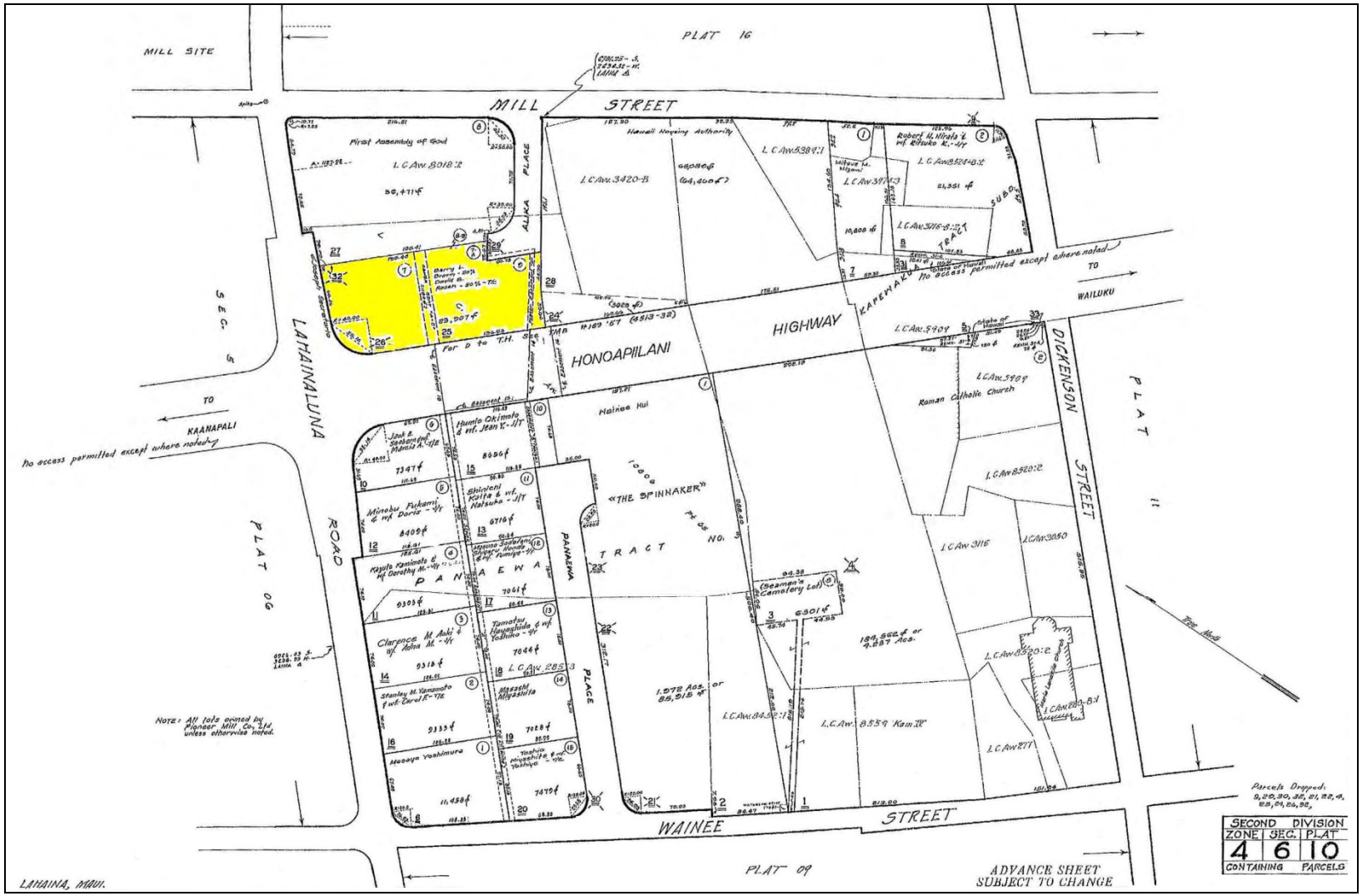

Figure 2: Tax Map Key (TMK [2]-4-6-010:025) Map Showing Location of Subject Area (yellow)

EXHIBIT "A"

Proposed West Maui Community Federal Credit Union
Aerial Location Map

Figure 3: Aerial photograph of a portion of Lāhaina, depicting the subject parcel.

CULTURAL IMPACT ASSESSMENT

The purpose of this Cultural Impact Assessment (CIA) study is to assess potential impacts of the proposed West Maui Federal Credit Union Project on traditional cultural practices in the study area. The following components were considered with respect to this CIA:

- Information on cultural sites that may potentially be impacted by the proposed credit union project;
- Knowledge of any traditional gathering activities in the general project area (past/present);
- Traditional uses within the project area;
- Referrals of community elders who may be willing to share their cultural knowledge of the study area and the surrounding environs.

Interview results are located in Appendix A.

PROJECT AREA SUMMARY

The 23,907 square foot subject area is situated at the intersection of Honoapi`ilani Highway and Lāhainaluna Road (Figures 1-3). The proposed West Maui Community Federal Credit Union (WMCFCU) building will occupy approximately half of the parcel and the parking lot will take the remaining half. Lāhainaluna Road is north adjacent to the parcel and Honoapi`ilani Highway *makai* (west). The southeast portion of the lot connects to Alika Place; a short roadway segment joining Mill Street that will provide vehicular access for the proposed building. The proposed WMCFCU project is located in Paunau *Ahupua‘a*, Lāhaina District, Maui (TMK: [2] 4-6-010: 025.

The subject area is approximately 7.62 meters (25 feet) above mean sea level and about 518 meters (1,700 feet) inland from the coastline. Annual precipitation for this arid region of leeward Maui is typically less than 15-20 inches. Mango trees (Mangifera

indica) and a plumeria tree are still present on the parcel (Appendix B). Remains from the historic structures, which once occupied the parcel, are located on the vacant lot. There are various historic rock wall segments surrounding the subject parcel.

Soils in the general project area are classified as Ewa Silty Clay Loam, 0-3 percent slopes (EaE). EaA, which belongs to Ewa Soil Series is characterized by very slow runoff, no more than slight erosion hazard and moderate permeability. These soils consist of well-drained soils that are usually found at elevations ranging from near sea level to 150 ft AMSL. This soil is generally used for sugarcane and smaller acreage is used for home sites. Plants typically have trouble establishing themselves in these soils unless they are irrigated (Foote et al., 1972).

Lāhaina is a popular destination for ocean sports including surfing, snorkeling, diving, and fishing. The project area is culturally rich and there are many significant archaeological and historic sites located throughout the general area. The recent influx of modern development has altered the integrity of some of the sites and some remain in dilapidated state. However, some historic properties in the area have been cared for or reconstructed. Efforts are on-going to document, evaluate, and mitigate negative impacts to historic properties in the vicinity.

Current Use

The subject parcel once contained historic plantation era homes, associated with the *Pioneer Mill.* The homes remained on site until recent years when they were demolished by a previous owner about 10 years ago. Some concrete and possible old foundations remain on the parcel. The subject area more recently housed the Lāhaina Swap Meet. Currently, the subject area is not being utilized. There are historic wall segments surrounding portions of the parcel. Two SIHP site numbers have been issued – Sites 50-50-04-6660 and -6661. Site 6660 is located within the State highway right-of-way, while the Site 6661 wall lies along the parcel's eastern boundary.

Proposed Plans

Proposed plans include the construction of the West Maui Community Federal Credit Union (WMCFCU) building and parking lot. Upon completion, the building and parking area will occupy the entire 23,907 square foot parcel (Figure 4).

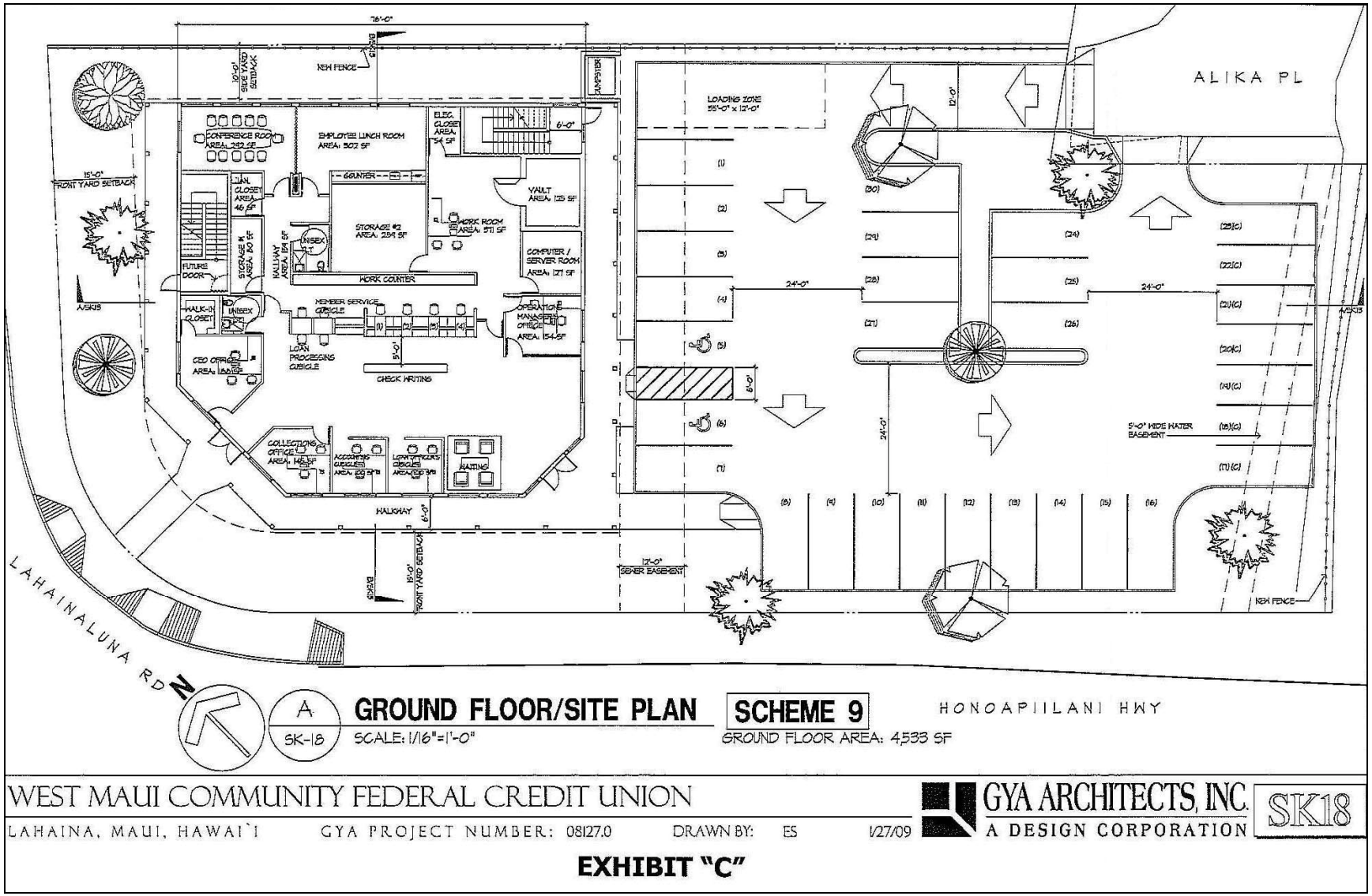

Figure 4: West Maui Community Federal Credit Union Proposed Site Plan.

BACKGROUND RESEARCH

Mo`olelo and Oral Tradition

The project area is located within Lahaina, which –in the past- has also been referred to as *Honoapi`ilani* or *Na-hono-a-Pi`ilani*, and *Lele*. The ancient name—Lā-hainā—literally translates to *cruel sun*, which most likely references the droughts that impacted the area from time to time (Pukui et al., 1974: 127). In early times, Lahaina may have meant "unmerciful sun", after one of the discovering chiefs reportedly muttered "what an unmerciful Sun" while beginning the walk from Launiupoko to Kauaula Valley a little after noon (Harold H. Hall notes circa. 1960 on file at Xamanek and the Lahaina Restoration Foundation).

Sterling (34-39) explains Paunau Ahupua`a is the location of many significant cultural sites including the Hauola Stone. *Hauola* is the name of an ancient surfing area and the name of a girl who was turned to stone in order to save her from enemies. The surrounding seawater around the stone was considered powerful healing water. According to the Lahaina Historical Guide:

> The rock that looks like a modern chair with a spacious seat and a small angular back is the healing rock, the front of which is worn hollow. Hawaiians believed that ailing people had only to sit in the seat, angle their legs in the water, and let the waves wash over them to regain their health…Since this rock was a sacred place and not likely to be disturbed, it was also used as a pohaku piko, or hiding place for the umbilical cords of newborn children. The Hawaiians believed that if an umbilical cord could be successfully hidden and was left undisturbed its owner would grow up to be a chief. The piko were secretly put in crevices in rocks and wedged in with pebbles.

Paunau is also the area known for the *Breadfruit of Lele*, or the infamous breadfruit trees of Lele, (ancient name for Lahaina). The breadfruit trees were planted by Kaka`alaneo and his brother, who ruled jointly over the islands of Maui and Lana`i. It has been said that Chief Kaka`alaneo also planted breadfruit trees known as the bread fruit trees of Kauheana" (ibid.). In current times, the area is still referred to as *Moku Ulu O Lele* (The Flying Breadfruit). Sterling (37) reports:

> …The breadfruit trees stand as thickly as those of an irregularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kappa trees, groves of bananas, rows of the sugar cane, and bunches of the potato and

> melon…it scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting the streams, which rush the mountains, by artificial courses, on every plantation. Every farmer has a right, established by custom, to the water every fifth day…

The significant ancient taro patches known as *Apukaiao* or *Kapukaiao* were located in Paunau Ahupua`a. In ancient Hawaiian days, the general area provided a plethora of food items produced from the extensive taro *lo`i*, irrigation ditches (*`auwai*), and embankments that created an impressive landscape. Organized brackish-water and fresh water ponds (*loko*), as well as fishponds were dispersed throughout Lāhaina. Given the limited rainfall on the leeward side of the island, the lush and garden-like elements of Lāhaina was a testament to the skill and ingenuity of the *Kanaka Maoli* (Native Hawaiians). Handy and Handy (1972:494) explain:

> The first four [valleys] all had extensive lo`i lands in their valley bottoms, where terraces rose tier on tier in symmetrical stone-faced lo`i. On this part of the coast there is no sloping kula land seaward of the valleys as there is back of Lahaina and southeastward...

There are at least three well known fishponds in the vicinity, as well as numerous Land Commission Awards (LCA). In ancient Hawaiian days, Lāhaina was an important food production area with a relatively large population.

Early historic references and oral history describe Lāhaina as a rich agricultural oasis, teeming with productive taro, sweet potato, breadfruit, coconut, bananas, and other food crops growing across the verdant slopes below and along the sides of valleys. Prior to the mass production of historic sugarcane plantation cultivation that rerouted the ancient water routes; the streams once had constant flow through the irrigated pond fields. Irrigated pond fields were interspersed with sophisticated fishponds; and all were fed by the freshwater streams running down the mountains, filtering back into the stream and eventually flowing into the ocean. Handy and Handy (1972: 493) refer to the area as extending "about three leagues[1] in length and one in its greatest breadth. Beyond this all is dry and barren". Perhaps the lush, healthy, and organized gardens surrounding Lahaina town emphasized the adjacent un-developed and dry rocky lands.

Early visitors commented on the appearance of Lāhaina. Archibald Menzies, a naturalist and surgeon on Captain George Vancouver's vessel, HMS Discovery, reported by Handy and Handy (1972: 493) during the 1793 voyage:

> March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with two Niihau women to see the village of Lāhaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regulated manner with different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there

[1] One league equals about 3 miles.

> along the banks intersecting the fields, and in this manner branching through the greatest part of the plantation.

When Louis de Freycinet visited Lāhaina in 1819, J. Arago commented on the idyllic look of Lāhaina (Handy and Handy 1972: 493):

> The environs of Lāhaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage; little pathways sufficiently raised, and kept in excellent condition, serve as communications between the different estates. These are frequently divided by trenches, through which a fresh and limpid stream flows tranquilly, giving life to the plantations, the sole riches of the country.

Lāhaina's main *taro* lands were watered by two large streams, Kanaha and Kahoma, which originated in deep, steep-sided valleys, which were often too steep for agricultural terraces (Ibid: 492).

Akua-Lele

Local informants tell of a phenomenon referred to as *Akua-lele*, which can be described as a fire ball often witnessed throughout areas of Lahaina. In 1827, Mr. Willam Richards reports on a community sighting of *Akua-lele* in a letter to the American Board of Commissioners for Foreign Missions (Volume 23:43 on-file). Mr. Richards explains the marvel as a meteoric stone, and states:

> …I took my glass immediately to look for a vessel, supposing the report I had heard, to be the firing of cannon from a ship at sea. There was no vessel in site; but while I was looking, I heard the natives cry, "Akua Lele" (flying god). On inquiry, they told me, that they had seen a streak of light passing horizontally through the atmosphere…I have since been told by some fishermen, who were fishing near Morokai, and about twenty miles from Lahaina, that the *Akua lele* fell in the Morokai channel. In describing its fall, they said, "the quantity of water thrown into the air, was very great; a ship, with all its sails spread, is very small". There was a rumbling noise heard for a considerable time…

According to the Andrews Hawaiian Dictionary, A-Ku-A-Le-Le literally translates as Akua: God and Lele: to fly. "A meteor; an *ignis fatuus*. NOTE— When the Hawaiians were first shown the representation or imaginary picture of an angel, they at once called it an *akualele*, a flying god". Akua lele is also described as, "Flying god, usually a poison god sent to destroy, sometimes in the form of fireballs *pōpō ahi*" (Pukui et.al 2003).

Ala-loa or King's Trail

Arguably, the population in this area of Maui was not a large as the windward side of West Maui. However, the five large verdant valleys supplied much of the food for the people that lived in clusters at the valley mouths. The early traditional Hawaiian communities were connected together by the "ala loa" or "long path" – a trail system said to have built (or rebuilt) by Kiha-a-Pi`ilani, son of Pi`ilani, in the early 1500s. Walker (1931:301) describes:

> The north end of West Maui also is traversed by a paved trail. Sections of it can be seen from Honolua to Honokohau and Kahakuloa. It is paved with beach rocks and has a width of four to six feet. Disregarding elevations and depressions it takes the shortest route between two points that is possible for foot travel. This trail is also spoken of as the Kihapiilani Trail.

According to Martha R. Fleming (1933:3-9), as reported in Handy and Handy (1972), much of the *Alaloa* had been covered or obliterated during the course of road building in the late 19th and early 20th century. The route of the present Honoapi`ilani Highway and other paved roadways most likely cover portions of the ancient routes.

***Pu`uhonua* or Place of Refuge**

In the Bishop Museum Report 12 written by Marion Kelly, (*Annotated List of Pu`uhonua in the Hawaiian Islands*) Pogue (1858:21) lists Lahaina as one of the *Pu`uhonua* of Maui; where men were free when they entered the area. Kelly explains the institution of the *Pu`uhonua* was more developed than any other area throughout Polynesia (except maybe Tonga). There were other ancient Hawaiian customs with specific unique development such as the unyielding respect for the ruling chief. Hawaiian chiefs advanced to a point where they could demand and receive complete submission from their subjects. The act of prostration by all commoners upon the appearance of a high chief or any of his servants is evidence of the powerful position of the Hawaiian chief. This development of Hawaiian leaders is unparalleled throughout Polynesia.

There are numerous modified drainage systems in West Maui that help create a likely settlement pattern for the Lāhaina region. In the higher elevations, within the valleys, are extensive *lo`i* and *`auwai* systems, built and maintained for the production of *kalo*. In the areas at lower elevations, where much of the moisture dissipated into large alluvial fans, dry land cultivation took place. Along the coast where settlements occurred, it appears that people concentrated on exploitation of marine resources. In Lāhaina, several fishponds existed. The inland ponds were naturally formed by the sandy beach dune deposits forming parallel to the shore, which kept the run-off water from reaching the sea. Hawaiians took advantage of this natural element, and modified the features in order to utilize the ponds for fish production. The most prominent of the fishponds was the royal *Loko O Mokuhinia*, around which intensive taro and breadfruit cultivation occurred. Dotted among the eccentric fishponds are taro pond fields, and on higher ground were habitation sites of the people who worked the land.

Loko O Mokuhinia

A nearby area was sometimes referred to as Kalua`ehu (pit of the red one), which references the lizard goddess or *mo`o*, associated with the adjacent Loko O Mokuhinia. This royal pond was the largest and perhaps most significant of the fresh water ponds in the area. This lake is significant in the early history of Lahaina because of constant reference throughout oral traditions and historic documents. This lake was traditionally connected with the Pi`ilani family of Maui through the *mo`o*, or lizard—a deity or *`aumakua* that traditionally took female form.

The *mo`o* of Loko O Mokuhinia was known by several names. The most well known name for the *mo`o* is Kihawahine, which is also the name of the Maui chiefess. Kihawahine was related to Kiha-a-Pi`ilani, a well known king on Maui. Their sister Pi`ikea married Umi-a-Liloa, the descendents of whom formed the royal line on the island of Hawai`i (Klieger et al., 1995a:20-21). Kihawahine most likely resided (in human form) on the island in the latter part of the 16th century.[2]

It is said that upon the death of Kihawahine, she transformed into the *mo`o* named or at Mokuhinia. Kamakau (1991: 85) records Chiefess Kihawahine transformed into a *mo`o* named Kalanainu`u. Mary K. Pukui maintains that Kihawahine was deified and made a *mo`o* goddess after her death. This *mo`o* goddess became one of Kamehameha I's favorite goddesses, and served as a "land holder" deity (Klieger et al., 1995a: 22). According to Kamakau (1991: 85) Kihawahine, as a *mo`o*, had the *kapu moe*, and was the *akua* of the high chiefesses of Maui during Kamehameha I's life.

In the Archives of the Lahaina Restoration Foundation, notes from Moses Manu (KUOKOA March 25, 1885) state "...Moku`ula, a little rock island. Below this was the den of this mo`o. This hole was called, from ancient times until this day Ka-lua-o-Kiha (The den of Kiha)." Kamakau (LRF Archives) further describes the mo`o as:

> …being seen on Maui at at Kapunakea, in Lahaina, and at Paukukalo and Kanaha in Wailuku; and she showed herself at Kalepolepo at the time that Kamehameha Kapuaiwa died. She has appeared before hundreds and thousands of people. At the close of the year 1838 she almost capsized Kekauluoni, who was going by canoe across the pond of Mokuhinia from Moku`ula on her way to church at Wainee…

A possible representation of Kihawahine was recovered from the Island of Hawai`i in 1885[3]. It is reported that Kamehameha I carried this image around the islands on the Makahiki circuit. The female image had bleached hair and was once decorated with feathers. Its eyes were inlaid with pearl shell, and human teeth lined the mouth. It is also stated that the image was wrapped in a turmeric-dyed *tapa* cloth (Klieger et al., 1995a: 26).

---

[2] Another factor linking the Pi`ilani family with Loko O Mokuhinia, is the location of Pi`ilani's residence, ectly *m* (Klieger et al., 1995b: 20-21)

[3] The image of Kihawahine was drawn by Robert C. Barnfield, and shown in Klieger et al., 1995a:25.

POST-CONTACT HISTORIC ERA

Royalty in Lāhaina

Lahaina was a spiritual center of the royal line of Maui, who ruled the greater part of the Hawaiian Islands. Lāhaina was formerly known as a political and social center. Lāhaina was considered to be a highly desirable location because of the abundant land and sea resources, its favorable climate, and its close proximity to Lana`i and Moloka`i. In ancient Hawaiian days, Lāhaina served as the residence of many powerful *Ali`i* (chiefs)—one of the most notable of whom was Kahekili. The significance and sacredness of Lāhaina was established long before the unification of the islands by Kamehameha I. Prior to the arrival of Kamehameha, the infamous Maui chief Kahekili ruled all of the islands except for Hawai`i. He maintained his home and royal court at Lāhaina until his death in 1794.

The nearby Pu`unoa *Ahupua`a* was home to many high ranked chiefs and in later years, members of the Royal family. The Pi`ilani family lived *makai* (seaward, or in this case- *west*) of *Loko O Mokuhinia*. The precise habitation location remains undocumented, but it is possible they lived near Kamehameha III's Hale Pi`ula.

In the latter part of the 18th century, a series of battles intended to unify all of the islands seriously disrupted the landscape and lifestyle throughout the archipelago. Lāhaina did not escape this destructive struggle. Klieger et al., comments on the extensive warfare (1995a:14):

> In the mid-eighteenth century, Alapa`i-nui of Hawai`i went to war against the O`ahu Mo`i Peleioholani on Maui, and focused his energies on Lāhaina. The tactics were somewhat unusual—Alapa`i dried up the streams of Kaua`ula, Kahana, and Kahoma (probable water source for Mokuhinia), toppled the terraces and `auwai, and destroyed the productive capabilities of the lo`i system below (Kamakau 1992:74). It is not certain if Lāhaina agriculture and aquaculture rebounded between the numerous battles for interisland supremacy. But years after Alapa`i's destructive path, Lahaina productivity still seemed marginal: Portlock confirmed in 1786 that western Maui had been devastated by the wars of unification (cited in Speakman 1978: 72-73). Lahaina then appears to have had little in the way of provisions to offer the passing explorers, perhaps much less to feed itself.

Nearby `Alamihi *Ahupua`a* (south of Kahoma stream) was the site of a battle between the chiefs Kauhi`aimokuakama and Kamehameha I prior to European contact. Kauhi`aimokuakama was the high chief of Maui at the time, and was rebelling against the authority of Kamehameha I. It was during this rebellion, that the Maui chief "seized all the food at `Alamihi *ahupua`a*"

(Kamakau 1963: 73). Enough food was obtained to meet the needs of Kauhi`aimokuakama's army for the militia march across Maui (ibid: 73). Inez Ashdown (in Joerger and Kaschko 1979) claims the lower part of Kahoma Stream was called "*Kapa`ulu*" or "breadfruit enclosure", and Kahoma stream allegedly provided freshwater for the `Alamihi Fishpond.[4]

The Brick Palace

In 1795, Kamehameha returned to Lāhaina to provision his war fleet before continuing on to conquer the islands of Moloka`i and O`ahu. Following the unification of those islands, between the years of 1798 and 1802, Kamehameha I commissioned the construction of a "Brick Palace" which was built at Keawaiki point in Lāhaina. The building was reported to have been built by two foreigners—Mr. Miller and a man named "Black Jack" Keaka. They had been living on O`ahu prior to Kamehameha's 1796 O`ahu invasion, and after the battle of Nu`uanu, they joined his side. The "Brick Palace" structure was two stories high, and measured 41 by 15 feet[5] on the outside.

Kamehameha used the "Brick Palace" as his encampment headquarters during his residence on Maui in the year of 1802, while waiting for the assembly of his fleet of war canoes to carry out the invasion of Kaua`i. Several historians suggest the building was built as a residence for Queen Ka`ahumanu, but she apparently refused to live in it. Instead, she preferred to live in a traditional *hale pili* located a few feet to the south. A retinue of about 1,000 people accompanied the King and Queen during their stay. Their encampment probably extended southward to Loko O Mokuhinia.

By the early 1800s, Lāhaina had rebuilt most of its war-ravaged infrastructure, and was once again productive. Lāhaina served as the capital of the Hawaiian Islands from 1802-1819. The area between the point (Keawa`iki) on which King Kamehameha I built the "Brick Palace", and Loko O Mokuhinia became the residences of chiefly families associated with the Kamehameha line. A large taro pond field *mauka* (inland) of the "Brick Palace" produced sacred food for the royalty, and the area has been referred to as the "Royal Taro Patch" in several sources.[6] The infamous brick palace was eventually demolished and the pond completely filled. Current day efforts move toward the clean up and restoration of archaeological features in the area.

After Kamehameha I left Lāhaina to wage an unsuccessful battle to gain control of Kaua`i, he established his court in Honolulu, O`ahu. He returned to Lāhaina on several occasions. In 1812, Kamehameha stopped to collect tribute during the Makahiki season and to appoint his brother-in-law Kahekili Ke`eaumoku[7] as governor of Maui (Klieger *et al*: 17).

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[4] This fishpond was largely filled and silted in at the time of a 1979 study that was carried out by Joerger and Kaschko.

[5] Several historians gave the measurements as 40 by 20 feet. The actual measurements were established during archaeological excavations undertaken in 1965 (Fredericksen and Fredericksen, 1965).

[6] Mr. Akoni Akana, President of the Friends of Moku`ula, and a Hawaiian cultural specialist, says that the reference is because the King himself actually worked taro there, demonstrating to his people the value and sacredness of physical labor (personal communication, 1998).

[7] He was the brother of wives Ka`ahumanu and Kaheiheimalie (Barrere, 1975: 23).

The government center was eventually moved from Lahaina to Honolulu however, many other members of the Royal family remained in Lāhaina. When Kamehameha I died, his son, Liholiho was crowned King Kamehameha II (1819-1824). Captain Louis Claude Desaules de Freycinet visited the encampment at Keawa`iki in 1819, shortly after the death of Kamehameha I and observed the following (ibid. Freycinet 1827-1839):

> We landed at Rahaina and immediately visited the water supply [possibly Pahumanamana Stream] and chose a suitable place to set up our observatory. The governor, Keeaumoku, came with us, and allowed us to use the platform of a neighboring morai [*heiau*], and of a red brick house to set up our instruments. The red brick house was built by Tamehameha, who had originally wanted it to be a store, but the construction was so defective that, hardly finished, it began to sag in plain view. To the south was the habitation of the priests, and right next to it, a morai, constructed on a platform of stones, forming a sort of platform on the beach. The governor made our observatory taboo, so that we would not be bothered by curious onlookers.

Lahaina Royal Mausoleum

Liholiho's mother, Keōpūolani was the highest ranking female *ali`i* with sacred power and she was known as a high *kapu* queen. Her ancestry was traced directly to the gods and therefore her children were the highest ranked possible. The young King Liholiho, Queen Keōpūolani, and Kamehameha's favorite wife (of 21 wives), Queen Ka`ahumanu all continued to reside in Lāhaina. In the early 1800s, ancient ways were replaced by introduced foreign concepts. In 1823, Keōpūolani died at the age of 54. Prior to her death, she requested a Christian funeral—issuing the strongest prohibitions against all traditional funeral customs—"save wailing" (Klieger et al. 1995a: 33). She was most likely entombed at Halekamani, which was located near the beach in the royal compound of Pakala. The Reverend Hiram Bingham (cited in Klieger 1995a:36) wrote:

> …her remains were deposited in a very tight stone and mud house. Around the house was built a stone wall from 6 to 12 feet thick, and from 4 to 10 feet high. This was a great work. The stones were all carried by hand, a distance of about a mile, and then laid in clay…

Other observers noted an encampment of mourners surrounding the tomb, in an effort to remain close to their beloved Queen. Kaumuali`i, the ruler of Kaua`i and husband of Ka`ahumanu, died in 1823. Prior to his death, he requested that he be laid to rest beside his friend, Keōpūolani. The infamous Queen Ka`ahumanu also died in Lahaina on June 25, 1832.

In 1825, when the bodies of Kamehameha II and his queen, Kamāmalu returned to the islands following their death from measles in England, their coffins were taken ashore at Lāhaina. Here they lay in state for a short time—next to the coffin containing the remains of the King's mother. The remains of King Liholiho and Queen Kamāmalu were delivered by the English Frigate Blonde and according to Gilman (1907:172):

> …deposited here where they remained for several years until removed into the large tomb adjoining the king's residence where, with other remains of royal personages, they remained until removed to the Mausoleum in Honolulu. In later years, after the royal remains had been removed, the little building was remodeled into a very tasty and convenient little cottage which was occupied by my partner, George Brayton, Esq., who was one of the United State Consuls at Lahaina.

The young King Kauikeaouli stayed in Lahaina with his sister Princess Nāhi`ena`ena, where they lived near their mother's tomb, in Pa Halekamani, preferring Lāhaina to the Capital in Honolulu. The Princess got married at Waine`e Church in 1835 to her father's daughter Kiliwehi's son, a young Big Island chief named Leleiōhoku. Following the marriage, she moved to Honolulu and soon became pregnant. Some said the child was fathered by Kauikeaouli, as their marriage would have been customary (had the missionary influence not been so pervasive). Nāhi`ena`ena gave birth to a child who died shortly thereafter.

Princess Nāhi`ena`ena never recovered from the pregnancy, birth, and death of her beloved child, and she died on December 30, 1836. Some say she died of a broken heart. Her body was returned to Lāhaina, and a stately funeral procession wound through the town ending at Halekamani where her remains were deposited next to those of her mother (Klieger 1995a: 52).

Following the Princess's death, King Kamehameha III (Kauikeaouli) immediately constructed a mausoleum for his beloved sister at Moku`ula, the Royal island at Loko O Mokuhinia. When construction for the mausoleum was complete, Princess Nāhi`ena`ena's remains and possibly those of her deceased child, along with the remains of Keōpūolani and other *ali`i*, were relocated to the mausoleum. Kamehameha III lived on the island for the next eight years—distancing himself from the overwhelming pressures of the government that existed in Honolulu.

In 1837, a missionary wife named Andelsia Lee Conde wrote about the tomb at Moku`ula (Klieger etal.1995a: 55):

> The room was a large chamber elegantly furnished with chairs, tables and large mirrors set under them, beautiful china matting and a small organ upon which he played for our entertainment. Nearly in the center of the room was placed a bedstead nearly the magnitude of 3 common bedsteads. Upon which was a bed neatly spread, and upon this were placed the three coffins, side by side, most splendidly ornamented. Each of these corpses were enclosed in 3 coffins—the first zinc—the second lead and the third or outside one of wood. These were covered with scarlet silk velvet put on with a multitude of brass nails—gilded plates, with their names & c. upon them, and various gilded ornaments, that gave us almost the impression but that of a tomb…

King Kamehameha III eventually married Kalama and they had two sons, both of whom died somewhere between 1839 and 1842.[8] The sister of his new *aikane*, Keoni Ana (John Young II) bore Kamehameha III twin boys, although the two were not married in the Christian sense. One of the twins was Albert Kunuiakea Kuka`ilimoku (1851-1903), the only royal child that survived infancy. Although raised by Queen Kalama, the grandson of Kamehameha I was treated with scorn by the Calvinist Christians. Albert served as a House representative in 1880 (ibid: 65).

Hale Pi`ula or The Iron Roof House

In 1840, Kamehameha III began building a western-style coral-block "palace" called Hale Pi`ula (House with the Iron Roof). A reference to the structure is found in Thrum's Almanac (1907: 173):

> …It was more of a curiosity than an adornment. It seemed out of place amid all the tropical profusion and exuberance of natural life to see this building intruding into the atmosphere…Fortunately so far as beauty was concerned it was partly dismantled and never finished and remained quite a conspicuous figure on the beach. However, in later years, they had to transport its stones to the premises of the old fort where they now appear in the government building which is much more in harmony with the surroundings.

The Polynesian (July 25, 1846) article reports:

> Lahaina contains many excellent and unoccupied houses which would find ready tenants could they be transported to Honolulu. The palace, as a huge graceless, incomplete, two-story building, encircled by a wide verandah…is a monument of a waste of government means which do credit to some old and dissolute monarchy verging to its downfall. Its site is the sandy beach, instead of, as it might have been had taste been consulted, a quarter of a mile back, amid one of the many beautiful groves that give Lahaina so picturesque an appearance. Mr. Baldwin's church and the adjoining house are most delightfully situated in this respect and are quite unique in their tout ensemble, for Hawaiian scenery. The white turrets of the church peer through the trees most prettily…

Bate's Sandwich Island Notes, 1854, (Lahaina Restoration Foundation) states:

> The Palace is a plain, huge frame building…It is a hundred and twenty feet long, and forty in width, exclusive of a piazza, which entirely surrounds it. It has two stories, divided off into almost any number of apartments, without the least regard to comfort or design. It was never

[8] Named Keaweawe`ulaokalani I and II, these were the last immediate family members of Kamehameha III to be placed in the tomb at Moku`ula (Klieger et al., 1995a:65)

> finished, and never will be; consequently, it retains an appearance peculiarly ruinous. The best thing about it is its location, close to the ebbing and flowing of the tides, and within hearing of that never-wearying hymns the ocean's anthem. Yet this worthless pile, erected, too at vast expense, was once the abode of royalty. Here in his younger days, Kamehameha III, convoded his counselors on affairs of state and received foreign officials. But since those days, every thing and everybody has changed. The past seems more an assemblage of shadows that have fled away forever. The large saloon in which the monarch formerly held his soirees is now employed as a circuit-court room, and very comical and absurd are some of the scenes sometimes enacted there…

Judging the comments cited above, many were not impressed by the structure. Again, some of the remaining foundation stones and coral blocks from the "Palace" were incorporated into the Lāhaina Court House, which a portion still stands in the center of Lāhaina town overlooking the small boat harbor (Fredericksen et al. June 1988). Other coral blocks from the dismantled "palace" found their way into structures elsewhere throughout Lāhaina.

Famous Winds

By 1848 the coral block iron roof "Palace" was used as a courthouse—until it was severely damaged by *Kaua`ula* winds in 1858. Note at the time, the same wind destroyed 20 other substantial buildings in the area. About a hundred years later, a local informant's residence was destroyed by the *Kaua`ula* wind (Appendix A). Historic documents indicate that on January 15, 1951, a strong windstorm caused major damage to buildings in the area including the military armory (Letters from the Office of the Commissioner of Public Lands, Fort Ruger Archives). The particular type of occasional gust is well known throughout the area as the *Kaua`ula Wind*.

If the wind blows recklessly from directly in front of Lahaina, that wind is known as *Kona*. Some common winds in the area are known as the *Ma`a`a, Kaomi, Moa`e,* and *Hau.* Other occasional winds (besides the *Kaua`ula* and *Kona*) include the Imihau and Ho`olua. If a gentle sea breeze such as the Ma`a`a blows at night, the wind is known as Ululoa. During this time, it is *kapu* (forbidden) to go on the sandy shores of Lahaina because one may encounter the "procession of ghosts, the marchers of the night, according to the old folks" (Sterling: 37).

Hawaiian Capital from Lahaina to Honolulu

In 1845 the royal court moved back to Honolulu. Kamehameha III took his trusted friend Keoni Ana and his wife, Julia Alapa`i[9] along with him. In the same year, Queen Kekauluohi--*hanai* mother of Queen Kalama and the last female *Kuhina Nui*[10]--died. Shortly thereafter,

[9] Julia Alapa`i is the granddaughter of Alapa`i-nui, the king of Hawai`i who ravaged Lāhaina in the mid- 1700s.
[10] Kaahumanu was the first, followed by Kina`u. Kekauluohi was appointed *kuhina nui* after the death of Kina`u in 1838. Kekauluohi was the daughter of Kaheiheimalie, who was a sister of Kaahumanu. Kaheiheimalie was married to Ulumaheihei Hoapili, the governor of Maui. Kekauluohi's father was a half-brother of Kamehameha I (Kame`eleihiwa, 1992: 125).

Kamehameha III appointed Keoni Ana *kuhina nui (*Klieger et al., 1995a: 69). Keoni Ana became the Minister of Interior, and carried out the land reform known as the "Great Mahele" in 1848. King Kamehameha III died on December 16, 1854—leaving behind a complex *constitutional* government and an entirely new land tenure system (ibid: 71).

Although the King's absence on O`ahu left others to attend to the affairs of state, during King Kamehameha III's reign, there was an immense list of political endeavors and changes with far reaching effects. Between 1825 and 1854 there was a series of radical changes, ranging from the Declaration of Rights (June 7 1839), to the Mahele (1848-1852). The King's death in 1854 ushered in a new era of intense acculturation, political and economic change, culminating in the overthrow of the monarchy in 1898, when Hawai`i became a United States Territory.

Lahainaluna

Lahainaluna is the name of the neighboring road, stream, ditch, school, and highscool. William Richards established the first missionary station in Lahaina around 1823. The site was named Lahainaluna, which translates as "Upper Lahaina". The site houses the oldest post-secondary school west of the Rocky Mountains. Originally, the school was a Protestant missionary school known in 1831 as "Lahainaluna Seminary". There is a small graveyard on the campus where a number of early settlers lay at rest. Lahainaluna was the first introduced school founded in Hawai`i.

The missionary school was established in 1831 and the well-known royal historian named David Malo was part of the first group of male students. David Malo was an important fixture in the early days serving as school master, eventually taking the role of General School Agent for Maui and Superintendent of Schools for the Hawaiian Kingdom, and he was also a member of the Hawaiian House of Representatives.

Hale Pa'i, (printing house), is a small building located on the campus that was built around 1834 (SIHP 50-50-03-1596). The historic building is constructed of coral and timber and operated as the first printing press in Hawai`i.

Whaling

In the early to mid 1800s, whaling was a vast Pacific trend. The discovery of profitable whaling sites throughout the seas brought a wave of whale hunters to the Hawaiian Islands. Lahaina was a key location for anchorage. This was generally an easily accessible place where boats and their crews could be outfitted or repaired, as well as food and supply replenishment. "Because grog shops were really discouraged most of the time, the visiting seamen were kept in order more than they were when they visited the larger port of Honolulu. About 400 whalers visited Lahaina in 1845. In 1846, 90 whalers, a portion of the 'Spring Fleet' were anchored off Lahaina at one time (62). In any event, seamen could always find women, alcohol, and a good time in Lahaina town.

The Pacific whaling industry, which had fueled the Hawaiian economy during the 1840s, prompted by the discovery of oil in Pennsylvania a decade or so earlier, collapsed in the 1860s.

Those who had worked in the support occupations that supplied whaling ships since the 1840s had to look elsewhere for their livelihood. The climax of whalers frequenting the Lahaina port occurred during the 1840-1860s. Competition from the petroleum industry created kerosene that replaced whale oil as lantern fuel, and also substituted whale oil as a lubricant. Around 1870, the whalers had essentially stopped coming to the Hawaiian Islands and whale hunting eventually dwindled away. Lahaina has gone from the whale hunting capital to the whale watching capital of the Pacific.

THE MAHELE

During the 1830s-1850s, the ancient Hawaiian ecologically-aware land tenure system was replaced by the more modern concept of land ownership. An 1831 census estimated the population of neighboring Ka`anapali, at 8.5% of the island total of 35,062 or 2,980 people (Schmitt 1973:18). By 1836, the population had dropped to about 5.5% of the island total, or 1,341 people (ibid: 38). Recognizing the declining Hawaiian population, the legislature acted on several resolutions that transformed the traditional land stewardship practices to the current concept of land tenure.

The *Mahele*, or *Division*, defines the process of the mid-1800 land tenure system change, which essentially divided land into three categories: (1) Crown Land (for the occupant of the throne), (2) Government Land, and (3) Konohiki Land (set aside for 245 of the highest ranking *Ali`i)*. All of the lands were subject to the *rights of native tenants*. If the common people (*maka`āinana*), or "Native Tenants", met certain criteria and filed land claims under specific guidelines, a Land Commission Award (LCA) was issued. Further efforts for native tenant land rights required paying hefty commutation in addition to conducting expensive land surveys (with limited surveyors available) then finally, a land grant may be awarded. The awarded lands are referred to as *Kuleana*.

During the tumultuous years following the deaths of Kamehameha I and II, Kamehameha III often retreated to Lāhaina to visit Loko O Mokuhinia and the royal island within the lake—Moku`ula. Again, Kamehameha III built a significant mausoleum for his mother, sister, and other *ali`i* connected with the royal family on this island. Lāhaina continued to attract various sorts of people and housed *Ali`i* throughout the 19th century. King David Kalākaua held a title to property north of Loko O Mokuhinia, and his heirs kept the title for two decades; into the 20th century. William Charles Lunalilo (King Lunalilo) also held a title to a nearby parcel (LCA 8559-B).

Victoria Kamāmalu was awarded LCA 7713, which included the *Ahupua`a* of Paunau. "The boundaries of said ahupuaa have never been settled by the Commissioner of Boundaries" (Sterling: 35).

The entire neighboring *ahupua`a* of Hanakaō`ō (LCA 7715M) was awarded to Lot Kapuaiwa (King Kamehameha V). The King died on December 11, 1872, and his half-sister Ruth Ke`elikolani declared his heir. Another nearby award (LCA 76) was to William Shaw, a prominent foreigner in Lāhaina, who was rewarded for his loyalty to the Hawaiian Royalty by gifted with large sections of land in Ka`anapali. When Shaw died, the property became part of the Lāhaina Sugar Company – later absorbed into Pioneer Mill Company. [11]

PLANTATION ERA

Toward the latter half of the 19th century, Lāhaina shifted from a governing center to a commercial agricultural center. With the advent of intensive commercial agriculture in Lāhaina; as elsewhere throughout areas of Maui and the other Hawaiian islands, came the need for ample amounts of freshwater. The sacred Loko O Mokuhinia and many streams throughout Lāhaina dried up as the water got diverted to irrigate the sugarcane fields. Water transport systems diverted the natural flows of the streams and the surrounding ecosystem was impacted by the severe change of land use and water flow.

According to Hamilton (2001: 77), Moku`ula was abandoned after the Capital moved to Honolulu in the 1850s. Allegedly, by the early 1900s, many local residents considered the site a "smelly, swampy, vermin, and mosquito infested problem". Trepidation ensued when mosquitoes were discovered to be carriers of yellow fever disease. The area was considered a potentially serious community health risk and the site was completely filled in with imported backfill transferred by a special spur line of rail tracks.

Sugarcane Plantation

In 1832, the missionaries conducted a census stating the population of Lāhaina was 4,028 (Schmitt 1973). By the mid-1800s, the forces of Christian missionary influence and commercialism transformed the Hawaiian system of social stratification. Along with the drastic change in land use and tenure, the social status now seemed to be based on acquired wealth, rather than on birth and rank. Chinese and Japanese laborers were imported to work in the sugar industry, and the immigrant groups settled in individualized ethnic clusters throughout Lāhaina. The early plantation era reshaped society throughout the islands and the landscape transformed

[11] Shaw's heirs conveyed land to Henry Turton, Paul Isenberg and Walter Horner and Lāhaina Agriculture Company. This company became part of Pioneer Mill Co. in 1884. Previous usage was for sugarcane cultivation and cattle pasture (Helbert, Hastner & Kimura, 1987, p. 4). William Shaw was reported to have been buried in the cemetery atop Black Rock (Pu`u Keka`a), from which burials were removed at the time of the construction of the Sheraton-Maui in the 1960s. His remains were reinterred in Wai`ola Cemetery in Lāhaina , according to informants (Fredericksen, 1998).

reflecting the massive cultivation of sugarcane. Some of the cultivated fields were actually reutilized features from the sophisticated ancient Hawaiian agricultural terrace network systems.

Beginning with the introduction of coffee in Honokawai in the 1840s, the importance of commercial production of single-crop agricultural products took on new status. However, sugar – not coffee – became the dominant crop in this region of Maui by mid-century. In 1848, a sugar mill commenced operation in Lāhaina, which was operated by Judge A. W. Parsons. Ten years later, storeowner, Henry Dickenson began the Lāhaina Sugar Company. Three partners[12] eventually established the Pioneer Mill Company, and in 1863 proceeded to buy out the bankrupt Lāhaina Sugar Company.

Extensive sugarcane cultivation began in West Maui in 1849 when Judge A.W. Parsons established and began operating a sugar mill in Lāhaina. The sugar operation was sold to J.T. Gower about 1850, and sold at auction in 1852 to O.H. Gulick, along with 1,000 acres of land (HRHP, 1974). In 1854, a whaling vessel stopped in Lāhaina on a return voyage from Tahiti with 2 varieties of sugar cane. These were given to the U.S. Consul, who planted them in his garden. One variety proved to be hardy and productive in the harsh Lāhaina climate, becoming known as "Lāhaina cane". It was the predominant variety for the next 50 years (ibid.).

In 1859, Lāhaina shopkeeper Henry Dickinson formed the Lāhaina Sugar Company and about a year later, Pioneer Mill Company was founded. Pioneer Mill Company was formed by three partners--James Campbell, Henry Turton, and James Dunbar, on land deeded to them by Benjamin Pittman. Again, the Lāhaina Sugar Company went bankrupt in 1863 and was sold to the infamous Pioneer Mill Company.

Another sugar plantation venture was attempted by King Lot Kamehameha[13] (Lota Kapuaiwa) and others in 1870. Although there is no specific mention of the location of the cultivated lands, it is likely that the King's sugarcane plantation was part of LCA 77. King Lot Kamehameha died on December of 1872 and Princess Ruth, his half-sister, was declared heir to his lands. This event must have had a bearing on the small plantation, which was also taken over by the Pioneer Mill Company.[14] In 1877, a German ex-ship captain, H. Hackfield, took over as manager of the plantation, which represented assets of $500,000 in 1883 (Simpich, 1974, as cited in Graves, 1993: A-5).

With the introduction of sugarcane cultivation, and the importation of foreign labor to work in the plantation, the character of Lāhaina changed. *Loko O Mokuhinia* dried up as water was diverted for irrigation. *Kuleana* land grants changed hands as plantation workers became affluent enough to purchase land from Hawaiians willing to sell. Commercial development became a driving force that would continue and intensify through the 20th century. H.P. Baldwin originally formed the Honolua Ranch Co. to raise cattle and coffee in the late-1880s.

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[12] James Campbell, Henry Turton, and James Dunbar (Conde and Best, 1973, p. 252).

[13] King Kamehameha V, who ruled from 1863 to 1872, was the grandson of Kamehameha I, and was called "the last great chief of the olden type" (Day, 1984, p. 69).

[14] Lot Kamehameha (Kamehameha V) died in 1872, without naming an heir. His property was inherited by his half-sister Ruth Keelikolani—Princess Ruth.

In the heyday of sugar production, the Pioneer Mill provided electricity, water, and medical care -not only for the workers, but also for the whole town of Lāhaina. It ran the largest mercantile on Front Street, which was known as *Lāhaina Dry Goods.* The building was said to have been built as a possible refuge for the Kaiser, prior to World War I. Because of the fact that it was controlled by German nationals in 1917--H. Hackfield and Company, the managing agent for Pioneer Mill—it was seized by the government and sold to Americans as America entered World War I. Without delay, the company was immediately renamed *American Factors*, which later became *Amfac, Inc*.

In 1889 Pioneer Mill Company had a lease of land for 15 years and in 1894 when the Provisional Government became the Republic of Hawai`i; the Crown Lands became public lands. After the Hawaiian Islands were annexed by the United States in 1898, the Commissioner of public lands reported out of all the originally designated Crown Lands in and around Lāhaina town; only 60 acres of land and fishponds remained. Additional significant changes occurred through the area when the government road (Govenment Road/Front Street) was constructed in 1908 and when Mala Wharf was built in 1920-1922. These improvements created changes to the area.

In the early part of the 20th century, Pioneer Mill controlled approximately 12,500 acres of land in West Maui. These lands were considered some of the rockiest plantation lands throughout the Hawaiian Islands commented upon in Gilmore's The Hawai`i Sugar Manual:

> …Owing to the roughness of the terrain, very little cultivating is ever effected with implements drawn by either tractors or mules. Practically all is done with the hoe. Forty percent of the land is so completely covered with rocks that plowing is impossible, and preparing land for planting is done with pick and shovel. In these fields the rocks are cleared away and built into a series of stone walls from 5 to 6 feet apart and often 3 feet high. These stone walls form the banks of the cane row; and between these walls the ground is softened up with pick and then planted. The soil in these areas, although extremely difficult to get at, is very fertile and yields as great as from 90 to 100 tons per acre can be secured off such fields (1936: 200 in Haun, 2000:15)."

Plantation field work was extremely labor-intensive, and a constant flow of workers was needed. The first group of immigrant workers to venture to Lahaina and labor in the sugarcane fields were from China followed about a generation later by Japanese, and finally during 1920-30s, by workers from the Philippines The Plantation basically operated as a feudal system, which provided all of the workers needs—from housing, to merchandise, to health care and social activity.

In this environment, Waine`e Village was established in the early 1900s. The village contained up to 200 houses in its prime in the 1920s. It continued to house plantation employees throughout the pre- and post-World War II years, until the village was slated for destruction. In March 1999, it was announced that Pioneer Mill would cease to plant sugarcane on its vast land holding on the west side of Maui. As each field ripened, it would be harvested, and when all harvest was complete, the mill ceased operations.

Water use was always an issue. The plantation water system included man-made ditches, tunnels, pumps, reservoirs, intakes, wells, flumes, siphons, and various types of pipes. The longest ditch in West Maui is the Honokohau Ditch, built between 1904 and 1913, which starts at Honokohau Stream intake and runs all the way south to Lāhaina (Site 1591). This system was begun in 1917 with the construction of a 1.55 mile tunnel, which was c. 6 by 6 feet in diameter, and eventually was lined with concrete. It started at 1525 feet AMSL, and within a year it could feed the Honokawai water system with 50 mgd if needed. In the 1940s, Pioneer Mill lost the right-of-way for the first section of the main tunnel, and had to build a second tunnel on land that they owned outright. There are now 2 tunnel mouths sitting c. 30 feet apart at the Honokawai intake (Wilcox, 1995, p. 134).

The Maui News devoted several pages to the history of Pioneer Mill in its August 29, 1999 issue. At that time, there were 36 homes left standing in Waine`e Village, which made up what was described as the last plantation camp on Maui[15]. The article went on to state: "Until recently, nearly all of the homes were occupied, although…the structures, many of them built in the 1920s, were in poor condition". This plantation camp was located to the south of the project area. Some of plantation housing (single men quarters) may have been associated with the current project area (Figure 5).

[15] Waine`e Village was demolished in 2000 and has been designated SIHP # 50-50-3-5042.

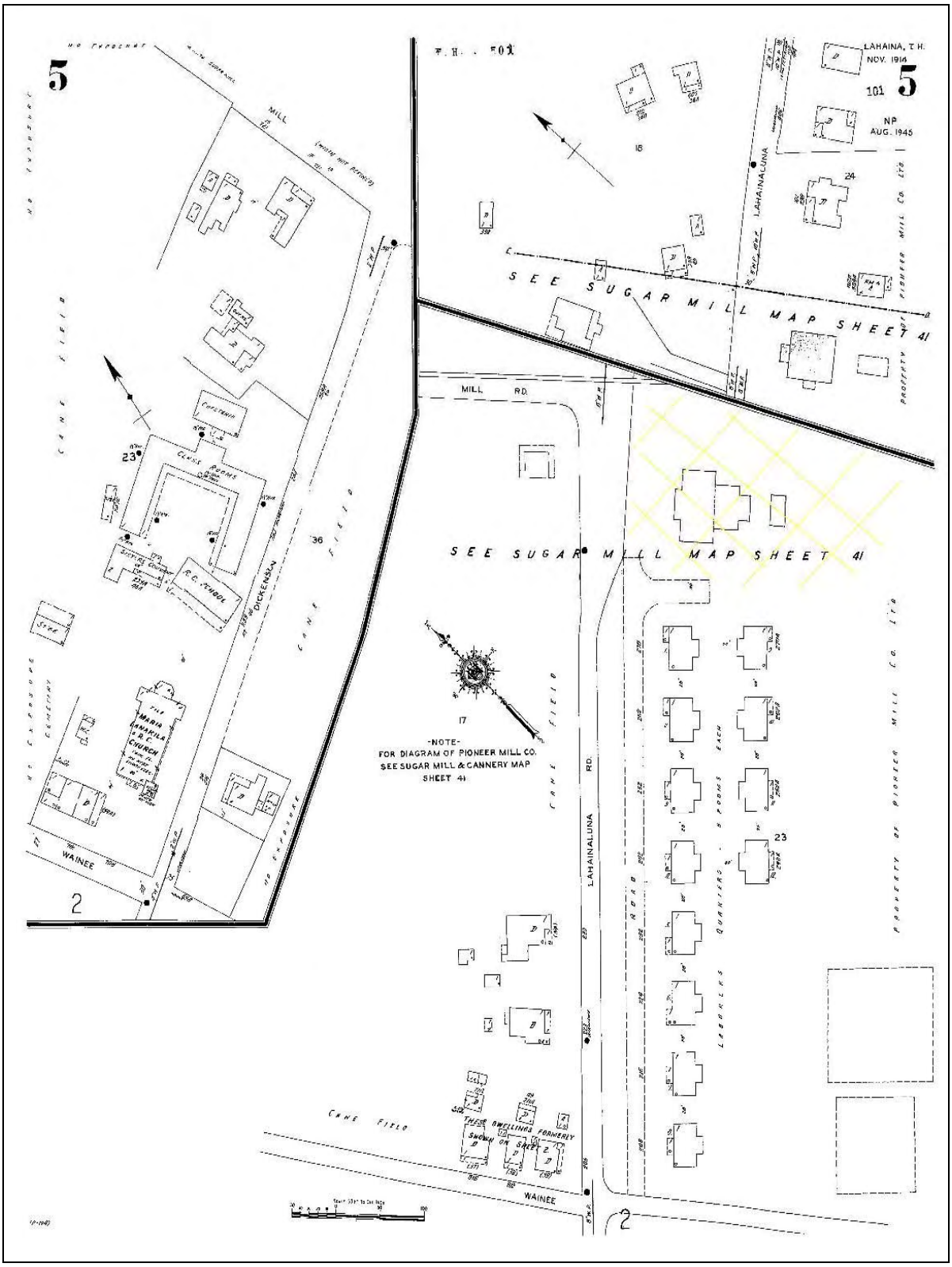

Figure 5: 1950 Pioneer Mill Map (Sanborn Map) showing structures in the vicinity of the current project area (yellow hatched area).

Pineapple Plantation

The ranch's second manager, D.T. Fleming, experimented with pineapple and found that pineapple grew well in this portion of Maui. The original cannery was constructed in about 1912 in Honolua. This facility was utilized for about six years, before the commercial operation was moved to Lāhaina near Mala Wharf. The Lāhaina Cannery was constructed to process the successful pineapple crop. About four years later, Honolua Ranch Co. was incorporated as Baldwin Packers, Ltd (Fredericksen, 2006; Kupau, 2001). The "new" Baldwin Packers Cannery was fully in use by 1920 and continued to be utilized until Baldwin Packers' merger with Maui Pineapple Company in 1962. The Cannery facility was subsequently utilized for storage and office space by small businesses and individuals in Lāhaina until the mid-1980s, when it was demolished. The present Lāhaina Cannery Mall Complex was essentially built on the footprint of the former Baldwin Packers Cannery facility.

Mala Wharf

The construction of Mala Wharf, a fixture of Lāhaina Town since its completion in about 1922, impacted the `Alamihi Fishpond. An access road to the wharf was installed across the central portion of this inland pond and the pond was subsequently completely filled (Joerger and Kaschko, 1979: 10).[16] Mala Wharf (SIHP 50-50-03-1599), was used on an intermittent basis to load raw sugar from Pioneer Mill onto Matson ships. The wharf was periodically repaired until about 1941. The wharf was subsequently abandoned because of unsafe conditions. The remnants of this historic structure now comprise a popular underwater dive attraction.

Lahaina Railroad and Hackfield

H. Hackfield became the agent for the Pioneer Mill Company in 1877. Five years later, a railroad was constructed that went from the sugar mill in Lāhaina to a point north of Pu`ukoli`i Village in Hanakaō`ō. The railroad ran the 5-mile distance at about 350 feet AMSL (Conde, p. 169). The steam-driven rail engine could deliver 120 loads of cane each day, as opposed to 20 loads, hauled in carts pulled by 6 to 8 bullocks (ibid.). The railroad continued to operate until 1952, when the job of hauling harvested sugarcane from the fields to the mill was taken over by huge turn hauler trucks. Where possible, the haul roads traced the old railroad route.

Henry Turton received permission from the Minister of the Interior of the Kingdom of Hawai`i in May of 1882, to proceed with the railroad, intended to connect distant fields with the mill. It eventually extended north to Napili, and south to Ukumehame, running across the entire area. The Maui News reported the closing of this railroad in December of 1952. The old railway beds were transformed into cane haul roads, some of which are still in use today. The *Sugarcane Train* presently runs a short distance taking visitors along some sections of the old historic railroad.

[16] The author recalls driving to Mala Wharf with my father, Walter M. Fredericksen, on several occasions in the late-1960s and crossing the still then somewhat marshy filled fishpond area.

Pioneer Mill Historic District

The Pioneer Mill District is listed in the Hawai`i Statewide Register of Historic Places as Site -1598. The historic district includes: 1) Kapunakea pump house; 2) the Kauaula hydro-electric plant; 3) Ka`anapali power plant which was at one time the main provider of power for the plantation and vicinity (built in 1915 and steam powered); 4) plantation office building dating from 1910; 5) the manager's house built in 1910-1912 but was actually used by the assistant manager; and 6) Puamana, a large 2-story hip-roofed structure built by William Desmond in 1927. This building is built in a Spanish tradition with arched arcades linking the wings together. Wrought-iron grillwork is situated on the balustrades. This was named after the old Farden Family house in Lāhaina, and the name remained. It was used as the managers house (Wright, 1974).

World War II

All of the islands, including Maui were involved in the *Pacific Theater* during World War II. Several areas throughout the island were utilized as staging centers and training bases. Members of the United States Marines, Navy, and Army were all present throughout Maui during World War II (WWII). Smoke from the bombings of Pearl Harbor could be seen from Lahaina (see Appendix A). During the climax of WWII in 1943 to 1944, more than 100,000 soldiers were said to be located throughout the island of Maui. At this time, the island was transformed and there were community efforts to make the service people feel at home on Maui.

CULTURAL RESOURCES

Heiau in the Area

The first anthropological work in Lahaina was conducted by Winslow Walker during his island wide inventory of religious structures, or *Heiau* (Walker 1931). Three Heiau were listed for the vicinity including Wailehua Heiau, located at Makila Beach in south Lahaina (SIHP 50-50-03-6), Halekamani, Heiau, located in the Puehuehunui sugarcane fields about Lahaina town (SIHP 50-50-03-7), and Apahua Heiau (SIHP 50-50-03-8) in the sugarcane fields above Waine`e.

Wailehua Heiau is the structure that was dismantled at the death of Queen Keōpūolani (Majors 1996:13). The stones were carried from the structure's shoreline location to the tomb, Halekamani, which held the remains of the queen until they were relocated to the Moku`ula mausoleum. Wailehua Heiau is described as measuring 130 by 80 feet (Thrum 1909), and was

allegedly constructed by Kauhi-ai-moku-kama, the son of Kekaulike, in or around 1738 (Walker 1931: 109).

Halekumukalani Heiau was a small sacrificial structure (Luakini) in the cane fields above the Pioneer Mill Company railroad. Walker recorded the Heiau as totally destroyed. Apahua Heiau is another structure totally destroyed by sugarcane cultivation. Thrum (1909) claims it was built by Huanui, about 50 years after Hua-a-Pohaku-kaina.

Associated Archaeological or Historic Architectural Features

Statewide Inventory of Historic Places (SIHP) 50-50-03-6660 lies in the adjacent State highway right-of-way and consists of a boundary or retaining wall (Appendix B). The probable age of this site is Post-contact Historic. One feature makes up this site and the dimensions of the wall are approximately 40 meters long, 43 centimeters wide and 60-125 centimeters high. The condition of the site is considered fair to good and it has been repaired numerous times over the years. The wall is located on the north and west sides of the subject parcel. The border/retaining wall is constructed of concrete and small to medium subangular basalt cobbles. The exterior side of the northern portion of the wall is aligned with the sidewalk along Lāhainaluna Road which runs east/west. At least one course of basalt cobbles and concrete was added at the time of the sidewalk improvements and is 20 cm above the sidewalk. Lāhainaluna Road slopes- and the wall slopes along with it. At the western border, along Honoapi`ilani Highway the wall is only 60 cm high on the interior. There is a set of steps on the northern portion -built into the wall. These steps begin at the interior base and connect with the sidewalk. There is also a broken aluminum railing built into the steps.

Statewide Inventory of Historic Places (SIHP) 50-50-03-6661 also consists of a boundary or retaining wall aligning the eastern boundary of the subject parcel (Appendix B). The probable age of this site is Post-contact/Historic. One feature makes up the site and the dimensions of the wall are approximately 60 meters long, 80 centimeters wide and 0-55 centimeters high. The condition of the site is considered fair to poor and it has been repaired numerous times. The border/retaining wall is constructed of concrete and small to medium subangular basalt cobbles. The exterior side of the wall is aligned with the adjoining property. The internal portion of the wall is c. 40 to 50 cm high from the base within the property. The wall is c. 63 cm wide. The wall begins at the wall which runs along Lāhainaluna Road and borders the eastern boundary of the project property. The wall appears to have been repaired in numerous areas, while other areas are collapsed. There is an opening built into the wall which may have been a driveway at some point. The exterior height is at ground level to 40 cm high.

FINAL SUMMARY

Site 6660 lies in the adjacent State of Hawaii right-of-way and will not be impacted by the actions of this project. Appropriate actions will be undertaken during the implementation of the project to help ensure that the Site 6660 wall is not impacted by construction activities. Since the Site 6661 wall on the project area has been adequately documented and has already yielded information, it will be demolished and a replacement masonry wall will be built in its place. The study area has an accepted archaeological monitoring plan. Given that the subject parcel is located within the Historic Lahaina District, the State Historic Preservation Division recommended precautionary archaeological monitoring. The State Historic Preservation Division has previously reviewed and accepted our archaeological monitoring plan, which will cover all on- and off-site construction work related to the project. Based on our research and oral interviews, we are not aware of any specific traditional Hawaiian cultural uses for the subject parcel. Interviewees were not aware of any specific cultural uses of the project area (see Appendix A of this report). As previously noted in this report, the individual interviewee's participation in the Cultural Impact Assessment process does imply support for the proposed construction project.

Assessment of Cultural Impacts

The subject parcel and surrounding areas have been heavily impacted by historic plantation activities of the 19th and 20th centuries. If traditional Hawaiian cultural sites were present prior to the Plantation Era, they were either destroyed or buried by earth altering activities, or more recent alterations. The subject area was formerly referred to as Mango Manor in more recent times. The historic houses once contained on the parcel were removed within the last ten years.

Potential Impacts by Future Construction Activities

Ancient Hawaiian or more recent historical subsurface habitation or agricultural sites could be present in subsurface sections of the subject area. Traditional Hawaiian cultural deposits may include midden deposits, charcoal, cooking pits, waterworn pebbles, or stone features. More recent historic cultural deposits may include discarded bottles, crockery, and other domestic objects. Human burials often accompany habitation sites, and there is a slight expectation of encountering significant sites during subsurface ground disturbance activities on the subject parcel.

The proposed project area may have been filled in the early to mid-1900s, which would lessen the likelihood of identifying intact portions of subsurface cultural resources. Because the subject area was utilized during the post-contact period as well, one could expect cultural

deposits in the form of refuse pits and other features associated with past residential and/or commercial usage. The previously approved monitoring plan is in place and will be implemented prior to the initiation of project construction.

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APPENDIX A

INTERVIEWS

Annie Kekona

Keoki Freeland

Charles Makekau

William Waiohu Jr

Annie Kekona

Interview by Jennifer Frey
16 December 2009 (around noon):

Annie Kekona was born Jan 15, 1933 in Kapalua, Maui. Mom was a midwife and Annie's 11 siblings were all born at home -aside from the youngest who was born in the Lahaina Hospital.

Father – George Ka`aihue was born in Kaupō,

Mothers family was from Hana – Konalia Family (Maiden name Waiwaiole – 100% Hawaiian)

In Kapalua Annie's parents worked on the Honokahua pineapple Plantation as a tractor operator (dad) and laborer (mom). Her parents retired at age 65.

Annie's oldest brother also was a tractor operator on the plantation.

Life on the plantation: As a child Annie used to play at the ballpark which was located near the Ritz Kapalua and the area we now identify as a burial ground. The school was beside the church that is still standing near the Ritz Kapalua. The plantation was divided by camps – Hawaiian, Japanese, Filipino camps. The kids swam, fished, played sports, gardening, raised ducks, chickens, and pigs. Wild horses used to run near the point Kapalua point.

The manager at the time of the plantation closing was Mr. Naganoma. Mr. Fleming was known by Annie and her family as a great manager/boss. He used to pay employees to clean the gulch near Fleming beach during slow periods to keep them employed.

Annie Kekona (continued)

In 1949 the Hawaiian camp was torn down and the family moved to Napili. Annie attended and graduated from Lahainaluna School.

In 1948 Annie and a couple siblings moved to Hana for a brief time to live with the grandparents. The rest of the family would drive out by truck every weekend to visit. The oldest siblings lived in Hana full time. It was customary that the children with the grandparents' namesake would be raised by them.

Annie did not spend much free time in Lahaina because her lifestyle was in Kapalua. After school she would head back out to Kapalua for chores and to play.

Annie remembers the area that is now considered a graveyard in front of the Ritz Carlton -had rock walls- and was used as a corral for the horses. She does not remember a heiau or any area that was KAPU for any reason. She does not recall any stories of the area either.

In 1951 she married and moved to Wailuku where she raised 4 children.

Keoki Freeland

Phone Interview by Jennifer Frey
21 December 2009

Mr. Freeland was born and raised in Lahaina, Maui, 1939. Keoki is third generation born in Lahaina. His father owned and ran various movie theaters throughout the Lahaina area mill camps, including Pu`ukoli`i, Honokahua, Lahaina, and Olowalu to name a few. There were ten total. Keoki's grandfather built the Pioneer Inn on Front Street in downtown Lahaina in 1901. It was built very quickly, from about September to December, opening in December of 1901. Despite rumors of his grandfather bringing the Inn from Lana`i, Keoki confirmed that was not the case. The Inn housed 10-12 rooms, a restaurant, and a bar. As a child, his home was located where the Wharf Cinema Center now sits. There were 5-6 homes on the Warf Center property which were cleared away when the center was built in the 1970s.

Mr. Freeland attended Lahainaluna School and attended college in the mainland, returning to Hawai`i he then worked in the Sugar Industry on Oahu until 1985; when he returned to Lahaina and became the Vice President and General Manager for the Pioneer Mill until retiring in 1995. After retiring from Pioneer Mill, Mr. Freeland worked for the Lahaina Restoration Foundation which he has been involved in until current day.

Keoki remembers the mill and its' surrounding area from his childhood. Per his account, the property along Lahainaluna Road and Honoapi`ilani Highway was occupied by homes where the single men who worked in the sugar mill lived. They were generally supervisors and skilled laborers, while the field workers generally lived in the field camps. A few of these single mens homes still remain along the lower Lahainaluna Road and have been restored. Keoki believes the homes were built in the 1920s.

Keoki Freeland (continued)

The corner parcel lot along Lahainaluna Road and the Honoapi`ilani Highway also contained a restaurant, which the chapel now occupies. The building has been renovated and altered since then. The building was also used as the Union Clubhouse. The two houses on that parcel along with the houses which were in the path of the highway- have been torn down. The highway was built in the 1950s. The rock wall along Lahainaluna Road is original -and dates to at least the initial construction of the homes.

When Mr. Freeland was acting as general manager, he lived in the Managers Home at 439 Front Street. This house has since been torn down -in the early 2000s. Before the 1970s, the managers' home used to reside in Puamana. The building is still there and acts as the clubhouse for the condo complex. The complex was built in the 1970s. Before the highway was built, Front Street was the only road to enter and leave Lahaina. The cane trucks used portions of the road as well.

Charles Makekau

Interview or *Talk Story* with Jenny Pickett
16 February 2010

Charles was born at Paeohi January 12, 1933. Charles has 12 brothers and sisters.

Father is Sam Makekau, who was born in 1898. (First wife had two children second had ten) In 1918, he graduated from Lahainaluna then traveled to Honolulu for a freight checker job with the ship. His first wife was an entertainer…Sam missed the boat and lost his job as a freight checker. He became a clarinet player for the Royal Hawaiian Band…Sam was allegedly sleeping (not playing) and lost his job. Prior to the thirties, he moved back home and worked as a truck swamper. Back then, the Kahawai was running with water all the time…that's where Charles learned to swim…by the time he went to the ocean, it was a piece of cake!

Hawaiian Japanese Grandmother…three quarters Japanese…Grandfather pure Hawaiian from —Honua-ula, Kanaio, (Makena-side…). Her father was Japanese and the married name Kokojido (spelling?)… They were *shinpai*…grandfather and mother were promised to each other in marriage; both Buddhist…Charles says there were many different religions around at the time…

Grandfather is pure Hawaiian…Grandfather is Charles K. Makekau, who worked as custodian of the post office by the court house. In the 1940s, he heard about a test to hire fire Captain in Lahaina…. (Charles father or grandfather got selected as fire Captain…selected from numerous applicants…)

Great Grandfather worked for Mr. Baldwin in Lahaina town at the old Baldwin Buildings…prior, he was involved with the infamous Battle of Nu`uanu.

Charles Makekau (continued)

During WWII, Charles remembers a crowd (including him) gathered at Front Street; and they could see black smoke from the bombs…

In his Junior year at Lahainaluna Highschool, Charles had an altercation with the teacher; who thought he was sleeping, so he said to go to the principal's office. After some debate, Charles decided to go work for the Plantation…

Charles's earliest memory of the area is when he was 5 or 6… at the time they lived way up Kilauea…when it was payday, his father was drinking Kikabu Juice -a drink made out of pineapple, sugar cane and fruit fermented in a Jimmy Jar- there was a type of tin can, somewhat like a tuna can, with a handle used to stir the and drink from the "swipe" (the special ingredient is cockroaches!). On Sunday morning, his father didn't wake up—so, Charles got up early to walk all the way to Front Street and buy bread at Hapo Bakery. For 10¢, his mom told him to have the lady slice the bread and put butter on top, then wrap it in a package. He ran all the way, through Citizen's Quarters- (just past half way there). At the time, there was mostly Plantation associated camps and developments…

The rock and concrete wall -surrounding the Credit Union subject parcel; used to step down and go around- the property had an entry and exit- (round-a-bout)…Mill Street and the main road (?). There was Poinsettia trees on driveway. The Church was a cafeteria… there was open space and a flag pole. Entrance/exit on Waine'e (?)…across was a park with a basketball court… below was "Citizen's Quarters". From Waine`e Street *mauka* Lahainaluna- (E/W road)…horse grass, cane grass…at the corner of Dickensen and Mill Street…Dickensen & Waine`e, Luakini (Chapel) Street...

Charles Makekau (continued)

The area of Paunau is Makila- down to the ballpark...

Area of *Mori* (Japanese for *Kapu*) is the grove of mango trees at Kahoma by the *kahawai* (waterway) …there was a huge cluster of mango trees and shiny *pohaku* (stones)…Kids wouldn't go in the mori area but the adults used to go there to drink. In the plantation days--- they bulldozed the whole area……

Plantation management was very aggressive- (Germans?)- they came on horse through the living areas with the bull whip to get the workers to go to work…there were all different ethnicities……the whole area was eventually sold to plantation families. After the war, the Plantation sold land for employee housing. Before the war, there was 9 or 10 separate camps; most of the workers lived outside of the camps and where they lived was related to where they worked. All different ethnicities were isolated in different areas.

Near the project area, they built a road to the Boiler House and before that, it was used for carpentry and pre-casting. In those days, they walked everywhere. A common route was cutting across the railroad tracks to Dickensen Street then down by the Baldwin House…

Charles went to kindergarten at Kamehameha III School, where there was about 30 kids in the class. He remembers playing Marbles-Agates…and "Pee Wee", which is like playing baseball or softball but using a stick fashioned from a broom handle for a bat. The ball is another cut piece of a stick about 4-5 inches long…the front is cut at angle and you hit the ball with the stick…when it bounces up…you hit it over and over. You have to bat it out- and if you don't catch it then you're out. If you keep hitting the

Charles Makekau (continued)

ball up 5 times then you get 5 points. Charles remembers his mom always commenting on how dirty he would always be from playing games with his friends.

Another game they played is with marbles called "In the Crotch", which was 2 branches or legs spread apart around a hole…the players would bet marbles for how many marbles would go in the hole…AKA *in the crotch*. Charles and William Wai`ohu exchanged stories about the games they played as boys.

Charles recalls having animals such as dogs, rabbits, chickens (about 9 or 10). The chickens would wander around freely in the daylight and at night they would call them back to the coop for the night. Mongoose would eat the chickens -and the inside of the chicken eggs- through a tiny hole in the eggshell. In the 1940s, before the war, there were a lot of mongoose- and through the Board of Health, under the Territory of Hawai`i, they gave an award of 30¢ per mongoose tail. Almost everyone had shotguns at the time, so they would collect the tails- and turn the tails in for money.

When Charles was about 7 years old, they moved -to follow a job- and stayed at Hopkee Camp, in front of Luakini Street (the building is still there- now a beauty shop). They lived next to the Japanese post office in Lahanina town that was run by the Fukanaka's (spelling?). At the beginning of World War II, the Fukanaka family was rounded up and sent to O`ahu. Some were probably sent to the mainland. The 2 sons were named Sunshine and Fred-and Charles was friends with them. Before the family was taken away, the boys would always get food from Sunshine and Fred's mother and father's container of Nasubi- a particular type of pickled fingerling eggplant. The eggplant was put inside a liquid mixture with a rail-road-tie spike. The rail-road-tie spike

Charles Makekau (continued)

would rust and turn dark purple. There was a concrete container and the Nasubi would float high on the top. As time passed, it pressed down and separated the bitterness from the eggplant. The color would turn very dark purple from the rust on the spike. When the eggplant starts to get a little flat and minomino (wrinkled); you add shoyu and other tasty ingredients.

At Camp Pecusa- Charles remembers watching the son, sister, and mother swim in the water. He was standing on the shore by a kiawe tree watching fish- he saw a five-foot shark swimming around- In this area, the sharks actually travel over the shallow reef like a torpedo. They used to dive with the sharks- Charles says we don't bother them [sharks]…and they [sharks] don't bother us…

The area is also known for *Akua-Lele* sightings (possibly originating from the marshy point) …Charles describes this as maybe being caused from natural gas…which is possibly a natural condition from liquid in the marsh- In any event, he says the *Akua-lele* is no good. He remembers at the basketball court near the credit union project area- they were playing basketball –and they all heard a loud POP! …near the graveyard…everyone started crying out "Akua Lele!" [William Wai`ohu says Akua Lele used to come from Moloka`i to Kapaiki]. They say this is a bad omen and one way to stop it is to swear, or curse, at the fireball…

Charles was the Lead Engineer at the Royal Lahaina Hotel at Ka`anapali. He worked at the hotel for 35 years. At one of the cottages once, there was a woman apparition in a negligee- all the people were scared because they saw a ghost! It was late

Charles Makekau (continued)

at night and all they could do was wait until sunrise- two nights later- the woman appeared again…and as much as he knows -after that, she never appeared again.

Subject area was previously disturbed- the parcel still has mango trees- and historic plantation walls- the plantation walls were there longer than Charles remembers (built in late 20s-30's?)… it used to step down and go around- there was an entry and exit- (round-a-bout)….with Poinsettia trees.

There used to be a lot of Ulu Trees in the area- they called the area Lele… Charles misses the old ways…even though it was hard, the people looked after each other in the past.

William Waiohu Jr.

Interview or *Talk Story* with Jenny Pickett
16 February 2010

William Waiohu Jr. was born at Ukumehame in July 1941. His full Hawaiian Mother is from Wailuku. His full Hawaiian Father is from Olowalu (now known as "Camp Pecusa"). He worked as a taro patch farmer and fisherman. He used to hang fish and squid at home…to share and sell. He went to Wailuku to work for WPA (?) to build the tunnel at `Iao Valley. He also used to work for the Plantation.

His Grandfather –Kaili (supposed to be Hapu or Hapu`u) Tutu Wahine- Kalei Waiho`i (from Kaua-Ula)- His Grandmother Mauwili was from Hanakahau- (Waihoiopio). Grandmother Kalaiwaihoi is from O`ahu. Mauwili married Waihoiopio.

William has many brothers and sisters… (~21) … His oldest brother and son recently passed away (2007). William has seen a lot of changes in the world, in the people, and in the area.

William's earliest memory of the area was around 1949, when his family moved to Kahoma. There are family ties to O`ahu. William was a former plantation worker (for about 15 years) His father was also a plantation worker (Pioneer Mill) and many other family members and friends also worked for the Plantation.

Charlie Lake owned a lot of the property at Ukumehame…The Ka`aihui property is *mauka*. Olowalu Company sold land to the Plantation - Kapaiki- (Teen Challenge)- Lake purchased the property…

Another well known household was Bee and the Bull's… long house--- the husband and wife were buried there… More recently, they planted a house right on top of

William Waiohu Jr. (continued)

the graveyard at Kapaiki- (beach/shorefront)… This area is also a Mormon and Catholic graveyard…

At Camp Pecusa –there were *Kinupake* (people that came from a different place- darker skin)… they lived near the present Camp Pecusa together with the Hawaiians- Actually, Camp Pecusa may be further down…

From 1941-1945, the Waiohu family lived at Ukumehame -then moved to Olowalu. At Olowalu hey had many animals- including chickens, goats, talapia, koi, mountain shrimp etc… In the early days, if you bring a spear to fish- you would get deported out of here. Now days, people take much more than they need. Before, they would take mature fish and leave the small ones to grow. There was balance.

When William Jr. was younger, he was was told not to go *kolohe* (make trouble) in Lahaina town… The older folk would say at Moku-Ula the Mo`o wahine will get you! William's brother Sunny saw the mo`o wahine … also, a Hawaiian lady disappeared- they didn't find her body -only her ring… and there is also a Mo`o Kane… There is lots of *mo`olelo* about the area of Moku-Ula sometimes known as *Moku Ulu O Lele* (The Flying Breadfruit).

William Jr.'s father worked for the Plantation many years ago- plantation workers could only live at "Citizen's Quarters"…near the current subject area. We continue to talk story about lots of things including ---pigeon English---- different ethnicities in the area…. The King---- the Mahele---- Queen Liliuokalani- cloudy titles- and land issues.

William doesn’t really recall a natural disaster that changed how they lived – but he believes the community -right now- is the biggest disruption and natural disaster to the

William Waiohu Jr. (continued)

area. Many people are coming in and taking…taking everything and not giving back---such as quiet title actions…natural resources…etc…etc.

On the ride home, William shared more stories including a story about the very strong *Kaua-Ula* wind that blows about once every 100 years…the home William used to live in once got destroyed by this wind…

[Some other words or phrases mentioned include: Alaala…Hupo…lolo lakou nei…Pala Naio-- pala (ripe) naio (worm)…hanabutta…maka`u…]

APPENDIX B

Sites 6660 AND 6661, Project area Photographs

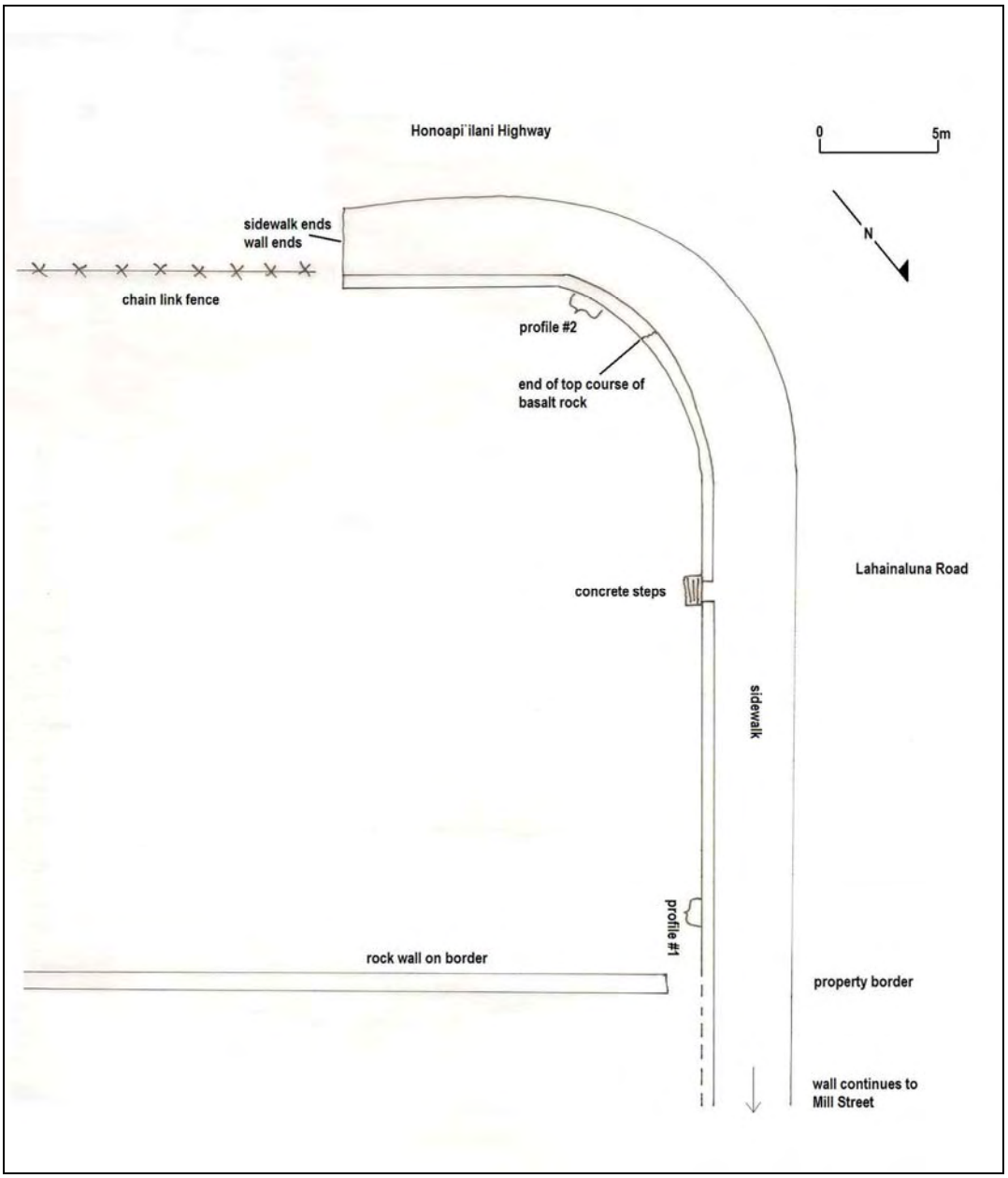


Figure 6: Site 6660 rock wall along Lahainaluna Road, Site 6661 rock boundary wall.

Photograph 1: overview of boundary fence line, view to East.

Photograph 2: Site 6660 with concrete path and stairway, view to the NW.

Photograph 3: Site 6660 rock wall showing rail insertion hole.

Photograph 4: Overview of historic walls and project boundary, view to NW. Site 6660 at left, Site 6661 in center and right.

Photograph 5: Overview of concrete wall cap (Site 6661), view to SE.

Photograph 6: Overview of Site 6661 wall section, view to SE.

Photograph 7: Overview of collapsed Site 6661 section, view to East.

Photograph 8: Overview of Site 6661 retaining wall segment, view to NE.

Photograph 9: Overview of Site 6660 retaining wall and sidewalk, view to WSW.

Photograph 10: Overview of subject parcel, view to west, Site 6660 in background.

Photograph 11: Overview of subject parcel, view to north.

Photograph 12: Overview of east boundary.

Photograph 13: Overview of wall and subject area boundary, view to SE.

Photograph 14: Close up of rock and concrete wall segment, view to SW.

Photograph 15: Close-up of concrete alignment associated with historic house.

APPENDIX C

STATE HISTORIC PRESERVATION RECOMMENDATION LETTER

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 24, 2009

Mr. Glenn Tadaki, Staff Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawai'i 96793

LOG NO: 2009.0316
DOC NO: 0904PC50
Archaeology

Dear Mr. Tadaki:

SUBJECT: Chapter 6E-42 Historic Preservation Review – REVISED Draft EA Consultation Request for Proposed West Maui Community Federal Credit Union Paunau Ahupua'a, Lahaina District, Island of Maui TMK: (2) 4-6-010:025

This letter serves as a correction to a March 28, 2009 comment letter (SHPD LOG NO: 2009.0289; DOC NO: 0903PC73) for the abovementioned project in which an incorrect date for an earlier transmittal on the same subject was noted (SHPD LOG 2009.0245; DOC NO: 0902PC39). The correct date of the letter referenced in the first paragraph of the March 28, 2009 letter should be February 23, 2009.

Upon further review, we have concluded that because the area of proposed effect is the location of a building with a ground surface mostly covered in asphalt, that anything other than precautionary archaeological monitoring during ground altering disturbance would be impractical.

Because we believe archaeological sites may be present in subsurface deposits exposed during the proposed work, we will recommend that a qualified archaeological monitor shall be present during all ground altering disturbance within the subject parcel for the proposed project in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

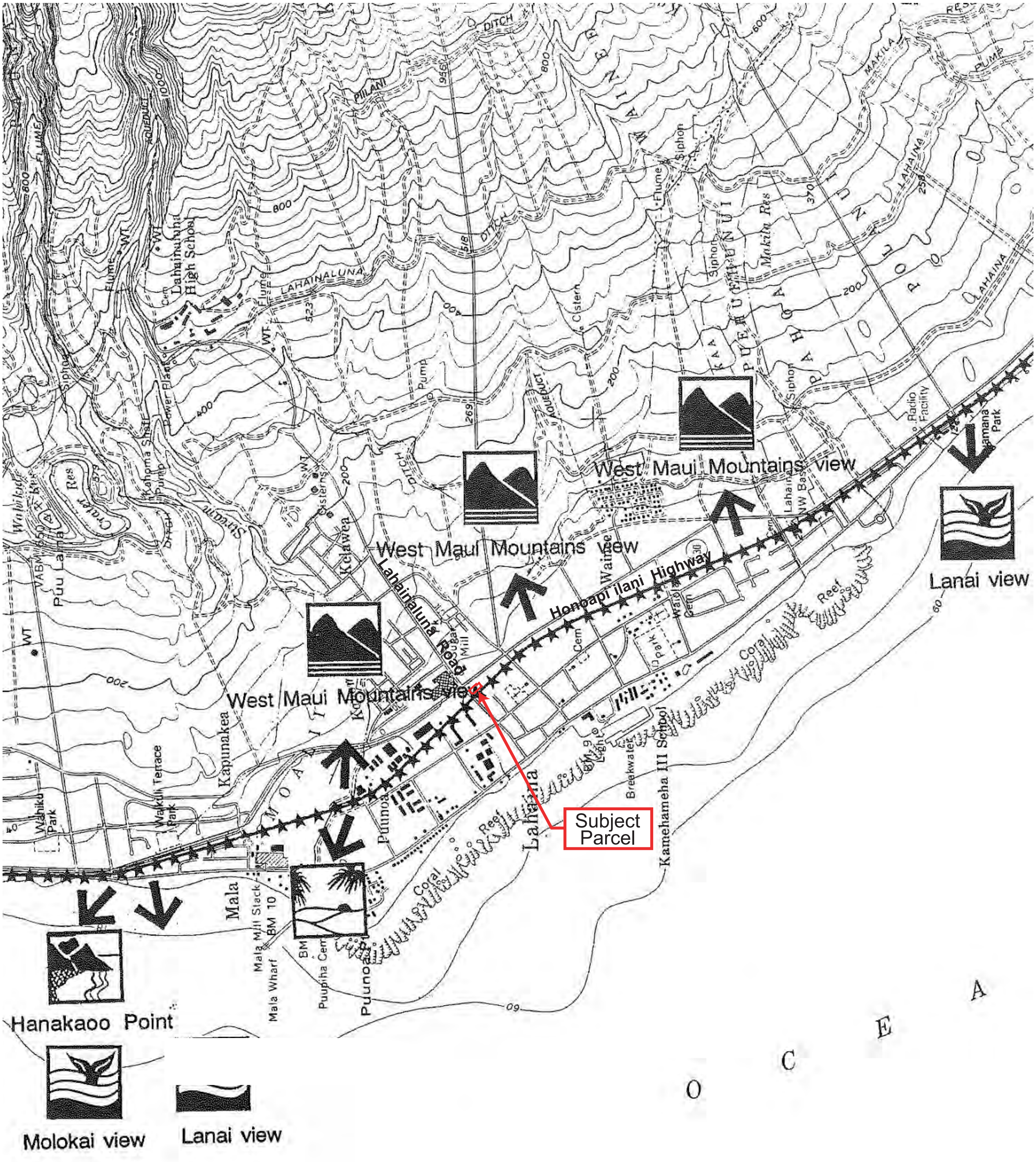
cc: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

CC: Glenn 08 072

RECEIVED
APR 30 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

APPENDIX G

Scenic Resources Map



APPENDIX G

Not to Scale

SCENIC RESOURCES MAP

Proposed West Maui Community
Federal Credit Union

APPENDIX H

Preliminary
Engineering &
Drainage Report

PRELIMINARY

CIVIL ENGINEERING AND DRAINAGE REPORT

FOR

PROPOSED WEST MAUI COMMUNITY FEDERAL CREDIT UNION

LAHAINA, MAUI, HAWAII

TAX MAP KEY: (2) 4-6-10:025

PREPARED FOR:

GYA ARCHITECTS, INC.
220 IMI KALA STREET, SUITE 201
WAILUKU, HI 96793

PREPARED BY:

Tanaka ENGINEERS, INC.

CIVIL & STRUCTURAL ENGINEERING • LAND SURVEYING • CONSTRUCTION MANAGEMENT & INSPECTIONAL SERVICES

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII - 96793

JOB 08-068

JULY 2009
REVISED: AUGUST 11, 2009

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I. INTRODUCTION:

The purpose of this preliminary study is to briefly assess and discuss the existing and anticipated infrastructural requirements for the development of Lot 7-A of Panaewa Tract No. 3 in support of an Environmental Assessment as required for developments within the Lahaina National Historic Landmark District. This preliminary report will also define the expected requirements for grading and Best Management Practices during site development.

II. LOCATION:

The project site is located in Lahaina Town at the southeast corner of Honoapiilani Highway and Lahainaluna Road intersection. The property is designated as Parcel 25 of Tax Map Key (2) 4-6-10 and has an area of 23,907 square feet (0.549 ac.) See Figures 1 and 2.

III. ACCESS:

A. EXISTING:

The project site is accessed from Alika Place, which is a 30-feet right-of-way under the jurisdiction of the County of Maui. Alika Place is connected to Honoapiilani Highway via Mill Street, Lahainaluna Road or Dickenson Street as show on Figure 3. Honoapiilani Highway is the main connecting link between West Maui and other parts of the island. The highway is under the jurisdiction of the State of Hawaii while the other thoroughfares are under the control of the County of Maui.

There is no vehicular access permitted from Honoapiilani Highway to the project site.

B. ANTICIPATED IMPROVEMENTS:

The existing roadway system and pre- and post-development traffic conditions in the project area are analyzed in the "Traffic Impact Assessment Report" for the proposed project. Recommended roadway improvements, if any, will be incorporated during the design stage of the proposed project.

IV. FLOODING HAZARD:

The site is located within Zone C as plotted on Panel 15003-0163C of the Flood Insurance Rate Map for the County of Maui as shown on Figure 4. Zone C is designated as areas of minimal flooding. Hence, the proposed project does not need flood development permits as required by Chapter 19.62 of the Maui County Code.

V. SOILS AND TOPOGRAPHY:

A. SOILS:

According to the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii [2], soils at the project area are classified as Ewa Silty Clay Loam, 0 to 3 percent slopes (EaA). See Figure 5. EaA, which belongs to Ewa Soil Series is characterized by very slow runoff, no more than slight erosion hazard and moderate permeability. These soils consist of well-drained soils that are usually found at elevations ranging from near sea level to 150 feet.

B. TOPOGRAPHY:

The project site is currently vacant and supports the growth of several trees as shown on Figure 8.

Generally, the ground surface is nearly bare and slopes down from east to west at about 1.0 percent. Ground elevation ranges from about 25 to 26 feet above mean sea level.

VI. PROPOSED PROJECT:

The proposed site plan is shown on Figure 9. It includes a 2-story office building and a paved parking area containing twenty nine (29) parking stalls and one (1) loading zone. The parking stalls consist of two (2) spaces for persons with disabilities and 27 standard spaces. Surface improvements also include a new concrete driveway apron off Alika Place, concrete curb, signage, pavement marking, etc.

Other civil work will be for improvements to water, sewer and drainage systems. Anticipated requirements are briefly discussed in their respective sections of this report.

VII. WATER SYSTEM:

A. EXISTING:

There are existing County waterlines that currently serve the project site and surrounding properties as shown on Figure 6. The existing system consists of a 12-inch waterline on Honoapiilani Highway; 8-inch waterline on Lahainaluna Road; and a 3-inch waterline at the project site under a 5- feet wide easement.

The project site is presently served by two (2) 5/8-inch water meters that are located at the end of Alika Place. See Figure 8. The water meters are connected to the 3-inch waterline.

The nearest fire hydrants (FH) to the project site are FH #5 on Lahainaluna Road and FH #122 at the intersection of Mill Street and Alika Place. Both hydrants are about 200 feet away from the project site.

B. ANTICIPATED WATER REQUIREMENTS:

The domestic and fire flow requirements for the proposed project were determined by Randolph Murayama & Associates as presented in Exhibit B. The expected water demands are 25 gallons per minute (gpm) and 1,250 gpm for domestic and fire flow, respectively. The domestic demand was based on the use of low-flow plumbing fixtures, while the fire flow was determined by using guidelines in the Insurance Services Office's 1974 Guide for Determination of Required Fire Flow.

The irrigation water demand is about 18 gpm in accordance with Miyabara and Associates, the project's Landscape Architect.

C. ANTICIPATED IMPROVEMENTS:

The proposed improvements include upgrading the existing water meters to accommodate the projected water demand of 43 gpm. The existing two (2) 5/8-inch water meters have a combined rated capacity of 40 gpm and are not sufficient to accommodate the projected demand; therefore, it is proposed that the existing water meters will be replaced with a 1-inch water meter that has a

rated capacity of 50 gpm. See Figure 10. It is recommended; however, that a separate water meter for irrigation purposes should be considered during the design stage of the project. The projected domestic demand of 25 gpm could be accommodated by a 3/4-inch water meter; similarly a 3/4-inch water meter could handle the irrigation flow if reduced to at least 15 gpm. Providing a water meter solely for irrigation purposes will exclude irrigation usage in determination of bi-monthly sewer fees.

Presently, FH #5 on Lahainaluna Road and FH #122 on Mill Street provide fire protection for the project site. Both hydrants are connected to an 8-inch waterline which is sufficient to deliver the 1,250 gpm fire flow required for the proposed project. Both hydrants are approximately 200 feet away from the project site. The Department of Water Supply or the Fire Prevention Bureau might require an additional fire hydrant to be installed closer to the project site. If needed, the additional fire hydrant could be installed on Lahainaluna Road fronting the property.

VIII. SEWER SYSTEM:

A. EXISTING:

There are existing gravity sewerlines at the project site and vicinity. A private 12-inch gravity sewerline crosses the middle of the parcel through a 12-foot wide easement. This line serves the mauka properties and also served residences that previously existed on the site. The 12-inch sewerline connects into the existing 21-inch sewerline that is located on the makai side of Honoapiilani Highway. The 21-inch sewerline is part of the Lahaina sewer

system that conveys wastewater flows to the Lahaina Wastewater Reclamation Facility in Honokowai which is about five (5) miles north of the project site.

The existing sewer system at the vicinity of the project site is shown on Figure 7.

B. Anticipated Sewage Flow:

The preliminary average sewage flow is about 970 gallons per day (gpd). Flow calculation is given in Exhibit B.

C. Anticipated Improvements:

The proposed onsite sewer system is laid out on Figure 10. It will be connected to the existing 8-inch sewerline on the mauka side of the highway. It will include a new service manhole at the property line in compliance with Section 14.25A.130F of the Maui County Code.

IX. DRAINAGE:

A. General:

The preliminary Drainage Study, in general, is based on the requirements, formulas, charts and tables of the Rules of the Design of Storm Drainage Facilities of the County of Maui [1] hereinafter referred to as Maui County Drainage Standards.

B. EXISTING DRAINAGE CONDITIONS:

Generally, storm runoff flows in the mauka to makai direction. Water would pond at the project site to a depth of about 2 feet (deepest point) and then flow southward along the mauka side of Honoapiilani Highway into a drain culvert inlet about 120' away from the project site. The storm runoff would then be discharged across the highway by a 24-inch culvert.

C. STORM RUNOFF DISCHARGES:

Based on the preliminary calculations (Exhibit A), the project area, encompassing about 0.55 acre could generate 1-hour storm discharges as follows:

10-year runoff peak rate:

Existing	= 0.6 cfs
Developed	= 1.8 cfs
Increase	= 1.2 cfs

50-year runoff peak rate:

Existing	= 0.8 cfs
Developed	= 2.2 cfs
Increase	= 1.4 cfs

50-year runoff volume:

Existing	= 1,494 cf
Developed	= 3,636 cf
Increase	= 2,142 cf

D. ANTICIPATED IMPROVEMENTS:

The Maui County Drainage Standards allows onsite retention of the additional runoff generated by the development when there is no existing drainage system or adequate outlet to connect the development's drainage system. Therefore, the planned drainage system includes subsurface retention basins to impound the runoff volume increase that will be generated by the proposed project. The storage capacity of the retention basins must be at least equal to the 50-year, 1-hour runoff volume increase in accordance with the Maui County Drainage Standards. However, to ensure that the proposed project will not have adverse drainage effects on downstream properties and drainage facilities, the planned retention basins will be sized to retain more than the runoff volume increase.

The conceptual drainage plan will primarily consist of subsurface perforated pipes with crushed rock envelopes. It is schematically laid out on Figure 11, while the typical section is shown in Exhibit A. Preliminarily, the proposed retention basins will consist of 68.5 linear feet of three (3) 42" perforated pipes with a combined storage capacity of about 2,740 cubic feet (cf) which is greater than the anticipated 50-year storm runoff volume increase of 2,142 cf.

The proposed drainage system also includes grated drain inlets to collect onsite runoff; unperforated pipes to convey the runoff to the retention basins; and drain manholes.

E. OPERATION AND MAINTENANCE PLAN:

The operation and maintenance of the onsite drainage system will be handled by the owner. The recommended operation and maintenance activities will include, but not limited to:

1. Inspection of the drainage facilities annually and after major storms. Repair damages, if any. Remove debris, if any, at grated drain inlets to permit unimpeded flow.
2. Periodic inspection of the drainage system. Remove debris and sediment build-up, as required, specifically inside grated drain inlets upstream of the subsurface retention basins.
3. Preventing grass and landscape cuttings from entering the drainage system.
4. Cleaning of parking areas as often as possible to minimize the entry of debris and sediments into the drainage system.
5. Maintaining healthy growth of grass lawns and landscaping to prevent soil erosion; thereby, reducing sediments that might enter the drainage system.

F. CONCLUSION:

The proposed development will increase the existing storm runoff due to addition of impervious surfaces such as building roofs, pavement and concrete walkways. Despite the increase in runoff, the proposed development is not anticipated to create any adverse drainage effects on downstream properties and drainage facilities. The proposed drainage

improvements include the impoundment of runoff volume greater than the anticipated 50-year, 1-hour runoff volume increase generated by the proposed development; thereby reducing the present storm runoff into the downstream properties. The 50-year runoff volume will be decreased by about 40%, from 1,494 to 896 cf. The proposed retention basins will also have the effect of reducing the potential for sediments contained in the runoff from entering neighboring properties and eventually the ocean.

The present drainage condition at the site will not be significantly altered. During high intensity storm, water will pond at the proposed parking area and some areas around the building. If overflow occurs, it will flow southward along the highway to the existing 24-inch culvert crossing as noted in Section B.

X. GRADING AND SOIL EROSION CONTROL:

A. GRADING CONCEPT:

Grading for the proposed development area will be performed in compliance with the applicable requirements of the Maui County Grading Ordinance No. 2884 or Chapter 20.08 of the Maui County Code. The project area will be graded for the proper reception of the proposed building, parking areas and other surface improvements. The proposed grading plan is shown on Figure 11.

Prior to commencing land disturbance activities, a grubbing and grading permit must be obtained from the Development Services Administration (DSA) of the Maui County Department of Public Works.

Associated submittals for the permit application are grading plan; soil erosion control plan or Best Management Practices Plan; drainage plan; and drainage report.

B. BEST MANAGEMENT PRACTICES (BMPs):

The preliminary plan for temporary control of soil erosion and dust during site improvement is shown on Figure 12. The BMPs will include the following:

1. Control dust by means of water trucks or by installing temporary sprinkler systems or both if necessary.
2. Graded areas shall be thoroughly watered after construction activity has ceased for the day and for weekends and holidays.
3. All exposed areas shall be paved, grassed, or permanently landscaped as soon as finished grading is completed.
4. Time of construction will be minimized.
5. Only areas that are needed for new improvements will be cleared.
6. Early construction of drainage control features.
7. Construction of pit for proposed subsurface retention basin prior to mass grading of project site. The pit will be temporarily utilized as sediment catchment during construction.
8. Installation of dust control fence surrounding the project site.
9. Installation of silt fence, gravel bag berms or other approved sediment trapping devices at the downstream side of the grading area and sediment pit.

10. Temporary control measures shall be in place and functional prior to construction and shall remain operational throughout the construction period or until permanent controls are in place.

The Contractor will also be required to submit a satisfactory soil erosion control plan to minimize soil erosion prior to an issuance of a grubbing and grading permit. Best Management Practices shall be in compliance with Section 20.08.035 of the Maui County Code (Ord. No. 2684) and "Construction Best Management Practices (BMPs) for the County of Maui" of the Department of Public Works & Waste Management, May 2001.

XI. ELECTRICITY/TELEPHONE/CATV:

There are existing overhead electrical, telephone and CATV facilities along Honoapiilani Highway and Lahainaluna Road. These facilities currently serve the nearby residences and businesses.

Electrical/telephone/CATV services to the proposed project will be tapped from the existing nearby overhead utility lines. The onsite utility services will be installed underground and in accordance with the requirements of the respective utility companies and the County of Maui.

XII. CONSTRUCTION PLAN APPROVALS:

Approval of construction plans and appropriate permits for site grading and infrastructure improvements of the proposed project will be obtained from the Department of Public Works; Department of Environmental Management;

Department of Water Supply; Fire Prevention Bureau; State Department of Transportation, Highways Division; and State Department of Health, Wastewater Branch. The various infrastructures will be designed in compliance with the applicable requirements of these governmental agencies.

XIII. REFERENCES:

1. Rules for the Design of Storm Drainage Facilities in the County of Maui, Title MC-15, Department of Public Works and Waste Management, County of Maui, Chapter 4.

2. Construction Best Management Practices (BMPs) for the County of Maui, Department of Public Works and Waste Management, May 2001.

3. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, August 1972.

4. Erosion and Sediment Control Guide for Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, March 1981.

5. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U. S. Department of Commerce, Weather Bureau, 1962.

6. Flood Insurance Rate Maps for the County of Maui, June 1981.

7. Water System Standards, Department of Water Supply, County of Maui, 2002.

EXHIBIT A

PRELIMINARY DRAINAGE CALCULATIONS

EXHIBIT "A"

PRELIMINARY DRAINAGE CALCULATIONS

I. REFERENCE:

"Rules for the Design of Storm Drainage Facilities in the County of Maui" [1], referred to as Maui County Drainage Standards. Plates and Tables as noted are found in the Standards.

II. METHODOLOGY:

A. Rational Method:

For drainage basins that have areas less than 100 acres, the peak discharge based on 1-hour storm will be determined by the Rational Method, Q = CIA, in which:

Q = flow rate in cubic feet per second (cfs)

C = runoff coefficient for the drainage basin

I = rainfall intensity in inches per hour for a duration equal to the time of concentration

A = drainage basin in acres

= 0.55 Ac. (Project Site)

The factors used in the application of the formula were taken from applicable tables and charts of the Maui Storm Drainage Standards.

1. Rainfall Values:

10-year, 1-hour rainfall = 2.0" (Plate 3)

50-year, 1-hour rainfall = 2.5" (Plate 4)

2. Time of Concentration, Tc: As determined from Plate 1.

Overall Project Site:

Length of Flow = 100 Ft.

Average Slope = 1.0%

T_c = 14 min. (Ave. Grass) (Existing Condition)

= 8 min. (Bare Soil as an average between paved and lawn areas)(Developed Conditions)

3. Rainfall Intensity, I: As determined from Plate 2

10-Year Storm: I = 3.75" (Existing)

= 4.50" (Developed)

50-Year Storm: I = 4.70" (Existing)

= 5.60" (Developed)

4. Runoff Coefficient, C: The runoff coefficients for the project area are as follows:

Unimproved Condition: C = 0.30 (Table 2)

Developed Condition: C = 0.17 (Lawn Area) (Table 2)

= 0.95 (Impervious Area) (Table 2)

Weighted C at Developed Conditions, Cw:

Lawn Area = 0.16 Ac.

Impervious Area = 0.39 Ac.

$$C_w = \frac{0.16 \times 0.17 + 0.39 \times 0.95}{0.55}$$

$$= \frac{0.40}{0.55}$$

$$= 0.73$$

III. STORM DISCHARGES CALCULATIONS:

A. Runoff Rate:

1. 10-Year, 1-Hour Storm

Existing	= 0.30 x 3.75 x 0.55	= 0.6 cfs
Developed	= 0.73 x 4.50 x 0.55	= 1.8 cfs
Increase	= 1.8 - 0.6	= 1.2 cfs

2. 50-Year, 1-Hour Storm

Existing	= 0.30 x 4.70 x 0.55	= 0.8 cfs
Developed	= 0.73 x 5.60 x 0.55	= 2.2 cfs
Increase	= 2.2 - 0.8	= 1.4 cfs

B. Runoff Volume:

$$\textbf{Volume} = \frac{1\text{-Hr.Rainfall}}{12} \times C \times A \text{ (sq. ft.)}$$

50-Yr., 1-Hr. Storm:

$$\textbf{Existing} = \frac{2.5}{12} \times 0.30 \times 23{,}907 = 1{,}494 \text{ cf}$$

$$\textbf{Developed} = \frac{2.5}{12} \times 0.73 \times 23{,}907 = 3{,}636 \text{ cf}$$

Increase = 3,636 - 1,494 = 2,142 cf

IV. RETENTION BASIN(S):

Subsurface retention basins are planned for this project to handle at least the 50-year, 1-hour runoff volume increase to be generated by the development. According to the Maui County Drainage Standards, soil percolation shall not be taken into account in determining the storage volume and that only 50% of the void volume of the rock envelope will be included.

Preliminarily, the proposed retention basin will consist of 68.5 linear feet of triple 42-inch perforated pipe with rock envelope. See attached section. The storage capacity of the retention basin is about 2,740 cf (68.5' x 40 cf/lf), exceeding the 50-year volume increase of 2,142 cf.

The holding capacity of the proposed retention basins is greater than the anticipated volume increase, thereby reducing the present runoff flowing into the downstream properties. The 50-year storm expected volume reduction is determined as follows:

New Volume to Downstream Properties:

= Post-Development Volume - Retention Basin Capacity

= 3,636 - 2,740

= 896 cf

Volume Reduction:

= Existing Volume - New Volume

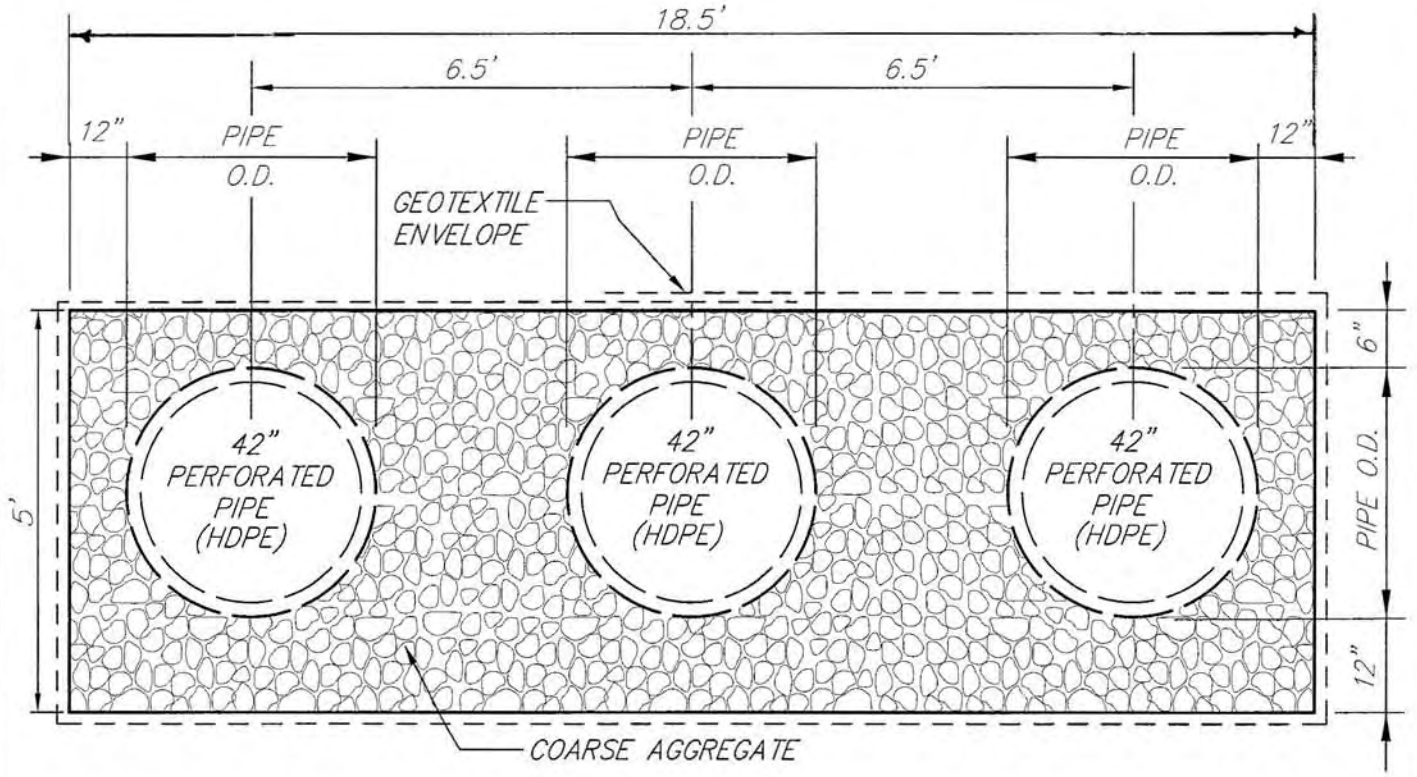
= 1,494 - 896

= 598 cf

% Volume Reduction:

$$= \frac{598}{1{,}494}$$

= 40%



DETERMINE HOLDING CAPACITY:

Stone Void Ratio = 35%

Capacity per Linear Foot:

Pipe Capacity $= 3 \pi R^2$
$= 3 \times 3.1416 \times 1.75^2$
$= 3 \times 9.62$
$= 28.9$ cf

Stone Capacity = 50% of Void Volume
$= 0.50 \times (18.5' \times 5.0' - 28.9) \times 0.35$
$= 0.50 \times 63.6 \times 0.35$
$= 11.1$ cf

Capacity/LF $= 28.9 + 11.1$
$= 40.0$ cf

TYPICAL SECTION
SUBSURFACE RETENTION BASIN
(TRIPLE BARREL)

NOT TO SCALE

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Table 1

GUIDE FOR THE DETERMINATION OF RUNOFF COEFFICIENTS FOR BUILT-UP AREAS*

WATERSHED CHARACTERISTICS	EXTREME	HIGH	MODERATE	LOW
INFILTRATION	NEGLIGIBLE 0.20	SLOW 0.14	MEDIUM 0.07	HIGH 0.0
RELIEF	STEEP (> 25%) 0.08	HILLY (15 - 25%) 0.06	ROLLING (5 - 15%) 0.03	FLAT (0 - 5%) 0.0
VEGETAL COVER	NONE 0.07	POOR (< 10%) 0.05	GOOD (10 - 50%) 0.03	HIGH (50 - 90%) 0.0
DEVELOPMENT TYPE	INDUSTRIAL & BUSINESS 0.55	HOTEL - APARTMENT 0.45	RESIDENTIAL 0.40	AGRICULTURAL 0.15

**NOTE: The design coefficient "c" must result from a total of the values for all four watershed characteristics of the site.*

Table 2

RUNOFF COEFFICIENTS

Type of Drainage Area	Runoff Coefficient C
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad yard areas	0.40
Unimproved areas	0.30
Streets:	
Asphaltic	0.95
Concrete	0.95
Brick	0.85
Driveway and walks	0.85
Roofs	0.95
Lawns:	
Sandy soil, flat, 2%	0.10
Sandy soil, avg., 2-7%	0.15
Sandy soil, steep, 7%	0.20
Heavy soil, flat, 2%	0.17
Heavy soil, avg., 2-7%	0.22
Heavy soil, steep, 7%	0.35

Table 3

MINIMUM RUNOFF COEFFICIENTS FOR BUILT-UP AREAS

Residential areas	C=0.55
Hotel, apartment areas	C=0.70
Business areas	C=0.80
Industrial areas	C=0.80

The type of soil, the type of open space and ground cover and the slope of the ground shall be considered in arriving at reasonable and acceptable runoff coefficients.

Table 4

APPROXIMATE AVERAGE VELOCITIES OF RUNOFF FOR CALCULATING TIME OF CONCENTRATION

TYPE OF FLOW	VELOCITY IN FPS FOR SLOPES (in percent) INDICATED			
OVERLAND FLOW:	0–3%	4–7%	8–11%	12–15%
Woodlands	1.0	2.0	3.0	3.5
Pastures	1.5	3.0	4.0	4.5
Cultivated	2.0	4.0	5.0	6.0
Pavements	5.0	12.0	15.0	18.0
OPEN CHANNEL FLOW:				
Improved Channels	Determine Velocity by Manning's Formula			
Natural Channel* (not well defined)	1.0	3.0	5.0	8.0

**These values vary with the channel size and other conditions so that the ones given are the averages of a wide range. Wherever possible, more accurate determinations should be made for particular conditions by Manning's formula.*

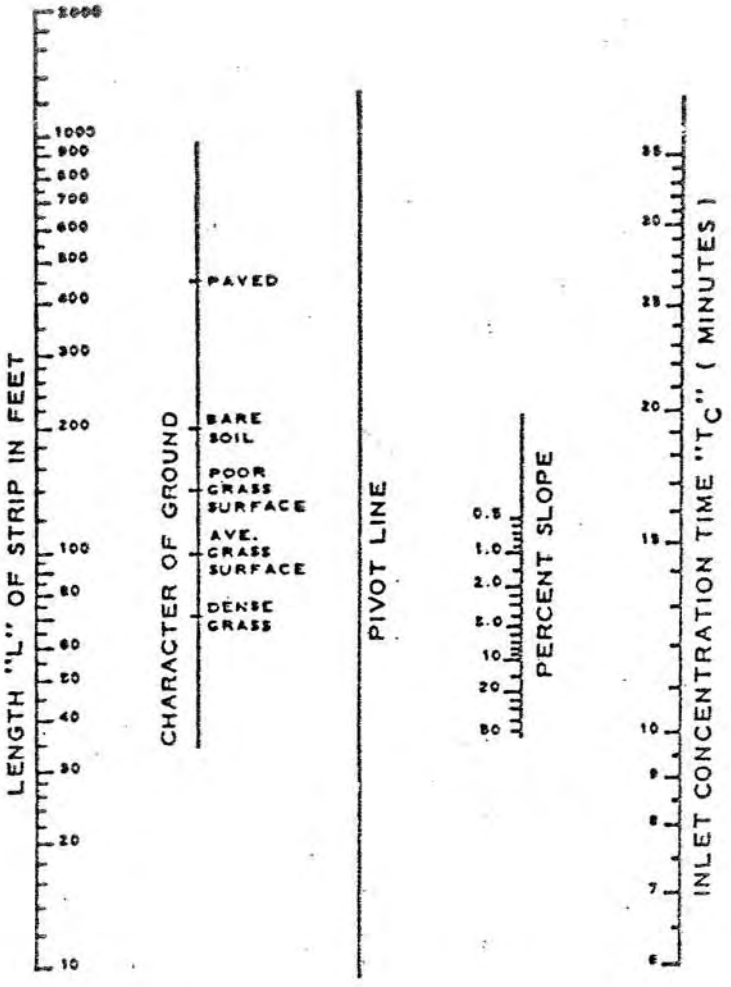
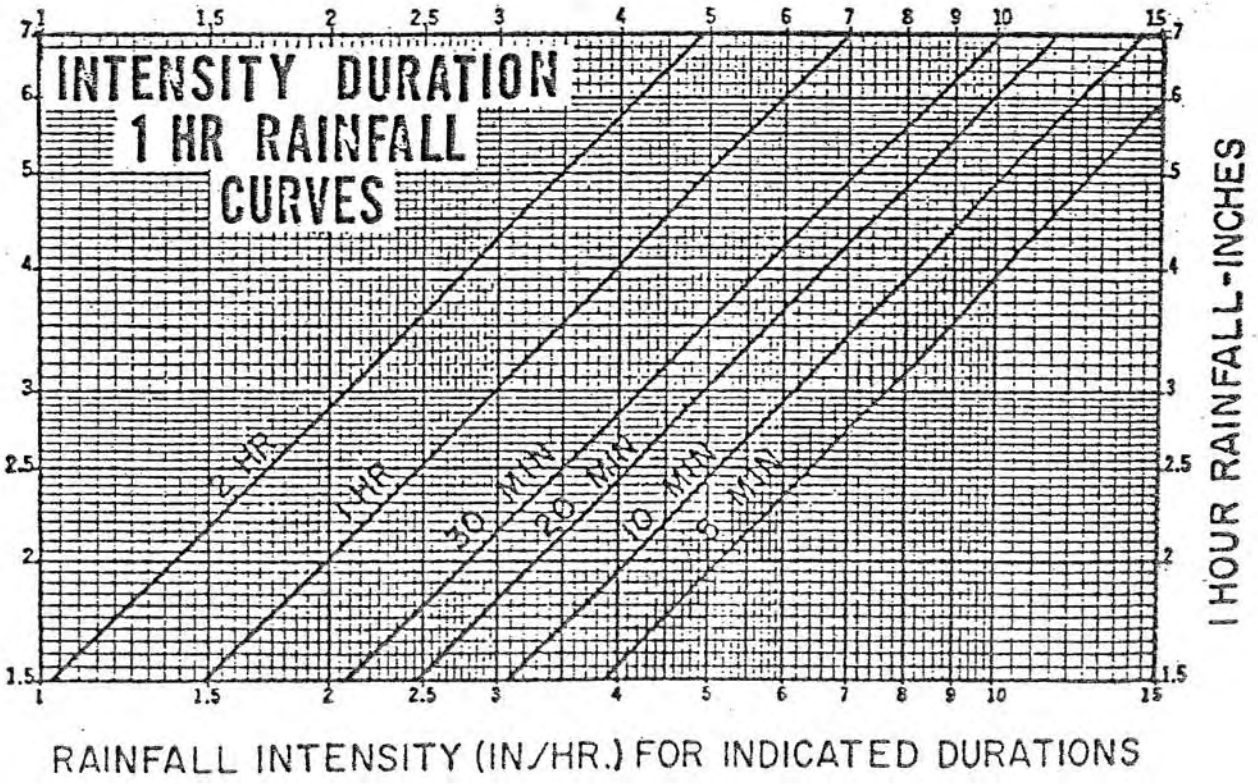


Plate 1

Overland Flow Chart

Plate 2



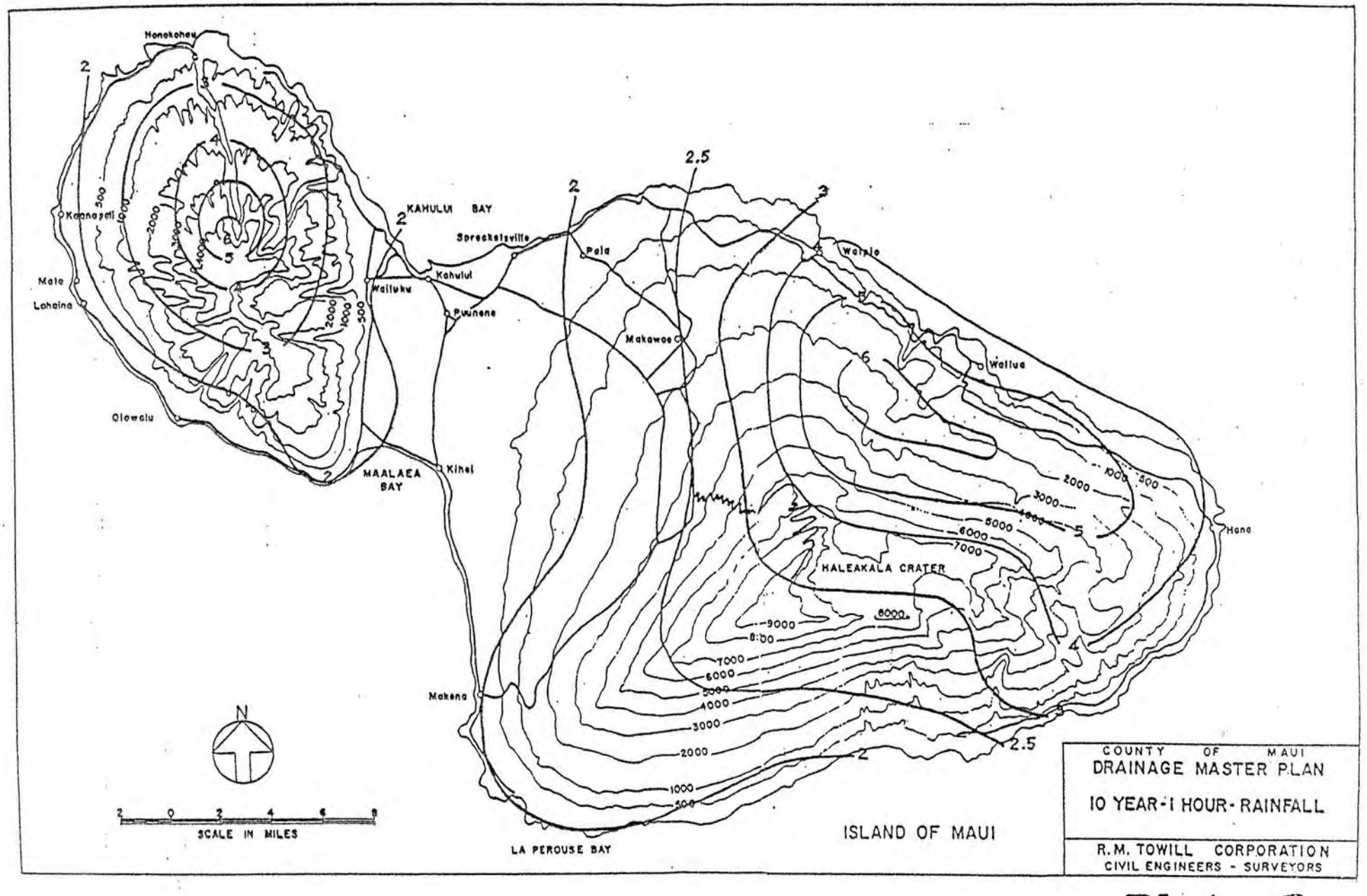
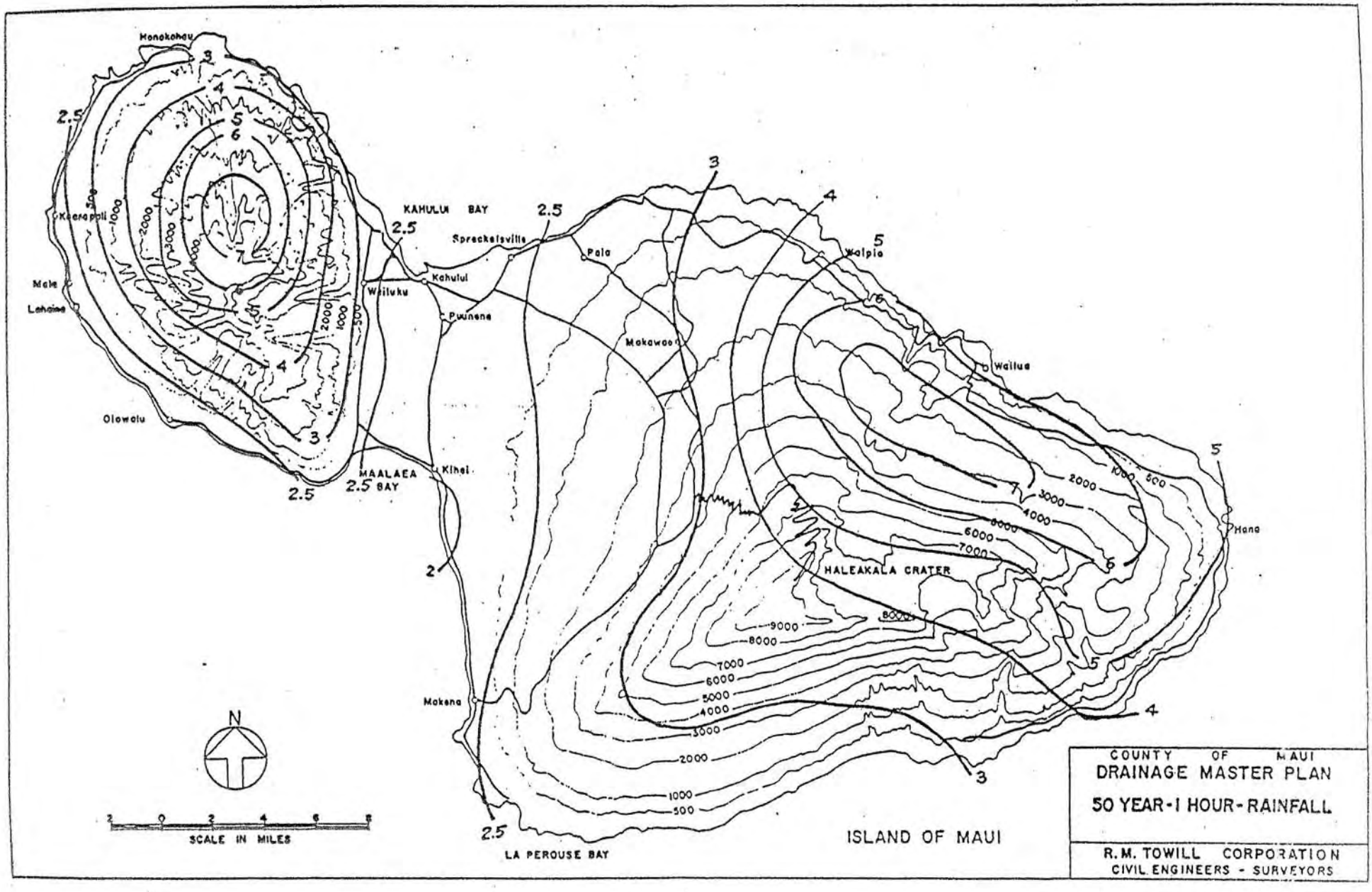

Honokohau
Kaanapali
Mala
Lahaina
Olowalu
KAHULUI BAY
Spreckelsville
Kahului
Wailuku
Puunene
Pala
Makawao
Waipio
Wailua
MAALAEA BAY
Kihei
Makena
LA PEROUSE BAY
HALEAKALA CRATER
Hana
ISLAND OF MAUI
SCALE IN MILES
N
COUNTY OF MAUI
DRAINAGE MASTER PLAN
10 YEAR-1 HOUR-RAINFALL
R.M. TOWILL CORPORATION
CIVIL ENGINEERS - SURVEYORS

Plate 3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ISLAND OF MAUI
SCALE IN MILES
N
COUNTY OF MAUI
DRAINAGE MASTER PLAN
50 YEAR-1 HOUR-RAINFALL
R.M. TOWILL CORPORATION
CIVIL ENGINEERS - SURVEYORS

Plate 4

EXHIBIT B

PRELIMINARY SEWAGE FLOW AND WATER REQUIREMENTS

- **SEWAGE FLOW CALCULATIONS**
- **DOMESTIC FLOW CHART REQUIREMENTS**
- **FIRE FLOW CALCULATIONS**

7-15-09

SEWAGE FLOW CALCULATIONS for
West Maui FCU Office Bldg, Lahaina, Maui, Hawaii
New 2-story Federal Credit Union/Office Building.
Building Permit Application #
270 lahainaluna road, Lahaina, Maui, Hawaii

1. Connection to existing sewer lateral

TMK:

2. Sewage Flow Calculations:

Federal Credit Union/Office:

Existing 4500 sf Ground level.	**Units**	**Gal/unit/day**	**subtotal**
Customers	**30**	**5**	**150**
Employees	**18**	**20**	**360**
Existing 4500 sf 2nd level.	**Units**	**Gal/unit/day**	**subtotal**
Customers	**20**	**5**	**100**
Employees	**18**	**20**	**360**

Totals			**970**

Operations: 5 days a week, 8 hours a day (9 am to 5 pm). Existing condensate drains connected to existing condensate drain lines in ceiling space, terminates in existing drywells outside of building.

RANDOLPH H. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 3404-M
HAWAII, U.S.A.

Prepared by:

Randolph Murayama
PE 3404 M License
expires 4-30-10

Randolph Murayama and Assoc.
1267 Young Street
Honolulu, Hawaii
Phone: (808) 593-9360
Fax: (808) 591-9362

Maui Water Supply
Domestic Flow Chart Requirement
7/22/2009

Project:WEST MAUI FCU
NEW BUILDING

Randolph H. Murayama
License no. 3404-M expires 4-10
Randolph H. Murayama and Associates

Notes:
No Irrigation on domestic water meter; Civil design: Separate water line and meter for this building.
A/C work will not affect water demand
No AFS on domestic water meter
No fire sprinkler
Fire Sprinkler Meter Number:
~~The existing water meter is adequate to service the Automatic Fire Sprinkler System; inclusive of this project's scope of work.~~

Tax Map Key 0

Premise Number

Meter Number

	FU	GPM	GPD
A) Proposed Domestic	41.4		
B) Proposed Irrigation	0.0	20 *	
C) Proposed Other	0.0		
D) Proposed Total (Include irrigation gpm at bottom total	41.4		
E) Demolition:	0.0		
F) Net Change (D-E; -Credit/+Charge)	41.4		
G) Existing Domestic to remain	0.0		
H) Grand Total (D+G; on meter)	41.4		

* Irrigation new, 1" meter, 20 gpm max.
Irrigation flow not on domestic water meter.

Existing	0.0	FU		
Demolished	0.0	FU		
Existing to Remain		FU		
Proposed	41.4	FU		
New Total FU / IRRIGATION GPM on separate	41.4	FU		
CHART A-3 PLUMBING CODE FU / GPM	41.4		0.0	gpm
DOMESTIC + IRRIGATION = Total GPM	25.0		0.0	gpm

1" METER AT 25 GPM = 5 PSI PRESSURE DROP ACROSS METER

Demolition

None

Proposed Fixtures
Ground Floor

Plumbing Fixture	Qty.	Low Flow F.U.	Total F.U.
MAIN KITCHEN EQUIPMENT/FIXTURES			
M-13 Cubed Ice Mach	0	1.0	0.0
M-19 Dishwasher	0	4.0	0.0
M-21 Scrap Collector-Pre-Rinse cw/hw faucet	0	6.0	0.0
M23 Pot Sinks 2 cw/2 hw faucets	0	6.0	0.0
M25 TABLE W/2-compartment cw/hw faucet	0	3.2	0.0
M33 Oven 2 cw faucets	0	6.0	0.0
M43 Hot Food Well 1 cw faucet	0	6.0	0.0
M53 Front Counter Sink	0	3.2	0.0

M57 Coffee Brewer, M58 Cappuccino mach.	0	6.0	0.0
M60 Iced/Hot Tea Brewer	0	6.0	0.0
Hand Sink	0	1.2	0.0
M71 Pre-Rinse Sink	0	3.2	0.0
M-72 Scrap Collector-Pre-Rinse hw/cw faucet	0	6.0	0.0
M73 pot sinks (3 compartment) 2 faucets	0	6.4	0.0
M79 Steamer	0	6.0	0.0
SERVICE SINK OR MOP SINK	1	3.2	3.2
OFFICE SINK	1	3.2	3.2
Hand Sink	0	1.2	0.0
Water Closet (WC, PWC) F.T.	5	1.7	8.5
Hose Bibb PUBLIC EXTERIOR	4	5.0	20.0
Drinking Fountain 2 spouts	0	1.0	0.0
Lavatory (LAV)	4	1.2	4.8
Urinal (UR)	1	1.7	1.7
Water Closet (WC, PWC) F.V. Public	0	5.6	0.0
			41.4

West Maui Federal Credit Union, Lahaina, Maui.
FIRE FLOW CALCULATIONS 7-15-09

270 Lahainaluna Road, Lahaina, Maui, hawaii
Guide for Determination of Required Fire Flow: Insurance Services Office, 1974 edition

Occupancy Hazard: Commercial light hazard, office. No fire sprinkler system.

Roof construction: Steel truss/builtup roofing. Concrete masonry walls.

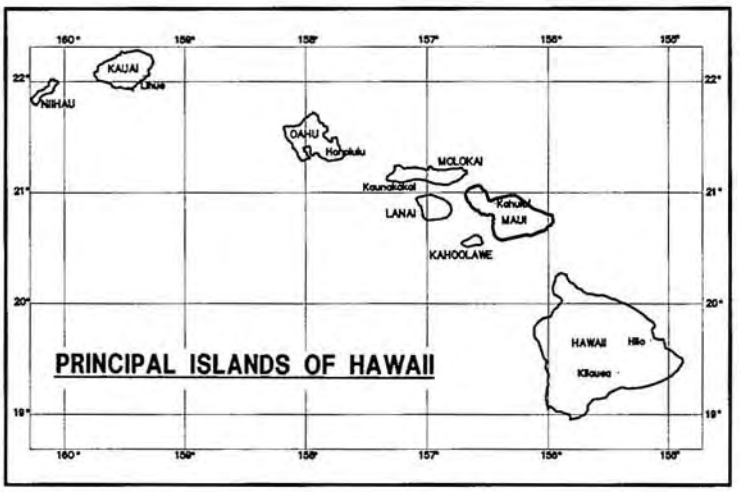
No drystandpipe systems

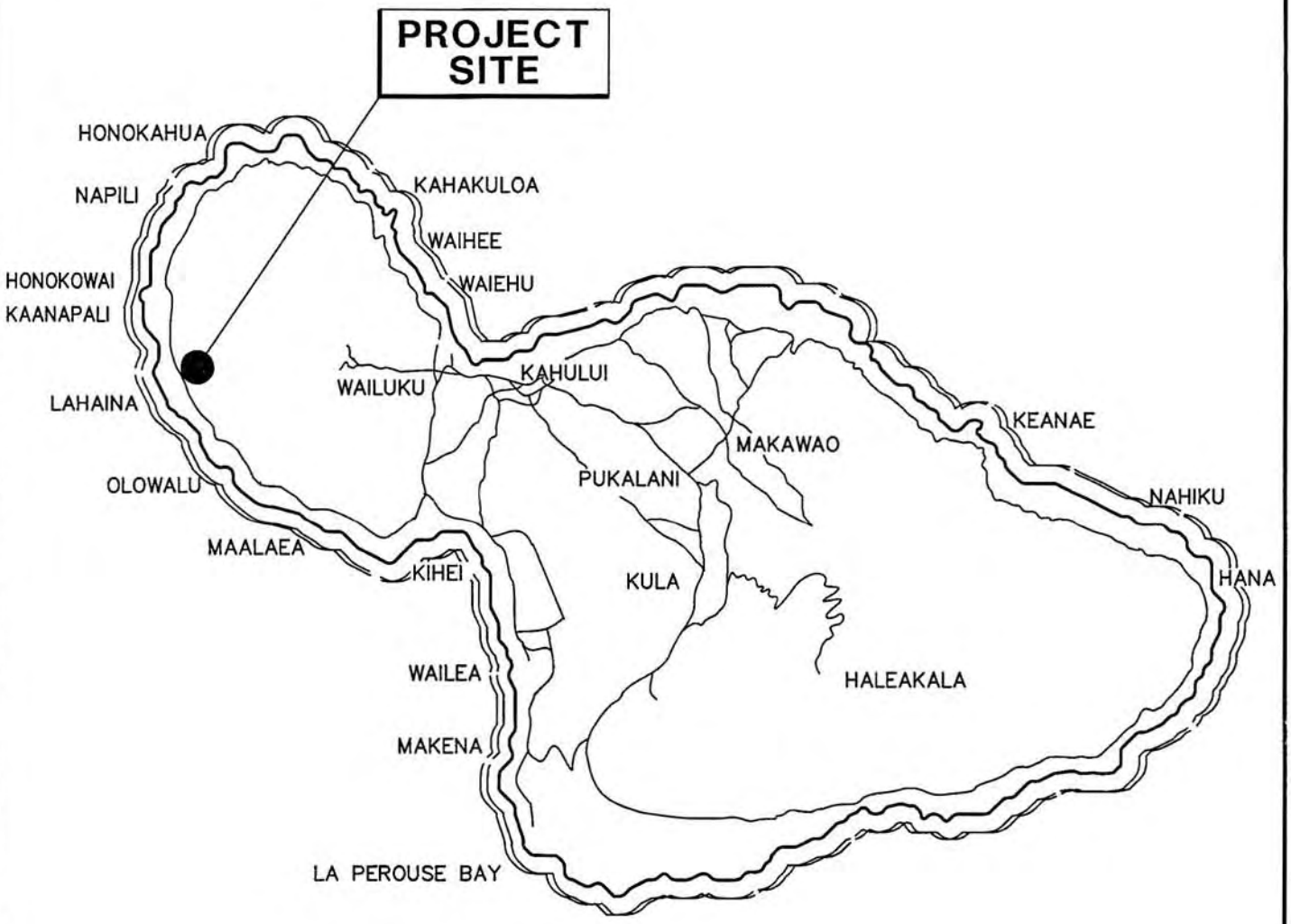
Maximum Flow Rate: 6000 gpm for non-combustible frame construction; building at 1250 gpm does not exceed.
Minimum Residual Pressure Required: 15 psi
Area: Maximum building area: 10,000 sq. ft

A. Construction: Steel joist roof construction
B. Floor Area: 10,000 sq. ft total
C. Height: 2 story
D. Tables or calculation (F= 18 x C x sq.root of A = 18 x 0.8 x sq. root of 10,000 = 1440 gpm
E. Increase/Decrease of Occupancy (Low hazard: Office Building: -25% or 75% x 1440= 1080 gpm fire flow
F. Decrease for Automatic Fire Sprinkler Protection (Entire Building) no credit not fire sprinkled

Fire Flow: 1080 gpm
G. Exposures (Increase or Decrease)
Northeast Exposure (Mauka): 100' distance or +10% or 1080 gpm x .10 = 108 gpm
Southeast Exposure (Kihei): Bldg across St, 142' or +5% or 1080 x 0.05 = 54 gpm gpm
Southwest Exposure (Makai): 105' distance or +5% or 1080 gpm x 0.05 = 54 gpm
Northwest Exposure (Kaanapali): 105' distance or +5% or 1080 gpm x 0.05 = 54 gpm
H. Subtotal = 1080 + 108 +54 + 54 + 54 = 1350 gpm OR 1250 GPM NEAREST 250 GPM IF LESS THAN 2500 GPM
I. Add Flow at Base of Riser (NFPA13 sizing): No fire sprinkler
Total Fire Flow Required: 1250 gpm

Randolph H. Murayama
License No. 3404-M Expires 4-2010
Randolph H. Murayama and Associates, Inc.





N

LOCATION MAP

ISLAND OF MAUI

Tax Map Key: (2) 4-6-10: 25

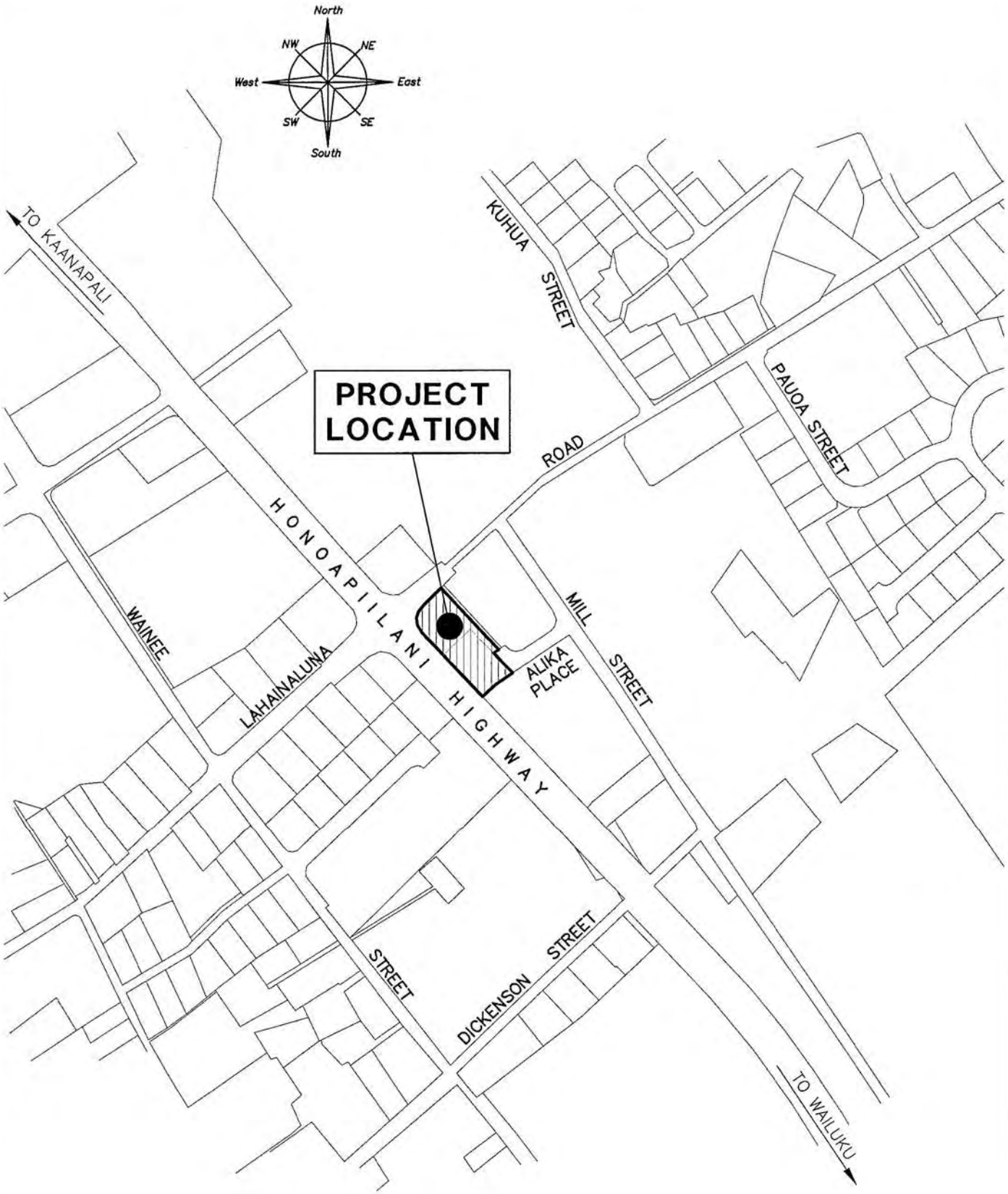
FIGURE 1

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS – CIVIL & STRUCTURAL ENGINEERS

JOB NO. 08-068

(Layout2) Z:\DRAW1\2008\08-068\WMFCU_VICINITY MAP.dwg 16-JUL-2009 : Revised BY:Nancy



VICINITY MAP

NOT TO SCALE

Tax Map Key: (2) 4-6-10: 25

FIGURE 2

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 08-068

(Layout1)
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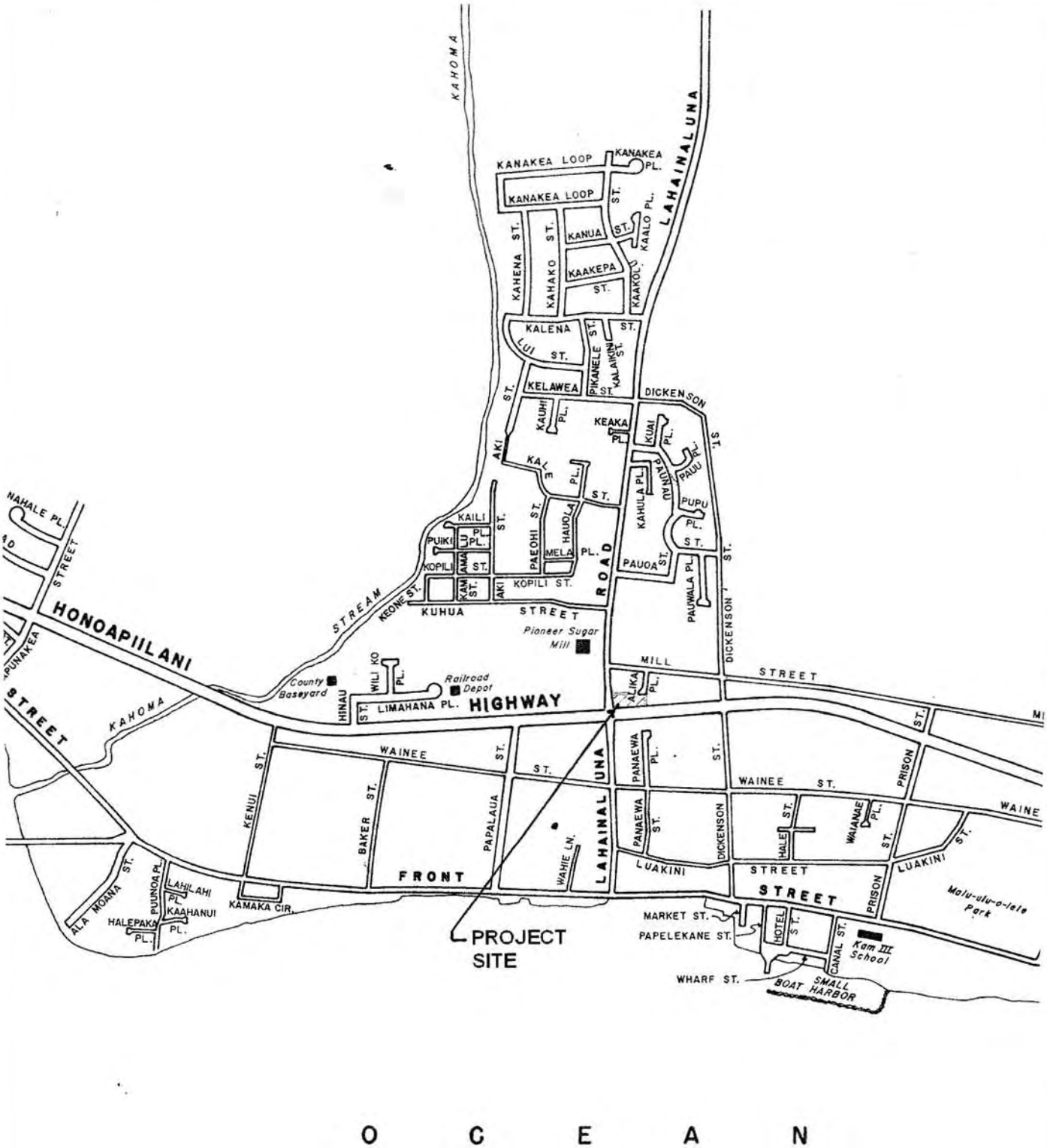


STREET MAP

Scale: 1" = 1,000'

FIGURE 3

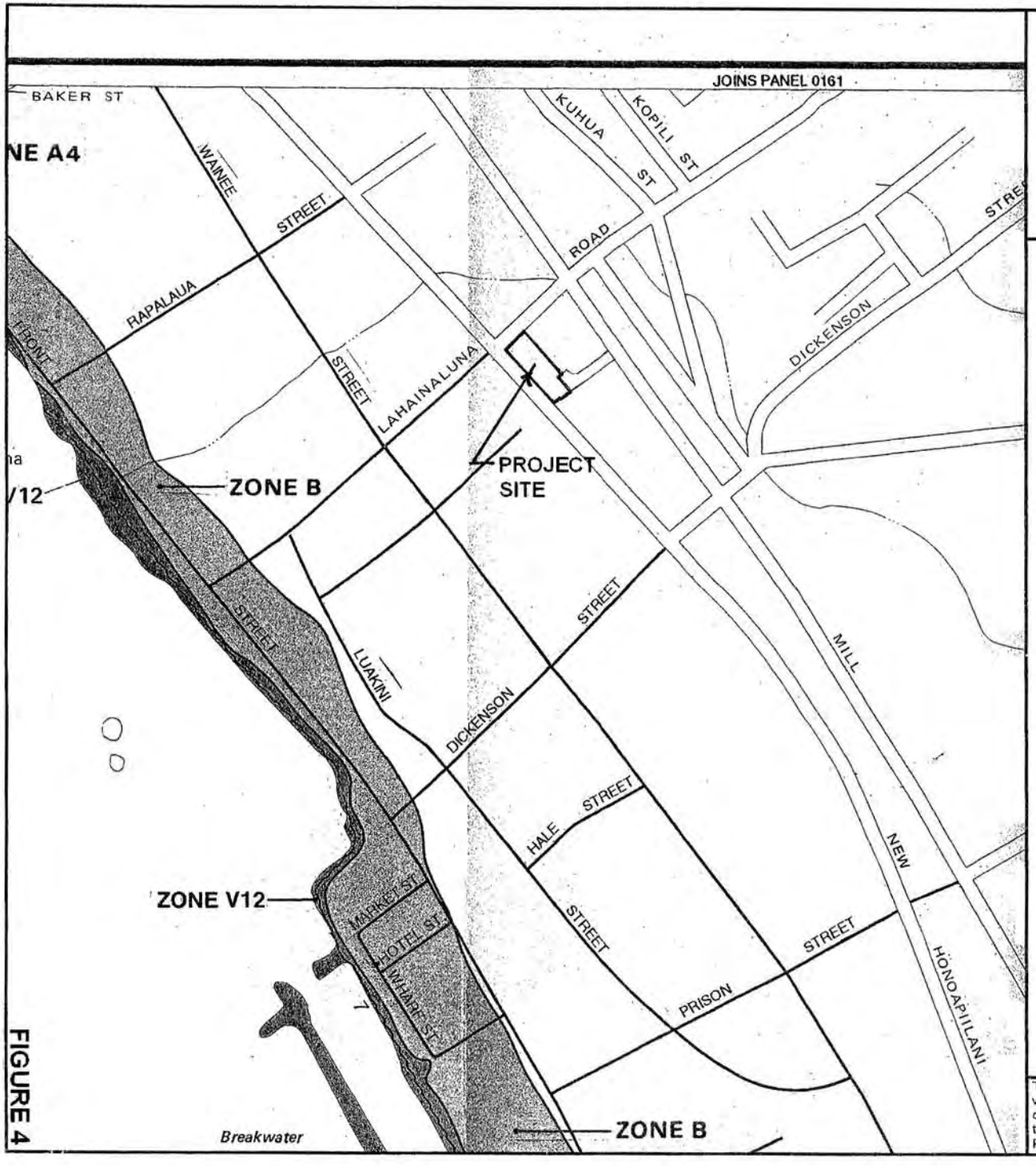


FIGURE 4

APPROXIMATE SCALE

500 0 500 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

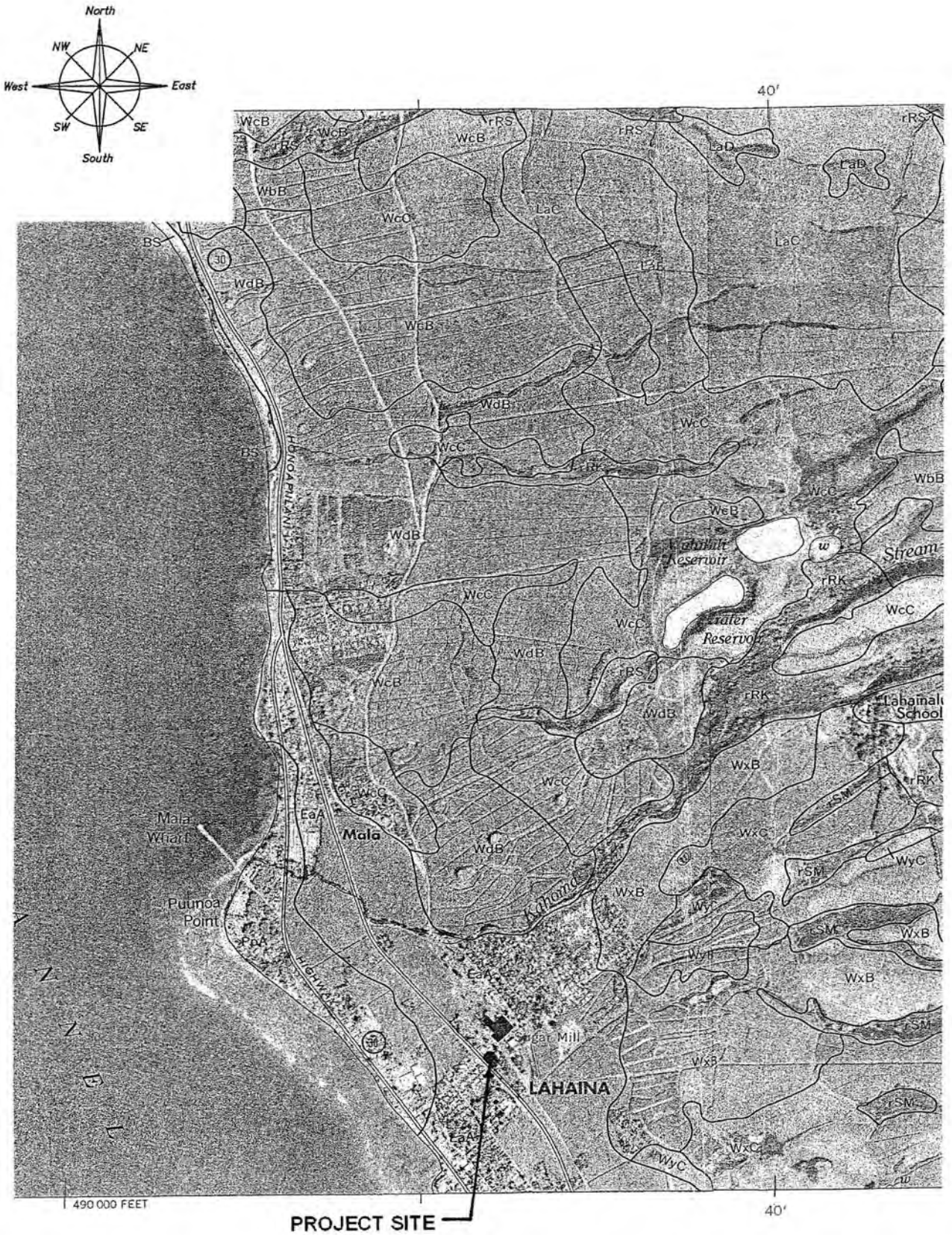
PANEL 163 OF 400
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
150003 0163 C

MAP REVISED:
AUGUST 3, 1998

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



SOILS MAP

NOT TO SCALE

Tax Map Key: (2) 4-6-10: 25

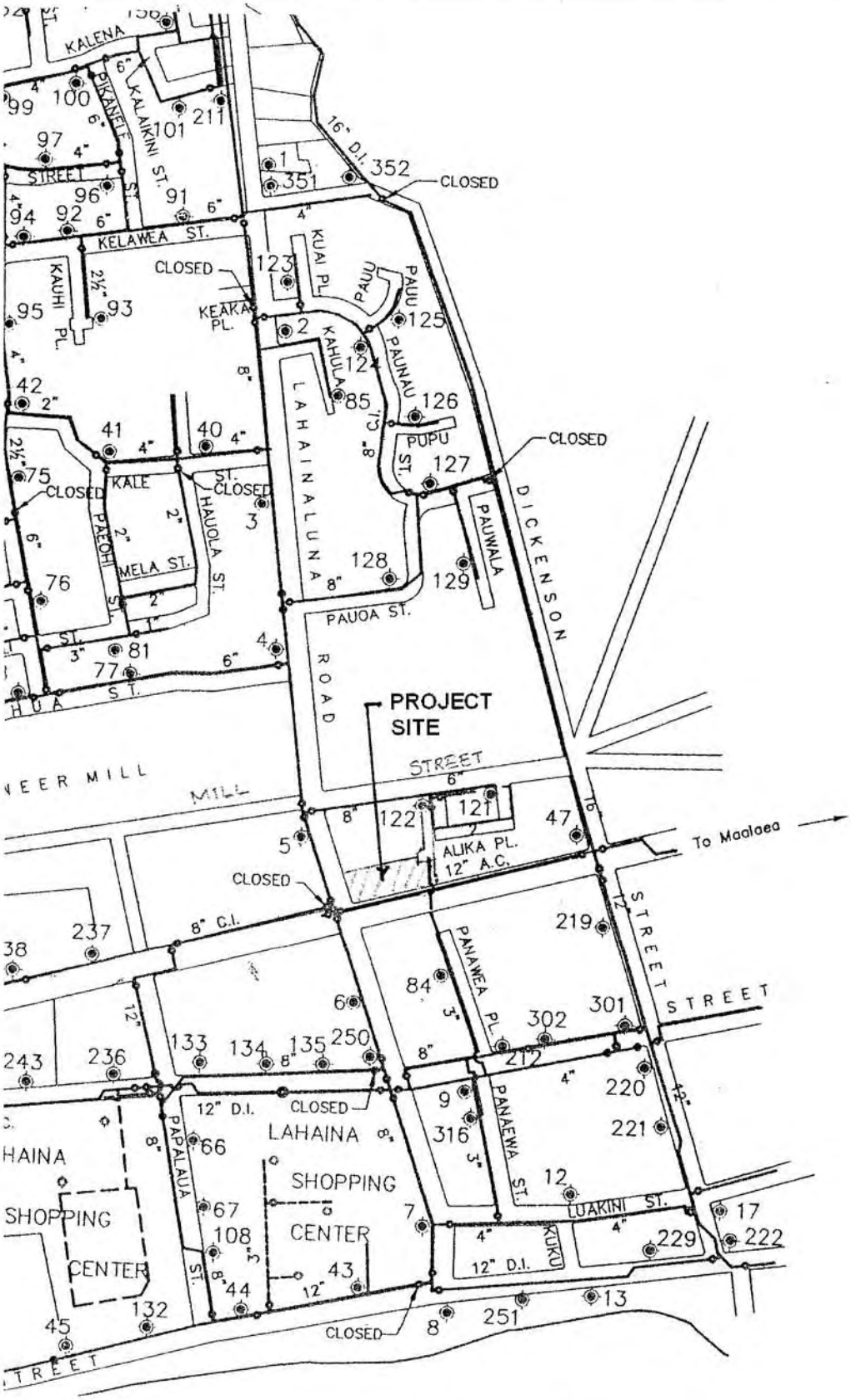
FIGURE 5

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 08-068

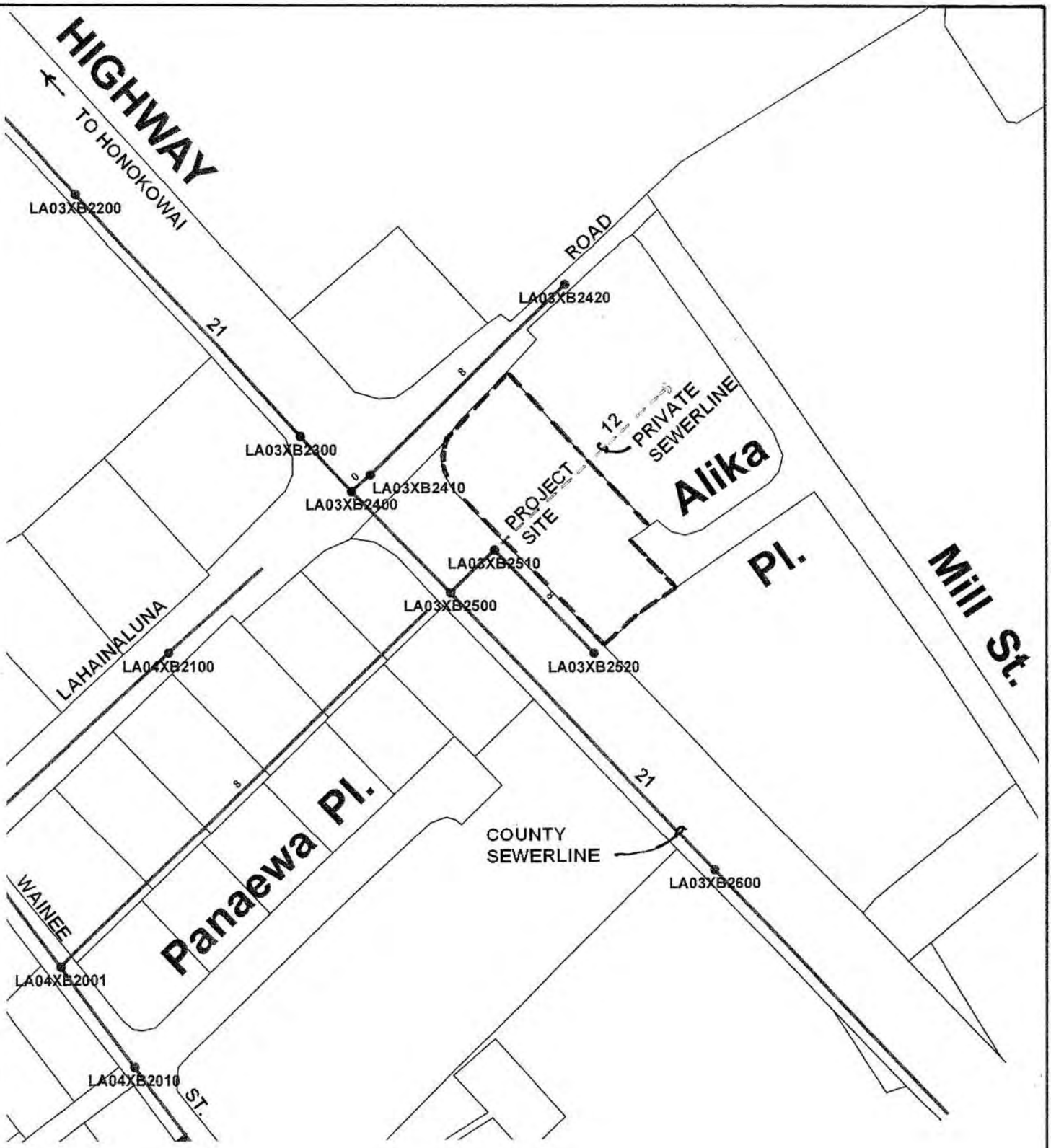
(SOILS MAP)
Z:\DRAW1\2008\08-068\WMFCU_VICINITY MAP.dwg 16-JUL-2009 : Revised BY:Nancy



EXISTING WATER SYSTEM

Scale: 1" = 500'±

FIGURE 6



EXISTING SEWER SYSTEM

Not to Scale

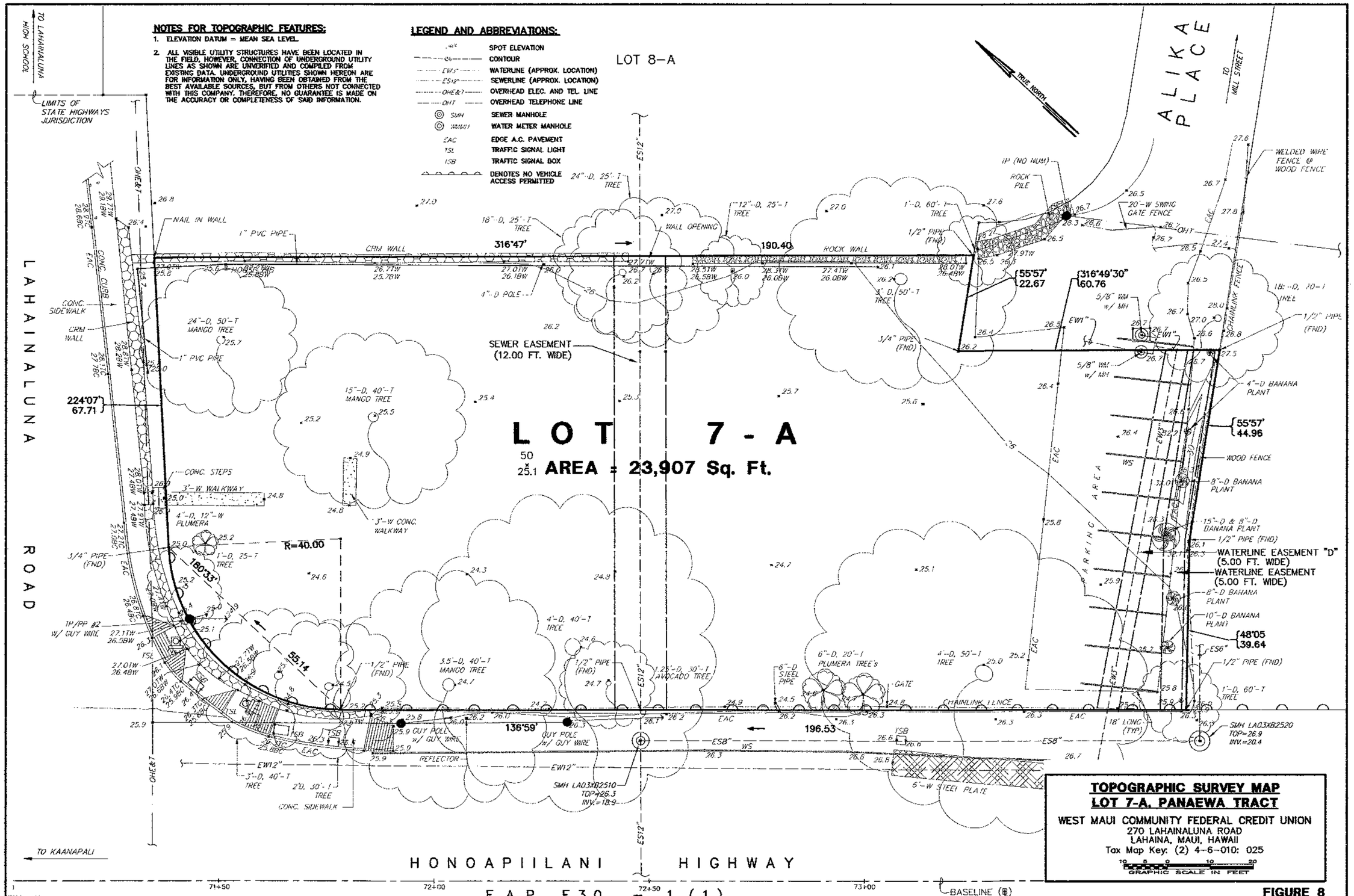
FIGURE 7

NOTES FOR TOPOGRAPHIC FEATURES:

1. ELEVATION DATUM = MEAN SEA LEVEL
2. ALL VISIBLE UTILITY STRUCTURES HAVE BEEN LOCATED IN THE FIELD, HOWEVER, CONNECTION OF UNDERGROUND UTILITY LINES AS SHOWN ARE UNVERIFIED AND COMPILED FROM EXISTING DATA. UNDERGROUND UTILITES SHOWN HEREON ARE FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES, BUT FROM OTHERS NOT CONNECTED WITH THIS COMPANY. THEREFORE, NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.

LEGEND AND ABBREVIATIONS:

- SPOT ELEVATION
- CONTOUR
- EW WATERLINE (APPROX. LOCATION)
- ES12" SEWERLINE (APPROX. LOCATION)
- OHE&T OVERHEAD ELEC. AND TEL. LINE
- OHT OVERHEAD TELEPHONE LINE
- SMH SEWER MANHOLE
- WMH WATER METER MANHOLE
- EAC EDGE A.C. PAVEMENT
- TSL TRAFFIC SIGNAL LIGHT
- TSB TRAFFIC SIGNAL BOX
- DENOTES NO VEHICLE ACCESS PERMITTED



TOPOGRAPHIC SURVEY MAP
LOT 7-A, PANAEWA TRACT

WEST MAUI COMMUNITY FEDERAL CREDIT UNION
270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAII
Tax Map Key: (2) 4-6-010: 025

GRAPHIC SCALE IN FEET

FIGURE 8

(TOPO 11x17)
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JOB NO. 08-068

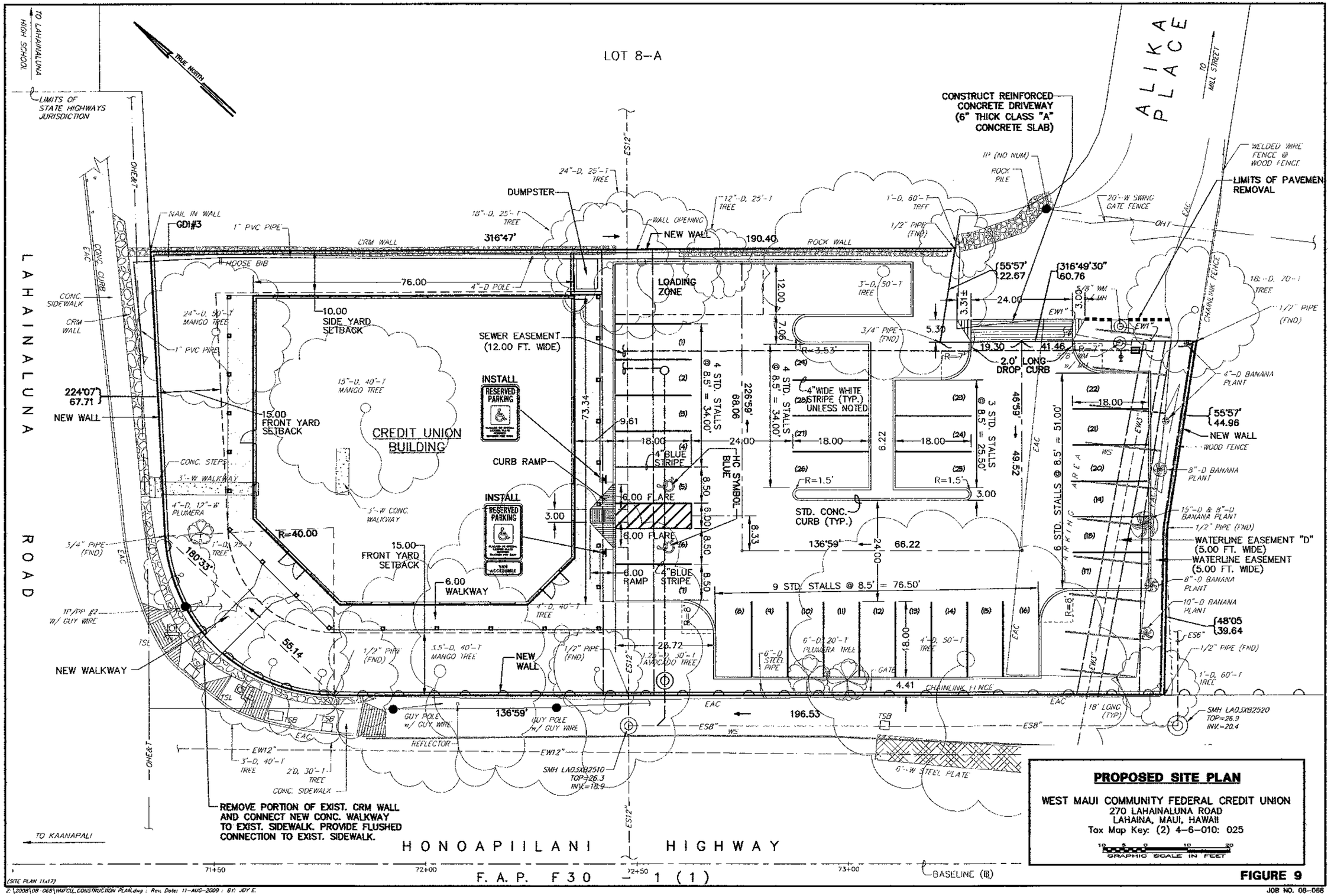
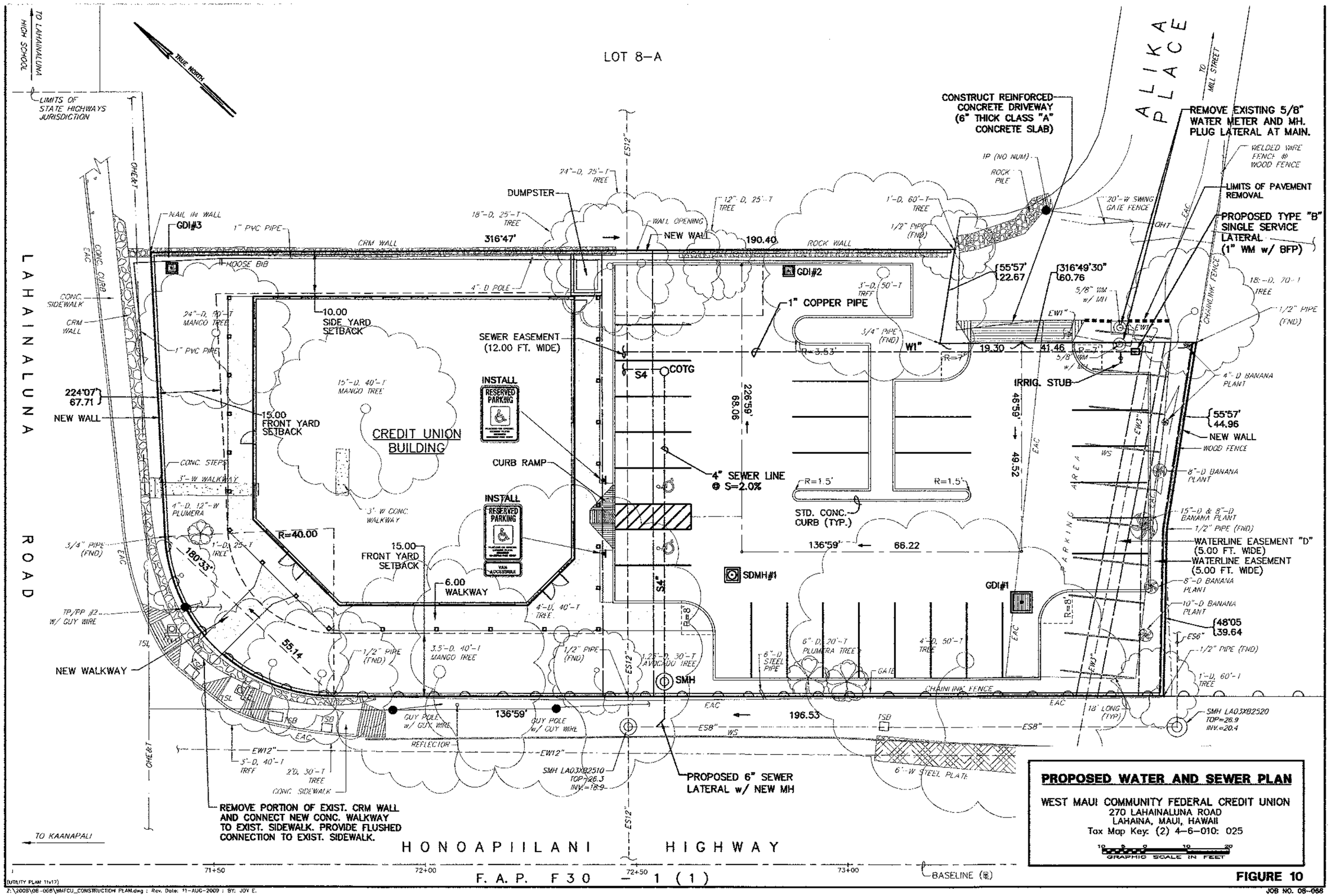


FIGURE 9

JOB NO. 08-068



PROPOSED WATER AND SEWER PLAN

WEST MAUI COMMUNITY FEDERAL CREDIT UNION
270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAII
Tax Map Key: (2) 4-6-010: 025

FIGURE 10

(UTILITY PLAN 11x17)
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JOB NO. 08-068

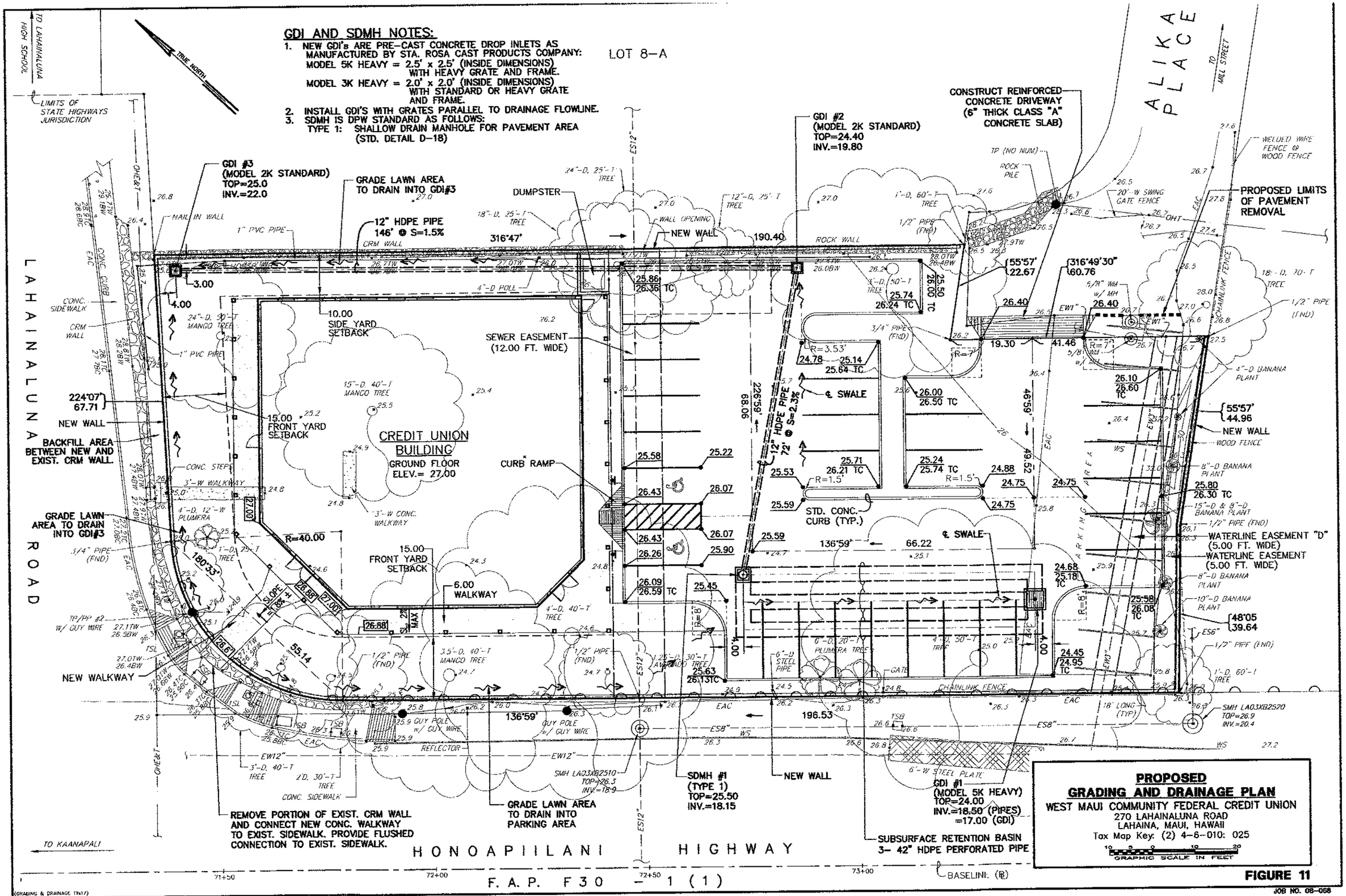

FIGURE 11

JOB NO. 08-068

(GRADING & DRAINAGE TM17)

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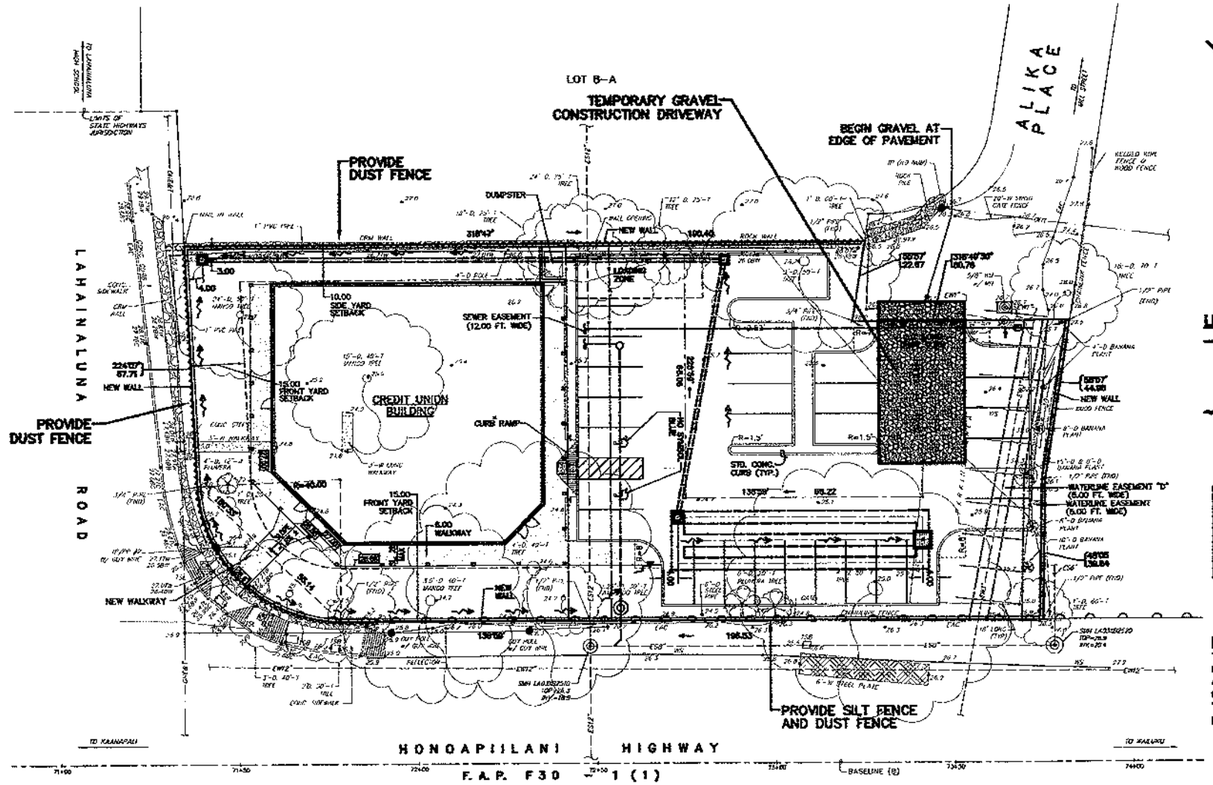
PERMITTEE NOTES TO CONTROL DRAINAGE AND EROSION:

1. CONTROL DUST BY MEANS OF WATER WAGONS OR BY INSTALLING TEMPORARY SPRINKLER SYSTEMS OR BOTH IF NECESSARY.
2. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND FOR THE WEEKEND AND HOLIDAYS.
3. ALL EXPOSED AREAS SHALL BE PAVED, GRASSED, OR PERMANENTLY LANDSCAPED AS SOON AS FINISHED GRADING IS COMPLETED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN AND PAY FOR THE WATER NECESSARY FOR DUST CONTROL AND IRRIGATION PURPOSES.
5. CONTRACTOR TO CONSTRUCT TEMPORARY DIVERSION DITCHES OR SWALES AWAY FROM GRADED AREAS TO NATURAL DRAINAGEWAYS DURING CONSTRUCTION.
6. CONTRACTOR SHALL SUBMIT A SATISFACTORY SOIL EROSION CONTROL PLAN TO MINIMIZE SOIL EROSION PRIOR TO AN ISSUANCE OF A GRADING PERMIT. SEE ALSO GRADING NOTES NO. 2 ON SHEET C-2.
7. THE FOLLOWING ADDITIONAL MEASURES SHALL BE TAKEN TO CONTROL SOIL EROSION DURING THE SITE DEVELOPMENT PERIOD:
   a. MINIMIZE TIME OF CONSTRUCTION.
   b. RETAIN EXISTING GROUND COVER UNTIL LATEST DATE TO COMPLETE CONSTRUCTION.
   c. EARLY CONSTRUCTION OF DRAINAGE CONTROL FEATURES.
   d. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
   e. STATION WATER TRUCK(S) ON SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES (WEEKENDS AND HOLIDAYS INCLUDED).
   f. ALL CUT AND FILL SLOPES SHALL BE PROVIDED WITH EROSION CONTROL BLANKETS AND BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.
   g. INSTALLATION OF SILT AND DUST CONTROL FENCE. IN LIEU OF SILT FENCE, GRAVEL BAGS OR OTHER APPROVED SEDIMENT -TRAPPING DEVICES CAN BE USED.
8. THE CONTRACTOR IS THE SOLE PARTY RESPONSIBLE FOR THE ADEQUACY OF ALL TEMPORARY CONTROL MEASURES TO PROTECT THE WORK FROM THE EFFECTS OF DUST AND EROSION. HE SHALL BE RESPONSIBLE FOR RESPONDING TO COMPLAINTS FROM NEIGHBORING PROPERTIES AND WILL PROVIDE ADDITIONAL MITIGATION MEASURES AS NECESSARY AT NO ADDITIONAL COST TO OWNER.
9. OIL OR PETROLEUM-BASED PRODUCTS SHALL NOT BE USED FOR DUST CONTROL.
10. STORM WATER CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO CONSTRUCTION AND SHALL REMAIN OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD OR UNTIL PERMANENT CONTROLS ARE IN PLACE. THIS WILL INCLUDE CONSTRUCTION OF TEMPORARY SILTATION BASINS THROUGHOUT THE SITE AND TEMPORARY BERMS AND/OR SWALES TO DIRECT RUNOFF TO THE SILTATION BASINS.
11. DISCHARGES ASSOCIATED WITH THE OPERATION AND MAINTENANCE OF EQUIPMENT SHALL BE FIELD MONITORED BY THE CONTRACTOR. ANY MECHANICAL AND HYDRAULICS FLUID LEAKAGE SHALL BE REPAIRED AS SOON AS IT IS IDENTIFIED AND LOCATED. LARGE LEAKAGE OF MECHANICAL FLUIDS SHALL BE CONTAINED, PROPERLY DISPOSED AND NOT ALLOWED TO IMPACT THE OCEAN.
12. DUST AND SILT FENCES SHOWN ARE MINIMUM REQUIREMENTS. CONTRACTOR SHALL LOCATE OR INSTALL ADDITIONAL FENCES AS NECESSARY TO PROVIDE MAXIMUM PROTECTION AT NO ADDITIONAL COST TO THE OWNER.
13. PRIOR TO ISSUANCE OF THE GRADING PERMIT, THE CONTRACTOR SHALL MEET WITH THE DEVELOPMENT SERVICES ADMINISTRATION AND PROVIDE INFORMATION ON THE SOURCE OF WATER FOR DUST CONTROL, AND JUSTIFY THE NUMBER OF WATER TRUCKS TO BE USED FOR THE CLEARING, GRUBBING, AND LOADING OPERATIONS.
14. IF THE CONTRACTOR IS NOT ABLE TO SATISFACTORILY CONTROL DUST EMISSIONS FROM THE PROJECT SITE, ALL CONSTRUCTION WORK SHALL CEASE EXCEPT FOR WATERING AND OTHER STABILIZATION EFFORTS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATELY CLEANING THE ROADWAY OF MUD OR SILT TRACKED FROM THE PROJECT SITE.

RECOMMENDED SEQUENCE FOR IMPLEMENTING BMPS:

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT. COORDINATE LOCATION WITH OWNER.
2. INSTALL SILT AND DUST FENCES AROUND PROPERTY.
3. INSTALL ANY OTHER STRUCTURAL BMP'S AS NEEDED SUCH AS DUST FENCE, TEMPORARY PROTECTION FOR CB AND GRATE INLETS, ETC.
4. EXCAVATE PIT (ENTIRELY OR PORTION) FOR THE PROPOSED SUBSURFACE RETENTION BASIN. USE PIT AS SEDIMENT BASIN TO EXTENT POSSIBLE DURING GRADING. DIRECT STORM RUNOFF INTO THE PIT. RUNOFF INTERCEPTORS MUST BE MODIFIED THROUGHOUT THE PROJECT AS CLEARING AND GRADING PROGRESSES TO ENSURE THEY ARE FUNCTIONAL AT ALL TIMES.
5. COMPLETE GRADING AS PLANNED. MODIFY BMP'S AS NEEDED.
6. TEMPORARILY STABILIZE ON THE FOURTEENTH DAY AFTER DISTURBANCE ALL CLEARED AND GRADED AREAS WHICH WILL NOT BE WORKED ON WITHIN 7 DAYS. TEMPORARY STABILIZATION MAY INCLUDE MULCHING WITH OR WITHOUT GRASS SEED, INSTALLING EROSION CONTROL BLANKETS, AND TEMPORARY GRASSING.
7. INSTALL UTILITY SERVICES AND DRAINAGE FACILITIES. HOWEVER INSTALL SUBSURFACE RETENTION BASIN DURING LATER STAGES OF CONSTRUCTION SO THAT THE PIT COULD BE UTILIZED AS SEDIMENT BASIN AS LONG AS POSSIBLE DURING CONSTRUCTION. PROVIDE INLET PROTECTION FOR NEW GDI'S
8. INSTALL THE TEMPORARY OR PERMANENT IRRIGATION SYSTEM WHERE NEEDED AS SOON AS GRADING IS COMPLETE.
9. PLANT TEMPORARY OR PERMANENT VEGETATION ACCORDING TO THE LANDSCAPING PLAN (GRASS IF THERE IS NO LANDSCAPING PLAN) ON TERRACES, BENCHES, STEEP SLOPES AND ALL OTHER AREAS WHERE FOUNDATIONS AND PAVING WILL WILL NOT OCCUR. IN AREAS OF BUILDINGS OR PAVING, TEMPORARY STABILIZATION MUST BE MAINTAINED UNTIL SUCH TIME THE PERMANENT STABILIZATION MEASURES ARE INSTALLED. IF BUILDING CONSTRUCTION OR PAVING WILL NOT BE PERFORMED WITHIN 90 DAYS, TEMPORARY GRASSING AND IRRIGATION SHALL BE PROVIDED.
10. REMOVE TEMPORARY STRUCTURAL BMP'S ONLY UPON COMPLETION OF BUILDING AND ESTABLISHMENT OF PERMANENT STABILIZATION MEASURES SUCH AS GRASSING AND PAVING.

(BMP NOTES & DEIS. 11x17)



SOIL EROSION CONTROL PLAN

SCALE: 1 in. = 20 ft.

20 10 0 20 40

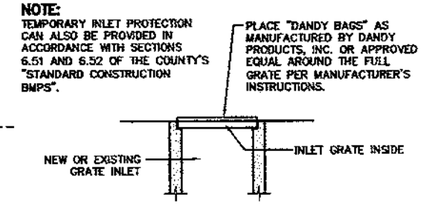
GRAPHIC SCALE IN FEET

LEGEND:

- DUST FENCE TOGETHER WITH SEDIMENT-TRAPPING DEVICES SUCH AS SILT FENCE, GRAVEL BAG BERM OR OTHER APPROVED FILTERING PRODUCTS.
- DUST FENCE

1. CONTROL MEASURES AS SHOWN ARE MINIMUM AND DIAGRAMMATIC. CONTRACTOR TO PROVIDE AND PLACE BMPS AS NEEDED TO OBTAIN MAXIMUM PROTECTION.
2. INSTALL DUST FENCE AROUND CONSTRUCTION AREA. CONTRACTOR TO DETERMINE LOCATION AT JOB SITE WITH APPROVAL OF OWNER.

NOTE:
TEMPORARY INLET PROTECTION CAN ALSO BE PROVIDED IN ACCORDANCE WITH SECTIONS 6.51 AND 6.52 OF THE COUNTY'S "STANDARD CONSTRUCTION BMPS".



TEMPORARY GRATE INLET PROTECTION

NOT TO SCALE

BMPS NOTES

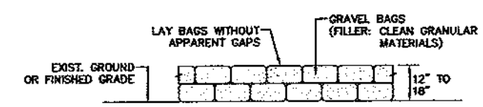
1. APPLICABLE SECTIONS, WHETHER CALLED FOR OR NOT ON THIS PLAN, OF THE COUNTY STANDARD BEST MANAGEMENT PRACTICES (STD. BMPS), "CONSTRUCTION BEST MANAGEMENT PRACTICES FOR THE COUNTY OF MAUI", MAY 2001 SHALL BE COMPLIED WITH DURING THE DEVELOPMENT OF THIS PROJECT. SECTIONS, BUT NOT LIMITED TO THE FOLLOWING ARE APPLICABLE TO THIS PROJECT:
   - SECTION 6.06 – TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
   - SECTION 6.10 – SEEDING
   - SECTION 6.30 – MATS, NETS & BLANKETS
   - SECTION 6.31 – MULCHING
   - SECTION 6.32 – PRESERVATION OF EXISTING VEGETATION
   - SECTION 6.33 – PROTECTION OF STOCKPILES
   - SECTION 6.51 – TEMPORARY FABRIC DROP INLET PROTECTION
   - SECTION 6.52 – TEMPORARY BLOCK AND GRAVEL DROP INLET PROTECTION
   - SECTION 6.62 – SEDIMENT FENCE (SILT FENCE)
   - SECTION 6.70 – DUST CONTROL
   - SECTION 6.71 – GOOD NEIGHBOR BARRIERS
   - SECTION 6.91 – SOLID WASTE MANAGEMENT
   - SECTION 6.92 – CONCRETE WASTE MANAGEMENT
   - SECTION 6.93 – VEHICLE FUEL & MAINTENANCE MANAGEMENT

NOTE REGARDING DISCOVERIES OF ARCHAEOLOGICAL INTEREST:

SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (243-5169, MAUI OR 692-8023, OAHU), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

GRADING NOTES:

1. CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO (2) WEEKS PRIOR TO COMMENCEMENT OF ANY GRADING OR GRUBBING.
2. CONTRACTOR SHALL BE REQUIRED TO SUBMIT A SATISFACTORY GRADING WORK METHOD TO MINIMIZE DUST POLLUTION BEFORE A GRADING PERMIT IS ISSUED.
3. ALL GRADING OPERATIONS SHALL CONFORM WITH APPLICABLE PROVISIONS OF THE "WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS" CONTAINED IN THE STATE OF HAWAII PUBLIC HEALTH REGULATIONS, STATE DEPT. OF HEALTH ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS AND THE COUNTY GRADING ORDINANCE.
4. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE AT ALL TIMES, INCLUDING WEEKEND AND HOLIDAYS. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATION OF THE STATE DEPARTMENT OF HEALTH AND GRADING ORDINANCE.
5. THE CONTRACTOR SHALL REMOVE ALL SILTS AND DEBRIS RESULTING FROM HIS WORK. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE DIRECTOR OF DPW (COUNTY OF MAUI) SHALL BE PAYABLE BY THE CONTRACTOR.
6. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF DPW OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE SHALL ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
7. APPROXIMATE:
   EXCAVATION = _____C. Y.
   EMBANKMENT = _____C. Y.
   AREA = _____ACRES
   FOR GRADING PERMIT PURPOSES ONLY



PLACEMENT OF TEMPORARY GRAVEL BAG BERM (IF NEEDED)

NOT TO SCALE

PROPOSED
BMP'S PLAN, NOTES AND DETAILS
WEST MAUI COMMUNITY FEDERAL CREDIT UNION
270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAII
Tax Map Key: (2) 4-6-010: 025

FIGURE 12

JOB NO. 08-068

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APPENDIX I

Traffic Impact
Assessment Report

ATM
Phillip Rowell and Associates
47-273 'D' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8206 FAX: (808) 239-4175 Email:prowell@hawiiantel.net

March 15, 2010

Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Maui, HI 96793

Attention: Glenn Tadaki

Re: **Traffic Impact Assessment Report**
Proposed West Maui Community Federal Credit Union
270 Lahainaluna Road
Lahaina, Maui, Hawaii
TMK: (2) 4-6-010:025

Dear Glenn:

Phillip Rowell and Associates have completed the following Traffic Impact Assessment Report (TIAR) for a proposed new office for the West Maui Community Federal Credit Union in Lahaina. The following report is presented in the following format:

A. Project Location and Description
B. Purpose and Objective of Study
C. Methodology
D. Traffic Characteristics of Existing Credit Union
E. Description of Existing Streets and Intersection Controls
F. Existing Peak Hour Traffic Volumes
G. Level-of-Service Concept
H. Existing Levels-of-Service
I. Background Traffic Projections
J. Project Trip Generation
K. Background Plus Project Traffic Projections
L. Impact Analysis of Background Plus Project Conditions
M. Mitigation
N. Summary and Conclusions

A. Project Location and Description

The proposed project is located at 270 Lahainaluna Road, the southeast corner of the intersection of Lahainaluna Road at Honoapiilani Highway, in Lahaina.

The proposed project is the construction of a two-story office building with 8,581 net square feet. The first floor (4,542 square feet) will be occupied by the credit union, which will be relocated from its existing location at 349 Lahainaluna Road, approximately two blocks east of the proposed new location.

The second floor (4,039 square feet) will be leased to other businesses as office space

Access and egress will be via the Alika Place which intersects Mill Street.

A preliminary site plan is provided as Attachment A.

B. Purpose and Objective of Study

1. Quantify and describe the traffic related characteristics of the proposed project.

2. Identify potential deficiencies adjacent to the project that will impact traffic operations in the vicinity of the proposed project.

C. Methodology

1. *Define the Study Area*

The first step in defining the study area was to estimate the number of peak hour trips that the proposed project will generate. It was estimated that the project will generate 31 trips during the morning peak hour and 49 trips during the afternoon peak hour. This implies that the scope of the traffic assessment could be limited to an "access location and design review" analysis as described by the Institute of Transportation Engineers[1]. However, because of traffic issues in the area and the heavy traffic volumes along Honoapiilani Highway, the following intersections were analyzed:

- Honoapiilani Highway at Lahainaluna Road,
- Honoapiilani Highway at Dickenson Street,
- Lahainaluna Road at Mill Street, and
- Mill Street at Alika Place

2. *Analyze Existing Traffic Conditions*

Existing traffic volumes at the study intersections were estimated from manual traffic counts performed at the intersections Tuesday, January 12, 2010 and Tuesday, January 19, 2010. A level-of-service analysis was performed using the methodology described in the *Highway Capacity Manual*[2] to quantify existing traffic operating conditions.

3. *Estimate Horizon Year Background Traffic Projections*

Background traffic conditions are defined as future traffic conditions <u>without</u> the proposed project. The design horizon year does not necessarily represent the project completion date of the project. It is a date for which future background traffic projections were estimated. For this project, we have used a design, or horizon, year of 2015. Horizon year background traffic conditions were estimated using a background traffic growth factor.

---

[1] Institute of Transportation Engineers, *Transportation and Land Development*, 2002, Washington, D.C., page 3-6

[2] Transportation Research Road, Highway Capacity Manual, 2000, Washington, D.C.

4. *Estimate Project-Related Traffic Characteristics*

The number of peak-hour trips that the proposed project will generate was estimated using standard trip generation procedures outlined in the *Trip Generation Handbook*[3] and data provided in *Trip Generation*[4]. These trips were distributed and assigned based on existing traffic approach and departure patterns of traffic and the distribution of residences in the Lahaina area.

5. *Analyze Project Related Traffic Impacts*

The project-related traffic was then superimposed on background traffic volumes. The traffic impacts of the project were assessed by analyzing changes of the levels-of-service.

D. Existing Traffic Characteristics of Credit Union

Trip Generation does not provide traffic generation data for credit unions. Therefore, a traffic survey of the existing credit union office at 349 Lahainaluna Road was performed to obtained data that could be used to estimate the amount of traffic that the new credit union office will generate.

The credit union is open from 8:00 AM to 4:30 PM Monday through Friday, with Fridays the busiest day of the week according to the credit union. The number of vehicles to and from the existing credit union was manually counted during a Friday morning peak period and a Friday afternoon peak period. Vehicles using the credit union's parking lot, parking along the street and the parking lot across the street from the credit union were counted. Counts were performed during the peak commute periods of the adjacent streets as determined from traffic counts of the study intersections.

The results of the trip generation counts are summarized in Table 1. During the morning peak hour (8:30 AM to 9:30 AM), the credit union generated 13 inbound trips and 12 outbound trips. During the afternoon peak hour (3:30 PM to 4:30 PM), the credit union generated 20 inbound trips and 23 outbound trips.

Table 1 Trip Generation Analysis of Existing Credit Union

AM Peak Hour (8:30 AM to 9:30 AM)					PM Peak Hour (3:30 PM to 4:30 PM)				
Interval	Start Interval At:	Vehicles Counted			Interval	Start Interval At:	Vehicles Counted		
		In	Out	Total			In	Out	Total
1	8:30 am	3	2	5	1	3:30 pm	4	5	9
2	8:45 am	3	3	6	2	3:45 pm	5	4	9
3	9:00 am	3	3	6	3	4:00 pm	4	5	9
4	9:15 am	4	4	8	4	4:15 pm	7	9	16
AM Peak Hour Totals		13	12	25	PM Peak Hour Totals		20	23	43

Notes
(1) Counts were performed Friday, March 5, 2010.

[3] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998

[4] Institute of Transportation Engineers, *Trip Generation* Washington, D.C., 2003

G. Description of Existing Streets and Intersection Controls

Honoapiilani Highway is a north-south State highway along the west side of the project site. There are two southbound lanes north of Dickenson Street. The two southbound lanes transition to one southbound lane south of Dickenson Street. The northbound lanes transition from one lane to two lanes between Dickenson Street and Lahainaluna Road. There are two northbound lanes north of Lahainaluna Road. The posted speed limit along Honoapiilani Highway is 40 miles per hour. Honoapiilani Highway is in the process of being widened. When completed, there will be two northbound lanes.

Lahainaluna Road is a two-lane, two-way road with an east-west orientation along the north side of the project site. The posted speed limit is 20 miles per hour.

Dickenson Street is also a two-lane, two-way road with an east-west orientation south of the proposed project site. The posted speed limit is 20 miles per hour.

Mill Street is a two-lane, two-way street east of the project site. A speed limit of 20 miles per hour is assumed as no speed limit signs were noted.

The intersection of Honoapiilani Highway at Lahainaluna Road is a four-legged signalized intersection. The northbound and southbound left turns along Honoapiilani Highway are protected. There are separate left turn lanes along the eastbound and westbound approaches and the left turns are protected-permissive.

The intersection of Honoapiilani Highway at Dickenson Street is a four-legged signalized intersection. The northbound and southbound approaches have separate left turn lanes and the left turns are protected. There are two southbound lanes (one through and one through and right turn) and one northbound through and right turn lane. When the Honoapiilani Highway widening project is completed, there will be two northbound lanes through the intersection (one through lane and one through and right turn lane). The eastbound and westbound approaches are one lane only. Eastbound and westbound left turns are permitted.

A schematic drawing indicating the study intersections, existing lane configurations and right-of-way controls is provided as Attachment B. Lane configurations upon completion of the Honoapiilani Highway widening project are also shown.

H. Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined from manual traffic counts performed at the study intersections. The counts are summarized on Attachment C and the traffic count summary worksheets are attached. The traffic counts include buses, trucks and other large vehicles. Mopeds and bicycles are not included. Pedestrian activity was negligible.

The peak hour traffic volumes at the intersection of Honoapiilani Highway at Lahainaluna Road were determined from counts performed on Tuesday, January 12, 2010. The morning peak hour is from 7:15 AM to 8:15 AM and the afternoon peak hour is from 4:00 PM to 5:00 PM.

The intersection of Honoapiilani Highway at Dickenson Street was counted on Tuesday, January 19, 2010. The morning peak hour is from 7:15 AM and 8:15 AM and the afternoon peak hour is from 3:30 PM to 4:30 PM.

Peak hour volumes at the intersection of Lahainaluna Road at Mill Street were estimated from traffic counts performed during the peak hours of the intersection of Honoapiilani Highway at Lahainaluna Road (7:15 AM to 8:15 AM and 4:00 PM to 5:00 PM). The morning counts were performed on Thursday, March 4, 2010 and the afternoon counts were performed on Tuesday, February 15, 2010.

G. Level-of-Service Concept

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 2. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. *Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.*[5]

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

Table 2 Level-of-Service Definitions for Signalized Intersections(1)

Level of Service	Interpretation	Volume-to-Capacity Ratio(2)	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<20.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	20.1-35.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	35.1-55.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	55.1-80.0
F	Total breakdown with stop-and-go operation	>1.001	>80.0

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

[5] Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development: A Recommended Practice*, 2006, page 60

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 3 summarizes the definitions for level-of-service and the corresponding delay.

Table 3 Level-of-Service Definitions for Unsignalized Intersections(1)

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
(1) Source: *Highway Capacity Manual*, 2000.
(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

H. Existing Levels-of-Service

The results of the level-of-service analysis of the intersection of Honoapiilani Highway at Lahainaluna Road are summarized in Table 4. Based on the level-of-service, the intersection operates at Level-of-Service D during the morning and the afternoon peak hours. The major northbound and southbound through movements operate at Level-of-Service D and Level-of-Service C. The side street approaches and the northbound and southbound left turns operate at Level-of-Service E or Level-of-Service F. All volume-to-capacity ratios are less than 1.0.

Table 4 Existing (2010) Levels-of-Service - Honoapiilani Highway at Lahainaluna Road

	AM Peak Hour			PM Peak Hour		
	7:15 AM to 8:15 AM			4:00 PM to 5:00 PM		
Approach and Movement	V/C	Delay	LOS	V/C	Delay	LOS
Overall Intersection	0.74	43.2	D	0.77	47.5	D
Eastbound Left	0.57	86.2	F	0.72	89.4	F
Eastbound Thru	0.82	85.1	F	0.85	94.4	F
Eastbound Right	0.02	59.7	E	0.07	64.8	E
Westbound Left	0.78	92.5	F	0.80	101.6	F
Westbound Thru	0.57	61.3	E	0.49	71.6	E
Westbound Right	0.38	0.7	A	0.18	0.3	A
Northbound Left	0.34	77.4	E	0.24	77.1	E
Northbound Thru & Right	0.73	49.8	D	0.78	51.6	D
Southbound Left	0.69	65.2	E	0.75	66.7	E
Southbound Thru & Right	0.48	25.3	C	0.59	24.6	C

NOTES:
1. Level-of-Service analysis is based on traffic counts performed Tuesday, January 12, 2010.
2. V/C denotes ratio of volume-to-capacity.
3. Delay is in seconds per vehicle.
4. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
5. See Attachment D for Level-of-Service Calculation Worksheets.

The results of the level-of-service analysis of the intersection of Honoapiilani Highway at Dickenson Street are summarized in Table 5. Based on the level-of-service, the intersection operates at Level-of-Service C during the morning and the afternoon peak hours. The major northbound and southbound movements operate at Level-of-Service B. All volume-to-capacity ratios are less than 1.0.

Table 5 Existing (2010) Levels-of-Service - Honoapiilani Highway at Dickenson Street

	AM Peak Hour			PM Peak Hour		
	7:15 AM to 8:15 AM			3:30 PM to 4:30 PM		
Approach and Movement	V/C	Delay	LOS	V/C	Delay	LOS
Overall Intersection	0.70	24.7	C	0.74	25.4	C
Eastbound Left, Thru & Right	0.91	112.1	F	0.88	104.3	F
Westbound Left, Thru & Right	0.50	72.4	E	0.57	76.3	E
Northbound Left	0.39	90.9	F	0.48	88.8	F
Northbound Thru & Right	0.65	13.6	B	0.71	16.4	B
Southbound Left	0.49	92.8	F	0.41	88.2	F
Southbound Thru & Right	0.39	8.3	A	0.50	10.9	B

NOTES:
1. Level-of-Service analysis is based on traffic counts performed Tuesday, January 12, 2010.
2. V/C denotes ratio of volume to capacity. V/C ratio is not calculated for unsignalized intersections.
3. Delay is in seconds per vehicle.
4. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
5. See Attachment D for Level-of-Service Calculation Worksheets.

The results of the level-of-service analysis of the intersection of Lahainaluna Road at Mill Street are summarized in Table 6. The eastbound and westbound approaches along Lahainaluna Street operate at Level-of-Service A and the northbound approach along Mill Street operate at Level-of-Service C during both peak periods. The southbound approach operates at Level-of-Service F during the morning peak hour and Level-of-Service D during the afternoon peak hour.

Table 6 Existing (2010) Levels-of-Service - Lahainaluna Road at Mill Street

	AM Peak Hour		PM Peak Hour	
	7:15 AM to 7:15 AM		3:30 PM to 4:30 PM	
Approach and Movement	Delay	LOS	Delay	LOS
Eastbound Left, Thru & Right	0.2	A	0.1	A
Westbound Left, Thru & Right	1.2	A	0.9	A
Northbound Left, Thru & Right	19.8	C	16.9	C
Southbound Left, Thru & Right	59.7	F	26.0	D

NOTES:
1. Level-of-Service analysis is based on traffic counts performed Thursday, January 14, 2010.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. LOS is based on delay.
4. See Attachment D for Level-of-Service Calculation Worksheets.

A level-of-service analysis was not performed for the intersection of Mill Street at Alika Place as no traffic used Alika Street during the peak hours.

I. Background Traffic Projections

2015 background traffic projections are defined as future background traffic conditions without the proposed project. Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. This growth factor also accounts for smaller development projects in the area for which a traffic impact study is not available or are not identified as a related project during the data collection process. The second component is estimated traffic that will be generated by other development projects (related projects) in the vicinity of the proposed project.

Background Traffic Growth

Historical peak hour traffic counts for the intersection of Honoapiilani Highway at Lahainaluna Road were analyzed to estimate at background growth rate of traffic along Honoapiilani Highway and Lahainaluna Road. Traffic counts for this intersection performed in 2005 were compared to the traffic counts performed in 2010. The results are summarized in Tables 7 and 8. The analysis concluded that peak hour traffic along Honoapiilani Highway south of Lahainaluna Road decreased approximately 2 percent between 2005 and 2010. Peak hour traffic along Lahainaluna Road east of Honoapiilani Highway decreased approximately 0.4%.

Table 7 Historical Growth Along Honoapiilani Highway Between Lahainaluna Road and Dickenson Street

	AM Peak Hour			PM Peak Hour		
Year	Northbound	Southbound	Total	Northbound	Southbound	Total
2005	917	868	1,785	1,206	941	2,147
2010	836	773	1,609	1,119	830	1,949
Change	-81	-95	-176	-87	-111	-198
% Growth/Year	-1.7%	-2.1%	-1.9%	-1.4%	-2.3%	-1.8%

Notes:
1. Source: Traffic counts performed by Phillip Rowell and Associates.
2. Compounded growth rate.

Table 8 Historical Growth Along Lahainaluna Road East of Honoapiilani Highway

	AM Peak Hour			PM Peak Hour		
Year	Northbound	Southbound	Total	Northbound	Southbound	Total
2005	607	820	1,427	480	546	1,026
2010	570	831	1,401	542	466	1,008
Change	-37	11	-26	62	-80	-18
% Growth/Year	-1.2%	0.3%	-0.4%	2.5%	-2.8%	-0.4%

Notes:
1. Source: Traffic counts performed by Phillip Rowell and Associates.
2. Compounded growth rate.

Since it would be inappropriate to apply negative traffic growth, the average growth rate as determined in the *Maui Long Range Land Transportation Plan* was used. The *Maui Long Range Transportation Plan*[6] concluded that traffic in Maui would increase an average of 1.6% per year from 1990 to 2020. This growth rate was used to estimate the background growth between 2010 and 2012, which is the design year for this project. The growth factor was calculated using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor
i = Average annual growth rate, or 0.016
n = Growth period in years

Related Projects

The second component in estimating background traffic volumes is traffic generated by other proposed projects in the vicinity. Related projects are defined as those projects that are under construction or have been approved for construction and would significantly impact traffic in the study area. Related projects may be development projects or roadway improvements.

Honoapiilani Highway is being widened between Lahainaluna Road and Aholo Street. According to the project's website (www.buildgbi.com/build honoapiilani highway), when completed Honoapiilani Highway will be a "four-lane divided highway with a curbed median, sidewalks on one side and paved shoulders on both sides."

The estimated background traffic projections for 2015 are shown in Attachment E.

J. Project Trip Generation

Future traffic volumes generated by a project are typically estimated using the methodology described in the *Trip Generation Handbook*[7] and data provided in *Trip Generation*[8]. This method uses trip generation rates to estimate the number of trips that the project will generate during the peak hours of the project and along the adjacent street.

The proposed project is the construction of a two-story office building with 8,581 net square feet. The first floor (4,542 square feet) will be occupied by the credit union, which will be relocated from its existing location at 349 Lahainaluna Road, approximately two blocks east of the proposed new location. The credit union does not plan any expansion of services or increased membership as a result of relocating to the new facility. Therefore, the results of the trip generation study were used directly to estimate the traffic generated by the credit union that will occupy the first floor of the building.

The second floor (4,039 square feet) will be leased to other businesses as office space. Trips generation rates for general office buildings were used to estimated the trips generated by the office

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[6] Kaku Associates, *Maui Long Range Land Transportation Plan*, October 1996

[7] Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998, p. 7-12

[8] Institute of Transportation Engineers, *Trip Generation, 7th Edition,* Washington, D.C., 2003

building. The rates are based on thousand gross square feet of floor area. The trip generation calculations are summarized in Table 9. As shown, the proposed project will generate 18 inbound and 13 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 21 inbound and 28 outbound trips.

Table 9 Trip Generation Calculations for Proposed Project

Time Period	Direction	First Floor Credit Union	Second Floor Office Space (LU Code 710)			Total
		Trips (1)	Rate or %(2)	TGSF	Trips	
AM Peak Hour	Total	25	1.55	4.039	6	31
	In	13	88%		5	18
	Out	12	12%		1	13
PM Peak Hour	Total	43	1.49		6	49
	In	20	17%		1	21
	Out	23	83%		5	28

NOTES:
(1) AM and PM trips for the credit union are based on counts of existing credit union building.
(2) Institute of Transportation Engineers, *Trip Generation*, Seventh Edition, 2003, p 1159 - 1160

These trips were distributed and assigned based on distribution of population, the approach and departure patterns of traffic to and from the credit union office and available traffic approach and departure routes. The project's trip distribution and the resulting project trip assignments are shown in Attachment F.

K. Background Plus Project Projections

Background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the background (without project) peak hour traffic projections. This assumes that the peak hourly trips generated by the project coincide with the peak hour of the adjacent street. This represents a worse-case condition as it assumes that the peak hours of all the intersection the peak hour of the study project coincide. The traffic projection calculations are shown as Tables 10 through 13. The resulting background plus project peak hour traffic projections are shown in Attachment G.

Table 10 Traffic Projection Calculations - Honoapiilani Highway at Lahainaluna Road

Approach and Movement		Existing (2010)		2010 to 2015 Background Growth		2015 Background		Project Trips		2015 Background Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt	66	63	5	5	71	68			71	68
	Th	691	941	57	78	748	1019			748	1019
	Lt	263	316	22	26	285	342	7	8	292	350
East	Rt	507	256	42	21	549	277	5	12	554	289
	Th	202	104	17	9	219	113	4	6	223	119
	Lt	122	106	10	9	132	115			132	115
South	Rt	93	33	8	3	101	36			101	36
	Th	639	769	53	64	692	833			692	833
	Lt	41	28	3	2	44	30			44	30
West	Rt	23	72	2	6	25	78			25	78
	Th	214	193	18	16	232	209	5	6	237	215
	Lt	41	100	3	8	44	108			44	108
Totals		2902	2981	240	247	3142	3228	21	32	3163	3260

Table 11 Traffic Projection Calculations - Honoapiilani Highway at Dickenson Street

Approach and Movement		Existing (2010)		2010 to 2015 Background Growth		2015 Background		Project Trips		2015 Background Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt	126	84	10	7	136	91			136	91
	Th	755	1031	62	85	817	1116			817	1116
	Lt	24	26	2	2	26	28			26	28
East	Rt	24	15	2	1	26	16			26	16
	Th	10	5	1	0	11	5	0	2	11	7
	Lt	47	53	4	4	51	57	3	6	54	63
South	Rt	62	71	5	6	67	77	4	4	71	81
	Th	745	789	62	65	807	854			807	854
	Lt	11	21	1	2	12	23			12	23
West	Rt	18	33	1	3	19	36			19	36
	Th	59	27	5	2	64	29	0	1	64	30
	Lt	51	48	4	4	55	52			55	52
Totals		1932	2203	159	181	2091	2384	7	13	2098	2397

Table 12 Traffic Projection Calculations - Lahainaluna Road at Mill Street

Approach and Movement		Existing (2010)		2010 to 2015 Background Growth		2015 Background		Project Trips		2015 Background Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt	4	13	0	1	4	14			4	14
	Th	0	0	0	0	0	0			0	0
	Lt	3	14	0	1	3	15			3	15
East	Rt	6	15	0	1	6	16			6	16
	Th	709	423	59	35	768	458			768	458
	Lt	36	27	3	2	39	29	2	2	41	31
South	Rt	137	81	11	7	148	88	1	3	149	91
	Th	4	2	0	0	4	2			4	2
	Lt	0	12	0	1	0	13	9	18	9	31
West	Rt	0	9	0	1	0	10	12	14	12	24
	Th	590	472	49	39	639	511			639	511
	Lt	6	4	0	0	6	4			6	4
Totals		1495	1072	122	88	1617	1160	24	37	1641	1197

Table 13 Traffic Projection Calculations - Mill Street at Alika Place

Approach and Movement		Existing (2010)		2010 to 2015 Background Growth		2015 Background		Project Trips		2015 Background Plus Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North	Rt			0	0	0	0	14	16	14	16
	Th	38	36	3	3	41	39			41	39
South	Th	112	95	9	8	121	103			121	103
	Lt			0	0	0	0	4	5	4	5
West	Rt			0	0	0	0	3	8	3	8
	Lt			0	0	0	0	10	21	10	21
Totals		150	131	12	11	162	142	31	50	193	192

L. Traffic Impact Analysis

1. The *Highway Capacity Software* (HCS) package was used to perform the level-of-service.

2. The intersection lane configurations after the widening project is completed were used for the level-of-service analysis.

3. As the *Highway Capacity Manual* defines level-of-service by delay, we have used the same definitions.

The results of the level-of-service analysis of the intersection of Honoapiilani Highway at Lahainaluna Road are summarized in Table 14. Shown are the peak hour volume-to-capacity ratios, average vehicle delays and levels-of-service of the overall intersection and all lane groups. The intersection will operate at Level-of-Service D during both peak hours, without and with project generated traffic. The major northbound and southbound movements will operate at Level-of-Service D and Level-of-Service C, respectively. Project generated traffic did not change the level-of-service of any lane group.

Table 14 2015 Levels-of-Service - Honoapiilani Highway at Lahainaluna Road

	AM Peak Hour						PM Peak Hour					
	Without Project			With Project			Without Project			With Project		
Approach and Movement	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Overall Intersection	0.78	45.3	D	0.79	45.8	D	0.80	50.2	D	0.81	50.7	D
Eastbound Left	0.59	88.6	F	0.60	89.6	F	0.76	93.1	F	0.76	93.2	F
Eastbound Thru	0.85	88.2	F	0.85	88.9	F	0.88	100.2	F	0.89	102.2	F
Eastbound Right	0.03	59.5	E	0.03	59.3	E	0.08	64.8	E	0.08	64.6	E
Westbound Left	0.82	97.0	F	0.82	97.3	F	0.84	108.8	F	0.84	108.9	F
Westbound Thru	0.59	61.3	E	0.60	61.4	E	0.51	71.9	E	0.53	72.4	E
Westbound Right	0.39	0.7	A	0.39	0.8	A	0.20	0.3	A	0.20	0.3	A
Northbound Left	0.37	80.1	F	0.37	80.3	F	0.26	78.8	E	0.26	78.9	E
Northbound Thru & Right	0.75	52.0	D	0.75	52.3	D	0.78	53.1	D	0.79	53.2	D
Southbound Left	0.76	71.3	E	0.79	73.3	E	0.82	73.6	E	0.85	76.1	E
Southbound Thru & Right	0.53	27.6	C	0.53	27.9	C	0.64	27.1	C	0.65	27.3	C

NOTES:
1. Peak hour conditions analyzed are "worst-case" conditions, which is the sum of the peak hour of the adjacent street plus the peak hour of the generator.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
4. See Attachments H & I for Level-of-Service Calculation Worksheets.

The results of the level-of-service analysis of the intersection of Honoapiilani Highway at Dickenson Street are summarized in Table 15. Shown are the peak hour volume-to-capacity ratios, average vehicle delays and levels-of-service of the overall intersection and all lane groups. The intersection will operate at Level-of-Service C during both peak hours, without and with project generated traffic. The major northbound and southbound movements will operate at Level-of-Service A during the morning peak hour and Level-of-Service B during the afternoon peak hour. Project generated traffic did not change the level-of-service of any lane group.

Table 15 2015 Levels-of-Service - Honoapiilani Highway at Dickenson Street

	AM Peak Hour						PM Peak Hour					
	Without Project			With Project			Without Project			With Project		
Approach and Movement	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Overall Intersection	0.51	23.4	C	0.51	23.4	C	0.63	24.1	C	0.64	24.4	C
Eastbound Left, Thru & Right	0.92	110.5	F	0.92	109.6	F	0.89	102.6	F	0.89	102.6	F
Westbound Left, Thru & Right	0.51	71.2	E	0.54	72.5	E	0.55	72.8	E	0.62	77.2	E
Northbound Left	0.42	91.5	F	0.42	91.5	F	0.51	88.9	F	0.51	88.9	F
Northbound Thru & Right	0.38	9.7	A	0.39	9.7	A	0.41	10.6	B	0.42	10.7	B
Southbound Left	0.41	88.2	F	0.41	88.2	F	0.42	88.2	E	0.42	88.2	F
Southbound Thru & Right	0.42	9.4	A	0.42	9.5	A	0.55	13.0	B	0.55	13.1	B

NOTES:
1. Peak hour conditions analyzed are "worst-case" conditions, which is the sum of the peak hour of the adjacent street plus the peak hour of the generator.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
4. See Attachments H & I for Level-of-Service Calculation Worksheets.

The results of the level-of-service analysis of the intersection of Lahainaluna Road at Mill Street are summarized in Table 16. Shown are the average vehicle delays and levels-of-service of the controlled lane groups. Delays and levels-of-service are not calculated for uncontrolled lane groups or the overall intersections. Also, volume-to-capacity ratios are not calculated for unsignalized intersections. The results of level-of-service analysis indicate that the major eastbound and westbound approaches will operate at Level-of-Service A. The level-of-service of the northbound approach will change from Level-of-Service C to Level-of-Service E during the morning peak hour and from Level-of-Service C to Level-of-Service D during the afternoon peak hour. The southbound approach will operate at Level-of-Service F during the morning peak hour and Level-of-Service D during the afternoon peak hour, without and with project generated traffic. However, it should be

noted that the peak hourly volume of the southbound approach is only nine (9) vehicles during the morning peak hour and 29 vehicles during the afternoon peak hour. The proposed project adds no traffic to the southbound approach.

Table 16 2015 Levels-of-Service - Lahainaluna Road at Mill Street

	AM Peak Hour				PM Peak Hour			
	Without Project		With Project		Without Project		With Project	
Approach and Movement	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Eastbound Left, Thru & Right	0.2	A	0.2	A	0.1	A	0.1	A
Westbound Left, Thru & Right	1.4	A	1.6	A	0.9	A	1.0	A
Northbound Left, Thru & Right	23.4	C	43.3	E	19.1	C	27.5	D
Southbound Left, Thru & Right	88.4	F	95.8	F	31.8	D	33.2	D

NOTES:
1. Peak hour conditions analyzed are "worst-case" conditions, which is the sum of the peak hour of the adjacent street plus the peak hour of the generator.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
4. See Attachment H & I for Level-of-Service Calculation Worksheets.

The results of the level-of-service of the intersection of Mill Street at Alika Place is summarized in Table 17. Only the results of level-of-service with project generated are shown as no background traffic uses Alika Place. As shown, the controlled movements at this intersection will operate at Level-of-Service A without and with project generated traffic. A level-of-service was not calculated for the southbound through and right because this lane group is uncontrolled.

Table 17 2015 Levels-of-Service - Mill Street at Alika Place

	AM Peak Hour		PM Peak Hour	
	With Project		With Project	
Approach and Movement	Delay	LOS	Delay	LOS
Eastbound Left & Right	9.4	A	9.4	A
Northbound Left & Thru	0.3	A	0.4	A

NOTES:
1. Peak hour conditions analyzed are "worst-case" conditions, which is the sum of the peak hour of the adjacent street plus the peak hour of the generator.
2. Delay is in seconds per vehicle.
3. LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. LOS is based on delay.
4. See Attachment H & I for Level-of-Service Calculation Worksheets.

M. Mitigation

We have used the Institute of Transportation Engineers standard that a Level-of-Service D is the minimum acceptable level-of-service and that the criteria is applicable to the overall intersection.[9]. It is generally accepted that side street approaches and minor movements, such as left turn lanes may operate at Level-of-Service E or F for short periods if the volume-to-capacity ratio indicates a higher Level-of-Service as this implies that the long delay and therefore the low level-of-service is a result of the traffic signal cycle length rather than a lane deficiency [10]. "Level-of-Service E is sometimes tolerated for minor movements such as left turns when there are no feasible mitigating measures or if it helps maintain the main through movements at acceptable levels-of-service."

Based on this criteria, no mitigation is required at the study intersections as a result of project generated traffic.

[9] Institute of Traffic Engineers *Transportation Impact Analyses for Site Development, A Recommended Practice,* Washington, D.C., 2006, p 60.

[10] Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, p 16-35.

N. Summary and Conclusions

The conclusions of the traffic impact assessment are:

1. The proposed project is located at 270 Lahainaluna Road, the southeast corner of the intersection of Lahainaluna Road at Honoapiilani Highway, in Lahaina. The proposed action is the construction of a two-story office building with 8,581 net square feet. The first floor (4,542 square feet) will be occupied by the credit union, which will be relocated for it existing location at 349 Lahainaluna Road, approximately two blocks east of the proposed new location. The second floor (4,039 square feet) will be leased to other businesses as office space. Access and egress will be via the Alika Place which intersects Mill Street.

2. The first step in defining the study area was to estimate the number of peak hour trips that the proposed project will generate. It was estimated that the project will generate 31 trips during the morning peak hour and 49 trips during the afternoon peak hour.

3. The level-of-service analysis of the intersection of Honoapiilani Highway at Lahainaluna Road concluded that the intersection will operate at Level-of-Service D during both peak hours, without and with project generated traffic. The major northbound and southbound movements will operate at Level-of-Service D and Level-of-Service C, respectively. Project generated traffic did not change the level-of-service of any lane group.

4. The level-of-service analysis of the intersection of Honoapiilani Highway at Dickenson Street concluded that the intersection will operate at Level-of-Service C during both peak hours, without and with project generated traffic. The major northbound and southbound movements will operate at Level-of-Service A during the morning peak hour and Level-of-Service B during the afternoon peak hour. Project generated traffic did not change the level-of-service of any lane group.

5. The level-of-service of the intersection of Lahainaluna Road at Mill Street concluded that the major eastbound and westbound approaches will operate at Level-of-Service A. The level-of-service of the northbound approach will change from Level-of-Service C to Level-of-Service E during the morning peak hour and from Level-of-Service C to Level-of-Service D during the afternoon peak hour. The southbound approach will operate at Level-of-Service F during the morning peak hour and Level-of-Service D during the afternoon peak hour, without and with project generated traffic. However, it should be noted that the peak hourly volume of the southbound approach is only nine (9) vehicles during the morning peak hour and 29 vehicles during the afternoon peak hour. The proposed project adds no traffic to the southbound approach.

6. At the intersection of Mill Street at Alika Place, all controlled movements will operate at Level-of-Service A without and with project generated traffic.

7. We have used the Institute of Transportation Engineers standard that a Level-of-Service D is the minimum acceptable level-of-service and that the criteria is applicable to the overall intersection.[11]. It is generally accepted that side street approaches and minor movements, such as left turn lanes may operate at Level-of-Service E or F for short periods if the volume-to-capacity ratio indicates a higher Level-of-Service as this implies that the long delay and therefore the low level-of-service is a result of the traffic signal cycle length rather

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[11] Institute of Traffic Engineers *Transportation Impact Analyses for Site Development, A Recommended Practice,* Washington, D.C., 2006, p 60.

than a lane deficiency [12]. "Level-of-Service E is sometimes tolerated for minor movements such as left turns when there are no feasible mitigating measures or if it helps maintain the main through movements at acceptable levels-of-service." Based on this criteria, no mitigation is required at the study intersections as a result of project generated traffic.

Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES

Phillip J. Rowell, P.E.
Principal

[12] Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, p 16-35.

List of Attachments

Attachment A Project Location and Site Plan

Attachment B Existing (2010) and Future (2015) Lane Configurations and Right-of-Way Controls

Attachment C Existing (2010) Peak Hour Traffic Volumes

Attachment D Level-of-Service Calculation Worksheets for Existing (2010) Conditions

Attachment E 2015 Background Peak Hour Traffic Projections

Attachment F Project Trip Distributions and Peak Hour Trip Assignments

Attachment G 2015 Background Plus Project Peak Hour Traffic Projections

Attachment H Level-of-Service Calculation Worksheets for 2015 Background Conditions

Attachment I Level-of-Service Calculation Worksheets for 2015 Background Plus Project Conditions

Attachment A
Project Location and Site Plan
(Provided by Others)

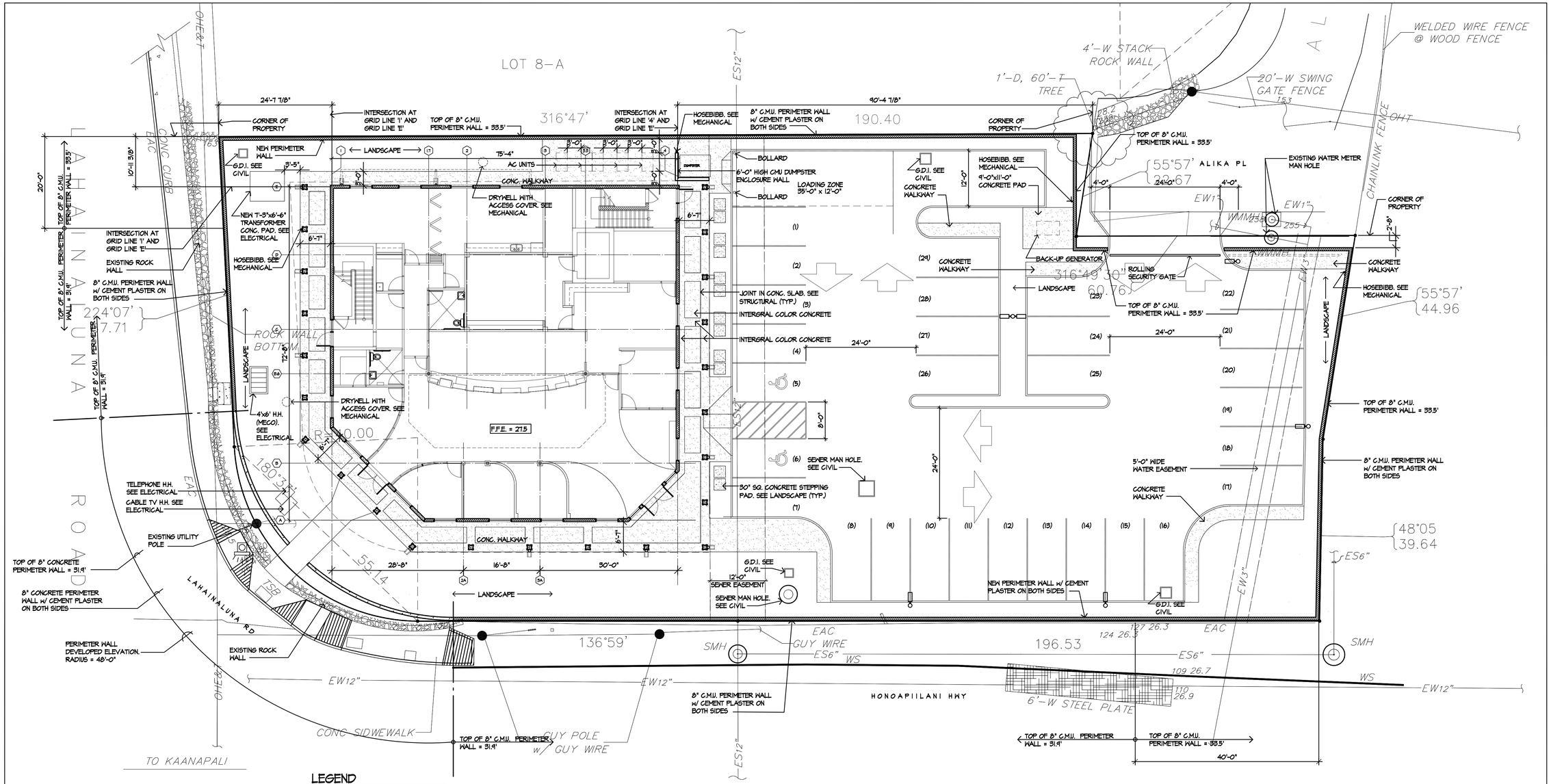
FIGURE 1

Not to Scale

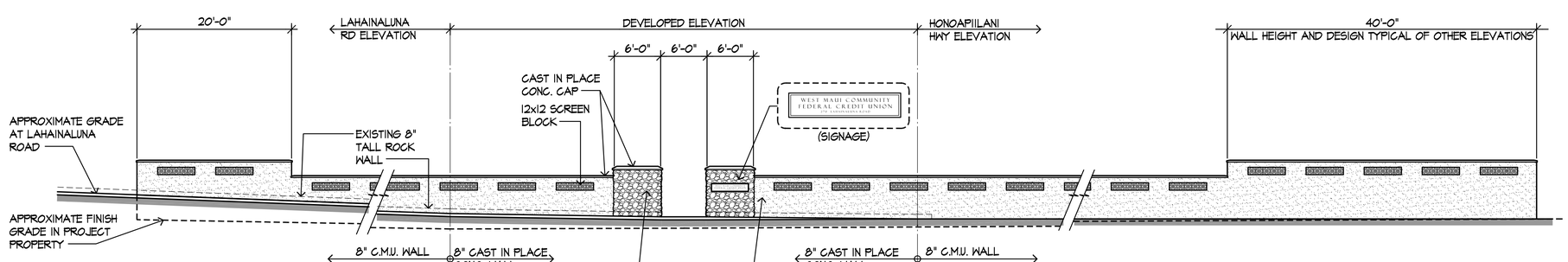
REGIONAL LOCATION MAP

Proposed West Maui Community
Federal Credit Union

CHRIS HART & PARTNERS



A / A-1 **SITE PLAN**
SCALE: 3/32"=1'-0"



- / - **PERIMETER WALL ELEVATION**
SCALE: 1/8"=1'-0"

GYA ARCHITECTS, INC.
A DESIGN CORPORATION
MAUI
Millyard Plaza
220 Imi Kala Street
Suite 201
Wailuku, Maui, Hawaii 96793
Phone (808) 242-4666
Fax (808) 242-4675
Email maui@gyaarchitects.com
OAHU
P.O. Box 894823
Mililani, Hawaii 96789
Phone (808) 626-0811
Fax (808) 626-0812
Email oahu@gyaarchitects.com

WEST MAUI COMMUNITY FEDERAL CREDIT UNION

270 LAHAINALUNA ROAD
LAHAINA, MAUI, HAWAI'I
TMK: (2) 4-6-010: 025

SITE PLAN

STAMP

This work was prepared by me or under my supervision and construction of this project will be under my observation. ("Observation of construction" as defined under Section 16-115-2 of Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)

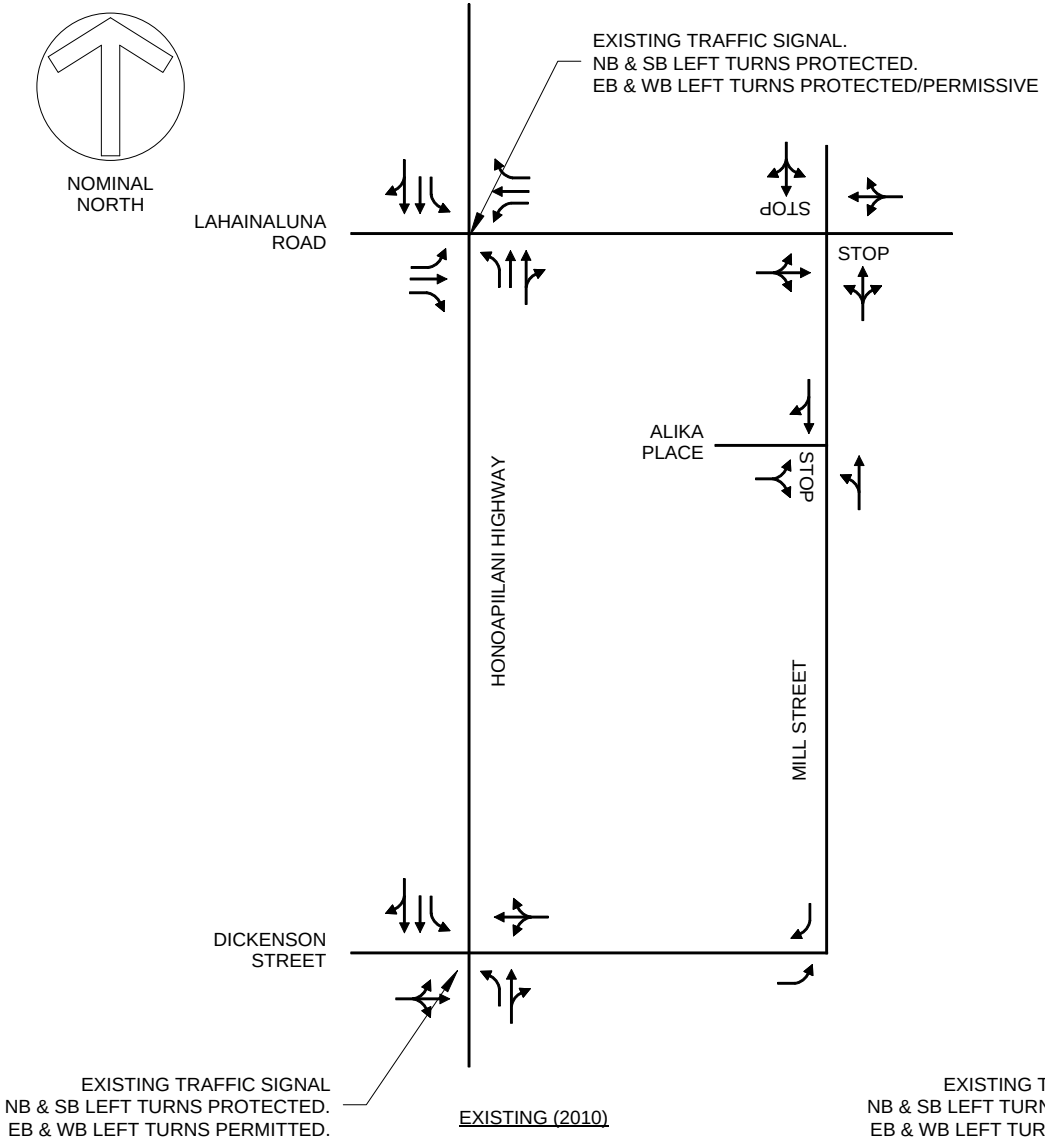
Signature

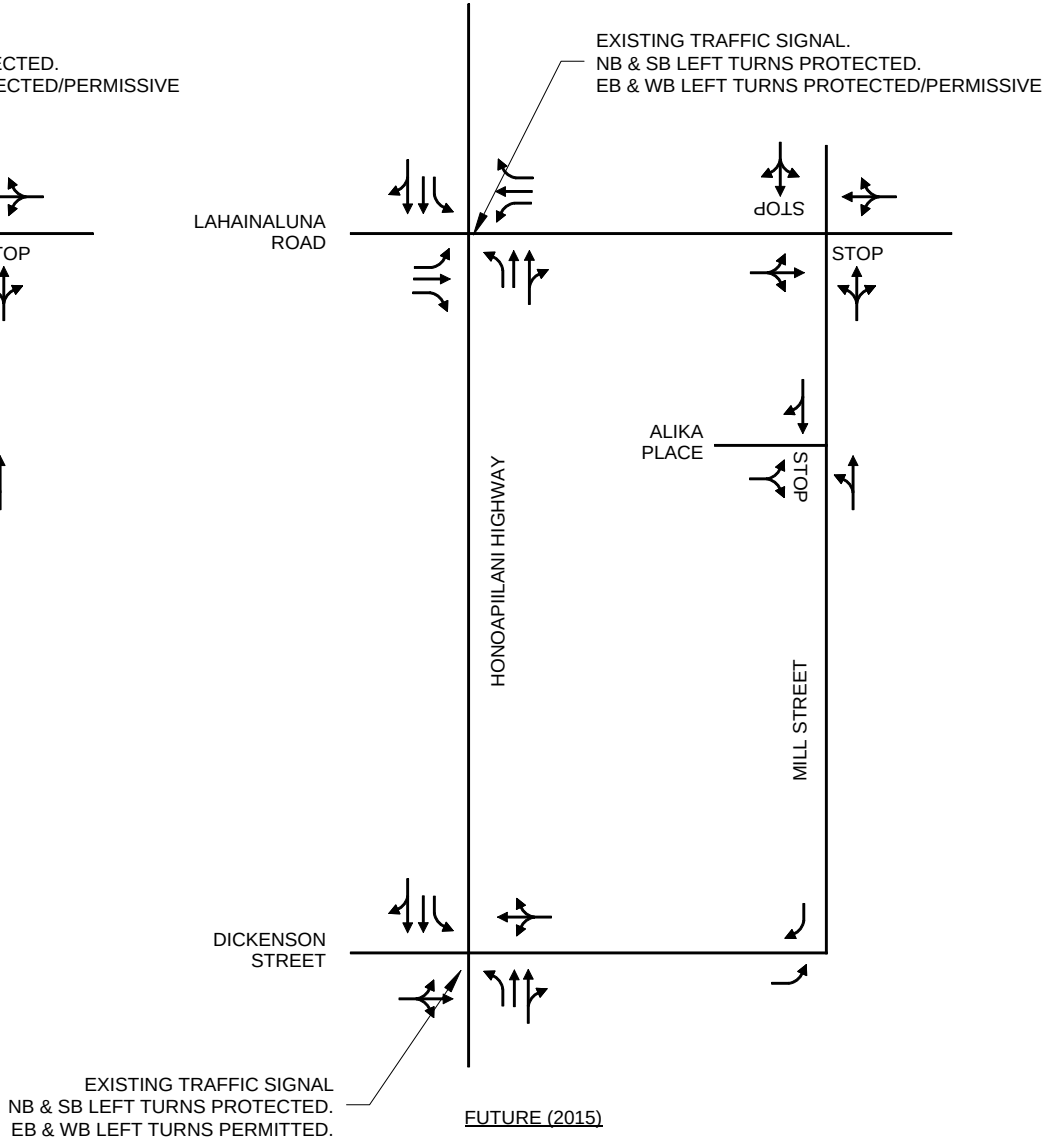
Note: Contractor shall check and verify all dimensions at job before proceeding with work.

Designed by
Drawn by ES
Project No. 08127.0
Date DEC. 2009
Sheet No.

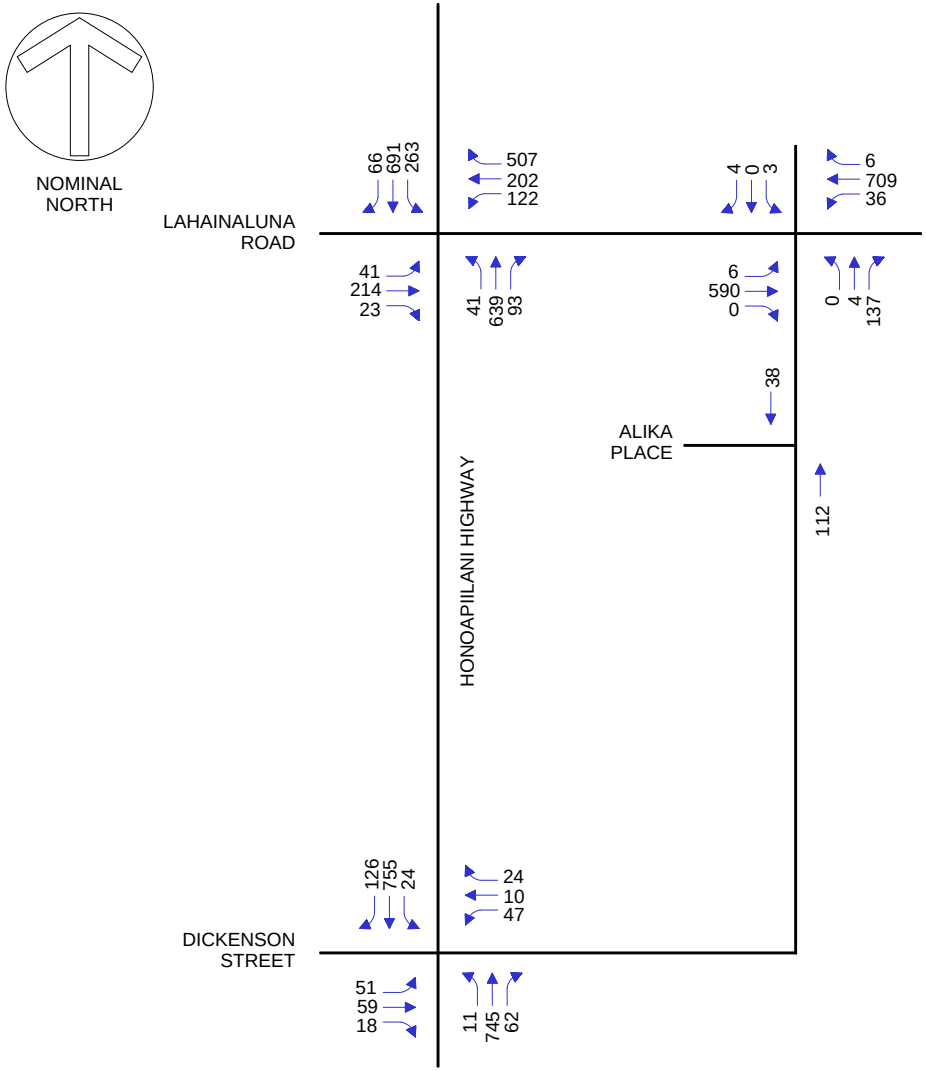
A-1.1

of sheets

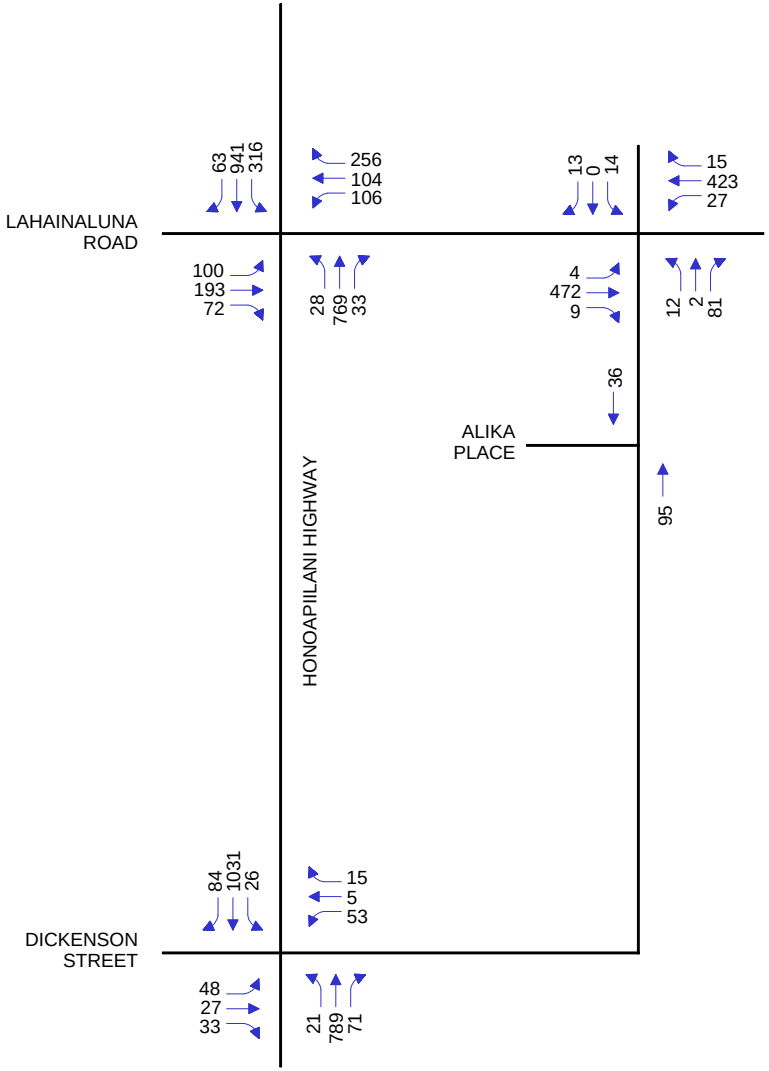




Attachment B
EXISTING (2010) AND FUTURE (2015) LANE CONFIGURATIONS
AND RIGHT-OF-WAY CONTROLS



EXISTING (2010) AM PEAK HOUR VOLUMES



EXISTING (2010) PM PEAK HOUR VOLUMES

NOTE:
THE INTERSECTION OF HONOAPPILANI AT LAHAINALUNE ROAD WAS COUNTED TUESDAY, JANUARY 12, 2010.
THE INTERSECTION OF HONOAPIILANI AT DICKENSON STREET WAS COUNTED TUESDAY, JANUARY 19, 2010..

Attachment C
EXISTING (2010) PEAK HOUR TRAFFIC VOLUMES

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: West Maui Community Federal Credit Union
INTERSECTION: Honoapiilani Highway at Lahainaluna Road
DAY & DATE: Tuesday, January 12, 2010
START TIME: 6:30 am
END TIME: 9:00 am

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	6:30 am	6	84	21	54	15	13	18	140	15	9	10	0	385
2	6:45 am	19	126	42	58	25	26	20	121	6	3	31	3	480
3	7:00 am	8	129	79	79	29	22	24	161	17	5	47	9	609
4	7:15 am	18	173	83	95	45	28	44	137	10	3	61	3	700
5	7:30 am	14	181	70	151	63	28	22	158	9	5	74	7	782
6	7:45 am	16	169	74	126	40	32	19	205	6	8	45	22	762
7	8:00 am	18	168	36	135	54	34	8	139	16	7	34	9	658
8	8:15 am	7	166	37	53	22	34	8	172	15	11	26	11	562
9	8:30 am	12	135	30	55	20	23	14	138	11	6	27	16	487
10	8:45 am	14	174	34	66	30	27	12	145	18	12	29	9	570
11	9:00 am													0
12	9:15 am													0
13	9:30 am													0
14	9:45 am													0
	Maximum:	19	181	83	151	63	34	44	205	18	12	74	22	782

Hourly Volume of Each Movement

6:30 am	7:30 am	51	512	225	286	114	89	106	559	48	20	149	15	2174
6:45 am	7:45 am	59	609	274	383	162	104	110	577	42	16	213	22	2571
7:00 am	8:00 am	56	652	306	451	177	110	109	661	42	21	227	41	2853
7:15 am	**8:15 am**	**66**	**691**	**263**	**507**	**202**	**122**	**93**	**639**	**41**	**23**	**214**	**41**	**2902**
7:30 am	8:30 am	55	684	217	465	179	128	57	674	46	31	179	49	2764
7:45 am	8:45 am	53	638	177	369	136	123	49	654	48	32	132	58	2469
8:00 am	9:00 am	51	643	137	309	126	118	42	594	60	36	116	45	2277
8:15 am	9:15 am													
8:30 am	9:30 am													
8:45 am	9:45 am													
9:00 am	10:00 am													
Peak Hour Volume		66	691	263	507	202	122	93	639	41	23	214	41	2902
Per Cent of Approach		6%	47%	27%	61%	48%	14%	12%	91%	15%	8%	7%	1%	
Peak Hour Factor:		0.87	0.95	0.79	0.84	0.8	0.9	0.53	0.78	0.57	0.48	0.72	0.47	0.93

Total Arrivals	1020	831	773	278
Total Departures	1187	570	836	309
Total	2207	1401	1609	587

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: West Maui Community Federal Credit Union
INTERSECTION: Honoapiilani Highway at Lahainaluna Road
DAY & DATE: Tuesday, January 12, 2010
START TIME: 3:30 pm
END TIME: 6:00 pm

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:30 pm	12	235	62	72	37	36	10	197	8	13	41	23	746
2	3:45 pm	17	194	76	53	41	20	14	176	14	27	37	31	700
3	4:00 pm	17	246	83	61	19	27	7	191	8	18	50	21	748
4	4:15 pm	19	225	83	70	28	25	11	198	7	26	43	28	763
5	4:30 pm	17	261	91	59	29	28	7	177	5	17	51	27	769
6	4:45 pm	10	209	59	66	28	26	8	203	8	11	49	24	701
7	5:00 pm	14	221	74	50	25	17	8	192	5	13	59	17	695
8	5:15 pm	19	223	66	56	20	26	7	192	6	18	45	26	704
9	5:30 pm	13	142	54	52	24	24	11	185	7	18	37	34	601
10	5:45 pm	19	191	36	60	23	10	15	209	16	15	39	21	654
11	6:00 pm													0
12	6:15 pm													0
13	6:30 pm													0
14	6:45 pm													0
	Maximum:	19	261	91	72	41	36	15	209	16	27	59	34	769

Hourly Volume of Each Movement

3:30 pm	4:30 pm	65	900	304	256	125	108	42	762	37	84	171	103	2957
3:45 pm	4:45 pm	70	926	333	243	117	100	39	742	34	88	181	107	2980
4:00 pm	**5:00 pm**	**63**	**941**	**316**	**256**	**104**	**106**	**33**	**769**	**28**	**72**	**193**	**100**	**2981**
4:15 pm	5:15 pm	60	916	307	245	110	96	34	770	25	67	202	96	2928
4:30 pm	5:30 pm	60	914	290	231	102	97	30	764	24	59	204	94	2869
4:45 pm	5:45 pm	56	795	253	224	97	93	34	772	26	60	190	101	2701
5:00 pm	6:00 pm	65	777	230	218	92	77	41	778	34	64	180	98	2654
5:15 pm	6:15 pm													
5:30 pm	6:30 pm													
5:45 pm	6:45 pm													
6:00 pm	7:00 pm													
Peak Hour Volume		63	942	316	256	104	106	33	769	28	72	193	100	2981
Per Cent of Approach		5%	62%	47%	55%	43%	12%	4%	88%	10%	20%	6%	3%	
Peak Hour Factor:		0.83	0.9	0.87	0.89	0.63	0.74	0.55	0.92	0.44	0.67	0.82	0.74	0.97
Total Arrivals			1321			466			830			365		
Total Departures			1125			542			1120			195		
Total			2446			1008			1950			560		

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: West Maui Community Federal Credit Union
INTERSECTION: Honoapiilani Highway at Dickenson Street
DAY & DATE: Tuesday, January 19, 2010
START TIME: 6:30 am
END TIME: 9:00 am

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	6:30 am	13	94	1	3	5	9	14	169	1	0	2	1	312
2	6:45 am	20	124	0	6	2	4	10	141	3	1	1	3	315
3	7:00 am	22	153	4	4	1	8	12	166	2	7	4	5	388
4	7:15 am	30	166	4	9	1	9	16	195	1	4	9	4	448
5	7:30 am	43	179	15	5	3	10	19	173	4	5	28	17	501
6	7:45 am	25	209	2	5	1	11	17	182	1	6	19	21	499
7	8:00 am	28	201	3	5	5	17	10	195	5	3	3	9	484
8	8:15 am	34	184	1	6	2	9	5	157	6	1	3	3	411
9	8:30 am	14	177	2	5	2	7	19	166	5	10	6	4	417
10	8:45 am	14	164	0	4	2	3	12	168	6	3	2	4	382
11	9:00 am													0
12	9:15 am													0
13	9:30 am													0
14	9:45 am													0
	Maximum:	43	209	15	9	5	17	19	195	6	10	28	21	501

Hourly Volume of Each Movement

6:30 am	7:30 am	85	537	9	22	9	30	52	671	7	12	16	13	1463
6:45 am	7:45 am	115	622	23	24	7	31	57	675	10	17	42	29	1652
7:00 am	8:00 am	120	707	25	23	6	38	64	716	8	22	60	47	1836
7:15 am	**8:15 am**	**126**	**755**	**24**	**24**	**10**	**47**	**62**	**745**	**11**	**18**	**59**	**51**	**1932**
7:30 am	8:30 am	130	773	21	21	11	47	51	707	16	15	53	50	1895
7:45 am	8:45 am	101	771	8	21	10	44	51	700	17	20	31	37	1811
8:00 am	9:00 am	90	726	6	20	11	36	46	686	22	17	14	20	1694
8:15 am	9:15 am													
8:30 am	9:30 am													
8:45 am	9:45 am													
9:00 am	10:00 am													
Peak Hour Volume		126	755	24	24	10	47	62	745	11	18	59	51	1932
Per Cent of Approach		14%	94%	41%	30%	8%	6%	8%	96%	13%	14%	3%	3%	
Peak Hour Factor:		0.73	0.9	0.4	0.67	0.5	0.69	0.82	0.96	0.46	0.45	0.53	0.61	0.96

Total Arrivals	905	81	818	128
Total Departures	820	145	820	147
Total	1725	226	1638	275

TRAFFIC COUNT SUMMARY WORKSHEET

PROJECT: West Maui Community Federal Credit Union
INTERSECTION: Honoapiilani Highway at Dickenson Street
DAY & DATE: Tuesday, January 19, 2010
START TIME: 3:30 pm
END TIME: 6:30 pm

15-Minute Volumes Beginning at:

		North Approach			East Approach			South Approach			West Approach			
Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:30 pm	28	274	8	4	1	22	15	209	12	14	4	12	603
2	3:45 pm	13	230	2	3	2	10	25	206	3	8	5	12	519
3	4:00 pm	22	280	7	4	1	6	17	203	5	5	5	9	564
4	4:15 pm	21	247	9	4	1	15	14	171	1	6	13	15	517
5	4:30 pm	27	216	0	4	2	8	13	207	5	8	9	11	510
6	4:45 pm	21	222	7	4	2	5	16	162	5	7	8	25	484
7	5:00 pm	21	233	3	1	1	8	22	200	3	7	7	15	521
8	5:15 pm	34	246	1	5	1	6	12	207	1	8	7	11	539
9	5:30 pm	24	213	1	4	3	5	14	209	14	9	6	11	513
10	5:45 pm	17	158	5	9	1	7	17	198	10	2	3	6	433
11	6:00 pm													0
12	6:15 pm													0
13	6:30 pm													0
14	6:45 pm													0
	Maximum:	34	280	9	9	3	22	25	209	14	14	13	25	603

Hourly Volume of Each Movement

3:30 pm	**4:30 pm**	**84**	**1031**	**26**	**15**	**5**	**53**	**71**	**789**	**21**	**33**	**27**	**48**	**2203**
3:45 pm	4:45 pm	83	973	18	15	6	39	69	787	14	27	32	47	2110
4:00 pm	5:00 pm	91	965	23	16	6	34	60	743	16	26	35	60	2075
4:15 pm	5:15 pm	90	918	19	13	6	36	65	740	14	28	37	66	2032
4:30 pm	5:30 pm	103	917	11	14	6	27	63	776	14	30	31	62	2054
4:45 pm	5:45 pm	100	914	12	14	7	24	64	778	23	31	28	62	2057
5:00 pm	6:00 pm	96	850	10	19	6	26	65	814	28	26	23	43	2006
5:15 pm	6:15 pm													
5:30 pm	6:30 pm													
5:45 pm	6:45 pm													
6:00 pm	7:00 pm													
Peak Hour Volume		84	1031	26	25	5	53	71	789	21	33	27	48	2203
Per Cent of Approach		7%	95%	46%	30%	4%	6%	8%	94%	26%	31%	1%	2%	
Peak Hour Factor:		0.62	0.92	0.72	0.69	0.42	0.6	0.71	0.94	0.38	0.59	0.52	0.48	0.91

Total Arrivals	1141	83	881	108
Total Departures	862	124	1117	110
Total	2003	207	1998	218

Attachment D
Level-of-Service Calculation Worksheets for Existing (2010) Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3378		1719	3395	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3378		1719	3395	
Volume (vph)	41	214	23	122	202	507	41	639	93	263	691	66
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.78	0.85	0.85	0.86	0.89
Adj. Flow (vph)	53	243	36	147	227	551	55	819	109	309	803	74
RTOR Reduction (vph)	0	0	30	0	0	0	0	6	0	0	4	0
Lane Group Flow (vph)	53	243	6	147	227	551	55	922	0	309	873	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	9.2	27.8	27.8	18.6	37.2	169.9	16.1	63.3		44.2	91.4	
Effective Green, g (s)	9.2	27.8	27.8	18.6	37.2	169.9	16.1	63.3		44.2	91.4	
Actuated g/C Ratio	0.05	0.16	0.16	0.11	0.22	1.00	0.09	0.37		0.26	0.54	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	296	252	188	396	1538	163	1259		447	1826	
v/s Ratio Prot	0.03	c0.13		c0.09	0.13		0.03	c0.27		c0.18	0.26	
v/s Ratio Perm			0.02			0.36						
v/c Ratio	0.57	0.82	0.02	0.78	0.57	0.36	0.34	0.73		0.69	0.48	
Uniform Delay, d1	78.4	68.6	59.7	73.7	59.3	0.0	71.9	46.0		56.7	24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	16.5	0.0	18.8	2.0	0.7	5.5	3.8		8.5	0.9	
Delay (s)	86.2	85.1	59.7	92.5	61.3	0.7	77.4	49.8		65.2	25.3	
Level of Service	F	F	E	F	E	A	E	D		E	C	
Approach Delay (s)		82.5			30.1			51.3			35.7	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	43.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	169.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frt		0.95			0.96		1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1696			1688		1719	1789		1719	3364	
Flt Permitted		0.83			0.58		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1434			1010		1719	1789		1719	3364	
Volume (vph)	51	59	18	47	10	24	11	745	62	24	755	126
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	77	64	72	51	11	26	19	810	67	26	839	140
RTOR Reduction (vph)	0	13	0	0	10	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	200	0	0	78	0	19	876	0	26	976	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		27.6			27.6		5.1	134.8		5.6	135.3	
Effective Green, g (s)		27.6			27.6		5.1	134.8		5.6	135.3	
Actuated g/C Ratio		0.15			0.15		0.03	0.75		0.03	0.75	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		220			155		49	1340		53	2529	
v/s Ratio Prot							0.01	c0.49		c0.02	0.29	
v/s Ratio Perm		c0.15			0.09							
v/c Ratio		0.91			0.50		0.39	0.65		0.49	0.39	
Uniform Delay, d1		75.0			69.9		85.9	11.1		85.8	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		37.1			2.5		5.0	2.5		7.0	0.4	
Delay (s)		112.1			72.4		90.9	13.6		92.8	8.3	
Level of Service		F			E		F	B		F	A	
Approach Delay (s)		112.1			72.4			15.3			10.4	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	590	0	36	709	6	0	4	137	3	0	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	641	0	39	771	7	0	4	149	3	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	777			641			1511	1510	641	1658	1507	774
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	777			590			1583	1582	590	1751	1578	774
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			95			100	95	66	91	100	99
cM capacity (veh/h)	826			850			72	89	439	35	89	394

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	648	816	153	8
Volume Left	7	39	0	3
Volume Right	0	7	149	4
cSH	826	850	395	73
Volume to Capacity	0.01	0.05	0.39	0.10
Queue Length 95th (ft)	1	4	45	8
Control Delay (s)	0.2	1.2	19.8	59.7
Lane LOS	A	A	C	F
Approach Delay (s)	0.2	1.2	19.8	59.7
Approach LOS			C	F

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3418		1719	3407	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3418		1719	3407	
Volume (vph)	100	193	72	106	104	256	28	769	33	316	941	63
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.78	0.85	0.85	0.86	0.89
Adj. Flow (vph)	128	219	112	128	117	278	38	986	39	372	1094	71
RTOR Reduction (vph)	0	0	96	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	128	219	16	128	117	278	38	1024	0	372	1162	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	17.9	24.9	24.9	16.2	23.2	174.3	16.0	67.1		50.1	101.2	
Effective Green, g (s)	17.9	24.9	24.9	16.2	23.2	174.3	16.0	67.1		50.1	101.2	
Actuated g/C Ratio	0.10	0.14	0.14	0.09	0.13	1.00	0.09	0.38		0.29	0.58	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	259	220	160	241	1538	158	1316		494	1978	
v/s Ratio Prot	0.07	c0.12		c0.07	0.06		0.02	c0.30		c0.22	0.34	
v/s Ratio Perm			0.07			0.18						
v/c Ratio	0.72	0.85	0.07	0.80	0.49	0.18	0.24	0.78		0.75	0.59	
Uniform Delay, d1	75.8	72.8	64.7	77.5	70.0	0.0	73.5	47.1		56.5	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.6	21.6	0.1	24.1	1.5	0.3	3.6	4.6		10.2	1.3	
Delay (s)	89.4	94.4	64.8	101.6	71.6	0.3	77.1	51.6		66.7	24.6	
Level of Service	F	F	E	F	E	A	E	D		E	C	
Approach Delay (s)		85.8			41.0			52.6			34.7	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	174.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

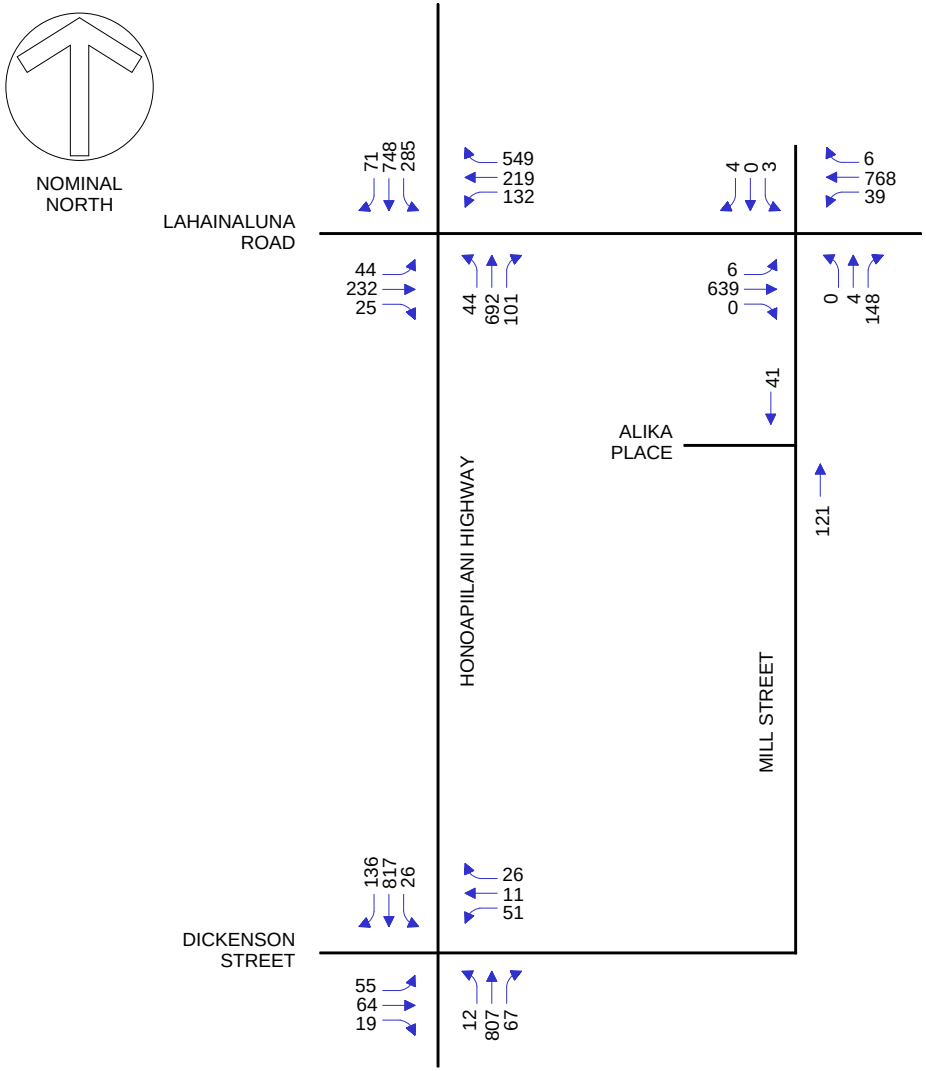
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frt		0.92			0.97		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1646			1698		1719	1787		1719	3399	
Flt Permitted		0.88			0.46		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1464			817		1719	1787		1719	3399	
Volume (vph)	48	27	33	53	5	15	21	789	71	26	1031	84
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	73	29	132	58	5	16	36	858	77	28	1146	93
RTOR Reduction (vph)	0	31	0	0	6	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	203	0	0	73	0	36	934	0	28	1237	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		28.3			28.3		7.9	132.5		7.2	131.8	
Effective Green, g (s)		28.3			28.3		7.9	132.5		7.2	131.8	
Actuated g/C Ratio		0.16			0.16		0.04	0.74		0.04	0.73	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		230			128		75	1315		69	2489	
v/s Ratio Prot							c0.02	c0.52		0.02	0.36	
v/s Ratio Perm		c0.16			0.10							
v/c Ratio		0.88			0.57		0.48	0.71		0.41	0.50	
Uniform Delay, d1		74.2			70.2		84.0	13.1		84.3	10.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		30.1			6.0		4.8	3.3		3.9	0.7	
Delay (s)		104.3			76.3		88.8	16.4		88.2	10.9	
Level of Service		F			E		F	B		F	B	
Approach Delay (s)		104.3			76.3			19.1			12.6	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

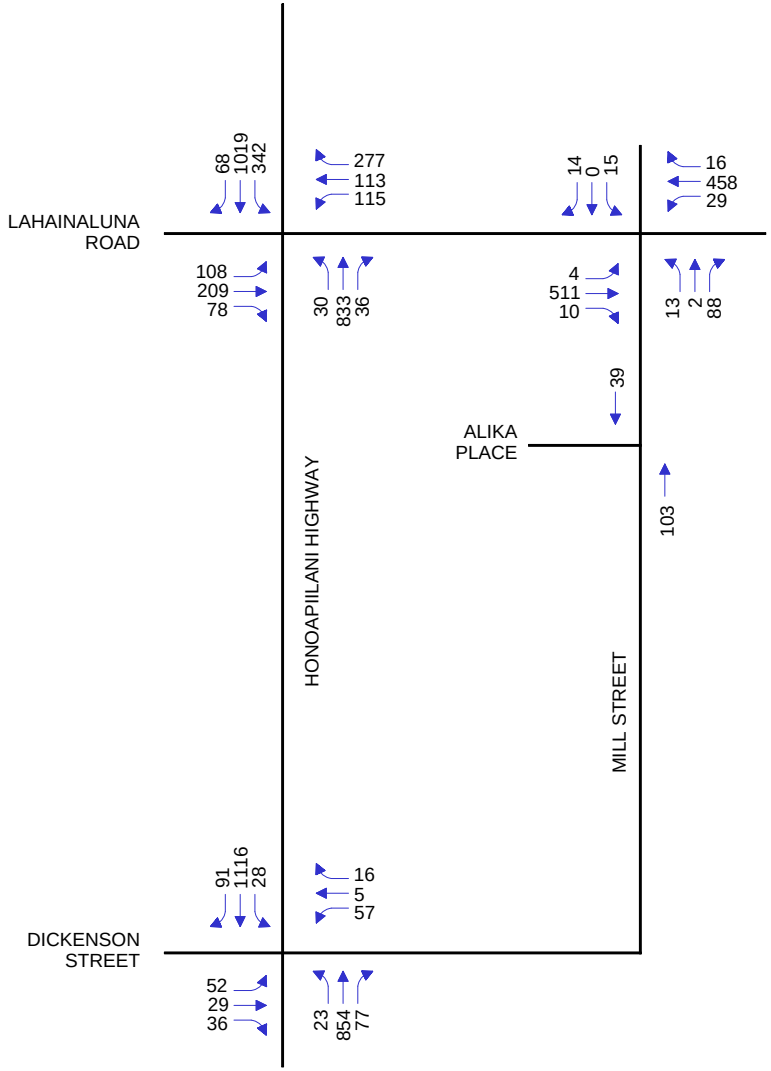
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	472	9	27	423	15	12	2	81	14	0	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	513	10	29	460	16	13	2	88	15	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	476			523			1067	1061	518	1142	1058	468
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	476			472			1075	1068	467	1158	1064	468
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			92	99	83	88	100	98
cM capacity (veh/h)	1071			971			167	191	533	124	192	589

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	527	505	103	29
Volume Left	4	29	13	15
Volume Right	10	16	88	14
cSH	1071	971	406	201
Volume to Capacity	0.00	0.03	0.25	0.15
Queue Length (ft)	0	2	25	13
Control Delay (s)	0.1	0.9	16.9	26.0
Lane LOS	A	A	C	D
Approach Delay (s)	0.1	0.9	16.9	26.0
Approach LOS			C	D

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

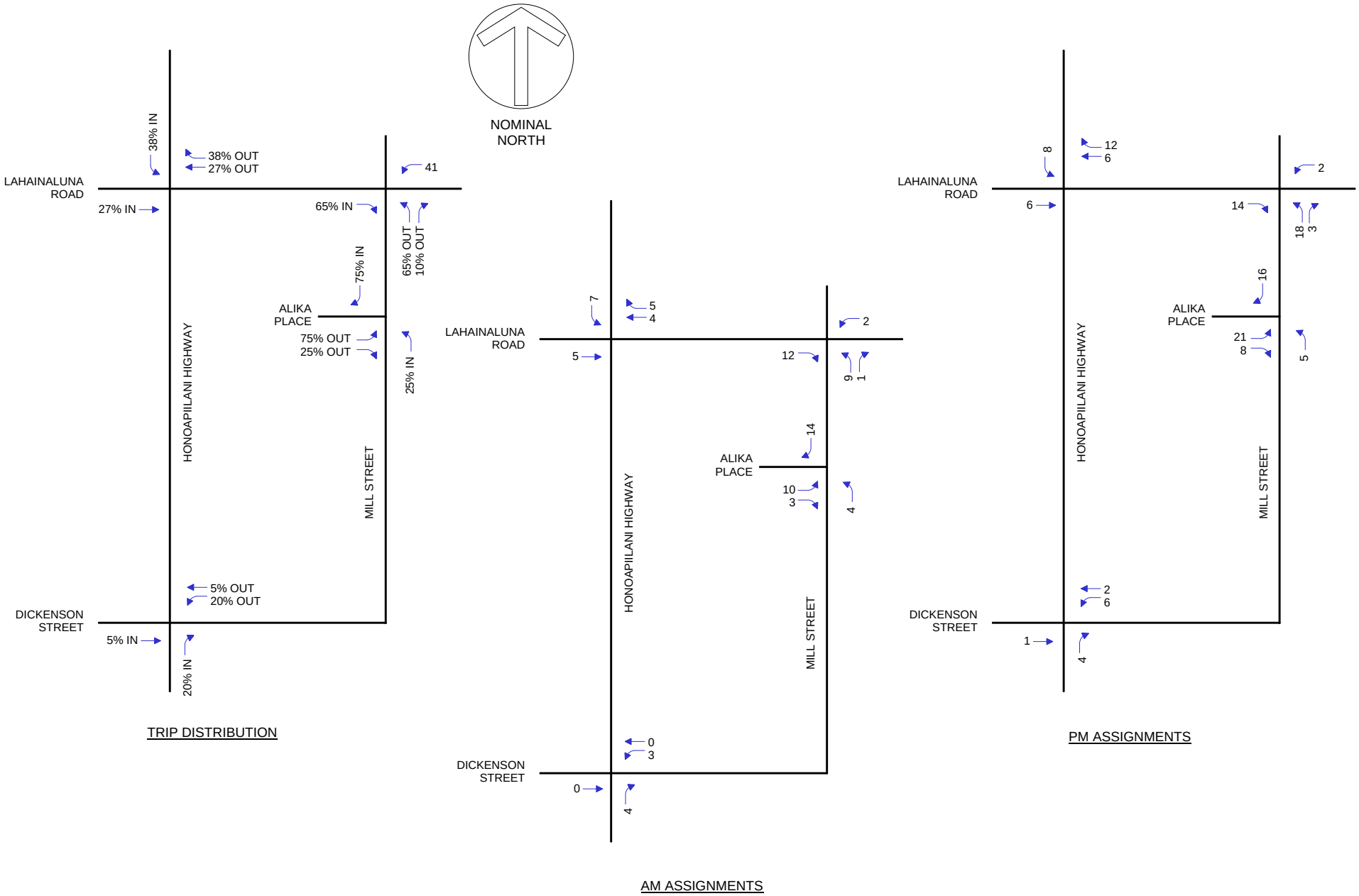


AM PEAK HOUR



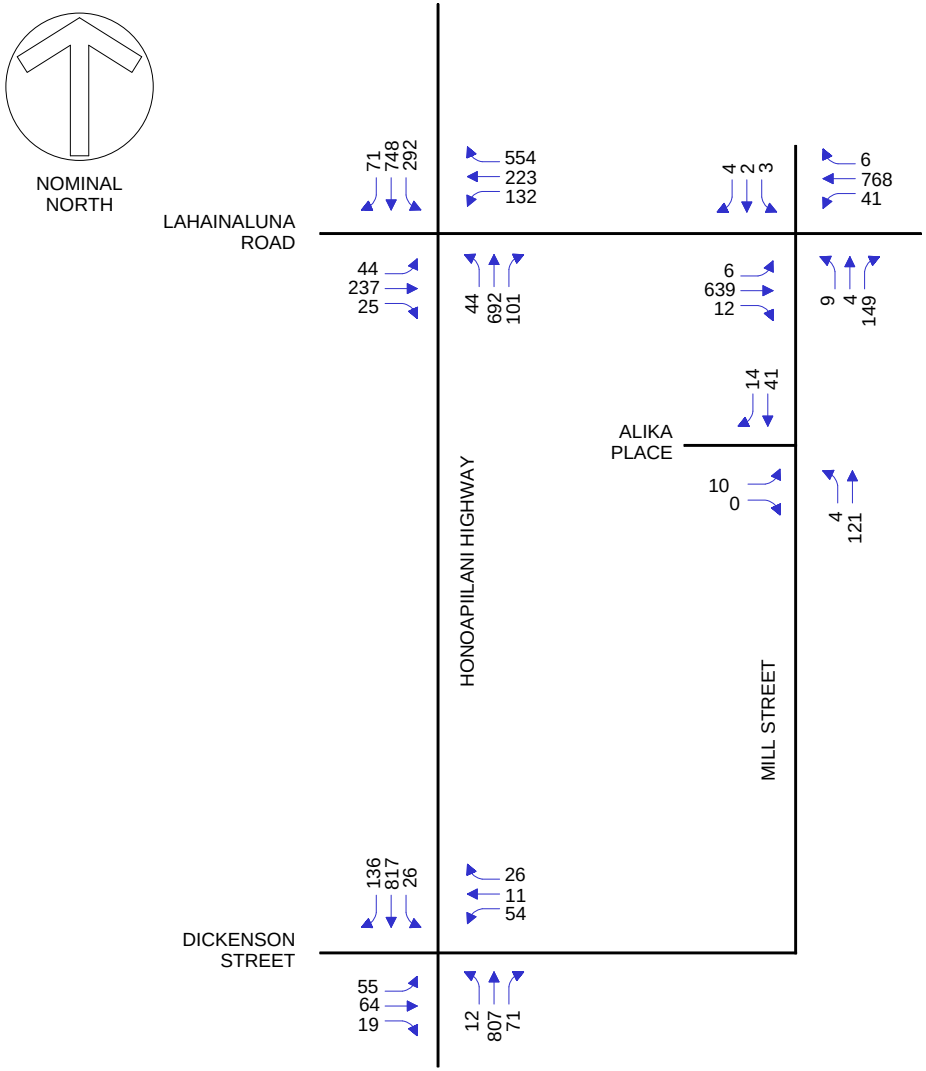
PM PEAK HOUR

Attachment E
2015 BACKGROUND PEAK HOUR TRAFFIC PROJECTIONS



Attachment F

PROJECT TRIP DISTRIBUTION AND PEAK HOUR TRIP ASSIGNMENTS



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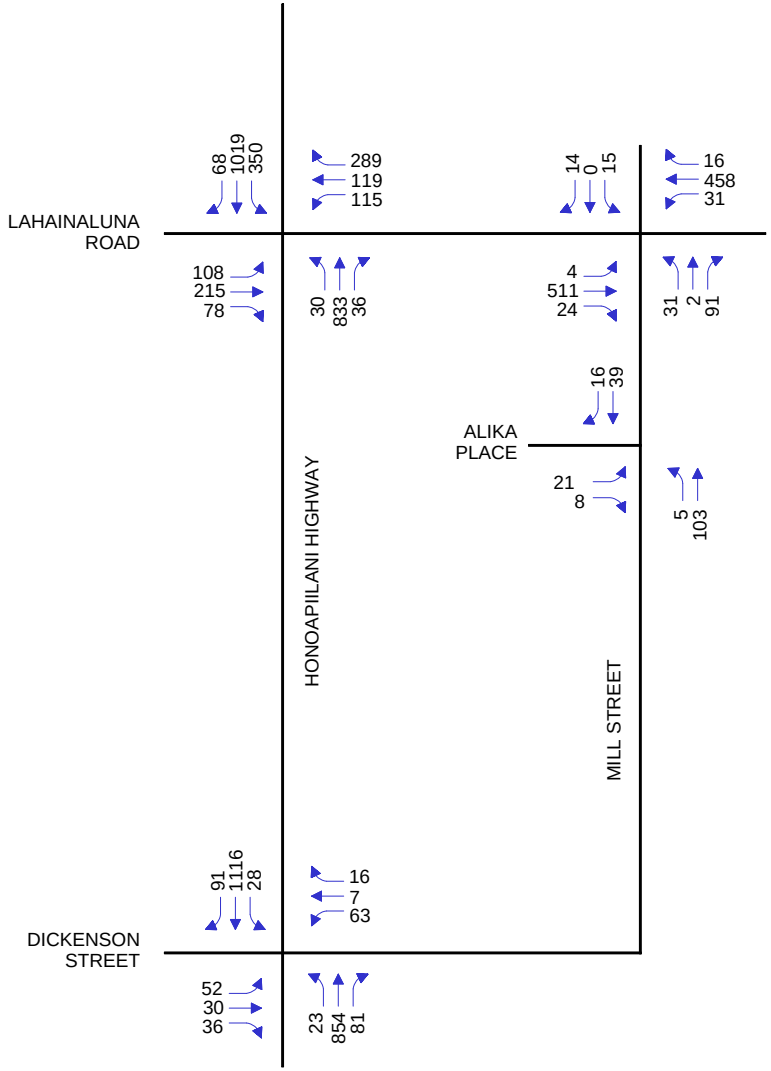


PM PEAK HOUR

Attachment G

2015 BACKGROUND PLUS PROJECT PEAK HOUR TRAFFIC PROJECTIONS

Attachment H
Level-of-Service Calculation Worksheets for 2015 Background Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3372		1719	3395	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3372		1719	3395	
Volume (vph)	44	232	25	132	219	549	44	692	101	285	748	71
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.85	0.85	0.85	0.86	0.89
Adj. Flow (vph)	56	264	39	159	246	597	59	814	119	335	870	80
RTOR Reduction (vph)	0	0	32	0	0	0	0	6	0	0	4	0
Lane Group Flow (vph)	56	264	7	159	246	597	59	927	0	335	946	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	9.5	29.6	29.6	19.6	39.7	172.5	16.0	63.2		44.1	91.3	
Effective Green, g (s)	9.5	29.6	29.6	19.6	39.7	172.5	16.0	63.2		44.1	91.3	
Actuated g/C Ratio	0.06	0.17	0.17	0.11	0.23	1.00	0.09	0.37		0.26	0.53	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	95	311	264	195	417	1538	159	1235		439	1797	
v/s Ratio Prot	0.03	c0.15		c0.09	0.14		0.03	c0.28		c0.19	0.28	
v/s Ratio Perm			0.03			0.39						
v/c Ratio	0.59	0.85	0.03	0.82	0.59	0.39	0.37	0.75		0.76	0.53	
Uniform Delay, d1	79.6	69.3	59.4	74.7	59.1	0.0	73.5	47.8		59.4	26.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	18.9	0.0	22.4	2.1	0.7	6.5	4.2		11.9	1.1	
Delay (s)	88.6	88.2	59.5	97.0	61.3	0.7	80.1	52.0		71.3	27.6	
Level of Service	F	F	E	F	E	A	F	D		E	C	
Approach Delay (s)		85.1			30.9			53.6			39.0	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	172.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.96		1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1698			1689		1719	3398		1719	3365	
Flt Permitted		0.83			0.58		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1430			1009		1719	3398		1719	3365	
Volume (vph)	55	64	19	51	11	26	12	807	67	26	817	136
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	83	70	76	55	12	28	21	877	73	28	908	151
RTOR Reduction (vph)	0	13	0	0	10	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	216	0	0	85	0	21	948	0	28	1055	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.7			29.7		5.2	131.1		7.2	133.1	
Effective Green, g (s)		29.7			29.7		5.2	131.1		7.2	133.1	
Actuated g/C Ratio		0.16			0.16		0.03	0.73		0.04	0.74	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		236			166		50	2475		69	2488	
v/s Ratio Prot							0.01	0.28		c0.02	c0.31	
v/s Ratio Perm		c0.16			0.09							
v/c Ratio		0.92			0.51		0.42	0.38		0.41	0.42	
Uniform Delay, d1		73.9			68.5		85.9	9.2		84.3	8.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		36.5			2.7		5.6	0.5		3.9	0.5	
Delay (s)		110.5			71.2		91.5	9.7		88.2	9.4	
Level of Service		F			E		F	A		F	A	
Approach Delay (s)		110.5			71.2			11.4			11.5	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	639	0	39	768	6	0	4	148	3	0	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	695	0	42	835	7	0	4	161	3	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.86			0.86	0.86	0.86	0.86	0.86	
vC, conflicting volume	841			695			1635	1634	695	1793	1630	838
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	841			646			1735	1734	646	1919	1730	838
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			95			100	94	60	86	100	99
cM capacity (veh/h)	781			799			55	70	403	24	70	362

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	701	884	165	8
Volume Left	7	42	0	3
Volume Right	0	7	161	4
cSH	781	799	358	51
Volume to Capacity	0.01	0.05	0.46	0.15
Queue Length 95th (ft)	1	4	59	12
Control Delay (s)	0.2	1.4	23.4	88.4
Lane LOS	A	A	C	F
Approach Delay (s)	0.2	1.4	23.4	88.4
Approach LOS			C	F

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3417		1719	3407	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3417		1719	3407	
Volume (vph)	108	209	78	115	113	277	30	833	36	342	1019	68
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.85	0.85	0.85	0.86	0.89
Adj. Flow (vph)	138	238	122	139	127	301	41	980	42	402	1185	76
RTOR Reduction (vph)	0	0	104	0	0	0	0	2	0	0	3	0
Lane Group Flow (vph)	138	238	18	139	127	301	41	1020	0	402	1258	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	18.7	26.3	26.3	16.9	24.5	176.4	16.0	67.1		50.1	101.2	
Effective Green, g (s)	18.7	26.3	26.3	16.9	24.5	176.4	16.0	67.1		50.1	101.2	
Actuated g/C Ratio	0.11	0.15	0.15	0.10	0.14	1.00	0.09	0.38		0.28	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	270	229	165	251	1538	156	1300		488	1955	
v/s Ratio Prot	0.08	c0.13		c0.08	0.07		0.02	c0.30		c0.23	0.37	
v/s Ratio Perm			0.08			0.20						
v/c Ratio	0.76	0.88	0.08	0.84	0.51	0.20	0.26	0.78		0.82	0.64	
Uniform Delay, d1	76.7	73.5	64.6	78.4	70.3	0.0	74.7	48.3		59.0	25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.4	26.7	0.1	30.4	1.6	0.3	4.1	4.8		14.6	1.6	
Delay (s)	93.1	100.2	64.8	108.8	71.9	0.3	78.8	53.1		73.6	27.1	
Level of Service	F	F	E	F	E	A	E	D		E	C	
Approach Delay (s)		89.6			42.9			54.1			38.3	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM Average Control Delay	50.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	176.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.97		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1646			1697		1719	3395		1719	3399	
Flt Permitted		0.87			0.47		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1462			819		1719	3395		1719	3399	
Volume (vph)	52	29	36	57	5	16	23	854	77	28	1116	91
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	79	32	144	62	5	17	40	928	84	30	1240	101
RTOR Reduction (vph)	0	31	0	0	6	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	224	0	0	78	0	40	1010	0	30	1339	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		31.0			31.0		8.3	129.6		7.4	128.7	
Effective Green, g (s)		31.0			31.0		8.3	129.6		7.4	128.7	
Actuated g/C Ratio		0.17			0.17		0.05	0.72		0.04	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		252			141		79	2444		71	2430	
v/s Ratio Prot							c0.02	0.30		0.02	c0.39	
v/s Ratio Perm		c0.17			0.10							
v/c Ratio		0.89			0.55		0.51	0.41		0.42	0.55	
Uniform Delay, d1		72.8			68.2		83.8	10.0		84.2	12.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		29.8			4.7		5.0	0.5		4.0	0.9	
Delay (s)		102.6			72.8		88.9	10.6		88.2	13.0	
Level of Service		F			E		F	B		F	B	
Approach Delay (s)		102.6			72.8			13.5			14.6	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	511	10	29	458	16	13	2	88	15	0	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	555	11	32	498	17	14	2	96	16	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	515			566			1154	1148	561	1236	1145	507
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	515			514			1173	1166	508	1264	1162	507
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			90	99	81	84	100	97
cM capacity (veh/h)	1035			925			140	164	499	100	165	560

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	571	547	112	32
Volume Left	4	32	14	16
Volume Right	11	17	96	15
cSH	1035	925	366	166
Volume to Capacity	0.00	0.03	0.31	0.19
Queue Length (ft)	0	3	32	17
Control Delay (s)	0.1	0.9	19.1	31.8
Lane LOS	A	A	C	D
Approach Delay (s)	0.1	0.9	19.1	31.8
Approach LOS			C	D

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

Attachment I
Level-of-Service Calculation Worksheets for 2015 Background
Plus Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3372		1719	3395	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3372		1719	3395	
Volume (vph)	44	237	25	132	223	554	44	692	101	292	748	71
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.85	0.85	0.85	0.86	0.89
Adj. Flow (vph)	56	269	39	159	251	602	59	814	119	344	870	80
RTOR Reduction (vph)	0	0	32	0	0	0	0	6	0	0	4	0
Lane Group Flow (vph)	56	269	7	159	251	602	59	927	0	344	946	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	9.5	30.1	30.1	19.6	40.2	173.0	16.0	63.2		44.1	91.3	
Effective Green, g (s)	9.5	30.1	30.1	19.6	40.2	173.0	16.0	63.2		44.1	91.3	
Actuated g/C Ratio	0.05	0.17	0.17	0.11	0.23	1.00	0.09	0.37		0.25	0.53	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	315	268	195	421	1538	159	1232		438	1792	
v/s Ratio Prot	0.03	c0.15		c0.09	0.14		0.03	c0.28		c0.20	0.28	
v/s Ratio Perm			0.03			0.39						
v/c Ratio	0.60	0.85	0.03	0.82	0.60	0.39	0.37	0.75		0.79	0.53	
Uniform Delay, d1	79.9	69.3	59.3	74.9	59.2	0.0	73.8	48.0		60.0	26.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.7	19.6	0.0	22.4	2.3	0.8	6.5	4.3		13.2	1.1	
Delay (s)	89.6	88.9	59.3	97.3	61.4	0.8	80.3	52.3		73.3	27.9	
Level of Service	F	F	E	F	E	A	F	D		E	C	
Approach Delay (s)		85.8			31.0			54.0			39.9	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	45.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	173.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.96		1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1698			1690		1719	3396		1719	3365	
Flt Permitted		0.83			0.57		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1433			988		1719	3396		1719	3365	
Volume (vph)	55	64	19	54	11	26	12	807	71	26	817	136
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	83	70	76	59	12	28	21	877	77	28	908	151
RTOR Reduction (vph)	0	13	0	0	10	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	216	0	0	89	0	21	952	0	28	1055	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.8			29.8		5.2	131.0		7.2	133.0	
Effective Green, g (s)		29.8			29.8		5.2	131.0		7.2	133.0	
Actuated g/C Ratio		0.17			0.17		0.03	0.73		0.04	0.74	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		237			164		50	2472		69	2486	
v/s Ratio Prot							0.01	0.28		c0.02	c0.31	
v/s Ratio Perm		c0.16			0.10							
v/c Ratio		0.91			0.54		0.42	0.39		0.41	0.42	
Uniform Delay, d1		73.8			68.9		85.9	9.3		84.3	8.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		35.8			3.6		5.6	0.5		3.9	0.5	
Delay (s)		109.6			72.5		91.5	9.7		88.2	9.5	
Level of Service		F			E		F	A		F	A	
Approach Delay (s)		109.6			72.5			11.5			11.5	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	639	12	41	768	6	9	4	149	3	2	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	695	13	45	835	7	10	4	162	3	2	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.84			0.84	0.84	0.84	0.84	0.84	
vC, conflicting volume	841			708			1647	1645	701	1805	1648	838
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	841			654			1766	1763	646	1954	1767	838
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			94			80	93	59	85	97	99
cM capacity (veh/h)	781			776			50	65	394	21	65	362

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	714	886	176	10
Volume Left	7	45	10	3
Volume Right	13	7	162	4
cSH	781	776	261	49
Volume to Capacity	0.01	0.06	0.68	0.20
Queue Length (ft)	1	5	110	16
Control Delay (s)	0.2	1.6	43.3	95.8
Lane LOS	A	A	E	F
Approach Delay (s)	0.2	1.6	43.3	95.8
Approach LOS			E	F

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	10	3	4	121	41	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	3	4	132	45	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	192	52	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	52	60			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	787	1007	1525			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	14	136	60
Volume Left	11	4	0
Volume Right	3	0	15
cSH	829	1525	1700
Volume to Capacity	0.02	0.00	0.04
Queue Length (ft)	1	0	0
Control Delay (s)	9.4	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3417		1719	3407	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3417		1719	3407	
Volume (vph)	108	215	78	115	119	289	30	833	36	350	1019	68
Peak-hour factor, PHF	0.78	0.88	0.64	0.83	0.89	0.92	0.74	0.85	0.85	0.85	0.86	0.89
Adj. Flow (vph)	138	244	122	139	134	314	41	980	42	412	1185	76
RTOR Reduction (vph)	0	0	104	0	0	0	0	2	0	0	3	0
Lane Group Flow (vph)	138	244	18	139	134	314	41	1020	0	412	1258	0
Turn Type	Prot		Perm	Prot		Free	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free						
Actuated Green, G (s)	18.7	26.6	26.6	16.9	24.8	176.6	16.0	67.1		50.0	101.1	
Effective Green, g (s)	18.7	26.6	26.6	16.9	24.8	176.6	16.0	67.1		50.0	101.1	
Actuated g/C Ratio	0.11	0.15	0.15	0.10	0.14	1.00	0.09	0.38		0.28	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	273	232	165	254	1538	156	1298		487	1950	
v/s Ratio Prot	0.08	c0.13		c0.08	0.07		0.02	c0.30		c0.24	0.37	
v/s Ratio Perm			0.08			0.20						
v/c Ratio	0.76	0.89	0.08	0.84	0.53	0.20	0.26	0.79		0.85	0.65	
Uniform Delay, d1	76.8	73.6	64.5	78.5	70.5	0.0	74.8	48.4		59.7	25.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.4	28.6	0.1	30.4	2.0	0.3	4.1	4.8		16.4	1.7	
Delay (s)	93.2	102.2	64.6	108.9	72.4	0.3	78.9	53.2		76.1	27.3	
Level of Service	F	F	E	F	E	A	E	D		E	C	
Approach Delay (s)		90.6			42.5			54.2			39.3	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM Average Control Delay	50.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	176.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.92			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1647			1703		1719	3393		1719	3399	
Flt Permitted		0.87			0.46		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1460			808		1719	3393		1719	3399	
Volume (vph)	52	30	36	63	7	16	23	854	81	28	1116	91
Peak-hour factor, PHF	0.66	0.92	0.25	0.92	0.92	0.92	0.58	0.92	0.92	0.92	0.90	0.90
Adj. Flow (vph)	79	33	144	68	8	17	40	928	88	30	1240	101
RTOR Reduction (vph)	0	31	0	0	5	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	225	0	0	88	0	40	1014	0	30	1339	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		31.3			31.3		8.3	129.3		7.4	128.4	
Effective Green, g (s)		31.3			31.3		8.3	129.3		7.4	128.4	
Actuated g/C Ratio		0.17			0.17		0.05	0.72		0.04	0.71	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		254			141		79	2437		71	2425	
v/s Ratio Prot							c0.02	0.30		0.02	c0.39	
v/s Ratio Perm		c0.18			0.12							
v/c Ratio		0.89			0.62		0.51	0.42		0.42	0.55	
Uniform Delay, d1		72.6			68.9		83.8	10.2		84.2	12.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		28.8			8.3		5.0	0.5		4.0	0.9	
Delay (s)		101.4			77.2		88.9	10.7		88.2	13.1	
Level of Service		F			E		F	B		F	B	
Approach Delay (s)		101.4			77.2			13.7			14.8	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	511	24	31	458	16	31	2	91	15	0	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	555	26	34	498	17	34	2	99	16	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	515			582			1166	1160	568	1251	1164	507
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	515			529			1187	1180	514	1283	1185	507
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.2	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			75	99	80	83	100	97
cM capacity (veh/h)	1035			909			136	160	492	95	159	560

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	586	549	135	32
Volume Left	4	34	34	16
Volume Right	26	17	99	15
cSH	1035	909	292	159
Volume to Capacity	0.00	0.04	0.46	0.20
Queue Length (ft)	0	3	58	18
Control Delay (s)	0.1	1.0	27.5	33.2
Lane LOS	A	A	D	D
Approach Delay (s)	0.1	1.0	27.5	33.2
Approach LOS			D	D

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

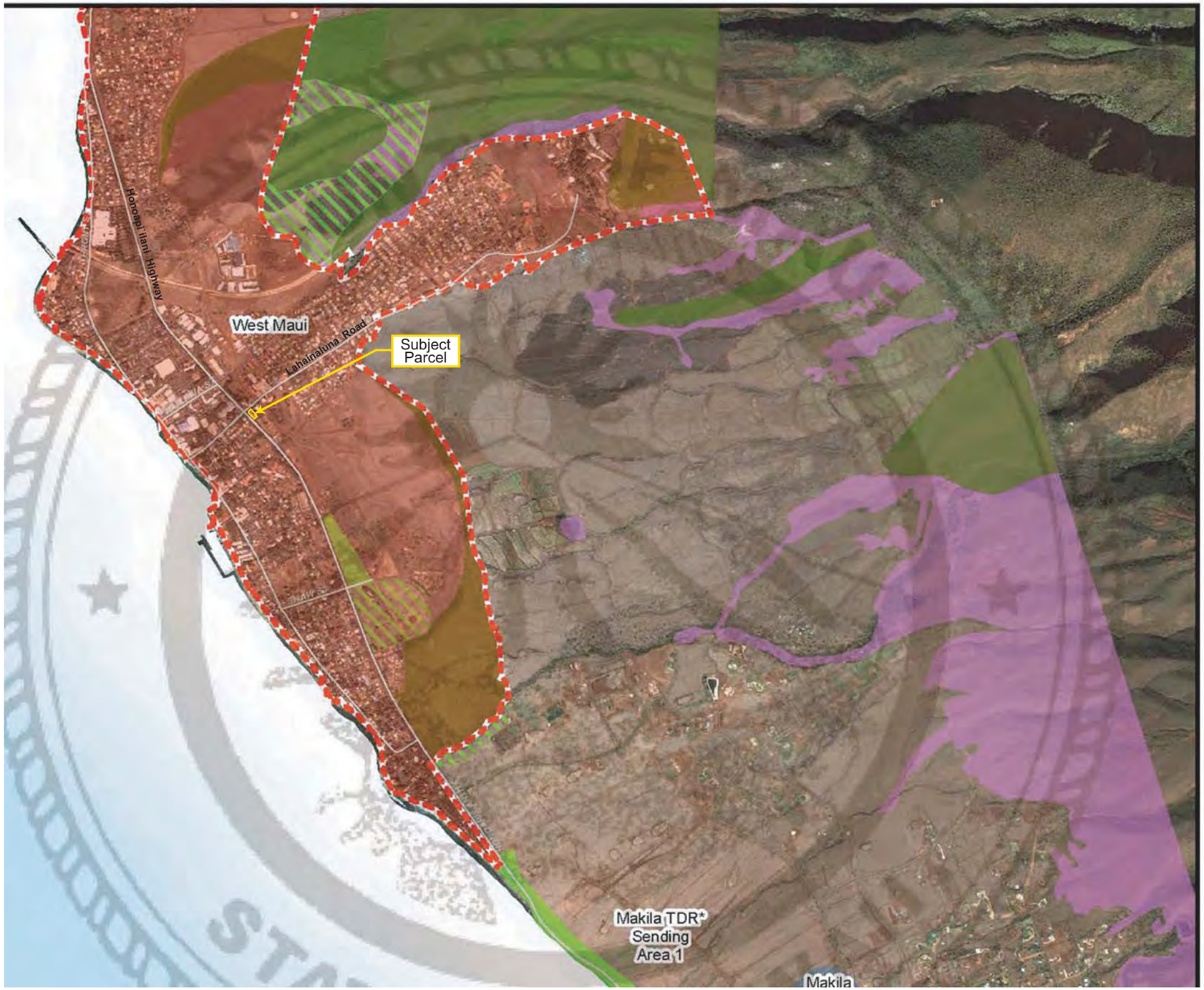
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	21	8	5	103	39	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	9	5	112	42	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174	51	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174	51	60			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	806	1008	1525			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	117	60
Volume Left	23	5	0
Volume Right	9	0	17
cSH	853	1525	1700
Volume to Capacity	0.04	0.00	0.04
Queue Length (ft)	3	0	0
Control Delay (s)	9.4	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX J

Proposed Directed
Growth Map
(Lahaina Town)



Planning Department Directed Growth Map

Lahaina Town

W3

Legend

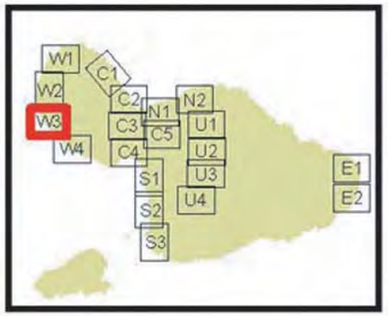
Primary Road

Growth Boundaries

Code

- Urban Town
- Country Town
- Rural Service Center
- Rural Residential
- Land Use -- Preservation
- Land Use -- Regional Park
- Urban Form -- Greenbelt
- Urban Form -- Greenway
- Sensitive Lands

*Transfer of Development Rights



Feet

0 500 1,000 2,000 3,000

1 inch = 2,000 feet

Product Code: MSET-JKG_20090327-b

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This is not a zoning map. Please contact the Planning Department for Zoning confirmation.

APPENDIX J

Not to Scale

DIRECTED GROWTH MAP

Proposed West Maui Community Federal Credit Union

CHRIS HART & PARTNERS

APPENDIX K

Early Consultation Letters

Typical Early Consultation Letter

CHRIS HART
& PARTNERS INC.

February 3, 2009

Mr. Morris Atta, Administrator
Land Division
Department of Land and
Natural Resources
P.O. Box 621
Honolulu, HI 96809

SUBJECT: Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Atta,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), Chris Hart & Partners will be preparing a Draft Environmental Assessment (EA) for a proposed two-story commercial building in the town of Lahaina. The project site is located in the *State Urban District* and is designated for *Business/Commercial* and *B-2, Community Business District* uses by the West Maui Community Plan and Maui County zoning, respectively. The property is located in the Lahaina National Historic Landmark District (LNHLD) but does not lie within Lahaina Historic District 1 or 2 nor does it fall within the limits of the Special Management Area (SMA) for the island of Maui.

The parcel's location within the LNHLD triggers the preparation of the EA which will be prepared in accordance with Chapter 343, HRS. In connection with its preparation, we would appreciate receiving any written comments you may have regarding the project by March 15, 2009.

Information pertaining to the proposed project follows below.

Project Location

The subject parcel occupies an area of 23,907 square feet at the southeast corner of the intersection of Honoapiilani Highway and Lahainaluna Road. Refer to Exhibit "A". The site is undeveloped and is occupied by various mature shade and fruit trees. Access to the property is provided via Alika Place.

The subject parcel is adjacent to existing business and residential development in the town of Lahaina. In the project area, land uses along Honoapiilani Highway are dominated by commercial activities, while land uses *mauka* of the highway and along Lahainaluna Road are mostly residential.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

Project Background

In August 1999, the Maui County Council approved a change in zoning (CIZ) for the subject parcel (from the *R-2, Residential District* to the *B-2, Community Business District*). As part of the CIZ process, a Final EA and a Finding of No Significant Impact were accepted for the "Mango Manor Commercial Complex" which proposed the development of two, 2-story commercial buildings (1,470 SF and 12,250 SF) and ancillary improvements.

The property was subsequently purchased by the Credit Union (in 2006) which is now proposing to construct a single, 2-story commercial building (8,778 SF) and related improvements on the site. The development and use of the subject parcel shall comply with the terms set forth by the conditional zoning approval for the subject parcel. Refer to Exhibit "B".

Project Description

Prior to construction, the site will be cleared and graded. After completion, a two-story (35 ft.) commercial building with 8,778 square feet of combined floor area will be constructed. Refer to Exhibit "C". The first floor (4,533 sq. ft.) of the new building will house the Credit Union and be used to support its operations. The second floor (4,245 SF) would be used as a future expansion area for the Credit Union or may be leased to others as tenant space. Access to the site will continue to be provided via Alika Place.

The County parking requirement for the *B-2, Community Business District* is one parking space for every 500 square feet of a building's floor area, with a minimum of 3 spaces. For the proposed project, a total of 18 parking spaces are required (9,066 SF ÷ 1 space/500 SF = 18.1 spaces). As second floor uses are unknown at this time, a conservative parking ratio of one parking space for every 300 square feet of floor area has been used to provide a total of 30 parking spaces (9,066 SF ÷ 1 space/300 SF = 30.2 spaces).

The project will also provide landscape plantings, a drainage system, driveway and any required street frontage improvements, as well as connections to existing water, sewer, electrical and telephone systems.

Although the subject parcel does not lie within the boundaries of Lahaina Historic District 1 or 2, the design of the proposed commercial building is consistent with the guidelines set forth in *The Architectural Style Book for Lahaina* (1969) and T*he Lahaina Design Guidelines (2003)*.

EA Content

Topics to be addressed in the EA include:

Physical Environment:
- Surrounding Land Uses
- Topography & Soils
- Air Quality
- Noise Characteristics
- Flora & Fauna
- Flood Hazard Areas
- Archaeological & Cultural Resources
- Scenic/Open Space Resources

Public Services:
- Solid Waste Disposal

Social & Economic Environment:
- Population & Economy

Infrastructure:
- Water
- Drainage
- Wastewater
- Roadways
- Electrical and Telephone Systems

Government Laws, Plans & Controls
- State Land Use Law
- Maui County General Plan

- Police and Fire Protection
- Educational & Recreational Resources
- Health Services
- West Maui Community Plan
- Maui County Zoning
- Hawaii Coastal Zone Management Program

Studies of the following subjects will be prepared by qualified individuals and will be included in the Draft EA:

- Traffic
- Drainage
- Utilities
- Cultural Resources
- Archaeological Resources

Thank you for participating in the early consultation process for the preparation of the Draft EA. Please feel free to call me at (808) 270-1557 if you have any questions about the proposed project.

Sincerely,

Glenn Tadaki
Planner

Enclosures
cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects

EXHIBIT "A"

Proposed West Maui Community Federal Credit Union
Aerial Location Map

EXHIBIT "B"

CONDITIONAL ZONING - TMK 4-6-010:025

1. The height of the structures cannot be higher than 35 feet above the grade of the Honoapiilani Highway and Lahainaluna Road.

2. That the architectural design of the structures shall be compatible with Historic Lahaina Town.

3. That the following high intensity uses permitted in Chapter 19.18 of the Maui County Code are prohibited:
   a. Baker goods stores;
   b. Candy stores;
   c. Day care centers and nurseries;
   d. Delicatessen stores;
   e. Grocery stores and meat markets;
   f. Ice cream or snack counters;
   g. Laundromats;
   h. Liquor stores (package only);
   i. Gasoline retailing;
   j. Single-family dwelling, detached accessory building or structure on the same lot;
   k. Amusement enterprises, including billiard or pool halls;
   l. Apartments;
   m. Auditoriums and theaters;
   n. Automobile parking lots and/or buildings;
   o. Automobile service stations, with or without auto repairing
   p. Banks;
   q. Baseball or football stadiums and other sport activities or amusements;
   r. Bowling alleys;
   s. Charity relief organizations (excluding general office);
   t. Clinics, medical, or dental;
   u. Dancehalls, dancing and hula studios;
   v Dry goods and department stores;
   w. Equipment rental and sales yards;
   x. Feed stores;
   y. Gymnasiums;
   z. Hardware and garden supply store;
   aa. Ice cream and milk manufacturing plants;
   bb. Libraries;
   cc. Marinas;
   dd. Miniature golf courses;
   ee. Museums;
   ff. Music conservatories or music studios;

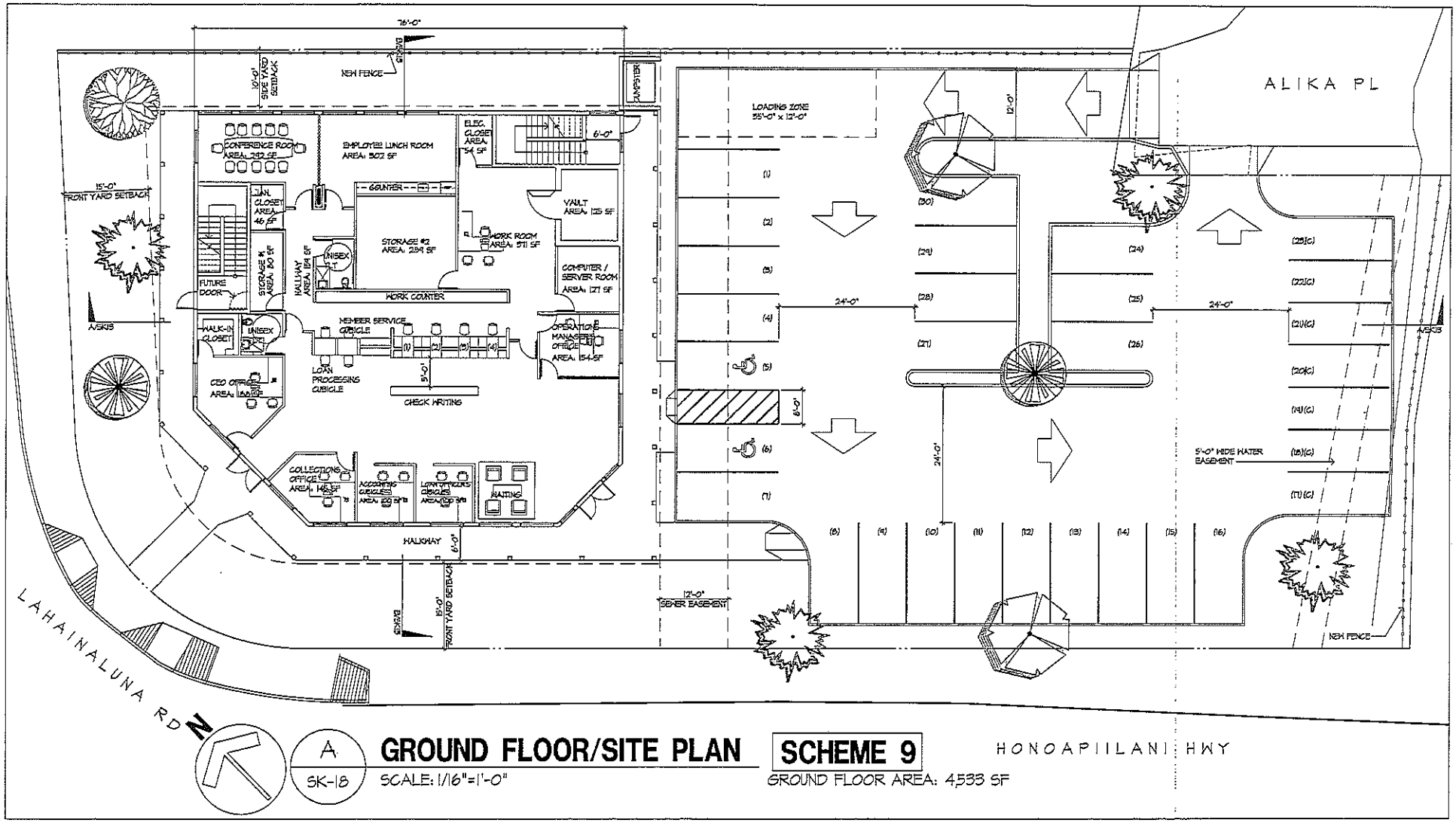
gg. News and magazine stands;
hh. Nurseries (flowers or plants);
ii. Nursing and convalescent homes;
jj.. Parcel delivery stations;
kk. Pet shops;
ll. Physical culture studios;
mm. Plumbing shops;
nn. Private clubs or fraternal organizations;
oo. Private schools or business colleges;
pp. Public parking areas;
qq. Religious, benevolent, and philanthropic societies;
rr. Restaurants, cafes or bars, including drive-ins;
ss. Sanitariums;
tt. Trade schools;
uu. Used car lots;
vv. Mortuaries; and
ww. Warehouses and yards.

4. That a 15-foot setback area along Honoapiilani Highway and Lahainaluna Road shall be maintained and the irrigation and landscape plans shall be integrated with the irrigation and landscape plans for the parking area. The plans shall be in accordance with the Maui County Planting Plan and shall be reviewed and approved by the Department of Planning.

5. That should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor and/or landowner shall immediately contact the State Historic Preservation Division, which shall assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

6. That at the time of demolition and construction, traffic control and site traffic personnel shall be hired to aid in the smooth flow of traffic.

7. That no certificate of occupancy shall be issued until a traffic signal is installed at Dickenson Street and Honoapiilani Highway.



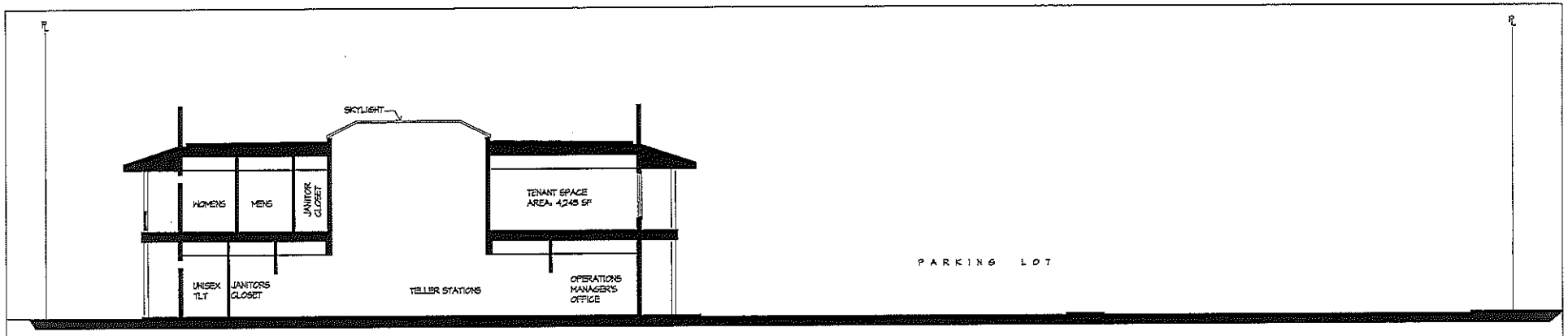
WEST MAUI COMMUNITY FEDERAL CREDIT UNION

LAHAINA, MAUI, HAWAI`I GYA PROJECT NUMBER: 08127.0 DRAWN BY: ES 1/27/09

GYA ARCHITECTS, INC.
A DESIGN CORPORATION

SK18

EXHIBIT "C"

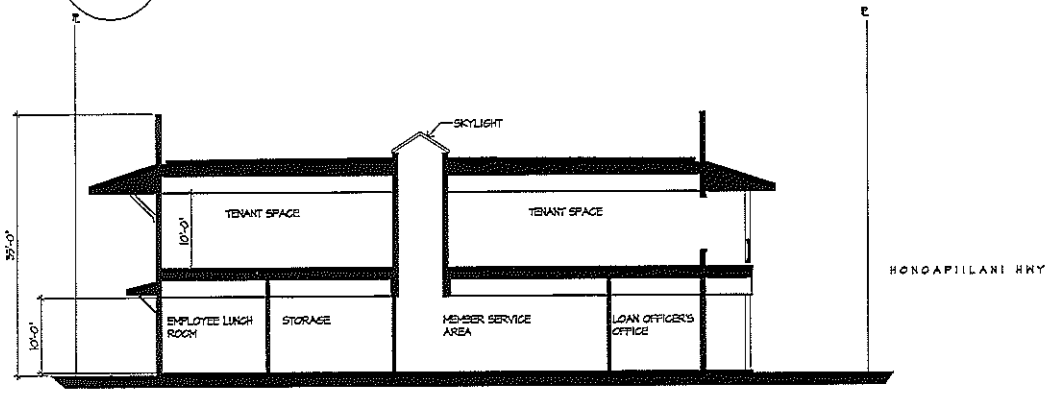


A
SK-13

LONGDITUDINAL SECTION

SCALE: 1/16"=1'-0"

SCHEME 4



B
SK-13

CROSS SECTION

SCALE: 1/16"=1'-0"

SCHEME 4

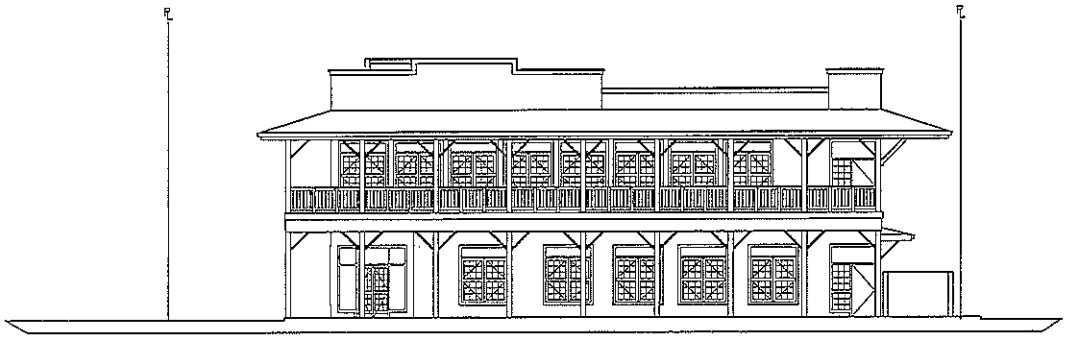
WEST MAUI COMMUNITY FEDERAL CREDIT UNION

LAHAINA, MAUI, HAWAI'I GYA PROJECT NUMBER: 08127.0 DRAWN BY: ES 12/2/08

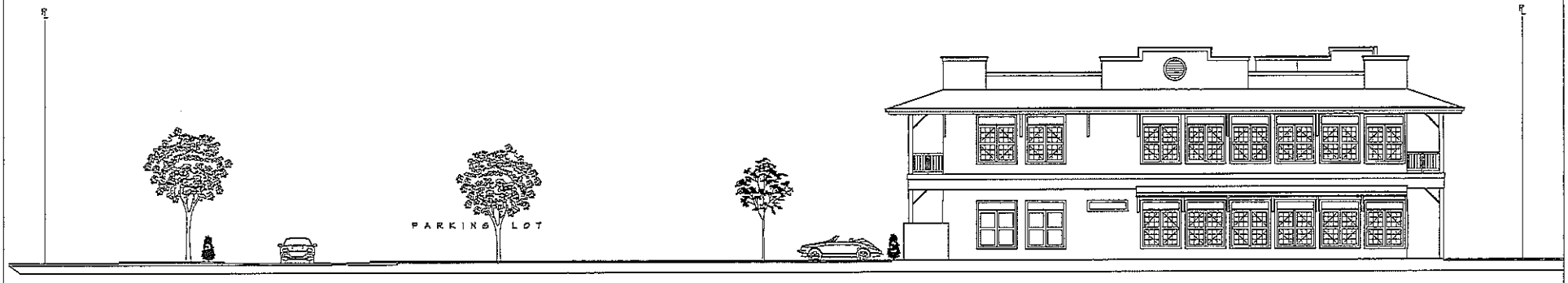
GYA ARCHITECTS, INC.
A DESIGN CORPORATION

SK13

EXHIBIT "C"



A / SK-11 **ELEVATION FROM PARKING LOT - SCHEME 4**
SCALE: 1/16"=1'-0"



B / SK-11 **ELEVATION FROM ADJACENT PROPERTY - SCHEME 4**
SCALE: 1/16"=1'-0"

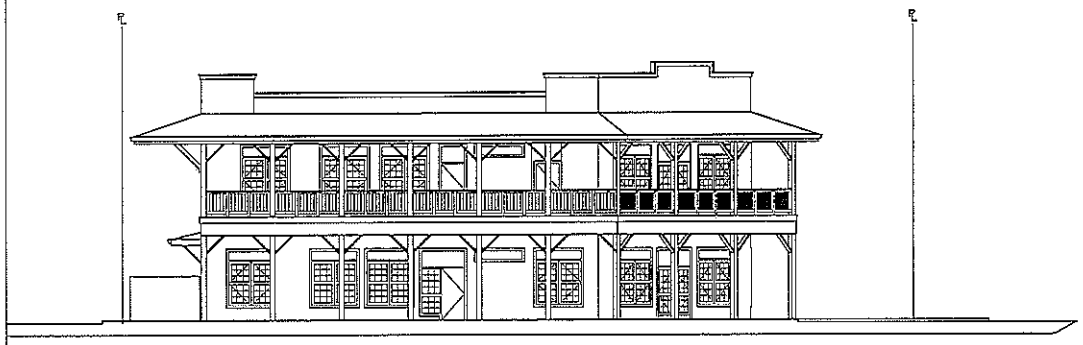
WEST MAUI COMMUNITY FEDERAL CREDIT UNION

LAHAINA, MAUI, HAWAI'I GYA PROJECT NUMBER: 08127.0 DRAWN BY: ES 11/24/08

GYA ARCHITECTS, INC.
A DESIGN CORPORATION

SK11

EXHIBIT "C"



A / SK-12 ELEVATION FROM LAHAINALUNA ROAD - SCHEME 4
SCALE: 1/16"=1'-0"

B / SK-12 ELEVATION FROM HONOAPIILANI HIGHWAY - SCHEME 4
SCALE: 1/16"=1'-0"

WEST MAUI COMMUNITY FEDERAL CREDIT UNION

LAHAINA, MAUI, HAWAI`I GYA PROJECT NUMBER: 08127.0 DRAWN BY: ES 11/24/08

GYA ARCHITECTS, INC.
A DESIGN CORPORATION

SK12

EXHIBIT "C"

Comments from Land Owners/Lessees
Within 500-ft. of the Subject Propserty

Early Consultation Comments from Surrounding Residents

On February 11, 2009, early consultation letters were mailed to owners and lessees of parcels within a 500 ft. radius of the subject property. **See** Appendix J, Early Consultation Letters.

The following individuals called (by phone) to provide their comments on the proposed project.

1. On February 13, 2009, Michelle Taylor called to say that she received the early consultation letter. Ms. Taylor said that she lives on the *makai* side of Honoapi`ilani Highway across the street from the subject property. Ms. Taylor indicated that landscape plantings could be used to complement and integrate the project with its surroundings and that some of the existing trees could be reused for landscaping. Ms. Taylor asked if a public hearing is required.

2. On February 17, 2009, Harold Mizomi called to acknowledge the receipt of the early consultation letter. Mr. Mizomi said that he lives on Mill Street next to the Circle K convenience store which is located at the corner of Dickenson Street and Honoapi`ilani Highway (Mill Street connects to Lahainaluna Road and the *mauka* end of Dickenson Street). Mr. Mizomi indicated that traffic on Mill Street is terrible, especially during the morning and afternoon peak hours. He mentioned that drivers have been using Mill Street as a shortcut to bypass the intersection of Honoapi`ilani Highway and Lahainaluna Road. He feels that Mill Street should be widened or improved to handle this traffic volume. Mr. Mizomi also stated that heavy trucks and machinery have a negative effect upon traffic on Mill Street. He asked if a public hearing is required.

Comment Letters Not Requiring Responses

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 6, 2009

Chris Hart & Partners Inc.
115 N. Market Street
Wailuku, Hawaii 96793-1717

Attention: Mr. Glenn Tadaki, Planner

Ladies and Gentlemen:

Subject: Proposed West Maui Community Federal Credit Union

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Charlene E. Unoki
for Morris M. Atta
Administrator

RECEIVED
FEB 10 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

cc: Glenn
08/072

LINDA LINGLE
GOVERNOR

CHAD K. TANIGUCHI
EXECUTIVE DIRECTOR

BARBARA E. ARASHIRO
EXECUTIVE ASSISTANT

STATE OF HAWAII

DEPARTMENT OF HUMAN SERVICES
HAWAII PUBLIC HOUSING AUTHORITY
1002 NORTH SCHOOL STREET
P.O. BOX 17907
Honolulu, Hawaii 96817

IN REPLY REFER TO:

09:CMS/059

March 10, 2009

RECEIVED
MAR 12 2009
CHRIS HART & PARTNERS
Landscape Architecture

cc: glen 08/07 2

Mr. Glenn Tadaki, Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Maui, Hawaii 96793-1717

Dear Mr. Tadaki:

Subject: Draft Environmental Assessment (EA)
Proposed West Maui community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

We have no comments on the draft environmental assessment for the above project. Thank you for the opportunity to comment.

Sincerely,

Edmund F. Morimoto
Project Engineer

Substantive Comments and Responses

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

February 12, 2009

Mr. Glenn Tadaki, Planner
Chris Hart & Partners Inc.
115 N. Market St.
Wailuku, Hawaii 96793

Dear Mr. Tadaki,

Subject: Early Consultation Request for Proposed West Maui Community Federal Credit Union
Lahaina, Maui, Hawaii
TMK: (2) 4-6-010:025

Thank you for allowing us to comment on the Early Consultation Request for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) has no objection to the subject project at this time. We highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as possible so that service can be provided on a timely basis.

Should you have any questions or concerns, please call me at 871-2340.

Sincerely,

Ray Okazaki
Staff Engineer

Cc: Glenn & Jen

RECEIVED

FEB 17 2009

CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

08/072

CHRIS HART
& PARTNERS INC.

April 9, 2009

Mr. Ray Okazaki, Staff Engineer
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, HI 96733-6898

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Okazaki,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we are responding to your letter dated February 12, 2009.

We understand that Maui Electric Company has no objections to the proposed project at this time. A copy of your letter has been provided to the Credit Union who will instruct their electrical consultant to submit the project time schedule and electrical demand requirements on a timely basis.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

THOMAS M. PHILLIPS
CHIEF OF POLICE

GARY A. YABUTA
DEPUTY CHIEF OF POLICE

OUR REFERENCE
tj
YOUR REFERENCE

February 17, 2009

RECEIVED
FEB 20 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

CC: Glenn
08/072

Mr. Glenn Tadaki
Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, HI 96793-1706

Dear Mr. Tadaki:

SUBJECT: Proposed West Maui Community Federal Credit Union at TMK: (2) 4-6-010: 025

Thank you for your letter of February 3, 2009, requesting comments on the above subject.

We have reviewed the information submitted for this project and would like to defer any comments until the draft Environmental Assessment is prepared and submitted for our review.

Thank you for giving us the opportunity to comment on this project.

Very truly yours,

AC Wayne T. Ribao

Assistant Chief Wayne T. Ribao
for: Thomas M. Phillips
Chief of Police

c: Jeffrey Hunt, Maui County Planning Department

COPY

AGREE.
AC Wayne Ph
2/17/09

TO : **THOMAS PHILLIPS, CHIEF OF POLICE**

VIA : **CHANNELS**

FROM : **RICKY UEDOI, SERGEANT, LAHAINA PATROL DIVISION**

SUBJECT : **PROPOSED WEST MAUI COMMUNITY FEDERAL CREDIT UNION**

We have been invited to submit comments on a proposed project being prepared by Chris Hart and Partners. The proposed project is to construct a two story building on the corner of Honoapiilani Highway and Lahainaluna Road. The building will be for the West Maui Community Federal Credit Union.

As required by Chapter 343, HRS the applicant must prepare an Environmental Assessment (EA).

Things that should be considered for the EA would be the impact the project will have during the construction phase. A Traffic Impact Analysis Report should also be prepared.

I would recommend that we defer any comments until the draft EA is prepared at which time we could review and make comments at that time.

Concur
2-12-09

2/13/09

Respectfully submitted,

Sgt. Ricky C. Uedoi, 1512
Lahaina Patrol Division
February 9, 2009 @ 1110 hours

CHRIS HART
& PARTNERS INC.

April 9, 2009

Chief Thomas Phillips
Maui Police Department
55 Mahalani Street
Wailuku, HI 96793

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Chief Phillips,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we are responding to your letter dated February 17, 2009.

The Draft EA will include a traffic study, as well as measures to control traffic during the construction of the project. In addition, we understand that the department has deferred further comment until the completion and review of the Draft EA.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Phillip Rowell, P.E.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

February 23, 2009

Mr. Glenn Tadaki, Planner
CHRIS HART & PARTNERS, INC.
115 North Market Street
Wailuku, Maui, Hawaii 96793-1717

Dear Mr. Tadaki:

SUBJECT: PROPOSED WEST MAUI COMMUNITY FEDERAL CREDIT UNION EARLY CONSULTATION; TMK: (2) 4-6-010:025

We reviewed your early consultation request for the subject application and have the following comments to offer:

1. Any street-side landscaping shall be provided with root barriers. Landscaping should not block sight distance for vehicles at the intersection of Mill Street and Lahainaluna Road.

2. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with building codes. We will review the project for building code requirements during the building permit application process.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

MILTON M. ARAKAWA, A.I.C.P.
Director of Public Works

CC glenn 08/02

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FEB 26 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

MMA:MMM:ls
xc: Highways Division
Engineering Division
S:\LUCA\CZM\Prop_West_Maui_Comm_Fed_Credit_Union_erly_46010025_ls.wpd

CHRIS HART
& PARTNERS INC.

April 9, 2009

Mr. Milton M. Arakawa, AICP, Director
Department of Public Works
200 South High Street
Wailuku, HI 96793

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Arakawa,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we are responding to your letter dated February 23, 2009.

1. A copy of your comment letter has been provided to the project's landscape architect who plans to use root barriers for street side landscaping and will ensure that landscaping does not affect vehicle sight distance at the intersection of Mill Street and Lahainaluna Road.

2. We understand that detailed construction plans for the project will be reviewed for building code compliance during the building permit application process.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET • WAILUKU, MAUI, HAWAII 96793-1717 • PHONE 808-242-1955 • FAX: 808-242-1956

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

Cc: glenn 03/072

RECEIVED
MAR - 9 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture

March 6, 2009

Mr. Glenn Tadaki
Planner
Chris Hart & Partners Inc.
115 North Market Street
Wailuku, Hawai`i 96793

Dear Mr. Tadaki:

Subject: Proposed West Maui Community Federal Credit Union
TMK: (2) 4-6-010:025

Thank you for the opportunity to comment on the Proposed West Maui Community Federal Credit Union. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control". A noise permit may be required and should be obtained before the commencement of this project.

2. HAR, Chapter 11-46, sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design and construction of the building and installation of these types of equipment.

Should you have any questions, please call me at 808 984-8230.

Sincerely,

Patti Kitkowski

Patti Kitkowski
Acting District Environmental Health Program Chief

CHRIS HART
& PARTNERS INC.

April 9, 2009

Ms. Patti Kitkowski
Acting District Environmental Health Program Chief
Maui District Health Office
Department of Health
54 High Street

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Ms. Kitkowski,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we are responding to your letter dated March 6, 2009.

1. Should noise from construction activities exceed the allowable threshold (60 dBA) for business and commercial zoned districts, the contractor shall obtain a Community Noise Permit from the Noise, Radiation and Indoor Air Quality (NRIAQ) Branch in accordance with Chapter 11-46, Hawaii Administrative Rules (HAR) pertaining to *Community Noise Control.*

2. Stationary noise sources and their locations will be taken into account during the project's detailed design phase and appropriate mitigation measures will be established if required.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Kirk Tanaka, L.S., P.E.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET • WAILUKU, MAUI, HAWAII 96793-1717 • PHONE 808-242-1955 • FAX: 808-242-1956

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

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

IN REPLY
REFER TO:

STP 8.3179

March 19, 2009

Mr. Glenn Tadaki
Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

Subject: West Maui Community Federal Credit Union
Early Consultation (EC)
TMK: 4-6-010: 025

Thank you for providing the subject document for review and comments.

The State Department of Transportation (DOT) understands that the subject EC addresses a proposed project to construct a new two-story commercial building with 8,778 square feet of combined floor space and 30 parking spaces for the West Maui Community Federal Credit Union.

The project site is a vacant lot in Lahaina, Maui at the mauka corner of the Honoapiilani Highway and Lahainaluna Road intersection. Access to the site is projected to be from the mauka side of the site via Alika Place from Lahainaluna Road. The proposed project includes required utilities connections, landscaping, driveway access and any street frontage improvements.

Because the project site borders Honoapiilani Highway and will contribute a certain amount of traffic at the Honoapiilani Highway/Lahainaluna Road intersection, the Draft Environmental Assessment (DEA) may have to address the potential impacts to the State highway. The DOT Highways Division Planning Branch is concluding its review of the subject project and will provide supplemental comments as soon as this review is completed.

DOT appreciates the opportunity to provide comments. If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.

Very truly yours,

BRENNON T. MORIOKA, PH.D., P.E.
Director of Transportation

CC: glenn 08/07 2

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MAR 24 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

CHRIS HART
& PARTNERS INC.

April 9, 2009

Mr. Brennon Morioka, Ph.D., P.E.
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Morioka,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we acknowledge the receipt of your letters dated March 19, 2009 and March 30, 2009 and are responding to your comments.

1. The Draft EA will contain a traffic study which will evaluate potential impacts to roadways and intersections in the vicinity of the project and recommend appropriate measures to minimize impacts. To establish the project's trip generation potential, the traffic study shall make reasonable assumptions about the future use of the building's second floor as such use is currently unknown.

2. It is my understanding that the cost of addressing all project-generated traffic impacts should be the responsibility of the Credit Union.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Phillip Rowell, P.E.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

CHARMAINE TAVARES
Mayor

CHERYL K. OKUMA, Esq.
Director

GREGG KRESGE
Deputy Director

TRACY TAKAMINE, P.E.
Solid Waste Division

DAVID TAYLOR, P.E.
Wastewater Reclamation
Division

RECEIVED

FEB 26 2009

CHRIS HART & PARTNERS, INC
Landscape Architecture and Planning

CC: Glenn
08102

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

February 24, 2009

Mr. Glenn Tadaki
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

SUBJECT: WEST MAUI COMMUNITY FEDERAL CREDIT UNION EARLY CONSULTATION TMK (2) 4-6-010:025, LAHAINA

Dear Mr. Tadaki,

We reviewed the subject project as a pre-application consultation and have the following comments:

1. Solid Waste Division comments:

   a. Include a plan for construction waste recycling, reuse, disposal.

2. Wastewater Reclamation Division (WWRD) comments:

   a. Although wastewater system capacity is currently available as of 2/24/2009, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
   b. Wastewater contribution calculations are required before building permit is issued.
   c. Developer is not required to pay assessment fees for this area at the current time.
   d. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
   e. Plans should show the installation of a single service lateral, and a property service manhole near the property line.
   f. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Gregg Kresge at 270-8230.

Sincerely,

Cheryl K. Okuma, Director

CHRIS HART
& PARTNERS INC.

April 9, 2009

Ms. Cheryl K. Okuma, Esq, Director
Department of Environmental Management
One Main Plaza
2200 Main Street, Suite 175
Wailuku, HI 96793

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Ms. Okuma,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we are responding to your letter dated February 24, 2009.

1.a. A waste management plan for the recycling, reuse, and disposal of construction waste shall be included in the Draft EA.

2.a. The Credit Union acknowledges that wastewater system capacity cannot be ensured until issuance of the building permit

2.b. Wastewater contribution calculations shall be provided to the Wastewater Reclamation Division in conjunction with the building permit application process.

2.c. The Credit Union understands that it will not have to pay wastewater assessment fees for this area at the present time.

2.d. If necessary, the Credit Union understands that it is required to fund any necessary offsite improvements to the wastewater collection system and pump stations.

2.e. The detailed construction plans for the project shall show the installation of a single service lateral and the location of a service manhole near the property line.

2.f. Non-contact cooling water and condensate shall not be allowed to drain into the wastewater system.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Kirk Tanaka, L.S., P.E.

PHONE (808) 594-1888

FAX (808) 594-1865

Cc: Glenn 08/072

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MAR - 4 2009

CHRIS HART & PARTNERS, INC
Landscape Architecture and Planning

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD09/4146

February 25, 2009

Glenn Tadaki, Planner
Chris Hart and Partners Inc.
115 N. Market Street
Wailuku, HI 96793-1717

RE: Request for comments on the Draft Environmental Assessment for the proposed West Maui Community Federal Credit Union, Lahaina, Maui, TMK: (2) 4-6-010: 025.

Aloha e Glenn Tadaki,

The Office of Hawaiian Affairs (OHA) has received the above-mentioned letter dated February 3, 2009. The West Maui Community Federal Credit Union proposes to develop a project that includes a two-story commercial building with 8,778 square feet of combined floor area, 30 parking spaces, landscape plantings, a drainage system, driveway and any required street frontage improvements. The project site is 23,907 square feet of undeveloped land located in the Lahaina National Historic Landmark District (LNHLD). OHA has reviewed the project and offers the following comments.

OHA has substantive obligations to protect the cultural and natural resources of Hawai'i for its beneficiaries, the people of this land. The Hawai'i Revised Statutes mandate that OHA "[s]erve as the principal public agency in the State of Hawai'i responsible for the performance, development, and coordination of programs and activities relating to native Hawaiians and Hawaiians; . . . and [t]o assess the policies and practices of other agencies impacting on native Hawaiians and Hawaiians, and conducting advocacy efforts for native Hawaiians and Hawaiians." (HRS § 10-3)

Chapter 343 of the Hawaii Revised Statues (HRS) requires that the Draft Environmental Assessment (EA) include a Cultural Impact Assessment (CIA). The CIA should include information relating to the traditional and customary practices and beliefs of the area's Native Hawaiians, and the community should be involved in this assessment. Consideration must also be afforded to any individuals accessing the project area for constitutionally protected traditional

and customary purposes, in accordance with the Hawai'i State Constitution, Article XII, Section 7.

OHA requests clarification whether an archaeological inventory survey for the project will be submitted to the State Historic Preservation Division for review and approval. If so, OHA should be allowed the opportunity to comment on the criteria assigned to any cultural or archaeological sites identified within the archaeological inventory survey.

We also request the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

In addition, OHA recommends that the applicant use native vegetation in its landscaping plan for the subject parcel. Landscaping with native plants furthers the traditional Hawaiian concept of mālama 'āina and creates a more Hawaiian sense of place.

Thank you for the opportunity to comment. We look forward to reviewing your Draft EA and providing further comments at that time. If you have additional questions, please contact Heidi Guth by phone at (808) 594-1462, or e-mail her at heidig@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator

C: OHA Maui CRC Office

CHRIS HART
& PARTNERS INC.

April 20, 2009

Mr. Clyde W. Namu`o, Administrator
Office of Hawaiian Affairs
711 Kapi`olani Boulevard, Suite 500
Honolulu, HI 96813

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Namu`o,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we acknowledge the receipt of letter dated February 25, 2009 and are responding to your comments.

- In accordance with Act 50, a cultural impact assessment will be prepared and included in the Draft EA.

- The State Historic Preservation Division (SHPD) was also consulted during the early consultation process. In commenting on the proposed project, the SHPD indicated that anything other than precautionary archaeological monitoring during ground-altering construction activities would be impractical (due to past ground disturbance and land use activities). As such, the SHPD recommended that a qualified archaeological monitor be present during all ground-altering site work. An archaeological monitoring plan will be prepared and submitted to the SHPD for review and approval prior to the commencement of any ground-altering construction activities.

- A qualified archaeologist will be on the site to monitor all ground-altering activities during the construction of the project. The archaeologist will have the authority to stop work if cultural deposits are located. Should this occur, the SHPD will be consulted to determine the appropriate course of action. In addition, if human remains are located, work will cease in the immediate vicinity of the find and the find shall be protected from further disturbance. The SHPD and the Maui/Lana`i Islands Burial Council will be promptly notified and procedures for the treatment of the remains will be undertaken in accordance with Chapter 6E-43, Hawaii Revised Statutes.

LANDSCAPE ARCHITECTURE
CITY AND REGIONAL PLANNING
115 N. MARKET STREET · WAILUKU, MAUI, HAWAII 96793-1717 · PHONE 808-242-1955 · FAX: 808-242-1956

- Your comments regarding the use of native plants for landscaping purposes have been furnished to the Credit Union for their consideration.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Erik Fredericksen, Xamenek Researches

LINDA LINGLE
GOVERNOR OF HAWAII

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

February 23, 2009

Mr. Glenn Tadaki, Staff Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawai'i 96793

LOG NO: 2009.0245
DOC NO: 0902PC39
Archaeology

Dear Mr. Tadaki:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Draft EA Consultation Request for Proposed West Maui Community Federal Credit Union
Paunau Ahupua'a, Lahaina District, Island of Maui
TMK: (2) 4-6-010:025

Thank you for the opportunity to comment on the aforementioned project, correspondence for which we received on February 3, 2009.

Based on the submitted documents, the project involves the development of the 23,907 square foot subject parcel situated at 270 Alika Place in Lahaina as the location of the West Maui Community Federal Credit Union, parking lot and associated infrastructure.

A search of our records indicates that an archaeological inventory survey of the subject parcel has not yet been completed. Therefore, upon review of any permit application forwarded to us by the County of Maui, we are likely to recommend that such a survey be completed with a report of the findings, significance and mitigation recommendations forwarded to this office for review and acceptance prior to approval of that permit.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

CC glenn 08/072
RECEIVED
FEB 26 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
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STATE PARKS

March 28, 2009

Mr. Glenn Tadaki, Staff Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawai'i 96793

LOG NO: 2009.0289
DOC NO: 0903PC73
Archaeology

Dear Mr. Tadaki:

SUBJECT: Chapter 6E-42 Historic Preservation Review – REVISED Draft EA Consultation Request for Proposed West Maui Community Federal Credit Union Paunau Ahupua'a, Lahaina District, Island of Maui TMK: (2) 4-6-010:025

This letter serves as a revision to a February 19, 2009 comment letter for the abovementioned project in which we indicated that we would likely recommend that an archaeological inventory survey of the subject parcel be completed prior to the issuance of any permits (SHPD LOG 2009.0245; DOC NO: 0902PC39).

Upon further review, we have concluded that because the area of proposed effect is the location of a building with a ground surface mostly covered in asphalt, that anything other than precautionary archaeological monitoring during ground altering disturbance would be impractical.

Because we believe archaeological sites may be present in subsurface deposits exposed during the proposed work, we will recommend that a qualified archaeological monitor shall be present during all ground altering disturbance within the subject parcel for the proposed project in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

CC: Glenn 081072

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Landscape Architecture and Planning

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

April 24, 2009

Mr. Glenn Tadaki, Staff Planner
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Hawai'i 96793

LOG NO: 2009.0316
DOC NO: 0904PC50
Archaeology

Dear Mr. Tadaki:

SUBJECT: Chapter 6E-42 Historic Preservation Review – REVISED Draft EA Consultation Request for Proposed West Maui Community Federal Credit Union Paunau Ahupua'a, Lahaina District, Island of Maui TMK: (2) 4-6-010:025

This letter serves as a correction to a March 28, 2009 comment letter (SHPD LOG NO: 2009.0289; DOC NO: 0903PC73) for the abovementioned project in which an incorrect date for an earlier transmittal on the same subject was noted (SHPD LOG 2009.0245; DOC NO: 0902PC39). The correct date of the letter referenced in the first paragraph of the March 28, 2009 letter should be February 23, 2009.

Upon further review, we have concluded that because the area of proposed effect is the location of a building with a ground surface mostly covered in asphalt, that anything other than precautionary archaeological monitoring during ground altering disturbance would be impractical.

Because we believe archaeological sites may be present in subsurface deposits exposed during the proposed work, we will recommend that a qualified archaeological monitor shall be present during all ground altering disturbance within the subject parcel for the proposed project in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

Cc: Glenn 08 072

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793

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Landscape Architecture and Planning

CHRIS HART
& PARTNERS INC.

April 20, 2009

Ms. Nancy McMahon
Deputy SHPO/State Archaeologist
State Historic Preservation Division
601 Kamokila Boulevard, Room 555
Kapolei, HI 96707

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Ms. McMahon,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, Credit Union), we acknowledge the receipt of your letter dated March 28, 2009 which revises your initial comment letter from February 2009. In response to your March 28th letter, we would like to note the following.

As the result of past ground disturbances and land use activities on the subject parcel, we concur with your determination that anything other than precautionary archaeological monitoring during ground-altering construction activities would be impractical. We agree that a qualified archaeological monitor will need to be present to monitor all ground-altering activities during the construction of the project. As such, an archaeological monitoring plan will be prepared and submitted to the SHPD for review and approval prior to the start of any site work.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects
Erik Fredericksen, Xamenek Researches

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CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

KATHLEEN ROSS AOKI
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

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APR - 1 2009
CHRIS HART & PARTNERS, INC.
Landscape Architecture and Planning

CC: Glenn 08/07 2

March 25, 2009

Mr. Glenn Tadaki
Chris Hart & Partners, Inc.
115 North Market Street
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

SUBJECT: ENVIRONMENTAL ASSESSMENT COMMENTS (EAC) FOR THE PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE PROPOSED WEST MAUI COMMUNITY FEDERAL CREDIT UNION TO BE LOCATED IN LAHAINA, ISLAND OF MAUI, HAWAII; TMK: (2) 4-6-010:025 (EAC 2009/0009)

The Department of Planning (Department) is in receipt of your letter dated February 3, 2009, requesting comments on the above project. The Department provides the following comments in preparation of a DEA, which are in addition to those comments made in a letter dated November 5, 2008, for EAC 2008/0038.

1. The land use designations for the project area are as follows:

   - State Land Use: Urban;
   - West Maui Community Plan: Business/Commercial;
   - County Zoning: B-2 Community Business; and
   - Other: Lahaina National Historic Landmark District.

2. The topics to be addressed as stated in your letter under EA Content are adequate for thorough review of a DEA, under Chapter 343, Hawaii Revised Statutes (HRS);

3. Please provide clarification on the size of the proposed building as your letter states the building is 8,778 square feet, but your calculations for the required parking is based on a building size of 9,066 square feet;

4. According to Chapter 19.36, Off-Street Parking and Loading, the minimum parking requirements are one (1) space for every 500 square feet of floor area of building. Additional parking above the minimum required can be provided for your project at your discretion; and

5. Please provide a definition of "credit union" in the DEA and show how this differs from a bank, as a bank is specifically prohibited under the Conditional Zoning for the parcel.

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Joseph Prutch at joseph.prutch@mauicounty.gov or at 270-7512.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

For: JEFFREY S. HUNT, AICP
Planning Director

xc: Joseph M. Prutch, Staff Planner
2009 EAC File
General File
JSH:CIY:JMP:vb
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CHRIS HART
& PARTNERS INC.

April 29, 2009

Mr. Jeffrey S. Hunt, AICP, Director
Planning Department
250 S. High Street
Wailuku, HI 96793

SUBJECT: Early Consultation for a Draft Environmental Assessment (EA)
Proposed West Maui Community Federal Credit Union
TMK (2) 4-6-010: 025
Lahaina, Maui, Hawaii

Dear Mr. Hunt,

On behalf of the land owner, the West Maui Community Federal Credit Union (aka, WMFCU), we acknowledge the receipt of letter dated March 25, 2009 and are responding to your comments.

1. WMFCU acknowledges that the State land use, community plan, zoning, and Lahaina National Historic Landmark District designations of the subject parcel have been verified by the department.

2. WMFCU understands that the topics to be covered in the environmental assessment (EA) adequately provide for a thorough review of the Draft EA and comply with Chapter 343, Hawaii Revised Statutes.

3. Based on our latest preliminary plans, the new two-story building will have a net floor area of 8,581 square feet (two references in our early consultation letter incorrectly stated 9,066 SF). The first floor (4,542 sq. ft.) of the building will house and support the WMFCU's operations. The second floor (4,039 SF) may be used as a future expansion area for the WMFCU <u>or</u> could be leased to others as tenant space. The County parking requirement for the *B-2, Community Business District* is one parking space for every 500 square feet of a building's floor area, with 3 stalls required as a minimum. Therefore, a total of 18 parking spaces are required for the proposed project (8,581 SF ÷ 1 space/500 SF = 17.162 or 18 spaces). Because second floor uses are unknown at this time, a conservative parking ratio of one parking space for every 300 square feet of floor area has been used to provide a total of 30 parking spaces (8,581 SF ÷ 1 space/300 SF = 28.603 rounded up to 30 spaces). The total number of parking spaces being provided (30) is more than the number of spaces that are required (18).

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4. The WMFCU acknowledges that the twelve additional parking stalls that are being provided (refer to the above) exceeds the minimum number of stalls that is required (18) and is being provided at its own discretion.

5. A credit union is a not-for-profit, financial cooperative that is owned and controlled by its members. Credit unions promote savings, provide credit at reasonable rates, further community development, and provide other financial services to its members. Surplus earnings are returned to members in the form of higher dividends, lower loan rates, and free or low-cost services. Credit unions vary in size but are typically smaller than banks in assets and members because they are limited to serving only those individuals within their field of membership which is stipulated by its charter. The WMFCU's charter is to serve those individuals who live, work, or worship in the West Maui District. This results in less foot traffic than the banks.

   A bank is a government-licensed financial institution whose primary purpose is to lend money in order to increase economic growth. Banks can serve anyone in the general public and are owned by investors who expect a return on their investment; only the investors get a share of the profits.

   The Credit Union understands that "Banks" are specifically prohibited by the conditional zoning for the subject parcel. It is noted that "*Professional and Financial Buildings*", such as the proposed credit union building, are allowed as permissible uses. Refer to the attached.

   In general credit unions are smaller in assets and members, and offer less products and services than banks. And although some products and services may be similar, the volume of transactions compared to that of a bank is far less.

Thank you for taking the time to provide us with your comments. A copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to call me at (808) 242-1955 if you have any questions.

Sincerely,

Glenn Tadaki
Associate Land Planner

Enclosure

cc: Michelle Hee, WMCFCU
Alvin Yoshimori & Eric Shimada, GYA Architects