

HRS Chapter 343 Draft Environmental Assessment

Proposed Construction of a Cafeteria Building

Lahainaluna High School

(2) 4-6-018:012 (por.)
Lahaina, Maui, Hawaii

May, 2009

Prepared for:
Department of Education
State of Hawaii
P.O. Box 2360
1390 Miller Street
Honolulu, Hawai'i 96804
(808) 586-3230



Prepared by:
Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Maui, Hawaii 96793
(808) 242-1955

1. ZONING AND FLOOD
CONFIRMATION FORM



April 7, 2009

COUNTY OF MAUI DEPARTMENT OF PLANNING ZONING AND FLOOD CONFIRMATION REQUEST FORM

Jason Medema, Planner, Chris Hart & Partners, Inc.

APPLICANT: FOR State Of Hawaii, Department of Education TELEPHONE: 808-242-1955
ADDRESS: 115 N. Market Street, Wailuku, HI 96793
PROJECT NAME: Lahainaluna High School Cafeteria Building
ADDRESS AND/OR LOCATION: 980 Lahainaluna Road, Lahaina, HI 96761
TMK: NUMBER(S): (2) 4-6-018:012 (por.)

ZONING INFORMATION

STATE LAND USE Aq of Urban COMMUNITY PLAN P/AP - Public / Hawaii - Public
COUNTY ZONING Interim

OTHER SPECIAL DISTRICTS

- Special Management Area
- Shoreline Setback Area
- Country Town Design District
- Lahaina National Historic Landmark District
- Maui Redevelopment Area
- Other _____

DEPT OF PLANNING
COUNTY OF MAUI
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FLOOD INFORMATION

FLOOD HAZARD AREA * ZONE C
BASE FLOOD ELEVATION N/A MEAN SEA LEVEL, 1929 NATIONAL GEODETIC
VERTICAL DATUM OR FOR FLOOD ZONE A0, FLOOD DEPTH _____

FLOODWAY [] Yes [] No

FLOOD DEVELOPMENT PERMIT IS REQUIRED [] Yes [] No

* For FLOOD HAZARD AREA ZONES B OR C; 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.
- Correction has been made and initialed.

REVIEWED AND CONFIRMED BY _____

SIGNATURE AARON SHINMOTO
ZONING ADMINISTRATION AND ENFORCEMENT DIVISION
Planning Program Administrator

DATE 4/9/09

(S:\ALL\FORMS\APPLICATION FORMS\SMAASSESSMENTAPP_REV0804.WPD)

2. DRAFT ENVIRONMENTAL ASSESSMENT



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I. PROJECT INFORMATION

A. OVERVIEW OF THE REQUEST

This Environmental Assessment (EA) has been prepared in support of the construction of a new, approximately 21,000 square foot, full-service cafeteria building along with related site improvements, at the Lahainaluna High School (LHS) campus, located at TMK (2) 4-6-018:005, 012 and 019, Lahaina, Maui, Hawaii (**See:** Figures No. 1.1 - 1.2, "Regional Location Maps," and No. 2. "TMK Map").

The site of the proposed project is located in the State Urban district, designated for Public/Quasi-Public use by the West Maui Community Plan, and lies within the Interim zoning district per Maui County Zoning. (**See:** Figures No. 3, "State Land Use Map," No. 4, "Community Plan Map," and No. 5, "County Zoning Confirmation"). The proposed action is therefore appropriate given the prevailing land use designations, as discussed in Section IV of this report. The proposed project involves the use of State land and funds; hence, it requires the preparation of Chapter 343, HRS, Draft and Final Environmental Assessments.

B. PROJECT PROFILE

Proposed Project:	Approximately 21,000 square foot cafeteria building
Lot Size(s):	Approximately 121.39 acres total
Existing Land Use:	Lahainaluna High School Campus
Project Area:	Approximately 1-acre portion of Parcel 012
Access:	Lahainaluna Road



C. PROPOSING AGENCY

Agency: State of Hawaii, Department of Education
P.O. Box 2360
Address: 1390 Miller Street
Honolulu, Hawai'i 96804
Phone: (808) 586-3230
Contact: Mr. Michael Nakano, Principal, LHS

D. ACCEPTING AGENCY

Agency: State of Hawaii, Department of Education,
Office of School Facilities and Support
Services
P.O. Box 2360
Address: 1390 Miller Street
Honolulu, Hawai'i 96804
Phone: (808) 586-3230
Contact: Randy Moore, Assistant Superintendent

E. CONSULTANTS

Land Use Planner: Chris Hart & Partners, Inc.
Address: 115 N. Market Street
Wailuku, Maui, Hawaii 96793
Phone: Voice: (808) 242-1955
Facsimile: (808) 242-1956
Contact: Mr. Jason Medema, Planner



Architect: Ferraro Choi, Inc.
Address: 733 Bishop St. Suite 2620
Honolulu, HI 96813
Phone: Voice: (808) 533-8880
Facsimile: (808) 599-3769
Contact: Mr. Bill Brooks, AIA, LEED-AP, Principal

Civil Engineer: Kim & Shiroma Engineers
Address: 1314 S King St. Suite 325
Honolulu, HI 96814
Phone: 808-593-8770
Contact: Mr. Conrad Shiroma, P.E., President

Mechanical Engineer: Lincolne Scott, Inc.
Address: 1132 Bishop St # 1850
Honolulu, HI 96813
Phone: Voice: (808) 536-1737
Facsimile: (808) 537-5829
Contact: Mr. Marcos Ibarra

Archaeologist: Scientific Consultant Services, Inc.
Address: 711 Kapiolani Blvd. Suite 975
Honolulu, HI 96813
Phone: Voice: (808) 597-1182
Facsimile: (808) 597-1193
Contact: Mr. Michael Dega, Ph.D.



Traffic Engineer: Phillip Rowell and Associates.
Address: 47-273 'D' Hui Iwa Street
Kaneohe, HI 96744
Phone: Voice: (808) 239-8206
Facsimile: (808) 239-4175
Contact: Mr. Phillip J. Rowell, P.E.



II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The Lahainaluna High School (LHS) campus is located at the northern (*mauka*) terminus of Lahainaluna Road, Lahaina, Maui, Hawaii; TMKs: (2) 4-6-018:005 012 and 019. (See: Figures No. 1.1 - 1.2, "Regional Location Maps," and No. 2. "TMK Map"). The site of the proposed new cafeteria building is roughly a 1.26-acre portion of Parcel 012, near the upper western boundary of the LHS campus, north of and adjacent to the existing cafeteria (See: Figure No. 12, "Campus Plot Plan").

B. EXISTING LAND USE

Land use on the project site consists of the existing Lahainaluna High School campus. The school was first established on the site in 1931, on land donated to missionaries by Hoapili, Governor of Maui, and his wife, Kalakua, for the purpose of establishing a literate ministry of Hawaiian men. The site has been in continuous use as a school since that time.

The new cafeteria site is situated on a previously developed site near the end of Lahainaluna Road, toward the northwest corner of the campus. To the south is the existing cafeteria building, and to the east is the Industrial Arts building. Lahainaluna Road is to the north and west. A groundskeeper's cottage is to the northeast of the new cafeteria.

Lahainaluna High School is bordered by Princess Nahienaena Elementary School, Lahaina Intermediate School and the Kelawea residential subdivision to the west. Lands to the east of the campus are being cultivated for use by the school's agricultural program, while lands formerly in sugar cane cultivation lie to the north, east and south. The existing use is compatible with surrounding uses and consistent with prevailing County Zoning and Community Plan designations. (See: Figures No. 6.1 - 6.5, Site Photographs).



C. LAND USE DESIGNATIONS

State Land Use Classification:	Urban (<u>See</u> : Figure No. 3, “State Land Use Map”)
West Maui Community Plan:	Public / Quasi-Public (<u>See</u> : Figure No. 4, “Community Plan Map”)
County Zoning:	Interim (<u>See</u> : Figure No. 5, “Maui County Zoning ”)
Flood Zone Designation:	C (Minimal Flooding) (<u>See</u> : Figure No. 7, “Flood Insurance Rate Map”)
Special Designations:	None

D. REASONS JUSTIFYING THE REQUEST

Founded in 1831, Lahainaluna High School (LHS) is the oldest school in Hawaii, as well as the oldest continuously operating school west of the Mississippi River. A unique aspect of the school is its coed boarding program, with a capacity of approximately 118 students. Current enrollment at LHS is 977 students, and future plans for the school are based on a design enrollment of 1,400 students.

The existing LHS cafeteria serves approximately 600 school lunches per day, in addition to providing breakfast and dinner for the boarding students. This cafeteria is small (roughly one-quarter the size of a standard high school cafeteria with similar enrollment) and undersized for both current and projected future student enrollment. Serving capacity is limited to approximately 220 students, and many students eat outside. Assembly seating is limited to approximately 350 students. The existing stage has been converted to office and storage space. Large assemblies which would typically be held in a cafeteria are held in the gymnasium. In addition, the existing cafeteria is outdated and considered uncomfortably warm.

The State of Hawaii, Department of Education (DOE) Facility Assessment and Development Schedule (FADS), dated January 2006, calls for a new cafeteria at the school of approximately 18,776 net usable square feet. With the addition of miscellaneous support space (mechanical, electrical, etc.), the total floor area of this type of facility reaches approximately 21,000 gross square feet (See: Appendix A “DOE Facility Assessment and Development Schedule”).



E. DESCRIPTION OF PROPOSED ACTION

The applicant is preparing this HRS 343 Environmental Assessment (EA) in support of the construction of an approximately 21,000 square foot cafeteria building on the 121 - acre campus of the existing Lahainaluna High School, TMK (2) 4-6-018:012 (por.). The new cafeteria will have a dining seating capacity, inclusive of indoor and lanai dining, of 650 students. Indoor assembly seating capacity will be approximately 1,000 students.

Currently, the school is served by an outdated and undersized cafeteria facility as detailed above (See: Figures No. 6.1 - 6.5, "Site Photographs"). The proposed new facility includes 19,600 gross square feet of enclosed building area and 2,500 square feet of exterior lanai (See: Figure No. 8, "Concept Site Plan"). The facility size is predicated upon the DOE Facility Assessment and Development Schedule for a school design enrollment of 1,400 students. Included in the facility will be a conventional kitchen, dining area with permanent stage and back-of-house provisions, restrooms, faculty dining room, and custodial center. Site improvements will include connections to existing power, water, and sewer service; grading, retaining, and drainage improvements; and paving, walkways and landscaping.

F. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives considered in the design of the proposed project include the following:

1. No Action

Analysis. Under this alternative, the present physical condition of the land and structures would be maintained. Any benefit accruing from the proposed action, including providing adequate cafeteria space to accommodate the existing student population, will be foregone. The "no action" alternative was not deemed to be 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. Delaying the project raises the potential for future economic conditions to affect its implementation, depending on the State's economy. The "deferred action" alternative was dropped from consideration due to the immediate need for additional cafeteria space to serve the existing student enrollment.



3. Demolition of Existing Cafeteria

Analysis. Under this option, the existing cafeteria would be demolished and the new cafeteria constructed on the same site. This option would minimize site disturbance outside of the boundaries of the existing cafeteria site. However, retaining the existing structure, will allow for the eventual re-purposing of the existing, undersized cafeteria into office and classroom space. This will help to accommodate future enrollment growth at the school, as well as provide permanent space for office and classroom uses that are currently housed in portable buildings. Additionally, retaining the existing cafeteria building avoids the impacts associated with demolition waste on County landfills. The option of demolishing and replacing the existing cafeteria was therefore dropped from consideration.



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

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The proposed action is to take place on the existing Lahainaluna High School campus, which occupies approximately 121 acres designated as TMK Parcels (2) 4-6-18:005, 012 and 019, located at the northern terminus of Lahainaluna Road, *mauka* of Honoapiilani Highway (**See:** Figure 1.1 - 1.2, “Regional Location Maps”). A mix of developed and undeveloped residential and agricultural zoned land, supporting residential, agricultural and open space uses, characterizes the immediate area surrounding the LHS campus.

The following is a description of Zoning, Community Plan Designations, State Land Use Classifications and existing land uses adjacent to the campus:

North:	<u>State Land Use:</u>	Agricultural
	<u>Zoning:</u>	Agricultural
	<u>Community Plan:</u>	Open Space
	Existing uses.	Undeveloped
East:	<u>State Land Use:</u>	Agricultural
	<u>Zoning:</u>	Agricultural
	<u>Community Plan:</u>	Agricultural
	Existing uses.	Undeveloped
South:	<u>State Land Use:</u>	Agricultural
	<u>Zoning:</u>	Agricultural
	<u>Community Plan:</u>	Agricultural
	Existing uses.	Undeveloped
West:	<u>State Land Use:</u>	Urban
	<u>Zoning:</u>	Interim
	<u>Community Plan:</u>	Public/Quasi-Public
	Existing uses.	Lahainaluna Intermediate School; Princess Nahienaena Elementary School



Potential Impacts and Mitigation Measures.

The site of the proposed project is located in the State **Urban** district (See: Figure No. 3, “State Land Use Map”), designated **Public/Quasi-Public** by the West Maui Community Plan (See: Figure No. 4, “Community Plan Map”), and is located in the Maui County **Interim** zoning district (See: Figure No. 5, “County Zoning Map”). The proposed project will involve the construction of an approximately 21,000 square foot cafeteria building. The project site is located in an area of existing public/quasi-public and residential development, and supporting infrastructure is proximate to the subject property. The proposed project complies with the intent of the applicable Maui County Zoning and West Maui Community Plan designations, as further discussed in Section IV below.

2. Topography and Soils

Existing Conditions. The school is located on the foothills of the West Maui Mountains, overlooking Lahaina Town. The project site is characterized by moderate to steep slopes (See: Appendix A, Preliminary Drainage Report). According to the “Soil Survey of the Islands of Kaua’i, O’ahu, Maui, Moloka’i, and Lana’i, State of Hawaii (August, 1972),” prepared by the United States Department of Agriculture Soil Conservation Service, the soil at the project site is Wainee very stony silty clay, 7 to 15 percent slopes (WxC). This series consists of well-drained soils on alluvial fans on the island of Maui. These soils developed in alluvium derived from weathered basic igneous rock. They are gently to moderately sloping. Permeability is moderately rapid. Runoff is slow to medium, and the erosion hazard is slight to moderate (See: Figure No 9, “Soils Map”).

Potential Impacts and Mitigation Measures. The proposed project will include limited new development on a currently developed parcel. Therefore, the subject parcel will require no significant alterations to the soils or topography of the site. The topographic and soil analysis suggests that the proposed use is suitable for the site

3. Floods and Tsunami Zone

Existing Conditions. According to Panel Number 150003 0161C of the Flood Insurance Rate Map, August 3, 1998, prepared by the United States Federal Emergency Management Agency, the subject parcel is situated in Flood Zone C. Flood Zone C represents areas of minimal flooding. The subject parcel is located approximately 6.5 miles from the shoreline and is not in a tsunami inundation zone (See: Figure No. 7, “Flood Insurance Rate Map”).



Potential Impacts and Mitigation Measures. The subject property is not located within a flood hazard area nor is it situated within the limits of tsunami inundation. As such, no adverse impacts from flooding or tsunami inundation are anticipated. During the Building Permit process, the applicant will be required to comply with Maui County Code Chapter 20.08, Soil Erosion and Sediment Control.

4. Terrestrial Biota (Flora and Fauna)

Existing Conditions. The project site is currently developed and has been subject to various ground disturbance activities over the duration of the 177 years since the school's establishment. The vegetation found on the site includes *haole koa*, various grasses, weeds and trees. Feral mammals typically found in this area include mongoose, cats, rats, and mice. Avifauna commonly found in this area includes the common mynah, spotted dove, barred dove, and house finch.

Potential Impacts and Mitigation Measures. There are no known significant habitats of rare, endangered or threatened species of flora and fauna located on the subject property, as it has already been disturbed by prior development. Therefore rare, endangered, or threatened species of flora and fauna will not be impacted by the proposed project.

5. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural background and emissions from many pollution sources. The impact of land development activities on air quality in a proposed development's locale differs by project phase (site preparation, construction, occupancy) and project type. In general, air quality in the West Maui area is considered relatively good. Non-point source emissions (automobile) are not significant to generate a high concentration of pollutants. The relatively high quality of air can also be attributed to the region's exposure to wind, which quickly disperses concentrations of emissions. West Maui is currently in attainment of all pollutant criteria established by the Clean Air Act, as well as the State of Hawaii Air Quality Standards (Hawaii State Department of Health, 2007).

Potential Impacts and Mitigation Measures Air quality impacts attributed to the proposed project could include dust generated by short-term construction related activities. Site work such as grading and building construction, for example, can generate airborne particulate. Adequate dust control measures that comply with the provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control,"



Section 11-60.1-33, Fugitive Dust, will be implemented during all phases of construction. Examples of some of these measures may include:

- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing material transfer points and on-site vehicular routes, and locating potentially dusty equipment in areas of least impact.
- Providing an adequate water source on site prior to start-up of construction activities so that the project site can be regularly sprinkled to keep dust down.
- Onsite dirt piles or other stockpiled particulate matter will be covered, and/or wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions.
- Traffic speeds will be limited to 15 miles per hour or less on all unpaved surfaces and access will be restricted to reduce unnecessary vehicle traffic.
- Landscaping and covering of bare areas, including slopes, beginning with the initial grading phase.
- Installation of temporary silt screens and an 8- to 12-foot high geo-textile dust fence around the perimeter of the project site.
- Controlling of dust from shoulders, project entrances, and access roads.
- Providing adequate dust control during weekends, after hours, and prior to daily start-up of construction activities. Controlling of dust from debris hauled away from project site.

The project is not expected to increase the volume of traffic in the region, which would increase vehicular emissions such as carbon monoxide. Thus, the proposed project is not anticipated to be detrimental to local air quality.

6. Noise Characteristics

Existing Conditions. The noise level is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, and heating, ventilation, and air-conditioning equipment. Ramifications of various sound levels and types may impact health conditions and an area's aesthetic appeal. Noise levels in the vicinity of the project are generally low, with traffic noise from Honoapiilani Highway being the predominant source of background noise.



Potential Impacts and Mitigation Measures. Development at the site could generate some short-term adverse impacts during construction activities. Noise from heavy equipment, such as bulldozers, front-end loaders, and material-carrying trucks and trailers, would be the dominant source of noise during the construction period. To minimize construction related impacts to the surrounding neighbors, construction activities will be limited to normal daylight hours, and activities associated with the construction phase of the project will comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control." In the longer-term, the proposed project should not significantly impact existing noise conditions in the area, as there is not expected to be an increase in traffic generated by the project (**See:** Appendix B, "Traffic Impact Assessment Letter").

7. Archaeological/Historical Resources

Existing Conditions. On February 9, 2009, Scientific Consultant Services, Inc. (SCS) archaeologist Michael Dega, Ph.D. conducted a field inspection of the subject property. The survey located a small number of historic features associated with prior use of the project site for school employee housing (**See:** Appendix C, Archaeological Field Inspection).

Potential Impacts and Mitigation Measures. Pedestrian survey did not indicate that any significant surface cultural features or likely areas for subsurface testing. It is the estimation of the Project Archaeologist, based on the Field Inspection, that any proposed undertaking in the project area would not have an adverse impact on any significant historic or cultural sites. Archaeological monitoring is recommended during any ground-disturbing activities associated with building construction (**See:** Appendix C, Archaeological Field Inspection).

8. Cultural Impact Assessment

Existing Conditions. Archival research, along with the conclusions of the Archaeological Field Inspection discussed above, indicates that while the Lahaina area is rich in Native Hawaiian cultural history, construction at the project site is not likely to impact cultural artifacts or practices.

Lahaina was an area favored by the *ali'i*, functioning for a time as the capital of the Hawaiian Kingdom under Kamehameha I until he moved the capital to Honolulu in 1855. During the time of Kamehameha I, the Lahaina area thrived as a center for the sandalwood trade. Coastal lands in the Lahaina area provided easy access to on- and off-shore fishponds, and some of the most extensive and fertile wet taro lands on Maui were in the Lahaina area (Kirch and Sahlins 1992 Vol. 1:19).



The school was first established on the site as Lahainaluna Seminary, on land donated to missionaries in the 1820s by Hoapili, Governor of Maui, and his wife, Kalakua, for the purpose of establishing a literate ministry of Hawaiian men. The site has been in continuous use as a school since that time, and therefore any historical and/or cultural significance attached to the site would arguably be associated with the school itself.

Informant Interviews. The State Historic Preservation Division (SHPD) and the Office of Hawaiian Affairs (OHA) were consulted in order to seek persons and information associated with native Hawaiian cultural beliefs, practices, and resources occurring at the site of the proposed project. An interview was conducted with Reverend Earl Kukahiko, an individual knowledgeable about and familiar with the project area and its history. The interview was conducted on April 15, 2009 by Chris Hart & Partners. A summary of the interview is presented below.

Earl Kukahiko was born in 1930, in Honokohua, Maui, to Reverend John Kukahiko, originally of Makena, and Daisy Kukahiko, originally from Pa'ia. Rev. John Kukahiko received his seminary training as a boarder at Lahainaluna when the school still functioned as Lahainaluna Seminary, and graduated in 1910. Rev. John Kukahiko was the minister at a plantation church in Honokohua, where Earl spent most of his childhood.

Reverend Earl Kukahiko has a long-standing association and familiarity with this project site, the surrounding environs, and associated cultural issues. He arrived as a boarder at Lahainaluna High School in 1947, at which time the school was a boys' only school. After graduating, he stayed on, and worked as school's Farm Foreman from 1952 through the early 1980s. His wife worked as cafeteria manager at the school for much of this same time period. In total, Rev. Kukahiko was at the school for 34 years before receiving his license as a minister and accepting a position at Waiola Church in Lahaina. Today, he still visits the campus often. He stated that frequently he is the first person contacted when construction or other activities uncover previously unknown infrastructure (e.g. cesspools, piping), because of his historical knowledge of the site.

Reverend Kukahiko recalled many memories of his time at Lahainaluna High School. During his time spent in the dormitories in the late 1940s, the boarding program housed approximately 120 boarders out of a total student population of roughly 400, which fostered a very close-knit community of students and teachers on campus. Farming operations at the time were far more extensive than today, as Lahainaluna was a technical school. Boarders worked in the vegetable gardens, and tending pigs, chickens, and cows. The school at that time operated a slaughterhouse and a dairy, as well as a hatchery that was housed in the basement of the Hale Pa'i building. Reverend Kukahiko spoke about some of the young men from Lahainaluna High School who later



enlisted in military service, and emphasized that the lessons of self-sufficiency they learned at Lahainaluna helped them in the military.

Reverend Kukahiko suggested that undiscovered cultural or archaeological sites probably do not underlie the project area. A cemetery dating from the time of the missionaries lies uphill from the developed area of the campus; however, its location is quite distant from the proposed cafeteria site. Reverend Kukahiko recalled that the now-undeveloped area where the project site is located was once the site of cottages for teachers and school staff, which he estimated were demolished in the 1960s. He further noted that during his early days at the school, the project area was one among several areas on the campus used occasionally for the construction of imu to cook pigs that were slaughtered in the school's slaughterhouse. He was unaware of any ongoing traditional or cultural activities in the project area, and suggested that the main item of cultural and historic significance at the site is the School itself.

Potential Impacts and Mitigation Measures. The Lahaina District as a whole is noted as being significant from a cultural perspective; however, the area which includes the project site has been significantly altered by existing development for the past 178 years. Lands surrounding the campus have been subject to disturbance associated with sugar cultivation. There are no known traditional beach and mountain access trails on the subject property nor did the CIA or Archaeological Field Assessment locate such features. In addition, archaeological field work, historical research, and personal interviews with individuals familiar with the site indicate that, other than Lahainaluna High School itself, there are no historic properties or significant cultural or religious activities which will be adversely impacted by the proposed project. The proposed action is not expected to have an adverse impact upon native Hawaiian cultural beliefs, practices, and resources.

9. Visual Resources

Existing Conditions. The project site overlooks Lahaina Town and the surrounding landscape. Scenic resources to the east, or *mauka* of the site, include the West Maui Mountains. To the west, or *makai*, lie views of the Pacific Ocean and the Island of Lana'i. To the north and south of the Lahainaluna High School Campus, extending generally parallel to the coastline, are broad expanses of vacant land formerly planted in sugarcane (See: Figures No. 6.1 - 6.5, "Site Photographs" and No. 10 "Coastal Scenic Resources Map").

Potential Impacts and Mitigation Measures. The proposed project lies at the *makai* limit of urban development in the area and does not encroach into any significant view corridors toward the ocean. As the project is internal to the Lahainaluna High School



campus, it will also not impact *mauka* views relative to existing conditions. Furthermore, the building and landscape planting will be designed to integrate the project with the visual character of the surrounding campus. The proposed project therefore is not anticipated to significantly impact public view corridors, or the visual character of the site and its immediate environs (See: Figures No. 3.1-3.2, “Site Photographs”).

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 (Maui County Data Book, 2007).

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 parcel is the site of the existing Lahainaluna High School. The proposed action does not involve a housing component nor will it generate a new or secondary demand for housing; therefore, it is not anticipated to increase the population of the immediate area or the County of Maui.

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, service, commercial, and residential center of the region. Agriculture also plays an important role in the region’s economy. Maui Pine’s pineapple fields occupy portions of the intermediate uplands between Honokowai and Honolua, while small-scale diversified agriculture (e.g., coffee, seed corn) occurs on lands *mauka* of Honoapiilani Highway in the area between Kaanapali and Honokowai.



Potential Impacts and Mitigation Measures. On a short-term basis, the development 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 proposed action could create one to two new part-time jobs as enrollment increases; therefore, the proposed action will generate a small but positive overall economic impact in the long term.

C. PUBLIC SERVICES

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, *Parks and Playgrounds*, Maui County Code.

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 Department's 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 County 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. The proposed project is not anticipated to have an impact on 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, but rather will serve both existing and increased future student populations. It will therefore have a positive impact on 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. County landfills located in Hana, Central Maui, Lanai, and Molokai accept residential and commercial solid waste for disposal. In addition to the disposal of solid waste, the Central Maui Landfill, which is located near Puunene, 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 Maalaea, accepts construction and



demolition waste for disposal. Lahainaluna High School contracts with a private waste hauler through a competitive bid process for disposal of solid waste generated at the school. In addition, a separate private contractor collects and disposes of grease collected in the Cafeteria grease interceptors.

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, waste collection and disposal will continue to be handled by the private waste collection services currently serving the LHS campus. Procedures for the long-term disposition of recyclable materials will be evaluated by the Applicant for implementation if feasible. Since the proposed Cafeteria will be serving the existing student population, there is not expected to be an increase in waste generated, and therefore no adverse impacts are anticipated. From a long-range perspective, waste generated by the proposed project is also 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.

Lahainaluna High School is served by a private water system that draws from Kanaha Stream, *mauka* of the school campus. Existing waterlines servicing the Lahainaluna High School campus include 6-inch, 8-inch, and 12-inch transmission and distribution lines.

Potential Impacts and Mitigation Measures. Domestic water demand is not expected to increase as a result of the proposed action, as the proposed action will not by itself generate an increase in enrollment or employment at the school. Domestic water demand will be determined according to guidelines of the Department of Water Supply as part of the building permit application process. The proposed project is not expected to impact water supply infrastructure.



2. Sewer

Existing Conditions. The LHS campus is currently served by the West Maui public sewer system, operated and maintained by the County of Maui. The collection, transmission, treatment, and disposal of the sewage fall under the jurisdiction of the Wastewater Reclamation Division (WWRD), a branch of the recently established Maui Department of Environmental Management (DEM). The WWRD operates a network of sewer lines and pump stations that conveys sewage to the Lahaina Wastewater Reclamation Facility 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. The Lahaina Wastewater Reclamation Facility has a design capacity of 9.0 million gallons per day (gpd). Current usage is approximately 5.0 million gpd, with an additional 2.0 million gpd already allocated to proposed future projects.

Potential Impacts and Mitigation Measures. The proposed project involves connection to the existing public sewer system. Wastewater flow for the proposed project is projected at 3480 gpd. The Proposing Agency 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.

Detailed wastewater contribution calculations will be submitted to the DEM in conjunction with the building permit review and approval process. Because of its relatively limited scope and scale, the proposed project is not expected to have an adverse impact upon County wastewater collection systems and treatment facilities.

3. Drainage

Existing Conditions. Storm runoff to the east of the Industrial Arts Building, *mauka* of the cafeteria site, is intercepted by the roadway/driveway leading to the Industrial Arts Building. The road slopes toward the north and discharges the runoff either into Kanaha Gulch or into a drain inlet fronting the groundskeeper's cottage. The drain inlet discharges into Kanaha Gulch.

Runoff from the new cafeteria site flows overland down to Lahainaluna Road to a drain inlet located across from the driveway leading to the existing cafeteria. This drain inlet connects to the school's drainage system which discharges into the Lahainaluna Ditch. The drainage area is 3.08 acres with a runoff flow rate of 11.23 cfs. (See: Appendix D, Preliminary Drainage Report).

Potential Impacts and Mitigation Measures. The storm runoff will be separated into three drainage areas. Runoff from the north side of the new cafeteria will flow overland



to Lahainaluna Road and combine with flows from the loading area including the kitchen roof and the portion of the new cafeteria roof that slopes to the west. This flow will follow the existing drainage pattern path down to the existing drain inlet. The drainage area is 1.34 acres with a flow rate of 5.07 cfs.

The second drainage area will collect storm runoff generated between the Industrial Arts Building and the new cafeteria including roof runoff that slopes to the east and to the south. The entry plaza and the accessible ramp areas are included in this drainage area. The drainage area is 0.59 acres with a flow of 3.37 cfs. This runoff will receive treatment to remove 80% of the total suspended solids (TSS) for a particle size of 110 microns and will also remove petroleum products.

The third drainage area is the area to the south of the Industrial Arts Building that is above the existing cafeteria. Offsite runoff will be collected into a drain inlet and will bypass the treatment system and be discharged back into the schools drainage system. This drainage area is 1.15 acres with a flow of 4.62 cfs. The total calculated flow due to the improvements is 13.06 cfs. This exceeds the predevelopment flow of 11.23 cfs by 1.83 cfs. To negate the increase in runoff due to the development, a detention system will be utilized to reduce the flows from the second drainage area to predevelopment conditions.

The detention system will consist of two 60-inch High Density Polyethylene (HDPE) pipes spaced five feet apart and connected on each end with concrete manholes. The outlet for the detention system consists of a 6-inch pipe with a 12-inch overflow pipe. The outflow pipe diameter was selected by comparing entrance control losses for various sizes of drain pipes, such that the outflow from the manhole will not exceed 1.99 cfs. While this detention system was designed to be low maintenance, debris and other trash could clog the pipes. Manhole openings on the detention structures will allow access for debris removal.

The treatment for water quality control proposed for the drainage improvements is a flow-through based, hydrodynamic separation system. The system utilizes a combination of vortex motion and flow control to remove sediment, oil and debris from the storm runoff. The water quality control facilities will be installed within Lahainaluna Road and will remain under the ownership of the Department of Education (See: Appendix D, Preliminary Drainage Report).

Examples of BMPs for controlling soil erosion and sedimentation from site runoff during the project's construction phase include, but are not limited to the following:

- Clearing shall be kept to the minimum necessary for equipment operation.



- Construction shall be sequenced to minimize the time of exposure of cleared surface areas.
- Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as PVC sheets, geotextile filter fabric, berms or sediment basins, or vegetative controls such as grass seeding and/or hydro-mulching.
- All slopes and grassed areas shall be graded as soon as final grades have been established. Grading to final grade shall be continuous, and any area in which work has been interrupted, delayed or exposed for more than 15 days shall be grassed in order to prevent dust, erosion, and silt runoff. Areas with imported soils shall be grassed not more than 5 working days after final grades have been established.
- Temporary erosion controls shall not be removed before permanent erosion controls are in place and established.
- All control measures shall be checked and repaired as necessary (e.g., weekly, during dry periods, and within 24 hours after any rainfall event of 0.5 inches or greater within a 24-hour period). During prolonged rainfall, daily inspection will be required. The contractor shall maintain records of checks and repairs to structural and vegetative controls.

4. Roadways and Traffic

Existing Conditions. The subject parcel is accessed from Lahainaluna Road, which is connected to Honoapiilani Highway. Honoapiilani Highway, the main arterial connecting the West Maui region with the rest of the island, is owned and maintained by the State of Hawaii. Lahainaluna Road is maintained by the County of Maui (**See:** Figure No. 8, “Concept Site Plan”).

Potential Impacts and Mitigation Measures. No additional students or employees are anticipated as a result of expanding the cafeteria at this time, and the cafeteria will not be open to persons from off-campus. Thus, there will be no change to existing access and egress traffic patterns of the LHS campus, and any changes to traffic and roadway facilities will be confined to within the school campus

The proposed action will not generate any additional vehicular trips, will not require changes to traffic patterns within or adjacent to the school campus, and will not require any roadway improvements. Therefore, no traffic impacts are anticipated as a result of expanding the LHS cafeteria (**See:** Appendix B, Traffic Impact Assessment Letter).



5. Electrical and Telephone

Existing Conditions. Maui Electric Company and Hawaiian Telcom provide electrical and telephone service to the West Maui region. In the vicinity of the project site, power and phone lines are placed on overhead utility poles along the south side of Lahainaluna Road.

Potential Impacts and Mitigation Measures. The proposed action will not produce additional demand for existing telephone and electrical services.



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 3, State Land Use Map).

Analysis: The proposed public/quasi-public use of the subject parcel is a permissible land use in the State Urban District. The LHS campus is located in an area consisting of medium-density residential development along with agricultural and open space uses. The proposed action will not alter the general character of the immediate area, as it involves the construction of a school cafeteria on a previously developed school campus.

B. GENERAL PLAN OF THE COUNTY

The General Plan of the County of Maui (1990 Update) provides 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.”

The General Plan identifies five major themes as follows:

1. Protect Maui County’s agricultural land and rural identity.
2. Prepare a directed and managed growth plan.
3. Protect Maui County’s shoreline and limit visitor industry growth.
4. Maintain a viable economy that offers diverse employment opportunities for residents.
5. Provide for needed resident housing.



The following General Plan Objectives and Policies are applicable to the proposed project:

I. POPULATION, LAND USE, THE ENVIRONMENT AND CULTURAL RESOURCES

A. Population

Objective No. 1: To plan the growth of resident and visitor population through a directed and managed growth plan so as to avoid social, economic and environmental disruptions.

Policies:

(b.) Balance population growth by achieving concurrency between the resident employee work force, the job inventory created by new industries, affordable resident/employee housing, constraints on the environment and its natural resources, public and private infrastructure and essential social services such as schools, hospitals, etc.

Analysis: The proposed action involves the upgrading of an existing school facility to both adequately serve an existing student population as well as provide for an anticipated increase in enrollment with future population growth in West Maui.

V. SOCIAL INFRASTRUCTURE

D. Education

Objective No. 1: To provide Maui residents with continually improving quality educational opportunities which can help them better understand themselves and their surroundings and help them realize their ambitions .

Policies:

(e.) Support the State in its efforts to recruit quality teachers and develop expanded and upgraded facilities in a timely manner.

Analysis: The proposed action will provide an upgraded facility to adequately serve both existing and future student populations. As discussed in Section II.D above, the DOE Facility Assessment and Development Schedule (FADS), dated January 2006, calls for a new cafeteria at LHS of approximately 18,776 net usable square feet.



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.

The Lahainaluna High School campus is located in the West Maui Community Plan region and the underlying parcels are designated for Public/Quasi-public use (**See:** Figure No. 4, "Community Plan Map"). The West Maui Community Plan was adopted by Ordinance No. 2476 and went into effect on February 27, 1996.

The following Community Plan objectives and policies are applicable to the proposed action:

SOCIAL INFRASTRUCTURE

Goal: *Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy, and enjoyable lifestyle, and offers opportunities for self improvement and community well being.*

Education

Objectives and Policies:

- 1. Ensure adequate school facilities and educational opportunities within the region.*
- 2. Support the improvement and maintenance of existing school facilities.*

Analysis: The proposed action will enable the development of adequate facilities for the existing student enrollment as well as providing improved facilities for future enrollment; hence, it is in line with the policies and objectives of the West Maui Community Plan.

D. MAUI COUNTY ZONING

The subject property is currently zoned Interim District (**See:** Figure No. 5, "County Zoning Map"). Permissible uses in the Interim District as described in Chapter



19.02.030, Maui County Code (MCC), “Permitted Property Uses,” include, but are not limited to:

4. *Day care nurseries, museums, churches, libraries, kindergartens, elementary schools, intermediate schools, high schools and universities;*
5. *Publicly owned buildings;*

Analysis: Pursuant to MCC Section 19.02.020, the Interim District was established for the purpose of providing interim regulations pending the formal adoption of a comprehensive zoning ordinance and map which are deemed as necessary in order:

“A. To encourage the most appropriate use of land;

B. To conserve and stabilize the value of property;

C. To prevent certain uses that will be detrimental to existing uses;

D. To promote the health, safety and the general welfare of the respective districts. (Prior code § 8-2.2)”

Construction of the proposed cafeteria building represents a permitted use within the Interim district; is an appropriate use of the land given the applicable State Land Use and Community Plan designations; and is an action that serves to promote the general welfare of the West Maui region. Therefore, the proposed project meets the intent and purpose of the Maui County Interim Zoning District.

The subject property is not located within the limits of Lahaina’s Historic District. As such, the proposed action is not subject to historic district regulations which stipulate that the exterior of all new buildings constructed within these districts must be consistent with the architectural styles for the districts so that the general design character of the districts is maintained.



V. ENVIRONMENTAL ASSESSMENT CRITERIA

Since the proposed project involves the use of State lands and funds, an Environmental Assessment is required by Hawaii Revised Statutes (HRS), Chapter 343. A finding of no significant impact (FONSI) is anticipated and therefore an Environmental Impact Statement (EIS) will not be required for the proposed action. In accordance with Title 11, Department of Health, Chapter 200 and Subchapter 6, Section 11-200-12, Environmental Impact Statement Rules, and based on the detailed analysis contained within this document, the following conclusions are supported.

1. **The proposed action will *not* result in an irrevocable commitment to loss or destruction of natural or cultural resources.**

Analysis. As documented in this report, the proposed project will not involve the loss or destruction of any natural or cultural resource (See: Section III).

2. **The proposed action will *not* curtail the range of beneficial uses of the environment.**

Analysis. The subject property is within the State's Urban District and the proposed use is allowed by the existing Community Plan and County Zoning designations. There are no unique or important environmental or natural resources on the property, the use of which would be impacted by the project. Thus, the proposed action will not curtail the range of beneficial uses of the environment.

3. **The proposed action will *not* conflict with State or County long-term environmental policies and goals as expressed in Chapter 344, HRS, and those which are more specifically outlined in the Conservation District Rules.**

Analysis. Development of the proposed project will take place in compliance with the State's long-term environmental goals. As documented in this report, appropriate mitigation measures will be implemented to minimize the potential for negative impacts to the environment, including near and off-shore coastal waters. The project will not have any impact on flora and fauna, and is not expected to have a negative impact on archeological or cultural resources.

4. **The proposed action will *not* substantially affect the economic or social welfare and activities of the community, county or state.**

Analysis. Short-term economic impacts can be expected to result from the increase in activity associated with construction at the site. In the long term, the development is



not expected to create additional full-time jobs. Therefore, the proposed action is not expected to have any negative overall impacts on the socio-economic environment (See: Section III.B).

5. The proposed action will *not* substantially affect public health.

Analysis. There are no special or unique aspects of the project that will have a direct impact on public health.

6. The proposed action will *not* result in substantial secondary impacts.

Analysis. The proposed project is not a population generator nor does it trigger any Maui County residential workforce housing requirements. Increased activity at the site during the construction phase may result in a marginal increase in traffic and associated noise and air pollution. However, as analyzed in Section III of this report, the increase in the level of these impacts is minimal and with the incorporation of mitigation measures is not anticipated to substantially impact the environment.

7. The proposed action will *not* involve substantial degradation of environmental quality.

Analysis. Mitigation measures will be implemented during the construction phase in order to minimize negative impacts on the environment, especially with regards to construction runoff. Also, the design of the project has incorporated mitigation measures to minimize impacts to nearshore water quality that could arise from an increase in runoff generated on the site as a result of the project (See Section III for a discussion of drainage). Other environmental resources such as endangered species of flora and fauna, air and water quality, and archeological resources will not be significantly impacted by the subject project.

8. The proposed project will not produce cumulative impacts and does *not* have considerable effect upon the environment or involve a commitment for larger actions.

Analysis. The proposed project is internal to the existing Lahainaluna High School campus, and does not involve a commitment for larger action on behalf of the applicant or any public agency. The subject property is designated for urban uses by State, County, and Community Plan land use controls, and as such, is part of the planned future growth of the West Maui region. As described in this report, the project will not significantly impact public infrastructure and services including roadways, drainage facilities, water systems, sewers and educational facilities. In addition, the project is not



a population growth generator and will therefore not produce considerable effect on the environment nor require a commitment for larger actions by governmental agencies.

9. **The proposed project will *not* affect a rare, threatened, or endangered species, or its habitat.**

Analysis. As described in Section III of this report, there are no rare, threatened, or endangered species of flora and fauna at the project site.

10. **The proposed action will *not* substantially or adversely affect air and water quality or ambient noise levels.**

Analysis. As described in Section III of this report, there is short-term potential for negative impacts to air or water quality and ambient noise levels related to construction activities. Air, noise and dust impacts will be mitigated through implementation of standard mitigation measures as identified previously in this report. It is not anticipated that the proposed action will create significant long-term impacts to air or water quality and ambient noise levels.

11. **The proposed action will *not* substantially affect or be subject to damage by being located in an environmentally sensitive area, such as flood plain, shoreline, tsunami zone, erosion-prone areas, estuary, fresh waters, geologically hazardous land or coastal waters.**

Analysis. According to Panel Number 150003 0161C of the Flood Insurance Rate Map, August 3, 1998, prepared by the United States Federal Emergency Management Agency, the subject parcel is situated in Flood Zone C. Flood Zone C represents areas of minimal flooding (See: Figure No. 7, "Flood Insurance Rate Map"). The proposed project therefore should not be affected by or have adverse impacts upon its neighbors with regards to flood hazard potential.

12. **The proposed action will *not* substantially affect scenic vistas or view planes identified in county or state plans or studies.**

Analysis. As discussed in Section III of this report, there will be no significant change in the project's effect on *mauka* or *makai* views. Therefore, the proposed project is not expected to have any significant adverse effects on visual resources. Figures No. 6.1 - 6.5, "Site Photographs," and No. 10, "Coastal Scenic Resources Map," document the project's potential impacts on visual resources.



13. The proposed action will not require substantial energy consumption

Analysis. Given the scope of the project, it is not anticipated that the increase in energy consumption from construction of the proposed Cafeteria will be significant within the context of existing levels of power consumption or vehicular energy usage on the Lahainaluna High School campus, in the region, and on Maui.



VI. FINDINGS AND CONCLUSIONS

This Draft Environmental Assessment analyzes the environmental and socio-economic impacts associated with the construction of a new Cafeteria Building , along with related site improvements, at the Lahainaluna High School campus.

The proposed action is not anticipated to result in significant environmental impacts to surrounding properties, near shore waters, natural resources, and/or archaeological and historic resources on the site or in the immediate area. Public infrastructure and services including roadways, sewer and water systems, medical facilities, police and fire protection, parks, and schools, are adequate to serve the project and are not anticipated to be significantly impacted by the proposed project. The proposed project is not anticipated to impact public view corridors and is not anticipated to produce significant adverse impacts upon the visual character of the site and its immediate environs.

The proposed action supports the existing mixture of residential, public/quasi-public and agricultural uses that characterize the immediate area. The subject parcel is located in the State Urban District, is designated for Public/Quasi-public use by the West Maui Community Plan, and is located in the Maui County Interim Zoning District. As such, the proposed action is consistent with the goals, objectives and policies of the West Maui Community Plan, State Land Use Law, and Maui County Zoning.

In light of the foregoing, the proposed construction of a new Cafeteria Building at Lahainaluna High School is not expected to have a significant impact on County infrastructure or the natural environment, and a Finding of No Significant Impact (FONSI) is anticipated.



VI. REFERENCES

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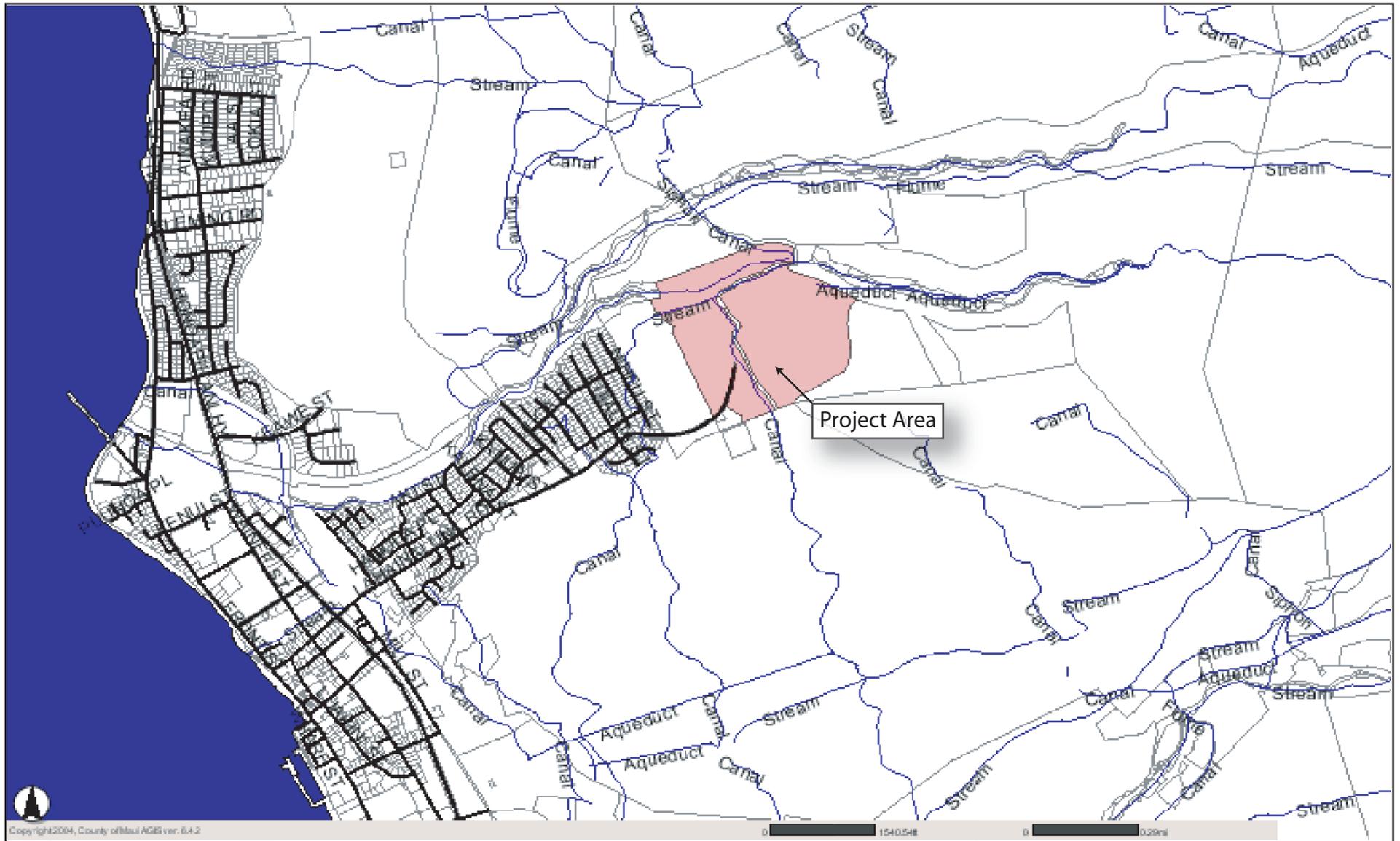
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3. FIGURES



Copyright 2004, County of Maui AGS ver. 6.4.2



Figure 1.1

Regional Location Map	
Lahainaluna High School Cafeteria Building	



Figure 1.2

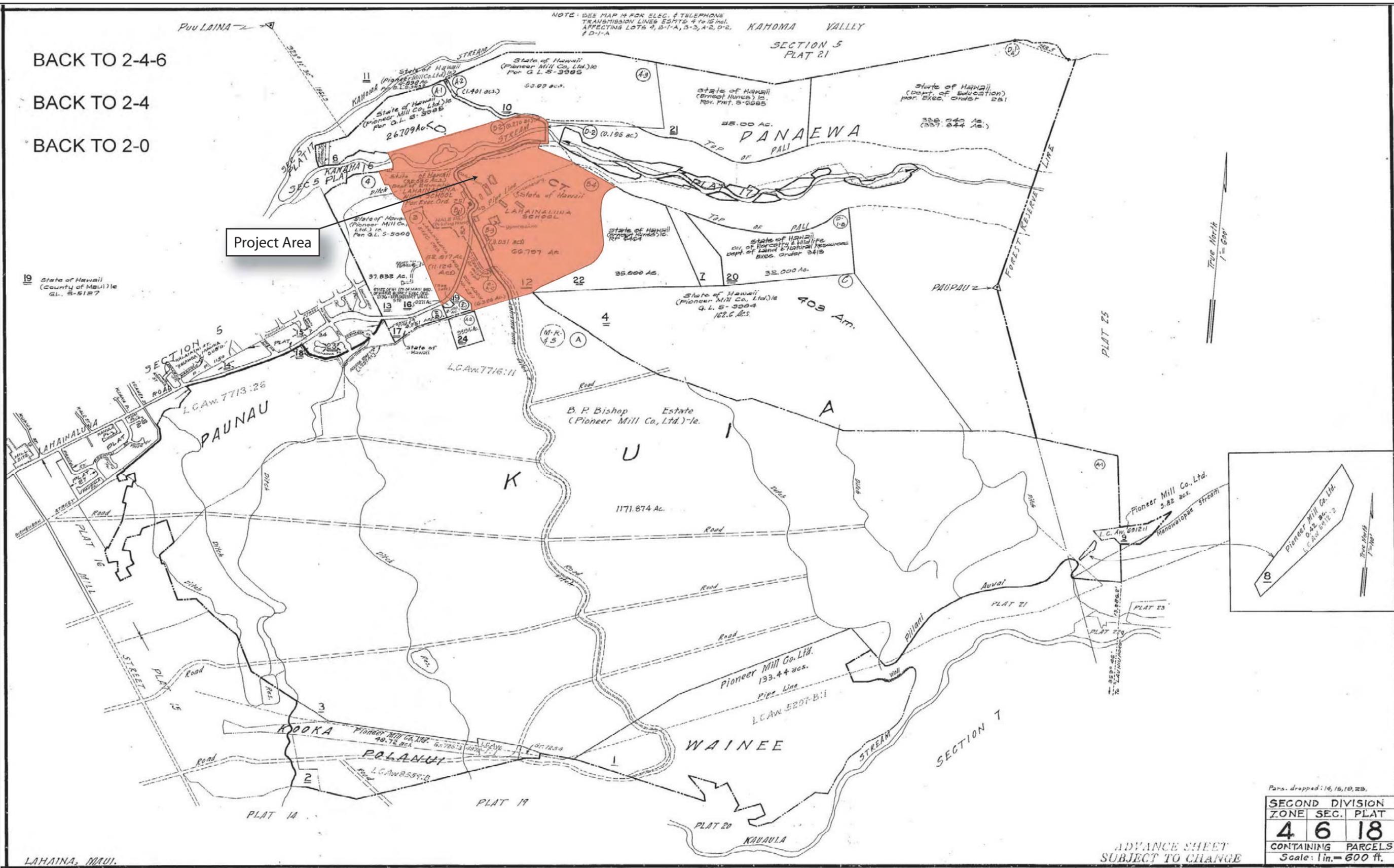
Aerial Location Map	
Lahainaluna High School Cafeteria Building	

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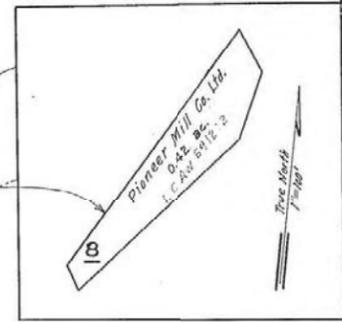
BACK TO 2-4

BACK TO 2-0

NOTE - SEE MAP 19 FOR ELEC. & TELEPHONE TRANSMISSION LINES EDITS 4 TO 15 INCL. AFFECTING LOTS 9, 5-1-A, 5-3, 4-2, 0-2, 7-D-1-A



Project Area



Parts dropped: 14, 15, 18, 23.

SECOND DIVISION		
ZONE	SEC.	PLAT
4	6	18
CONTAINING PARCELS		
Scale: 1 in. = 600 ft.		

ADVANCE SHEET
SUBJECT TO CHANGE

Figure 2

TMK Map		
Lahainaluna High School Cafeteria Building		

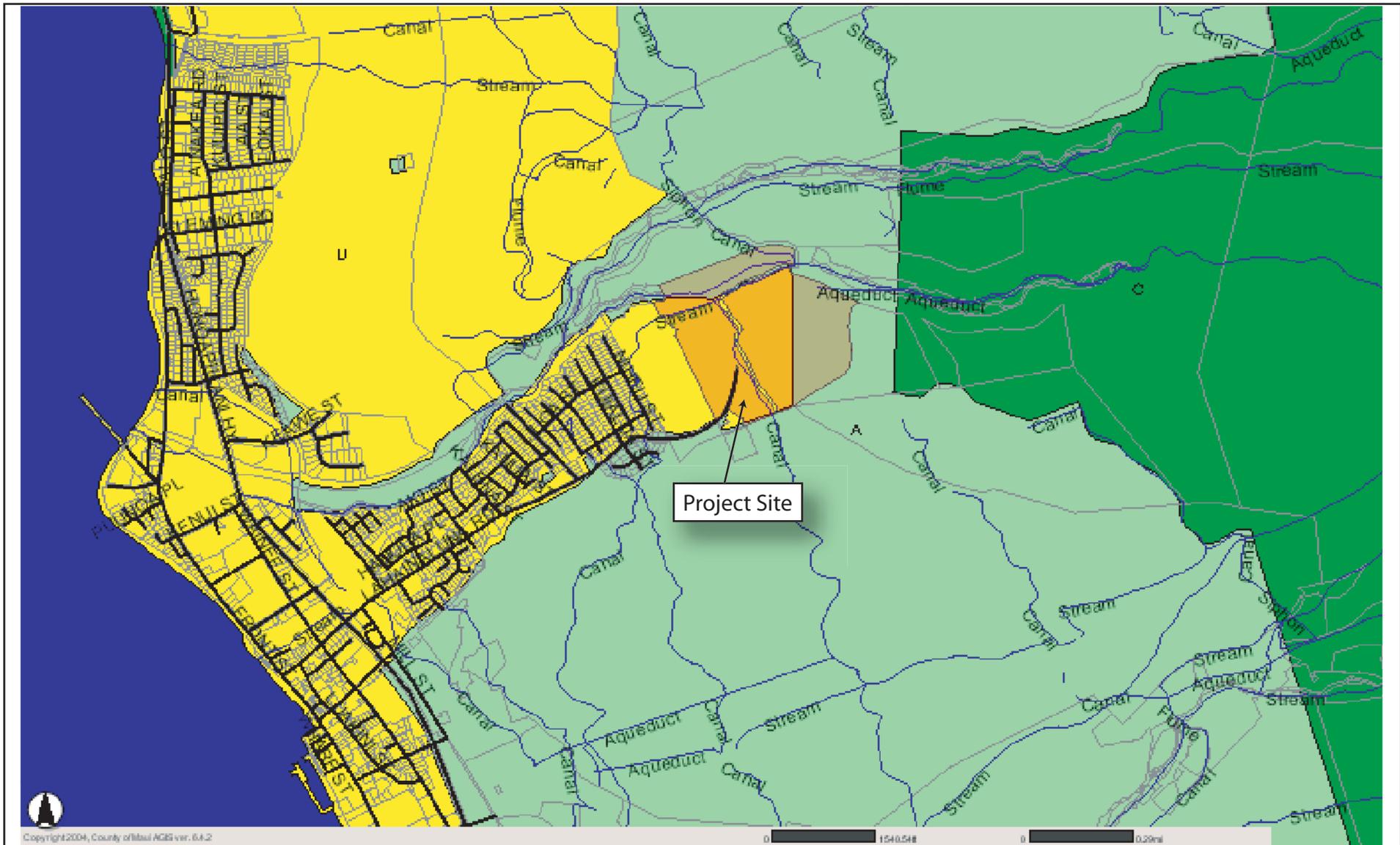
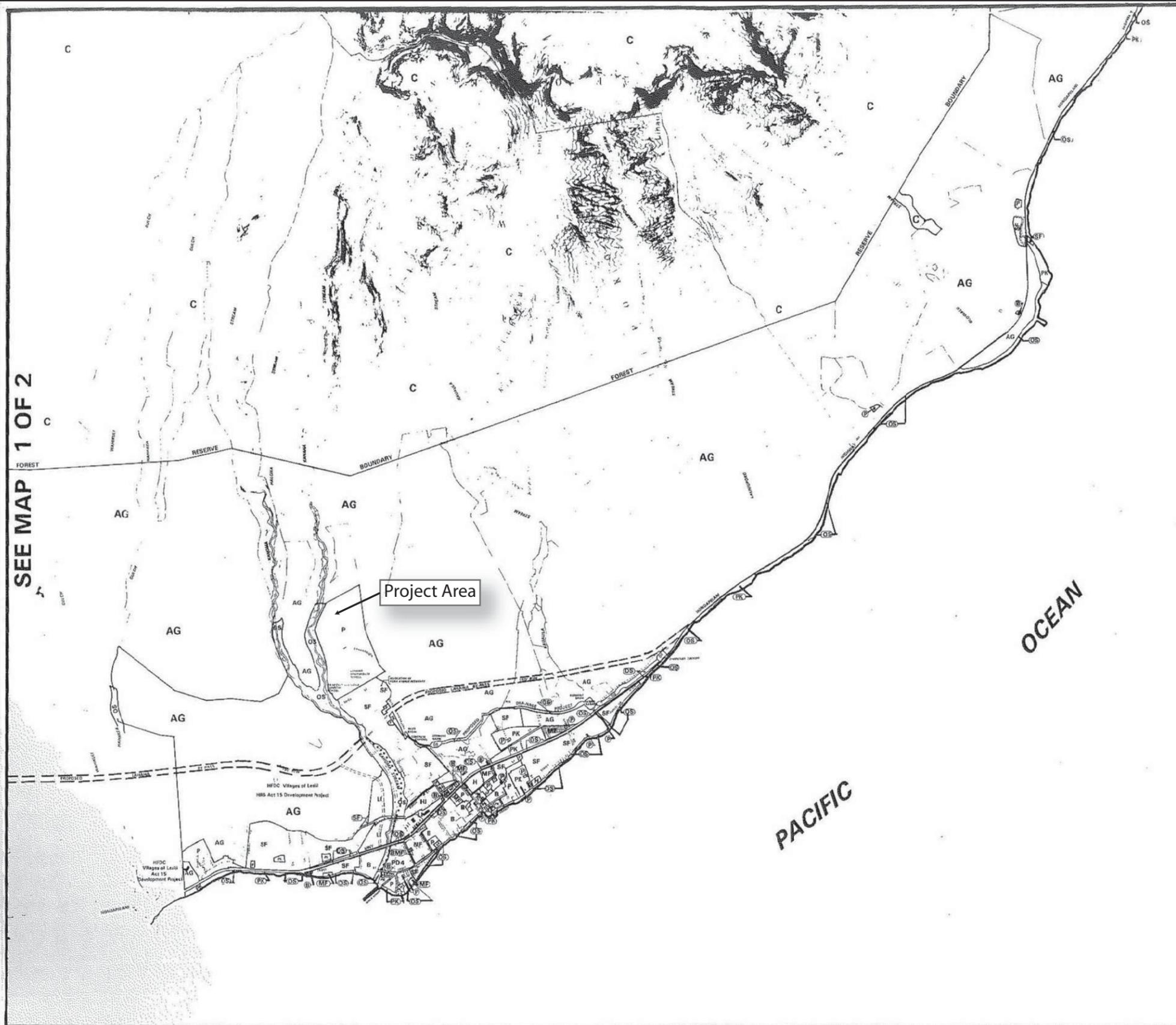


Figure 3

- Agricultural
- Conservation
- Rural
- Urban

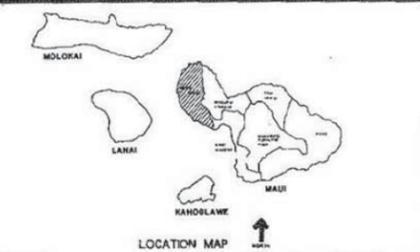
State Land Use Map	
Lahainaluna High School Cafeteria Building	



SEE MAP 1 OF 2

LEGEND

- SF Single Family Residential
- MF Multi-Family Residential
- B Business/Commercial
- SBR Service Business/Residential
- BMF Business/Multi-Family
- HI Heavy Industrial
- LI Light Industrial
- H Hotel
- P Public/Quasi-Public
- PK Park (GC) Golf Course
- OS Open Space
- PD Project District
- AP Airport
- AG Agricultural
- R Rural
- C Conservation
- Bikeway
- < One-way Street ARROW DIRECTION OF TRAFFIC FLOW



MAUI COMMUNITY PLANS
WEST MAUI
LAND USE MAP 2 OF 2

COUNTY OF MAUI

APPROVED: _____ DATE _____ PUBLIC HEARING: _____
 ADOPTED: 2/26/96

APPROVED: _____ DATE _____ ORDINANCE: 2476
 PLANNING DIRECTOR DATE DATE: _____
 REVISED: _____



Figure 4

Community Plan Map	
Lahainaluna High School Cafeteria Building	



April 7, 2009

COUNTY OF MAUI DEPARTMENT OF PLANNING ZONING AND FLOOD CONFIRMATION REQUEST FORM

Jason Medema, Planner, Chris Hart & Partners, Inc.

APPLICANT: FOR State Of Hawaii, Department of Education TELEPHONE: 808-242-1955
ADDRESS: 115 N. Market Street, Wailuku, HI 96793
PROJECT NAME: Lahainaluna High School Cafeteria Building
ADDRESS AND/OR LOCATION: 980 Lahainaluna Road, Lahaina, HI 96761
TMK: NUMBER(S): (2) 4-6-018:012 (por.)

ZONING INFORMATION

STATE LAND USE Ag & Urban COMMUNITY PLAN P/OP - Public / Open - Public
COUNTY ZONING Interim

OTHER SPECIAL DISTRICTS

- Special Management Area
- Shoreline Setback Area
- Country Town Design District
- Lahaina National Historic Landmark District
- Maui Redevelopment Area
- Other _____

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
APR -7 P2:20

FLOOD INFORMATION

FLOOD HAZARD AREA * ZONE C
BASE FLOOD ELEVATION N/A MEAN SEA LEVEL, 1929 NATIONAL GEODETIC
VERTICAL DATUM OR FOR FLOOD ZONE AO, FLOOD DEPTH _____

FLOODWAY [] Yes [] No

FLOOD DEVELOPMENT PERMIT IS REQUIRED [] Yes [] No

* For FLOOD HAZARD AREA ZONES B OR C; 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.
- Correction has been made and initialed.

REVIEWED AND CONFIRMED BY [Signature] DATE 4/9/09

SIGNATURE AARON SHINMOTO
ZONING ADMINISTRATION AND ENFORCEMENT DIVISION
Planning Program Administrator

(S:\ALL\FORMS\APPLICATION FORMS\SMA\ASSESSMENT\APP_REV0804.WPD)

S:\ALL\FORMS\Application Forms\SMA\Assessment\App_Rev0804.wpd

Figure 5

County Zoning Confirmation Form
Lahainaluna High School Cafeteria Building



Photo 1. View across project site facing North-Northwest , from Southwest corner of site.



Photo 2. View across project site facing North-Northeast , from Southwest corner of site.

Figure 6.1

Photo 3. Makai view, panning West to South from Northeast corner of project site.



Photo 4. Makai view, facing Northwest from Southeast corner of project site.



Figure 6.2

Photo 5. Lana'i view, facing *makai* from North end of project site, along Lahainaluna Road.



Photo 6. Lana'i view, facing *makai* from directly below (West of) project site, along Lahainaluna Road.

Figure 6.3

Site Photographs	
Lahainaluna High School Cafeteria Building	

Photo 7. View through site, facing *mauka* from North-Northwest of project site, along Lahainaluna Road.



Photo 8. Shop building, located immediately *mauka* of project site.

Figure 6.4

Site Photographs	 CHRIS HART & PARTNERS, INC.
Lahainaluna High School Cafeteria Building	

Photo 9. Existing cafeteria, facing *mauka* from South-Southwest corner of project site.



Photo 10. *Makai* view from shop building above project site; existing cafeteria in foreground.

Figure 6.5

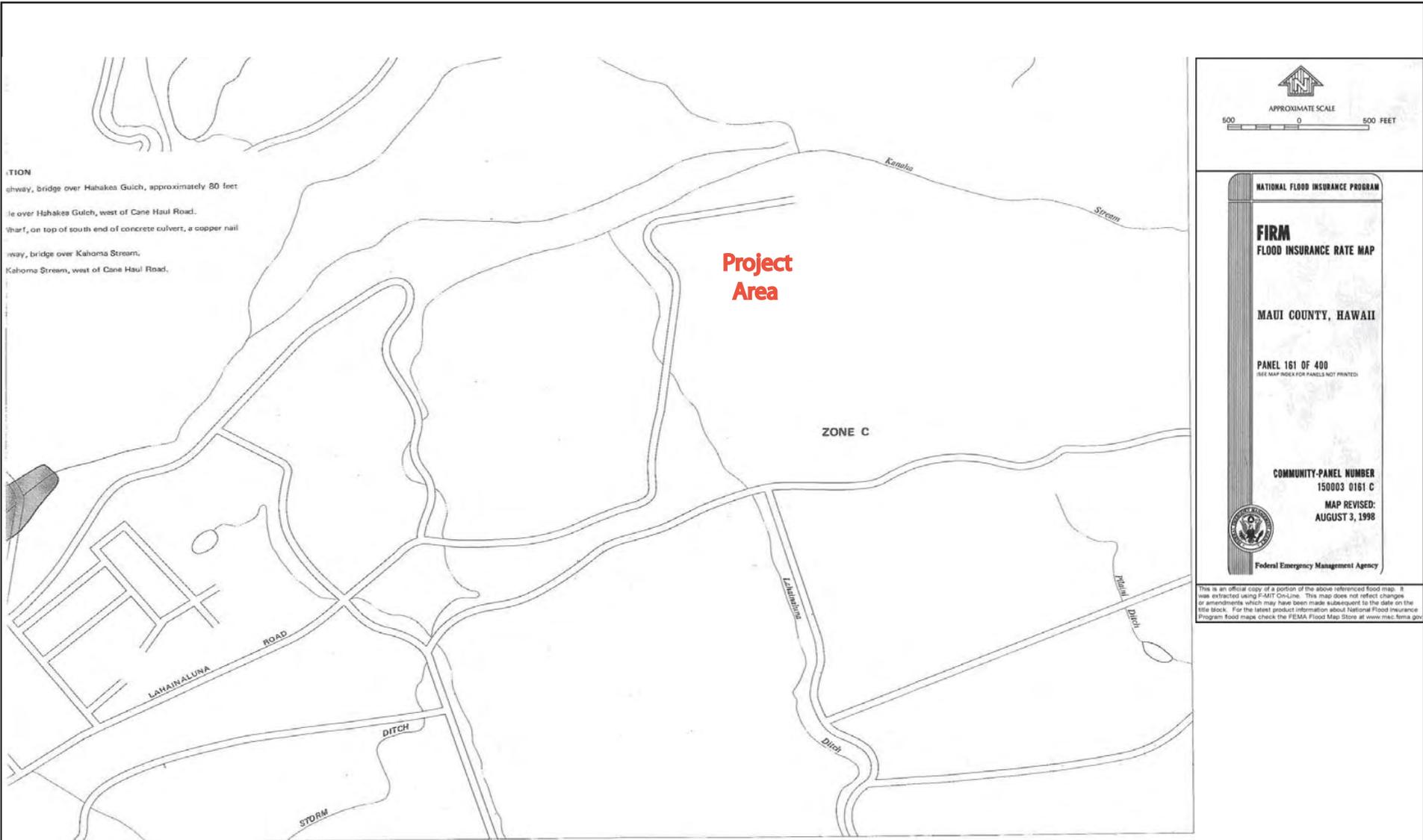
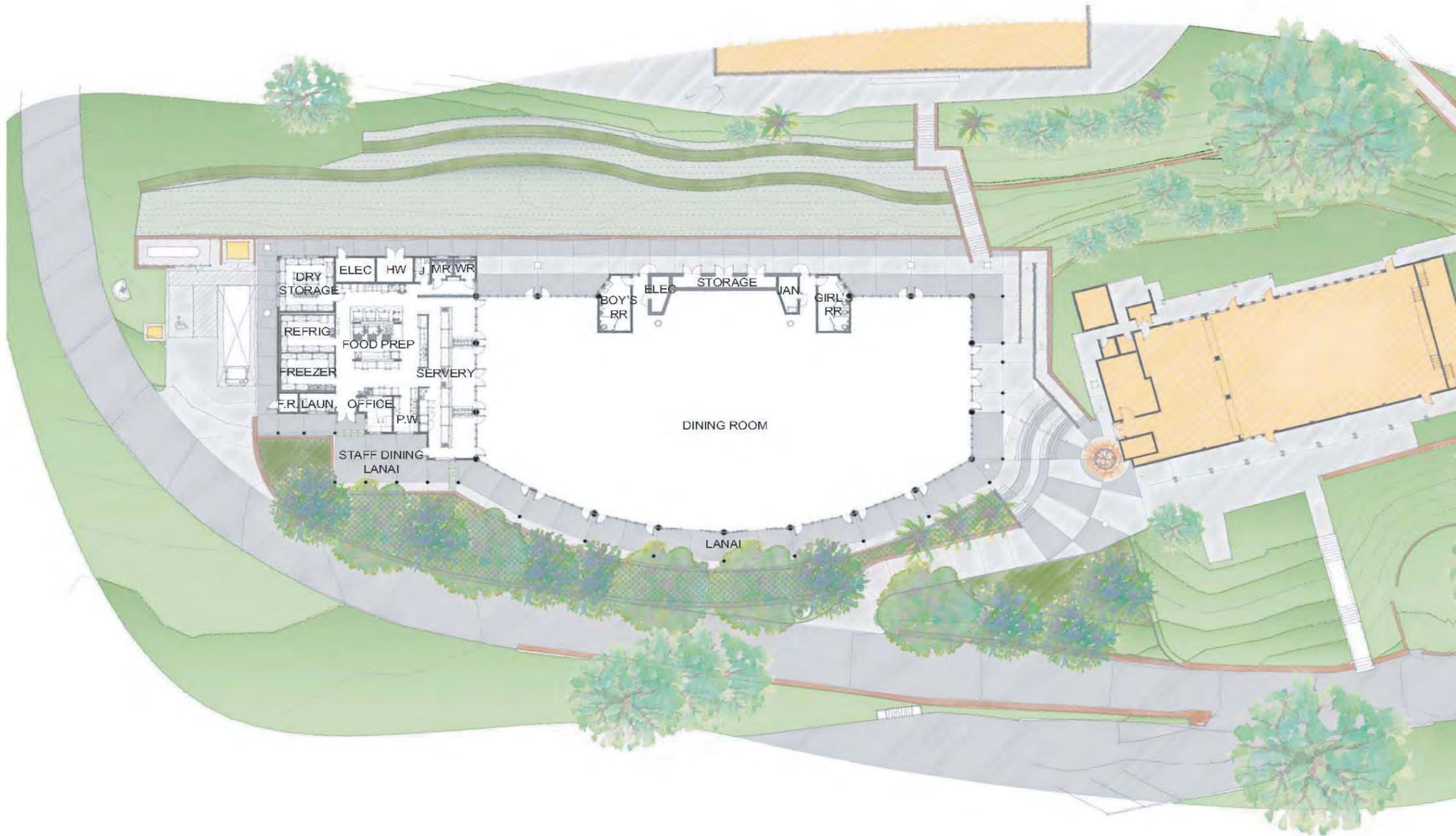


Figure 7

Flood Zone Map	
Lahainaluna High School Cafeteria Building	



1 SITE PLAN
A1.01 1/16" = 1'-0"



JANUARY 27, 2009



FERRARO CHOI

LAHAINALUNA HIGH SCHOOL CAFETERIA

LAHAINA, MAUI, HAWAII

DESIGN MODIFICATIONS: OPTION 3

Figure 8

Concept Site Plan	 CHRIS HART & PARTNERS, INC.
Lahainaluna High School Cafeteria Building	

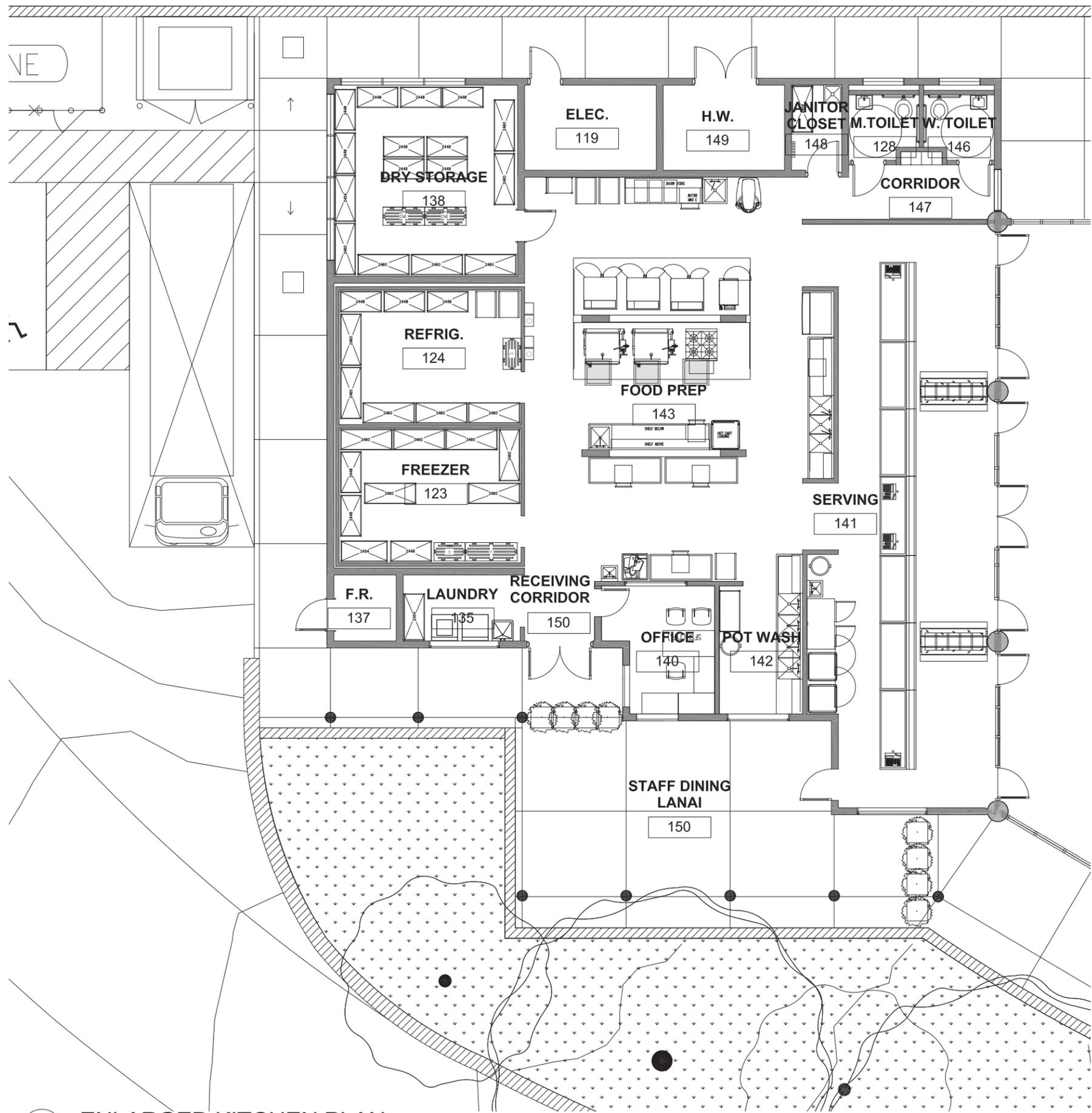
Figure 11

Concept Architectural
Drawings

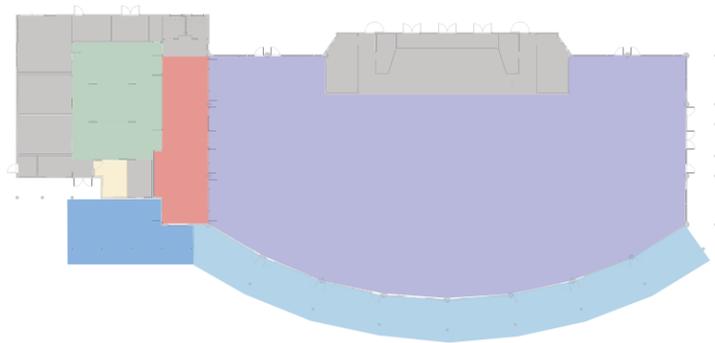
Lahainaluna High School
Cafeteria Building



**CHRIS
HART**
& PARTNERS, INC.

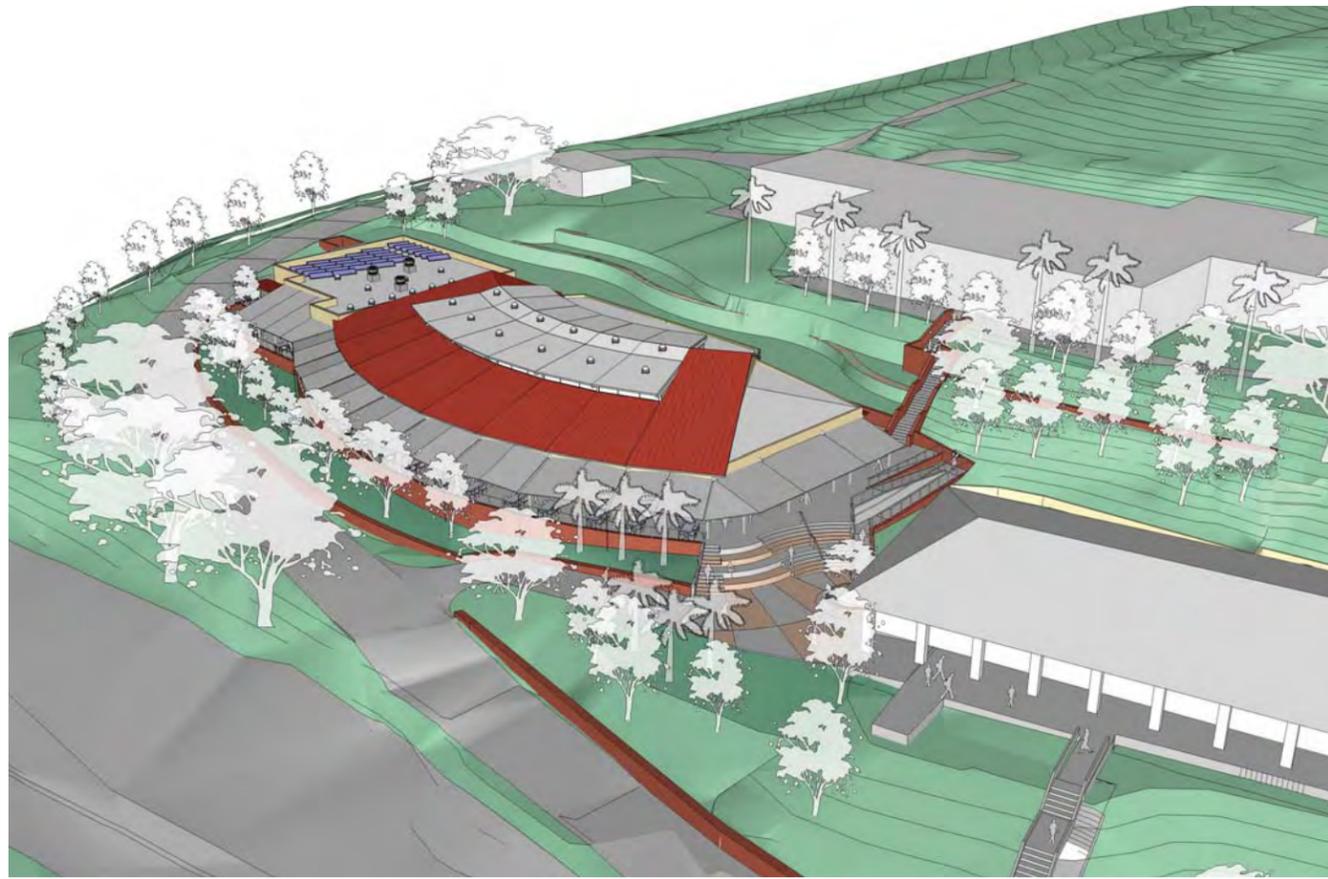


1 ENLARGED KITCHEN PLAN
 A1.06 SCALE= 3/16"=1'-0"



SPATIAL ADJACENCIES

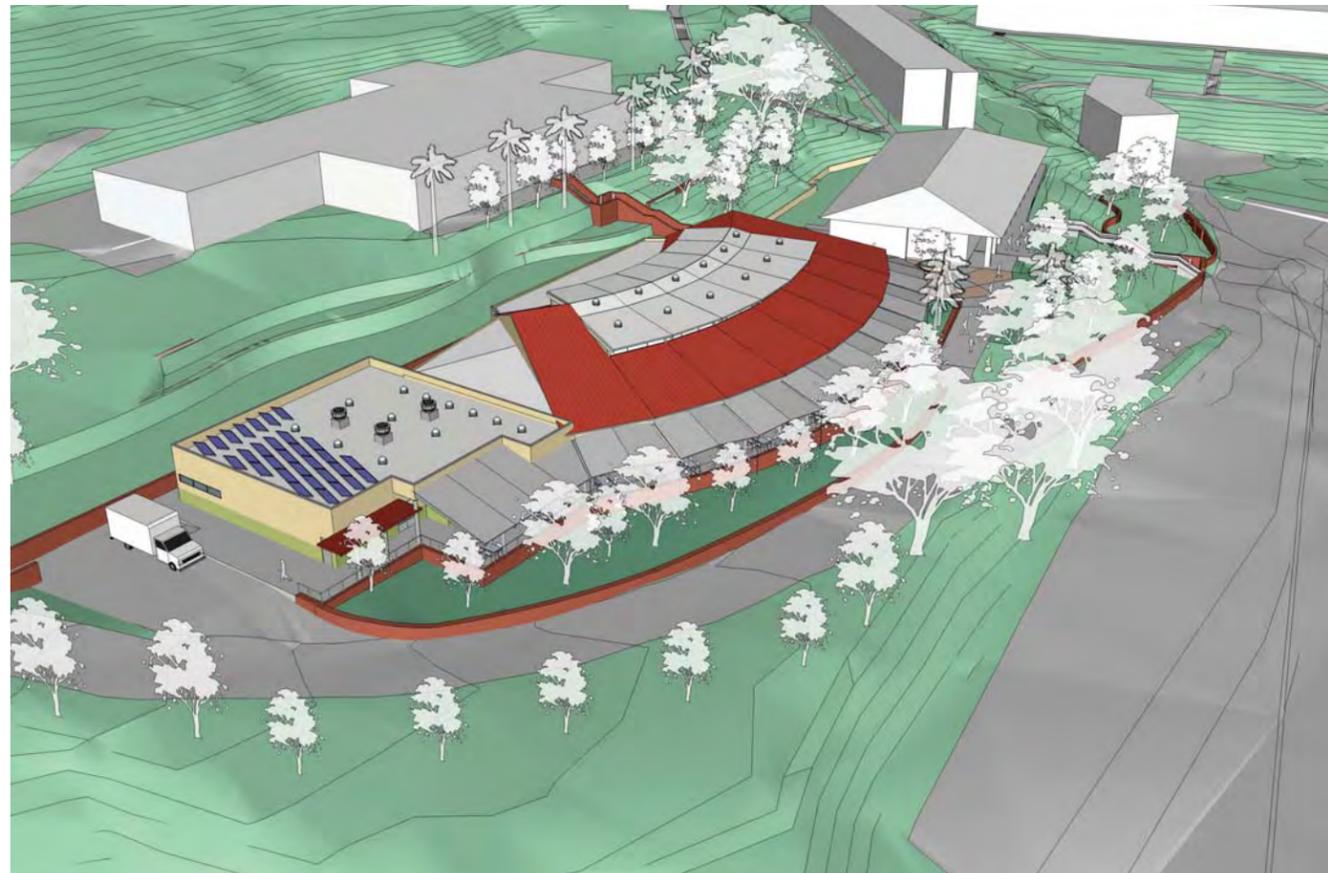
- | | | | |
|------------------|--|----------------------|--|
| FOOD PREPARATION | | STUDENT DINING | |
| PRIVATE OFFICES | | STUDENT DINING LANAI | |
| SERVERY | | STAFF DINING LANAI | |



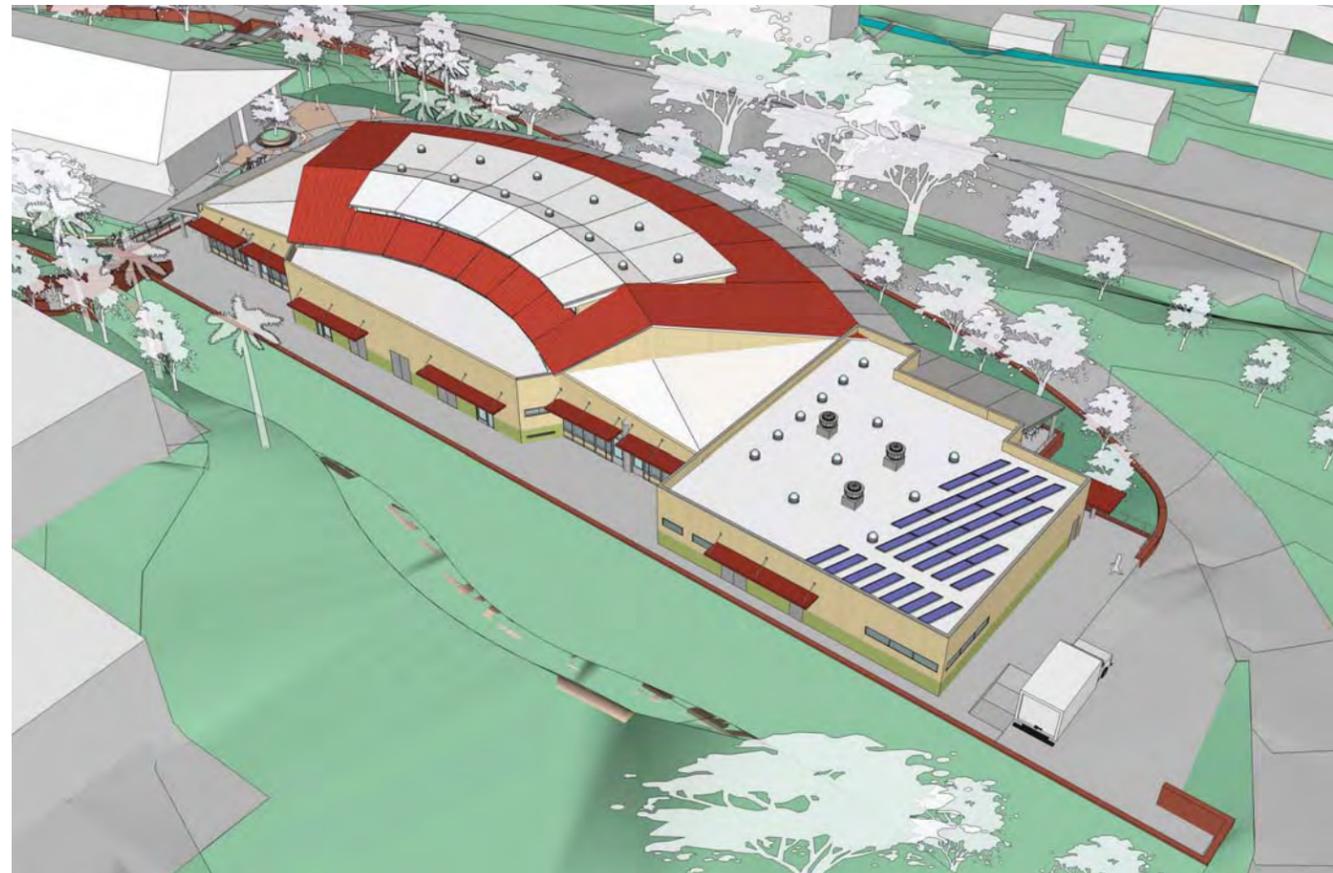
VIEW LOOKING NORTH



VIEW LOOKING NORTHWEST



VIEW LOOKING SOUTH



VIEW LOOKING SOUTHWEST

FERRARO CHOI

LAHAINALUNA HIGH SCHOOL CAFETERIA

LAHAINA, MAUI, HAWAII

DESIGN MODIFICATIONS: OPTION 3

JANUARY 27, 2009





VIEW LOOKING NORTH



VIEW LOOKING NORTHWEST



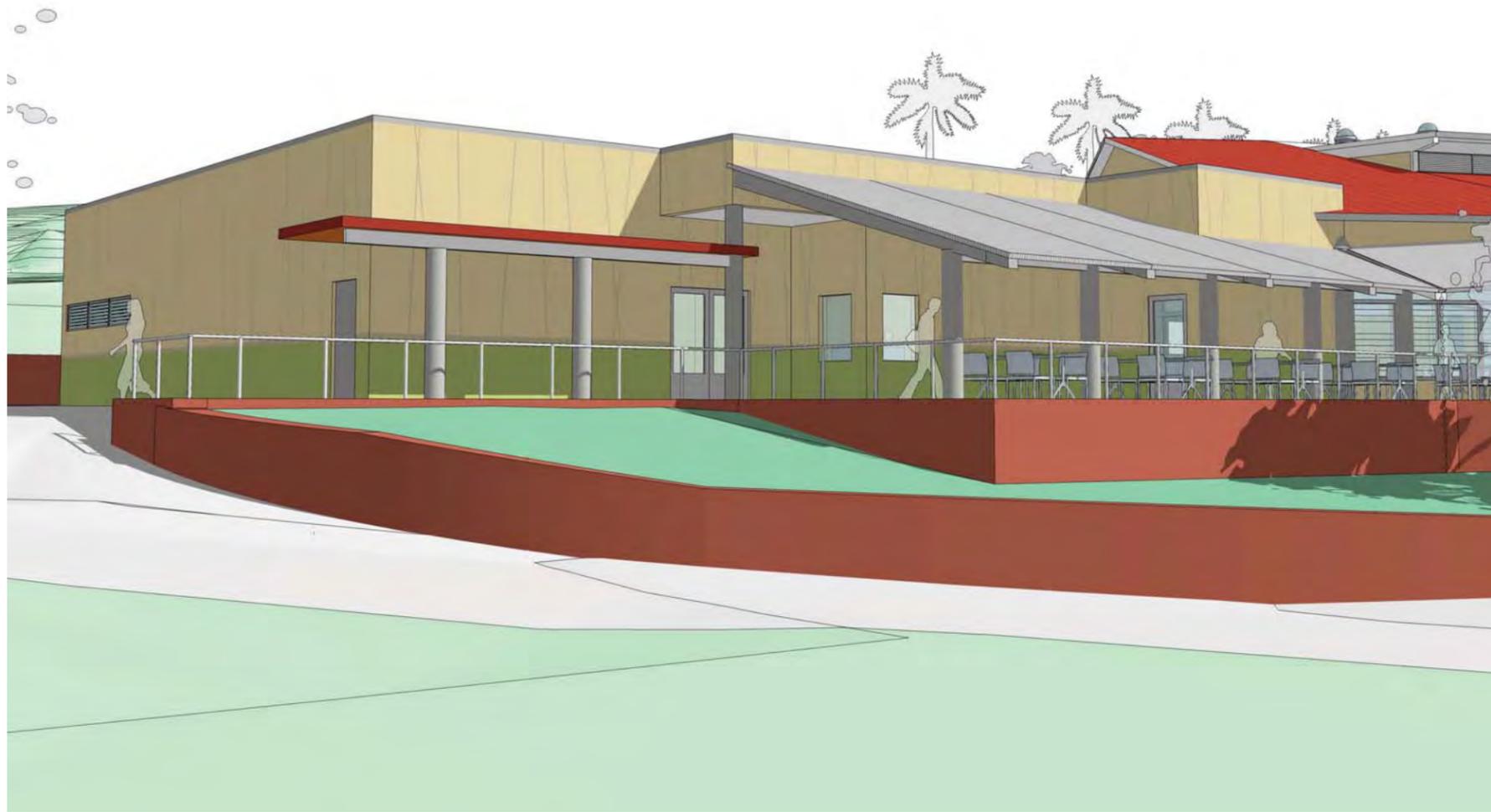
VIEW LOOKING SOUTHEAST



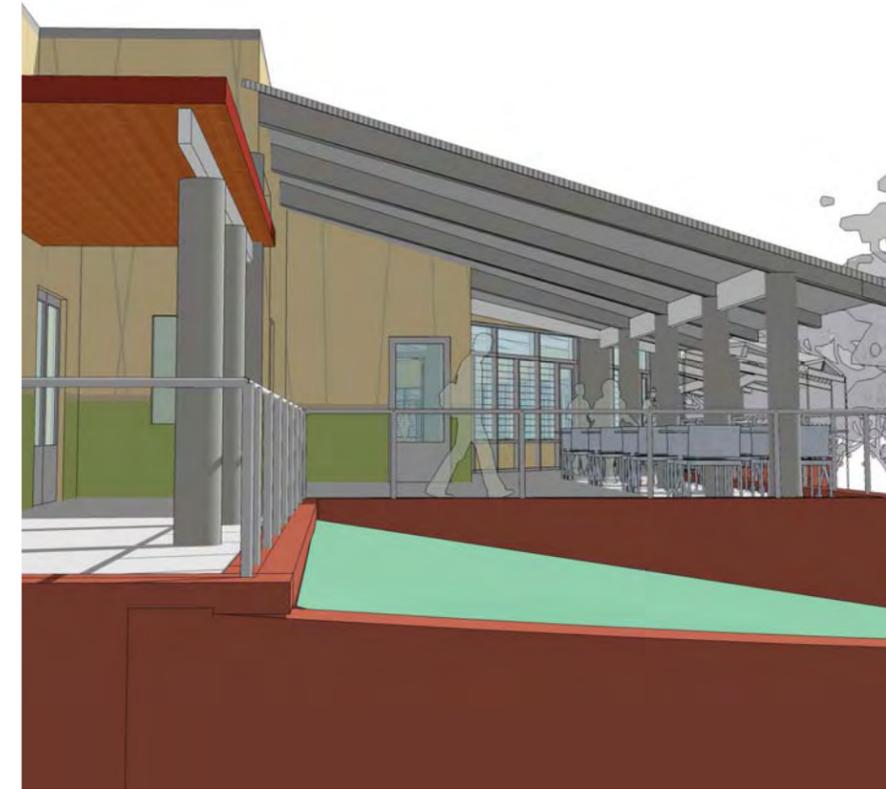
VIEW LOOKING SOUTH



VIEW LOOKING NORTHEAST



VIEW LOOKING EAST



VIEW LOOKING SOUTHEAST AT STAFF DINING LANAI



VIEW LOOKING SOUTH

FERRARO CHOI

LAHAINALUNA HIGH SCHOOL CAFETERIA

LAHAINA, MAUI, HAWAII

DESIGN MODIFICATIONS: OPTION 3

JANUARY 27, 2009





VIEW LOOKING NORTHEAST



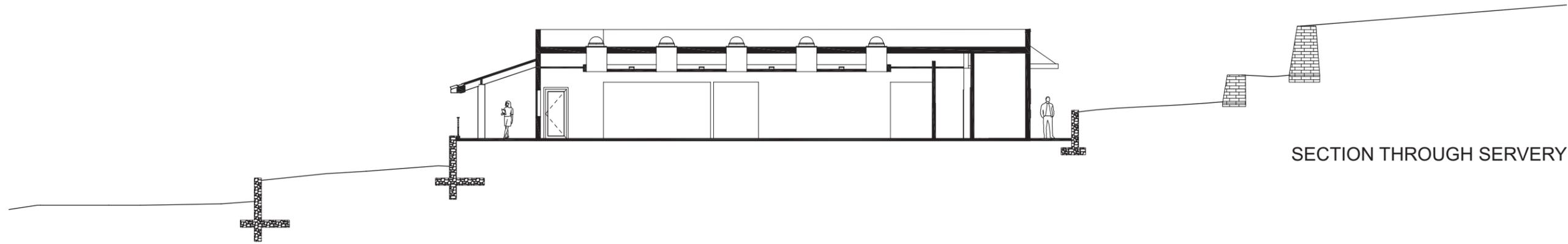
VIEW LOOKING SOUTHEAST



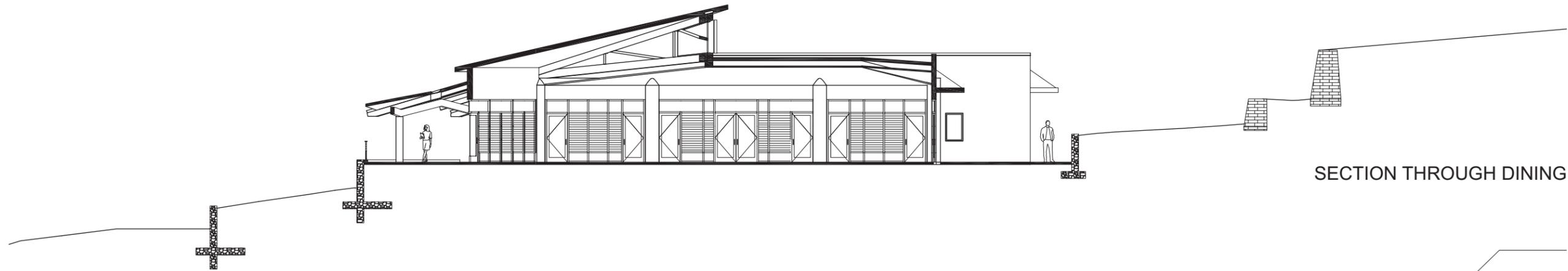
VIEW LOOKING NORTHWEST



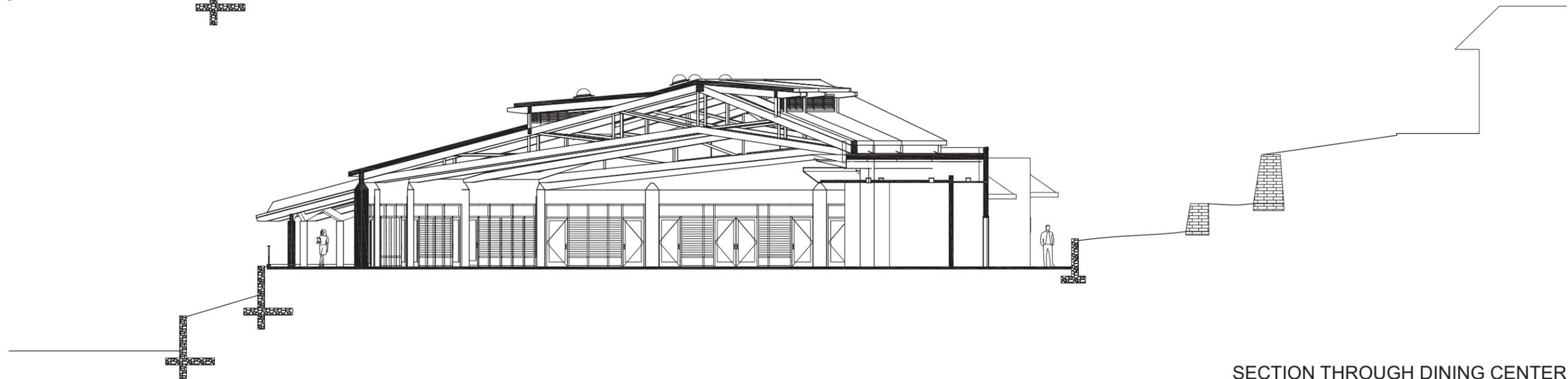
VIEW LOOKING SOUTHWEST



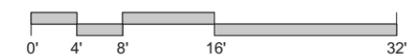
SECTION THROUGH SERVERY



SECTION THROUGH DINING

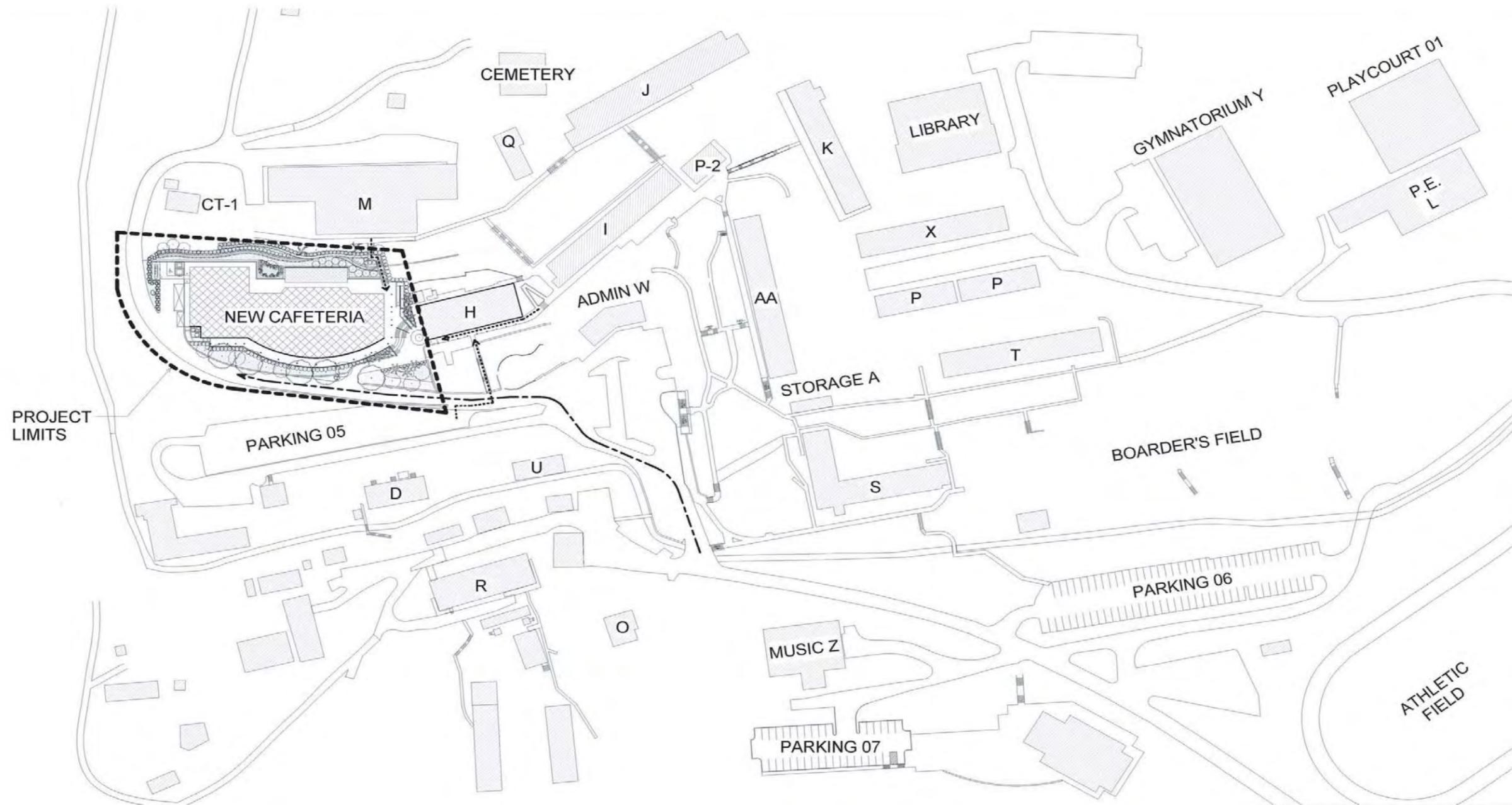


SECTION THROUGH DINING CENTER



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





1 PARTIAL PLOT PLAN
G1.01 1" = 60'-0"

← - - - - - VEHICULAR TRAFFIC
← ······· PEDESTRIAN TRAFFIC



REVISION					
NO.	DATE	DESCRIPTION	BY	APP.	DATE
DEPARTMENT OF EDUCATION STATE OF HAWAII					
LAHAINALUNA HIGH SCHOOL CAFETERIA					
LAHAINA	MALE	HAWAII			
PARTIAL PLOT PLAN					
FERRARO CHOI & ASSOC. LTD.		JOB NO.		DRAWING NO.	
DESIGNED BY: FCA	CHECKED BY: MA	Q54001-07	G1.01		
DRAWN BY: SD	APPROVED BY: SD	DATE: 01/22/2009	SHEET		
SCALE: 1" = 60'-0"					
LICENSE EXPIRATION DATE 06/30/13 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION					
FILE	OWNER	FOLDER			

NOT FOR CONSTRUCTION

Figure 12

Campus Plot Plan	
Lahainaluna High School Cafeteria Building	

4. APPENDICES

APPENDIX A:
DOE Facility Assessment
and Development Schedule

4

FACILITIES ASSESSMENT and DEVELOPMENT SCHEDULE

#

2 State of Hawaii

FADS

Department of Education

#

SCHOOL NAME —2c NEW	Lahainaluna HS	YRE-MT	No
DISTRICT:	Maui	COMPLEX:	Lahainaluna
		Air-Con ?	No
GRADE ORGANIZATION:	BOTT:	9	TOP: 12
		RAINFALL	

CURRENT ENROLLMENT	
REGULAR ENROLLMENT	n/a
SPEC ED ENROLLMENT	
PROJECTED SPECIAL EDUCATION ENROLMENT @ DESIGN	210

SPED TCHR(S) or % ENROLL	15.0%
--------------------------	-------

DESIGN ENROLLMENT	1400
REGULAR ENROLLMENT	1190
SPECIAL ED @ 15.0% of DE	210

--	--

10 MONTH ENROLLMENT = 1400	
EDSPEC PERMANENT CLASSROOMS	
GENERAL CLRM	26
FINE ARTS CLRM	2
SCIENCE CLRM	6
MAX. ADJUSTMENT	14
SPEC ED —2c(12/CLRM)	18
PERMANENT CR.	66 +7 Supp
Supplementals Built as Permanent Clsrr	
PEAK PORTABLES	7
TOTAL ALL CLRM	73 +7 Port

Max School Area = 175304		NEW	Unit	Ed Spec	Existing	+	NEW	Total
COMPONENT: [-2c-i#]=Req'		WORK	Area	Area	Area	-	Flr Area	Area
Selected Area = EDSPEC		BUDGET \$			PROJECT:			
-5FE School Summary - New Support —7FNew Area: (+/-) Excess/Deficit, (e) EDSF								
	Administrative Center	1		11505		-2	11505	11505
	Library Media Center	1		9654		-2	9654	9654
	Cafeteria/Multipurpose	1		14970		-2	14970	14970
	Kitchen ((conv)	1		4675		-2	4675	4675
	Custodial Service Center	1		600		-2	600	600
	Faculty Center	3	980	2940	0	-2	2940	2940
	Computer Resource Center	2	1200	2400	0	-2	2400	2400
	Itinerant Special Educat'n	1		330	0	-2	330	330
	Teacher Center(s)			0	0			
		0		1200	0	-2	0	0
	PE Locker Shower	1		8860		-2	8860	8860
	Athletic Locker Shower	1		10140		-2	10140	10140
	Gymnasium	1		22030		-2	22030	22030
	Adult Education Center				0		0	0
	Auditorium (optional)			By Design	0			0
	Staff Parking (DE/8)	Stalls	1/8	175	0			175
	Visitor Pkg (5 Stalls/499 DE)	Stalls		15	0			15
Student Pkg (no. of stalls to be determined per local conditions on a school by school basis)								

Max School Area = 175304	NEW	Unit	Ed Spec	Existing	+	NEW	Total
COMPONENT: [-2c- #]=Req'	WORK	Area	Area	Area	-	Flr Area	Area
Dining/Multi-Purpose	1						

Design Enrollment (DE)	1400	Shared Dining/Multi-Purpose DE					
Student Dining Room	1	12000	12000				12000
0-300 3600							
301-1000 DEx12							
1001-2000 12000							
2001-up DE*6							
Permanent Stage Area	1	990	990				990
Chair Storage	1	250	250				250
Amplifier Area	1	70	70				70
Hallway	1	Area by Designer					0
Boy's Dressing/Storage Room	1	180	180				180
Girl's Dressing/Storage Room	1	180	180				180
Boy's Toilet	1	160	160				160
Girl's Toilet	1	160	160				160
Custodial Closet	1	80	80				80
Staff Dining Room	1	900	900				900
Total Area Cafe/Multipurpose			14970				14970

CONTINUED

Selected Area = EDSPEC BUDGET \$ PROJECT:

Custodial Service Center	1						
---------------------------------	----------	--	--	--	--	--	--

Custodial Service Center	1						
Off/stor./repair area	1	290	290				290
Locker area	1	60	60				60
Tool room	1	160	160				160
Restroom w/ Shower	1	90	90				90
							0
Total Area Custodial Service Center			600				600

Total Area Custodial Service			600				600
Total Area Cafe/Multipurpose			14970				14970
Total Area Cafe & Custodial			15570				15570

Max School Area = 175304	NEW	Unit	Ed Spec	Existing	+	NEW	Total
COMPONENT: [-2c-i#]=Req'	WORK	Area	Area	Area	-	Flr Area	Area
CONTINUED							

:: Selected Area = EDSPEC conv Kitchen: PROJECT:

Food Service - Kitchen **1** **CONVENTIONAL KITCHEN FOR:** **1400**

SERV - CONV - PREP ??	conv						
Food preparation area	1	1100	1100				1100
Dry Storage	1	600	600				600
Walk-in Refrigerator	1	200	200				200
Walk-in Freezer	1	240	240				240
Serving Area	1	1325	1325				1325
Recycle Area	1	220	220				220
Trash Can Wash Area	1	50	50				50
Pot & Pan Washing Area	1	180	180				180
							0
Transport Cart Storage Area	1	100	100				100
Manager's Office	1	180	180				180
Lockers and Restrooms	2	140	280				280
Laundry/Utility Area	1	200	200				200
Heater room	1	Area by Designer					
Elec, Comm, & Compress Rm	3	Area by Designer					
Food Kiosks? —2b(Y or N) :	y						
Total Area of Kitchen			4675				4675

Selected Area = EDSPEC BUDGET \$ PROJECT:

Cafetorium/Multi-Purpose Notes and Comments

APPENDIX B:
Traffic Impact Assessment Letter

Phillip Rowell and Associates

47-273 'D' Hui Iwa Street Kaneohe, Hawaii 96744 Phone: (808) 239-8206 FAX: (808) 239-4175 Email: prowell@hawaiiantel.net

March 23, 2009

Chris Hart & Partners, Inc.
115 Market Street
Wailuku, Maui, 96793

Attn: Mr. Jason Medema

Re: Traffic Impact Assessment
Lahainaluna High School Cafeteria Expansion

Dear Jason:

This letter is in response to your inquiry relative to the viability of the Traffic Impact Analysis Report (TIAR) for the proposed expansion of the Lahainaluna High School Cafeteria. My understanding of the project is as follows:

1. The proposed expansion of the cafeteria is to accommodate a deficiency of capacity to accommodate the existing student enrollment, not an increase in the number of students. Students currently have to sit outside during lunch as there are no seats inside the existing cafeteria.
2. No additional employees are anticipated as a result of expanding the cafeteria.
3. The cafeteria will not be open to persons from off the school campus.
4. There will be no changes to the access and egress traffic patterns of the school campus. Any changes to the traffic and roadway facilities will be confined to the school campus.

As the project will not generate additional traffic and there will be no changes to the traffic patterns within of adjacent to the school campus, there will be no noticeable traffic impacts as a result of expanding the high school cafeteria.

There may be some short term impacts associated with construction activities. In order to mitigate these impacts, the following is recommended:

1. The arrivals and departures of construction workers should be restricted to off peak hours, and
2. Deliveries of construction materials and supplies should also be restricted to off peak hours.

I trust the above responds to your concerns. If you have questions, please do not hesitate to call.

Very truly yours,
PHILLIP ROWELL AND ASSOCIATES



Phillip J. Rowell, P.E.
Principal

APPENDIX C:
Archaeological Field Inspection

Ms. Patty J. Conte
SHPD-Maui
130 Mahalani Street
Wailuku, HI 96793

February 9, 2009

Re: Field Inspection of an Approximate 0.75-acre Lot for the Proposed New Cafeteria at Lahainaluna High School in Panaewa Ahupua`a, Lahaina District, Island of Maui [TMK:(2) 4-6-018: 012 (por.)]

Dear Ms. Conte:

At the request of Chris Hart and Partners, Inc., Scientific Consultant Services, Inc. (SCS) conducted an archaeological Field Inspection at the proposed development site for a new cafeteria at Lahainaluna High School in Lahaina, Panaewa Ahupua`a, Lahaina District, Island of Maui, Hawai`i [TMK: (2) 4-6-018: 012 (por.)] (Figures 1 and 2). The Field Inspection was conducted by SCS archaeologist David Perzinski, B.A, on February 3, 2009, under the direction of Michael Dega, Ph.D (Principle Investigator).

The request for Field Inspection was made to satisfy State of Hawai`i Historic Preservation Division (SHPD) review requirements outlined in a letter from the SHPD to the client (Log No. 17180, Doc No.9605kd14) dated May 14, 1996 in which several field visits were conducted then prior to work on construction of parking lots. The field inspections, at that time, were negative and SHPD ruled the areas as “no effect.” Despite extensive alteration in historic and more recent times, a Field Inspection was requested of the presently proposed cafeteria location due to the historic nature of the subject parcel. The purpose of the current Field Inspection was to determine the presence or absence of architecture, midden deposits, and artifact deposits on the surface of the project area, as well as assess the potential for the presence of subsurface cultural deposits.

Location and Current Status

The project area measures approximately 37,000 square feet and occurs at an elevation of 560 feet A.M.S.L. The area is bounded to the east by a classroom annex, to the west and north by an access road, and to the south by the existing cafeteria. The parcel is sloped from east to west and contains monkeypod trees (*Albizia saman*), plumeria and manicured grass. In addition, a classroom structure, propane tank, plant nursery, and a concrete slab with chairs and benches are currently occupying a portion of the project area

Field Methods

The Field Inspection of the parcel was conducted by SCS archaeologist David Perzinski, B.A., on February 3, 2009, under the direction of Michael Dega, Ph.D. The purpose of the pedestrian survey was to assess the parcel for the presence or absence of

surface features and deposits. A 100% pedestrian survey was conducted and numerous photographs were taken to document the current condition of the parcel. No subsurface testing was conducted during the Field Inspection.

Results

Through on-site discussions with Ray Camacho, superintendent of the Lahainaluna High School cafeteria, it was indicated that a portion of the parcel at one time contained housing for the school teachers and staff. Though none of the original structures still stand, two features were identified that are thought to be related to the staff housing. The features include an historic stone staircase and basalt terrace wall that form the northern and northeastern boundary of the parcel.

The five-step stairway is located on the northeastern portion of the parcel and is constructed of rounded basalt cobbles and concrete (Figure 3). The steps rise approximately 1 meter and lead to a level, non-manicured terrace area. At the base of the steps, the ground surface is covered in landscaping fabric for the school's plant nursery.

The basalt terrace wall is located along the eastern border of the parcel and is constructed of cut basalt blocks and basalt boulders (Figure 4). The terrace wall is stacked four courses to a height of approximately 70 cm and curves from the southwest to northeast before straightening and continuing in a northern direction. The terrace wall appears historic in origin with modern modifications and improvements.

Conclusions

Though a majority of the parcel has undergone repeated historic and recent grading and ground disturbing activities, the field inspection identified two historic features which are likely related to the original staff housing which was located in the current project area portion of the property. The school was opened in 1831 and is listed as the oldest school west of the Mississippi River. The location of the proposed cafeteria expansion will be in an area that once contained the housing for the school's staff. Therefore, it is possible that subsurface features (i.e. historic house foundations, trash pits, etc.) are located below existing grade and could be encountered during construction activities. It is equally possible that such features could have been removed/graded during repeated building on the parcel through time.

Based on the results from the field inspection and the historic significance of the project area, it is possible that ground disturbing activities associated with the proposed cafeteria expansion may encounter subsurface features. Though the above findings were limited, the previous use of this portion of the project area suggests that additional subsurface properties could be encountered. It is our estimation, based on this Field Inspection, that the proposed undertaking be subjected to an on-site archaeological monitoring program during ground disturbing activities. As the extent of ground disturbance remains speculative at present, we would recommend initial, full-time Monitoring during ground altering construction. If the results of Monitoring are negative after a short period, we would contact the SHPD to suspend full-time Monitoring and call

for intermittent Monitoring. Prior to construction work, an Archaeological Monitoring Plan would be prepared for SHPD review.

Thank you again for reviewing this document and your advice on conducting the Field Inspection. Please call (597-1182) if you have any questions or concerns about this letter.

Best regards,
David Perzinski B.A.,
Michael Dega, Ph.D.
Scientific Consultant Services, Inc.



Figure 1: Portion of USGS Lahaina Quadrangle Showing Project Area

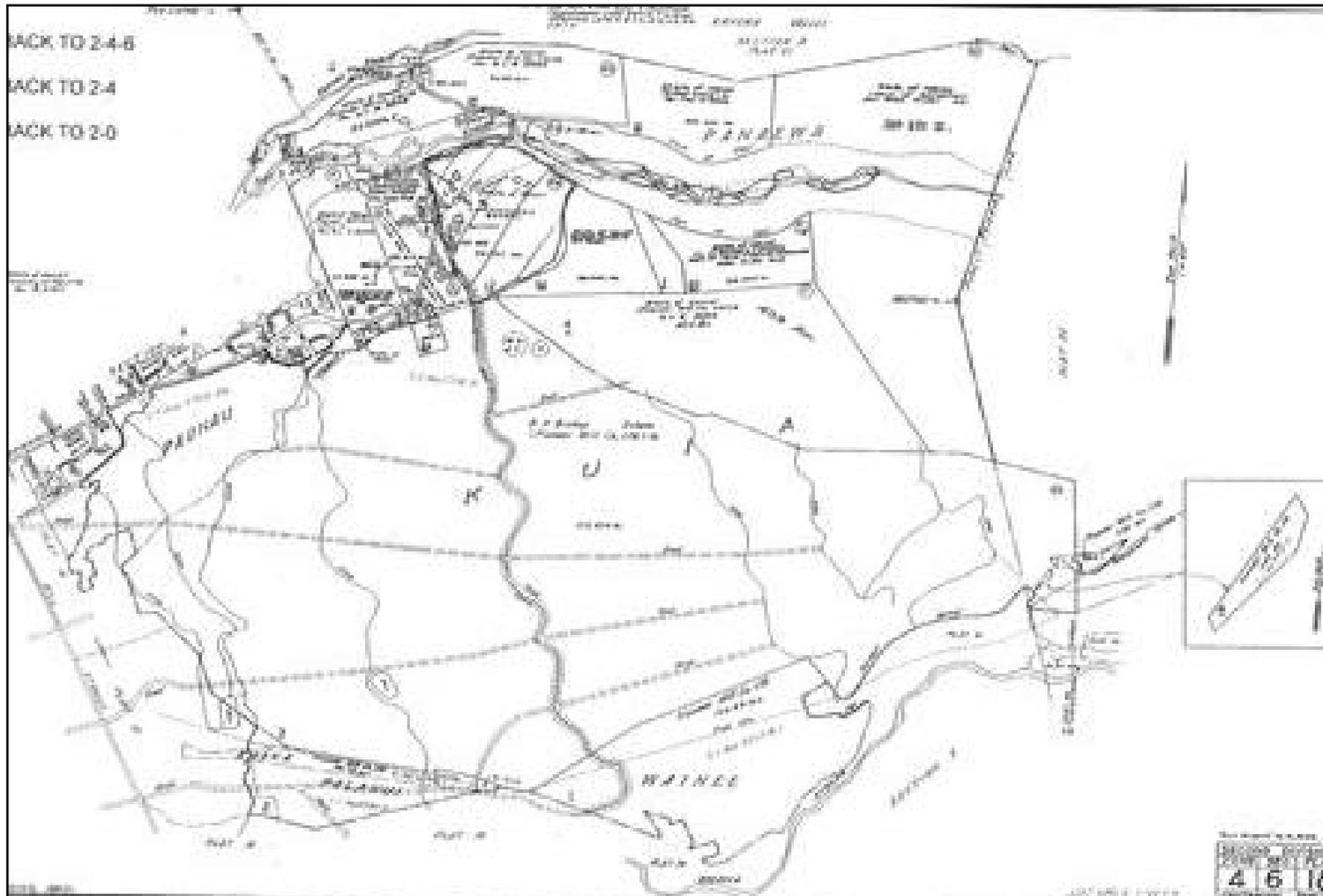


Figure 2: Tax Map Key [TMK: (2) 4-6-018: 012 (por.)] Showing Project Area



Figure 3: View Northeast of Staircase Feature



Figure 4: View East of Cut Basalt Terrace Wall

APPENDIX D:
Preliminary Drainage Report

DRAINAGE REPORT

Lahainaluna High School Cafeteria

At Lahaina, Maui, Hawaii

Tax Map Key: 2nd Div 4-06-018:23

Prepared for

Maui School District
Department of Education
State of Hawaii
54 High Street
Wailuku, Maui, Hawaii 96793

Prepared By

Kim & Shiroma Engineers, Inc.
1314 King Street Suite 325
Honolulu, Hawaii 96814

May, 2009

4/30/10

This work was prepared by me
or under my supervision.

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Hydrology	2
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Storm Water Quality Facilities	5
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INTRODUCTION

PROJECT DESCRIPTION

A new cafeteria is proposed for Lahainaluna High School adjacent to Lahainaluna Road in Lahaina, Maui, Hawaii (TMK 4-06-18:12). The area to be improved is about 1.26 acres and was previously developed. The new cafeteria building and other site improvements will cover approximately 0.90 acres of hard surface and the remaining 0.36 acres will be landscaped.

Lahainaluna High School is located on the slopes of the West Maui Mountains and is located at the upper end of Lahainaluna Road. Lahaina Intermediate School and Princess Nahienaena Elementary School is to the west, Kanaha Gulch and Stream is to the north and agricultural lands are to the east and south.

FLOOD HAZARD EVALUATION

Zone C, area of minimal flooding, based on FEMA's Flood Insurance Rate Map, Maui County, Hawaii, Panel No. 150030161 C, revised August 3, 1998.

EXISTING SOILS CONDITION

According to the "Soils Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai", U.S. Department of Agriculture Soils Conservation Services, the soil at the project site is WxC, Wainee very stony silty clay, 7 to 15 percent slopes. This series consists of well-drained soils on alluvial fans on the island of Maui. These soils developed in alluvium derived from weathered basic igneous rock. They are gently to moderately sloping. Permeability is moderately rapid. Runoff is slow to medium, and the erosion hazard is slight to moderate.

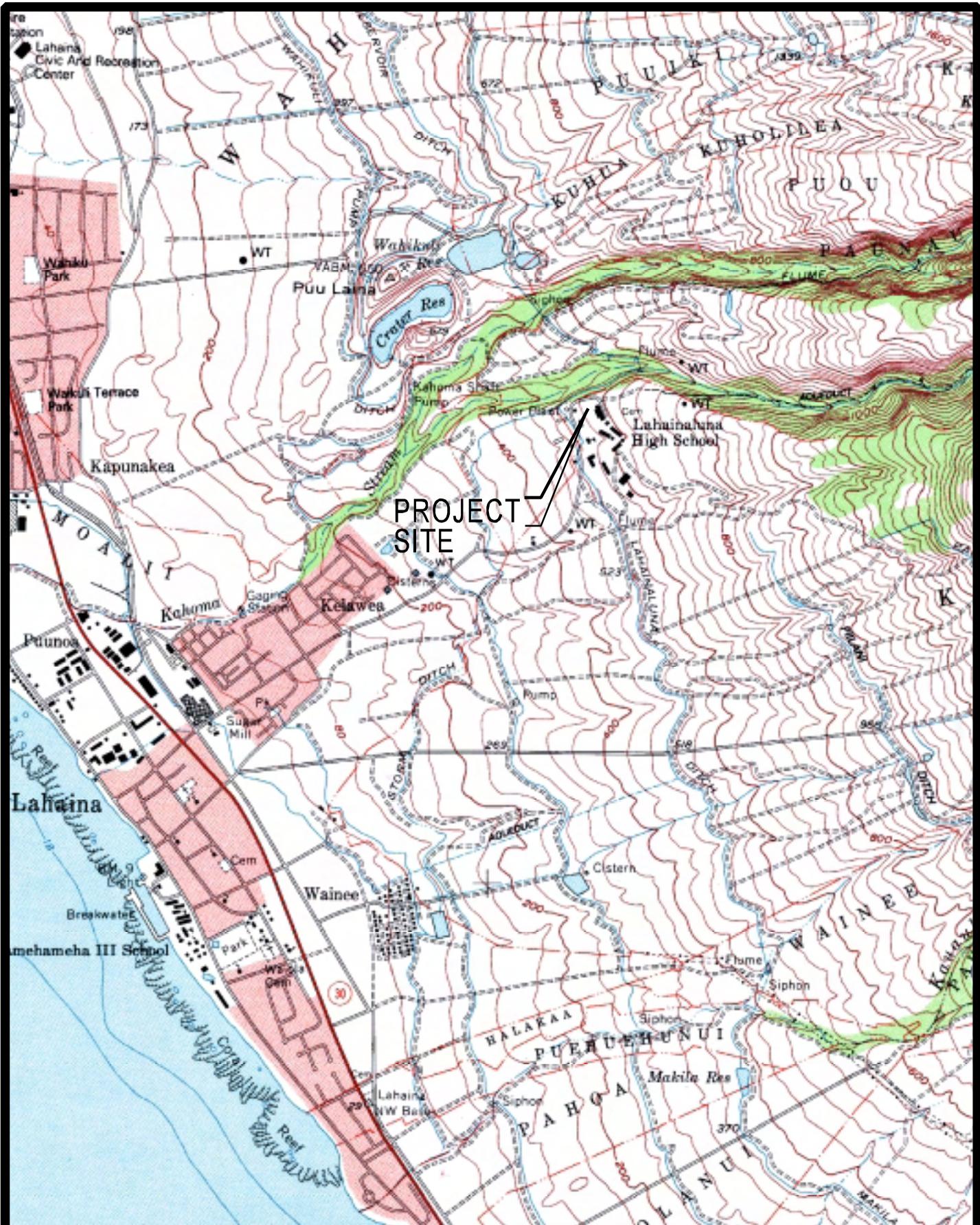
HYDROLOGY

Hydrologic calculations are based upon the design criteria established by the "Rules for the design of Storm Drainage Facilities in the County of Maui", herein referred to the "Storm Drainage Standards".

Storm runoff generated by drainage basins of 100 acres or less will be estimated by the Rational Method based on a one hour rainfall with a recurrence interval of 10 years and for detention purposes, a recurrence interval of 50 years.

EXISTING SITE DRAINAGE

The new cafeteria site is situated near the end of Lahainaluna Road. To the south is the existing cafeteria building, to the east is the Industrial Arts building and Lahainaluna Road is to the north and west. A grounds keeper cottage is to the northeast of the new cafeteria.



PROJECT SITE

USGS MAP
LAHAINA QUADRANGLE
SCALE: 1" = 2,000'



LAHAINALUNA HIGH SCHOOL
LOCATION MAP

EXHIBIT
A

Storm runoff to the east of the Industrial Arts Building is intercepted by the roadway/driveway leading to the Industrial Arts Building. The road slopes toward the north and discharges the runoff either into Kanaha Gulch or into a drain inlet fronting the grounds keeper cottage. The drain inlet discharges into Kanaha Gulch.

Runoff from the new cafeteria site flows overland down to Lahainaluna Road to a drain inlet located across from the driveway leading to the existing cafeteria. This drain inlet connects to the school's drainage system which discharges into the Lahainaluna Ditch.

The drainage area is 3.08 acres with flow rate of 11.23 cfs.

PROPOSED DRAINAGE SYSTEM

DESCRIPTION

The storm runoff will be separated into three drainage areas. Runoff from the north side of the new cafeteria will flow overland to Lahainaluna Road and combine with flows from the loading area including the kitchen roof and the portion of the new cafeteria roof that slopes to the west. This flow will follow the existing drainage pattern path down to the existing drain inlet. The drainage area is 1.34 acres with a Q of 5.07 cfs.

The second drainage area will collect storm runoff generated between the Industrial Arts Building and the new cafeteria including roof runoff that slopes to the east and to the south. The entry plaza and the accessible ramp areas are included in this area. The drainage area is 0.59 acres with a flow of 3.37 cfs. This runoff will receive treatment to remove 80% of the total suspended solids (TSS) for a particle size of 110 micron and will also remove petroleum product

The third drainage area is the area to the south of the Industrial Arts Building that is above the existing cafeteria. This offsite runoff will be collected into a drain inlet and will bypass the treatment system and be discharged back into the schools drainage system. The drainage area is 1.15 acres with a flow of 4.62 cfs.

The total calculated flow due to the improvements is 13.06 cfs. This exceeds the predevelopment flow of 11.23 cfs by 1.83 cfs. To negate the increase in runoff due to the development, a detention system will be utilized to reduce the flows from the second drainage area to predevelopment conditions.

DETENTION SYSTEM

The TR55 program "Urban Hydrology for Small Watershed" was used to calculate the hydrographs for the detention system. Pond-2 "Detention Pond Design and Analysis" was used to size the detention system.

The detention system will consist of two 60-inch High Density Polyethylene (HDPE) pipes spaced five feet apart and connected on each end with concrete manholes. The outlet for the detention system consists of an 6-inch pipe with a 12-inch overflow pipe.

The outflow pipe diameter was selected by comparing entrance control losses for various size drain pipes such that the outflow from the manhole will not exceed 1.99 cfs.

While this detention system was designed to be low maintenance, debris and other trash could clog the pipes. Manhole openings on the detention structures will allow access for debris removal.

PROPOSED STORM WATER QUALITY FACILITIES

The treatment for water quality control proposed for the drainage improvements is a flow-through based, hydrodynamic separation system. The system utilizes a combination of vortex motion and flow control to remove sediment, oil and debris from the storm runoff. The water quality control facilities will be installed within Lahainaluna Road and will remain under the ownership of the Department of Education.

Design calculations for the flow-through systems are as follows:

1. On site flows collected and flowing through the system.

$$\begin{aligned} \text{WQFR} &= C \times 0.4'' \times A, \quad C = 0.82, \quad A = 0.59 \text{ Ac} \\ &= 0.82 \times 0.4 \times 0.59 = 0.19 \text{ cfs} \end{aligned}$$

A single filtration unit is proposed to be on-line and treat 0.19 cfs of storm runoff. The hydrodynamic separation system is a precast concrete structure installed underground with access via manhole covers. A manhole cover is situated over the top slab for maintenance purposes. The system works with a standing water depth of 3.5-feet. This standing water depth created by the baffle and weir prevents the oils, grease and floatables from passing through the system. Maintenance of the system will be by a vacuum truck to suck out the accumulated debris, oils, grease and floatables.

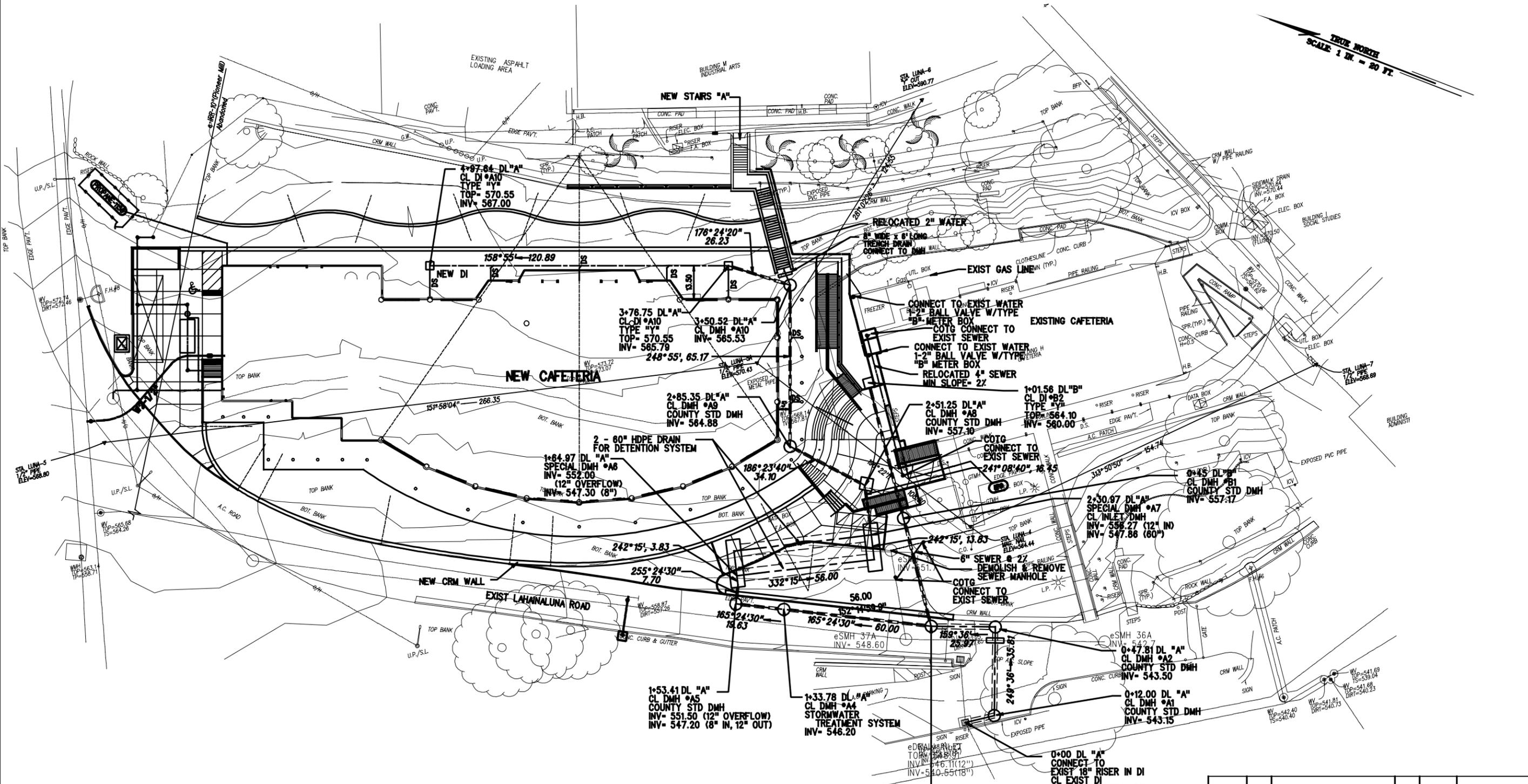
A maintenance schedule for the system is necessary. Inspection of the System should occur after any significant rain event or every quarter to record the accumulation of grit in the sump. Vacuuming of the sump should occur when the measurement between the top of the accumulated grit and the water surface in the sump area is 6-inches or less. Floating trash can be removed by nets.

To remove the accumulation of oil, grease and other hydrocarbons, it may be preferable to use absorbent pads rather than to dispose of an oil/water emulsion created by vacuuming the oily surface layer. Total volume of the sump is 0.5 cy.

CONCLUSIONS

The proposed site improvements will increase the overall runoff by approximately 1.83 cfs from 11.23 cfs to 13.06 cfs. The proposed detention system will reduce the flow back to predevelopment condition.

TRUE NORTH
SCALE 1 IN. = 20 FT.



1 UTILITY PLAN
D-0 SCALE 1" = 20'

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII					
LAHAINALUNA HIGH SCHOOL CAFETERIA					
LAHANA		MAUI		HAWAII	
DRAINAGE PLAN					
KIM & SHIROMA ENGINEERS, INC.			DOE JOB NO.	DRAWING NO.	
DESIGNED BY: CTS	CHECKED BY: CTS		QS4001-07	D-0	
DRAWN BY: KSE	APPROVED BY: CTS		DATE	SHEET	
			MAY, 2009	OF 3/15	
SCALE: AS NOTED					

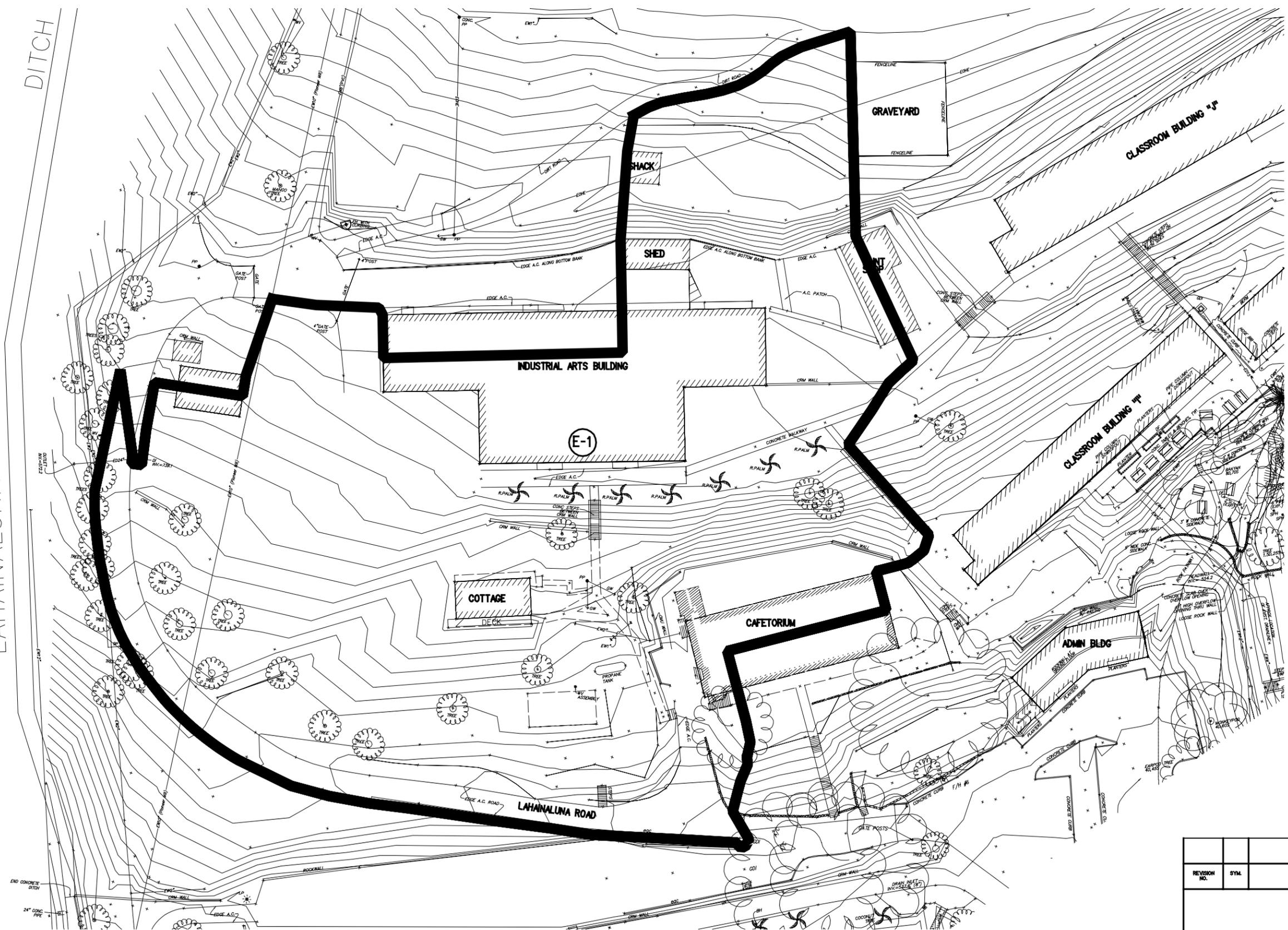
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A REGISTERED PROFESSIONAL ENGINEER AS DEFINED IN HAWAII TITLE 10, CHAPTER 15, KIM & SHIROMA ENGINEERS, INC.

TRUE NORTH
SCALE 1 IN. = 30 FT.

EXISTING HYDROLOGIC DATA	
	E-1
A= (Ac)	3.08
L= (Ft)	600
Ht= (Ft)	75
S (FvFt)	0.125
C=	0.81
$K(10)=$	2.5
Tc=	16
I (in/hr)	4.5
Q=(cfs)	11.23

LAHAINALUNA

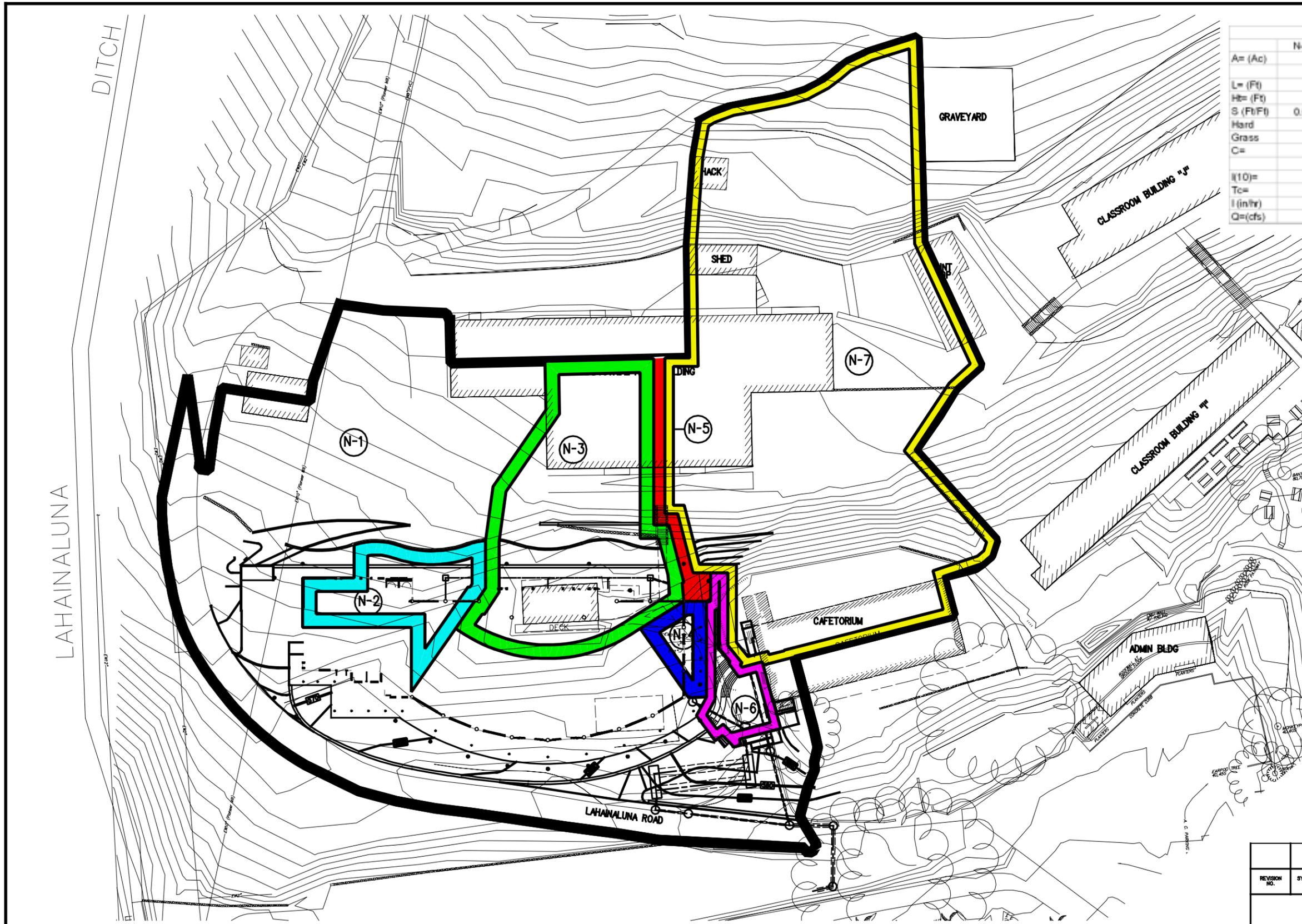
DITCH



1 EXISTING DRAINAGE CONDITION
SCALE: 1" = 30'

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII					
LAHAINALUNA HIGH SCHOOL CAFETERIA					
LAHANA		MAUI		HAWAII	
EXISTING DRAINAGE CONDITION					
KIM & SHIROMA ENGINEERS, INC.			DOE JOB NO.	DRAWING NO.	
DESIGNED BY:	CHECKED BY:		Q54001-07	D-1	
CTS	CTS				
DRAWN BY:	APPROVED BY:		DATE	SHEET	
KSE	CTS		MAY, 2009	OF	
SCALE: AS NOTED				SHTS	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I AM NOT PROVIDING CONTRACT ADMINISTRATION AS DEFINED IN HAWAII TITLE 10, CHAPTER 15.



PROPOSED HYDROLOGIC DATA							
	N-1	N-2	N-3	N-4	N-5	N-6	N-7
A= (Ac)	1.34	0.11	0.37	0.03	0.03	0.05	1.15
L= (Ft)	675	90	200	40	150	90	450
H= (Ft)	38		19.5				60
S (Ft/Ft)	0.0563	0.0200	0.0975	0.0200	0.1300	0.0550	0.1333
Hard	0.78	0.88	0.23	0.88	0.88	0.03	0.41
Grass	0.56		0.14			0.02	0.74
C=	0.84	0.88	0.84	0.88	0.88	0.84	0.82
t(10)=	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Tc=	16	3	8	3	3	16	11
I (in/hr)	4.5	7.5	6.6	7.5	7.5	4.5	4.9
Q=(cfs)	5.07	0.73	2.05	0.2	0.2	0.19	4.62

LAHAINALUNA

DITCH

1 PROPOSED DRAINAGE CONDITION
SCALE: 1" = 50'

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII					
LAHAINALUNA HIGH SCHOOL CAFETERIA					
LAHAINA		MAUI		HAWAII	
PROPOSED DRAINAGE SYSTEM					
KIM & SHIROMA ENGINEERS, INC.			DOE JOB NO.	DRAWING NO.	
DESIGNED BY:	CHECKED BY:		Q54001-07	D-2	
CTS	CTS				
DRAWN BY:	APPROVED BY:	DATE	SHEET		
KSE	CTS	MAY, 2009	OF 3/13		
SCALE: AS NOTED					

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII AS DEFINED BY HAWAII TITLE 10, CHAPTER 100, KIM & SHIROMA ENGINEERS, INC.

TR-55 TABULAR HYDROGRAPH METHOD
 Type I Distribution
 (24 hr. Duration Storm)

Executed: 05-03-2009 08:41:10
 Watershed file: --> 0725LHS .WSD
 Hydrograph file: --> 0725LHS .HYD

0725 LAHAINALUNA HIGH SCHOOL CAFETORIUM
 STORMWATER DETENTION SIZING

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
Kitchen	0.11	98.0	0.10	0.00	10.00	9.76	0 .10
Middle	0.37	89.0	0.10	0.00	10.00	8.66	.02 .10
Roof 2	0.03	98.0	0.10	0.00	10.00	9.76	0 .10
Stairs	0.03	98.0	0.10	0.00	10.00	9.76	0 .10
Pervious	0.05	92.0	0.10	0.00	10.00	9.03	.02 .10

* Travel time from subarea outfall to composite watershed outfall point.
 Total area = 0.59 acres or 0.00092 sq.mi
 Peak discharge = 4 cfs

WARNING: Drainage areas of two or more subareas differ by a factor of 5 or greater.

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p Interpolated	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	(Yes/No)	
Kitchen	0.10	0.00	**	**	No	Computed Ia/p < .1
Middle	0.10	0.00	**	**	No	Computed Ia/p < .1
Roof 2	0.10	0.00	**	**	No	Computed Ia/p < .1
Stairs	0.10	0.00	**	**	No	Computed Ia/p < .1
Pervious	0.10	0.00	**	**	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.
 ** Tc & Tt are available in the hydrograph tables.

TR-55 TABULAR HYDROGRAPH METHOD
 Type I Distribution
 (24 hr. Duration Storm)

Executed: 05-03-2009 08:41:10
 Watershed file: --> 0725LHS .WSD
 Hydrograph file: --> 0725LHS .HYD

0725 LAHAINALUNA HIGH SCHOOL CAFETORIUM
 STORMWATER DETENTION SIZING

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Kitchen	1	10.0
Middle	3	10.1
Roof 2	0	0.0
Stairs	0	0.0
Pervious	0	0.0
Composite Watershed	4	10.1

TR-55 TABULAR HYDROGRAPH METHOD
 Type I Distribution
 (24 hr. Duration Storm)

Executed: 05-03-2009 08:41:10
 Watershed file: --> 0725LHS .WSD
 Hydrograph file: --> 0725LHS .HYD

0725 LAHAINALUNA HIGH SCHOOL CAFETORIUM
 STORMWATER DETENTION SIZING

Composite Hydrograph Summary (cfs)

Subarea Description	12.0 hr	12.3 hr	12.6 hr	13.0 hr	13.5 hr	14.0 hr	14.5 hr	15.0 hr	15.5 hr
Kitchen	0	0	0	0	0	0	0	0	0
Middle	0	0	0	0	0	0	0	0	0
Roof 2	0	0	0	0	0	0	0	0	0
Stairs	0	0	0	0	0	0	0	0	0
Pervious	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	16.0 hr	17.0 hr	18.0 hr	20.0 hr	24.0 hr
Kitchen	0	0	0	0	0
Middle	0	0	0	0	0
Roof 2	0	0	0	0	0
Stairs	0	0	0	0	0
Pervious	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD
 Type I Distribution
 (24 hr. Duration Storm)

Executed: 05-03-2009 08:41:10
 Watershed file: --> 0725LHS .WSD
 Hydrograph file: --> 0725LHS .HYD

0725 LAHAINALUNA HIGH SCHOOL CAFETORIUM
 STORMWATER DETENTION SIZING

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
9.0	0	12.8	0
9.1	0	12.9	0
9.2	0	13.0	0
9.3	0	13.1	0
9.4	0	13.2	0
9.5	0	13.3	0
9.6	0	13.4	0
9.7	0	13.5	0
9.8	1	13.6	0
9.9	1	13.7	0
10.0	3	13.8	0
10.1	4	13.9	0
10.2	3	14.0	0
10.3	1	14.1	0
10.4	1	14.2	0
10.5	1	14.3	0
10.6	0	14.4	0
10.7	0	14.5	0
10.8	0	14.6	0
10.9	0	14.7	0
11.0	0	14.8	0
11.1	0	14.9	0
11.2	0	15.0	0
11.3	0	15.1	0
11.4	0	15.2	0
11.5	0	15.3	0
11.6	0	15.4	0
11.7	0	15.5	0
11.8	0	15.6	0
11.9	0	15.7	0
12.0	0	15.8	0
12.1	0	15.9	0
12.2	0	16.0	0
12.3	0	16.1	0
12.4	0	16.2	0
12.5	0	16.3	0
12.6	0	16.4	0
12.7	0	16.5	0

TR-55 TABULAR HYDROGRAPH METHOD
 Type I Distribution
 (24 hr. Duration Storm)

Executed: 05-03-2009 08:41:10
 Watershed file: --> 0725LHS .WSD
 Hydrograph file: --> 0725LHS .HYD

0725 LAHAINALUNA HIGH SCHOOL CAFETORIUM
 STORMWATER DETENTION SIZING

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
16.6	0	20.4	0
16.7	0	20.5	0
16.8	0	20.6	0
16.9	0	20.7	0
17.0	0	20.8	0
17.1	0	20.9	0
17.2	0	21.0	0
17.3	0	21.1	0
17.4	0	21.2	0
17.5	0	21.3	0
17.6	0	21.4	0
17.7	0	21.5	0
17.8	0	21.6	0
17.9	0	21.7	0
18.0	0	21.8	0
18.1	0	21.9	0
18.2	0	22.0	0
18.3	0	22.1	0
18.4	0	22.2	0
18.5	0	22.3	0
18.6	0	22.4	0
18.7	0	22.5	0
18.8	0	22.6	0
18.9	0	22.7	0
19.0	0	22.8	0
19.1	0	22.9	0
19.2	0	23.0	0
19.3	0	23.1	0
19.4	0	23.2	0
19.5	0	23.3	0
19.6	0	23.4	0
19.7	0	23.5	0
19.8	0	23.6	0
19.9	0	23.7	0
20.0	0	23.8	0
20.1	0	23.9	0
20.2	0		
20.3	0		

>>>> DETENTION STORAGE ESTIMATE <<<<<

LAHAINALUNA HIGH SCHOOL CAFETERIA
KSE JOB NO 0725

CALCULATED
DISK FILE: 0725LHS .DET

Drainage Area (acres) .59 0.0009 sq.mi.
Rainfall Distribution (Type) I

	Storm #1	Storm #2	Storm #3
Frequency (years)	10	50	100
Peak Inflow, qi (cfs)	3	4	5
Inflow Runoff, Q (in)	6.05	9.03	10.02
Peak Outflow, qo (cfs)			
qo/qi Ratio	0.000	0.000	0.000
* Vs/Vr Ratio	0.660	0.660	0.660
Inflow Volume, Vr (ac-ft)	0.3	0.4	0.5
STORAGE VOLUME, Vs (ac-ft)	0.2	0.3	0.3

Summary of Volume Computations

C0	0.660	0.660	0.660
C1	-1.760	-1.760	-1.760
C2	1.960	1.960	1.960
C3	-0.730	-0.730	-0.730
* Vs/Vr	0.660	0.660	0.660

$$* \text{ Vs/Vr} = C0 + (C1 \cdot (qo/qi)) + (C2 \cdot (qo/qi)) + (C3 \cdot (qo/qi))$$

Graphical Peak Discharge File Used for Inflow Data:
0725LHS1.GPD

POND-2 Version: 5.16 S/N: 1295160179

>>>> OUTFLOW HYDROGRAPH ESTIMATOR <<<<<

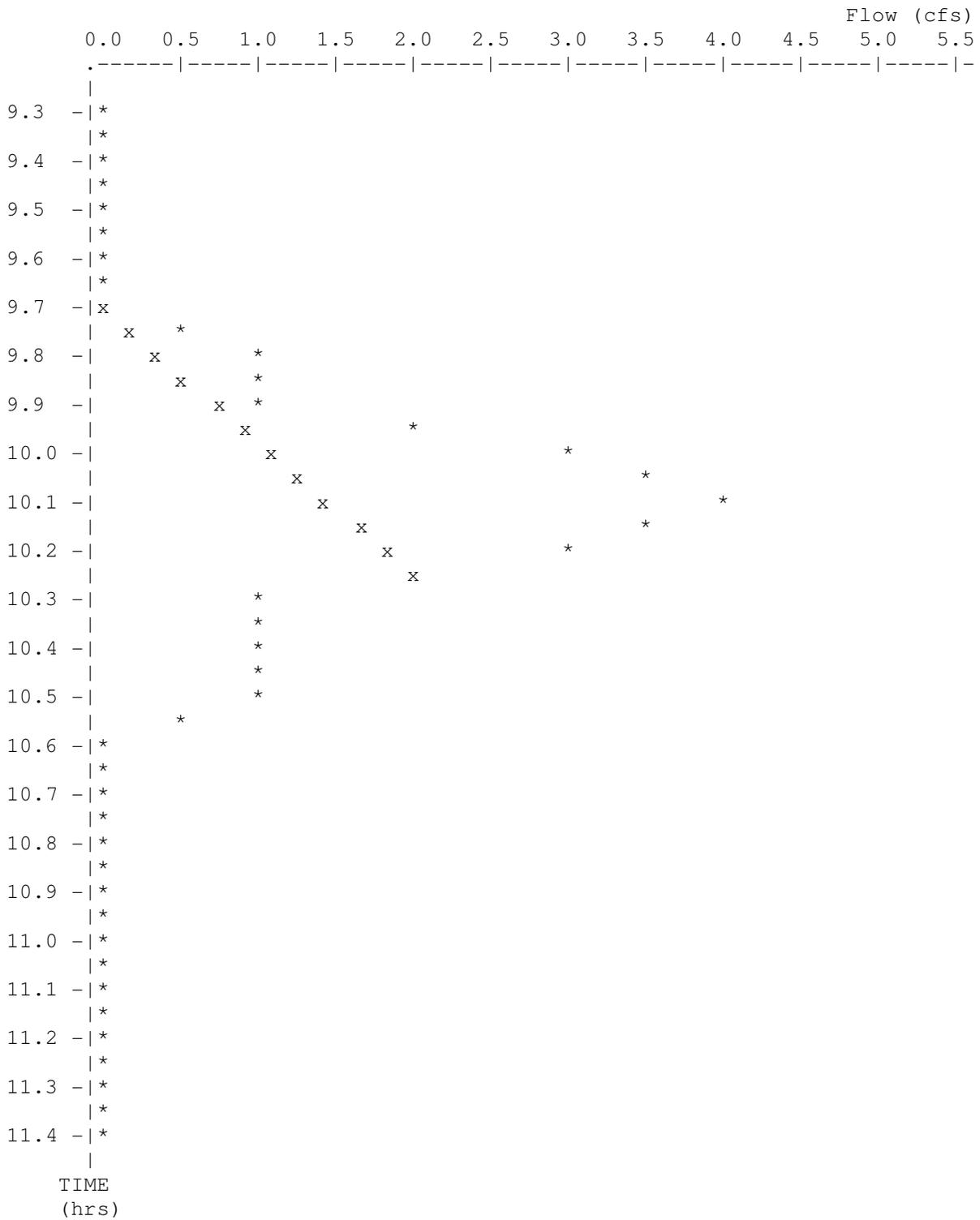
Inflow Hydrograph: 0725LHS .HYD
Qpeak = 4.0 cfs

Estimated Outflow: ESTIMATE.EST
Qpeak = 2.0 cfs

Approximate Storage Volume
(computed from t= 9.70 to 10.25 hrs)

2,100 cubic-ft

POND-2 Version: 5.16 S/N: 1295160179
 Plotted: 05-03-2009



* File: 0725LHS .HYD Qmax = 4.0 cfs
 x File: ESTIMATE.EST Qmax = 2.0 cfs

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
N-1	Open space; grass cover < 50%	(poor) B	.36	79
	Open space; grass cover > 75%	(good) B	.2	61
	Paved parking lots, roofs, driveways	B	.78	98
	Total Area / Weighted Curve Number		1.34 =====	87 ==
N-2	Paved; curbs and storm sewers	B	.11	98
	Total Area / Weighted Curve Number		.11 =====	98 ==
N-3	Open space; grass cover < 50%	(poor) B	.1	79
	Open space; grass cover > 75%	(good) B	.04	61
	Paved parking lots, roofs, driveways	B	.23	98
	Total Area / Weighted Curve Number		.37 =====	89 ==
N-4	Paved parking lots, roofs, driveways	B	.03	98
	Total Area / Weighted Curve Number		.03 =====	98 ==
N-5	Paved parking lots, roofs, driveways	B	.03	98
	Total Area / Weighted Curve Number		.03 =====	98 ==
N-6	Commercial & business	B	.05	92
	Total Area / Weighted Curve Number		.05 =====	92 ==
N-7	Open space; grass cover < 50%	(poor) B	.5	79
	Open space; grass cover > 75%	(good) B	.24	61
	Paved parking lots, roofs, driveways	B	.41	98
	Total Area / Weighted Curve Number		1.15 =====	82 ==

WinTR-55 Current Data Description

--- Identification Data ---

User: KSEngineer Date: 5/3/2009
 Project: Lahainaluna HS Units: English
 SubTitle: Drainage Study Areal Units: Acres
 State: Hawaii
 County: Maui
 Filename: G:\0725post.w55

--- Sub-Area Data ---

Name	Description	Reach	Area (ac)	RCN	Tc
N-1	North Side	Outlet	1.34	87	0.100
N-2	Kitchen	Reach 1	0.11	98	0.100
N-3	Middle	Reach 2	0.37	89	0.100
N-4	Roof 2	Reach 4	0.03	98	0.100
N-5	Stairs	Reach 3	0.03	98	0.100
N-6	Pervious	Reach 5	0.05	92	0.100
N-7	South Side	Reach 6	1.15	82	0.100

Total area: 3.08 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
4.0	6.0	7.0	8.0	10.0	11.0	3.0

Storm Data Source: User-provided custom storm data
 Rainfall Distribution Type: Type I
 Dimensionless Unit Hydrograph: <standard>

APPENDIX E:
Property Owners Within 500 Feet

246017011	ADAMS,RENEE K TRUST	P O BOX 165	WAILUKU HI 96793
246017012	MICHEL HANS FRITZ	1404 OLONA PL	LAHAINA HI 96761 0000
246017012	MICHEL,HANS FRITZ		
246018003	BISHOP B P TR EST	P O BOX 3466	HONOLULU HI 96801
246018004	STATE OF HAWAII		
246018005	STATE OF HAWAII		
246018006	STATE OF HAWAII		
246018007	STATE OF HAWAII		
246018010	STATE OF HAWAII		
246018011	PIONEER MILL CO., LTD	KAANAPALI DEVELOPMENT 275 LAHAINALUNA RD CORP.	LAHAINA HI 96761 1524
246018011	STATE OF HAWAII		
246018012	STATE OF HAWAII		
246018022	NUNES,ERNEST	505 LAHAINALUNA RD	LAHAINA HI 96761
246018022	STATE OF HAWAII		

