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STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

AUG 25 2004

PM-1072.4

MEMORANDUM

TO: Ms. Genevieve K. Y. Salmonson
Director, Office of Environmental Quality Control
Department of Health

FROM: Ernest Y. W. Lau
Public Works Administrator

SUBJECT: Hana High and Elementary School
Playground Accessibility Improvements & Softball Field
D.A.G.S. Job No. 15-16-4260

Hana High and Elementary School
Six-Classroom Building
D.A.G.S. Job No. 15-16-4133

In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200, of the Administrative Rules of the State Department of Health, a Final Environmental Assessment (EA) has been prepared for the subject project. The State of Hawaii, Department of Accounting and General Services, has determined a Finding of No Significant Impact (FONSI).

The Office of Environmental Quality Control publication form, four copies of the Final EA, and the project summary will be forwarded under separate cover. The project summary file will also be e-mailed to your office to facilitate publication. We request that notice of the availability of the Final EA be published in the next edition of the Environmental Notice.

If you have any questions, please call George Coates at 586-0721.

GC/si
Enclosures
c: Mich Hirano, Munekiyo & Hiraga, Inc.

2004-09-08 FONSI
HANA HIGH & ELEMENTARY
SCHOOL IMPROVEMENTS

Final
Environmental Assessment

PROPOSED IMPROVEMENTS TO HANA HIGH AND ELEMENTARY SCHOOL

Prepared for:

Approving Agency:

State of Hawaii,
Department of Accounting
and General Services

August 2004

MUNEKIYO & HIRAGA, INC.

Final
Environmental Assessment

PROPOSED IMPROVEMENTS TO HANA HIGH AND ELEMENTARY SCHOOL

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August 2004

MUNEKIYO & HIRAGA, INC.

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Project Overview

I. PROJECT OVERVIEW

A. PROJECT BACKGROUND

The State of Hawaii, Department of Accounting and General Services (DAGS) proposes facility improvements to Hana High and Elementary School. The approximate 37.8-acre site identified by TMK 1-3-06:08 is located on Hana Highway approximately 2 miles northeast of Hana, Maui, Hawaii. See Figure 1 and Figure 2. The subject property is designated Public/Quasi-Public in the Hana Community Plan land use map and is County zoned P-1, Public/Quasi-Public.

The lands surrounding Hana High and Elementary School are designated for agricultural and rural uses.

B. EXISTING CONDITIONS

Hana High and Elementary School, built in 1977, is a Grade K to 12 school. Total design enrollment is 500 students. Total school enrollment for Grades K to 12 in 2003-2004 is 398 students. There are two (2) driveways off of Hana Highway to access the school property. See Figure 3. The main driveway in the northern portion of the property leads to a paved parking lot. Adjacent to the parking lot are the library and gymnasium. The library is a joint school and public library. Leading from the parking lot are pathways to the classrooms, special educational facilities and administrative offices. The second driveway in the southern portion of the property leads to an approximate 50-stall paved parking lot. Adjacent to the parking lot are the food service center building, arts and science building and administration and classroom building. A teacher's cottage is located at the entrance of the second driveway. A large play field and baseball diamond are located between the two (2) driveways in the western portion of the school property.

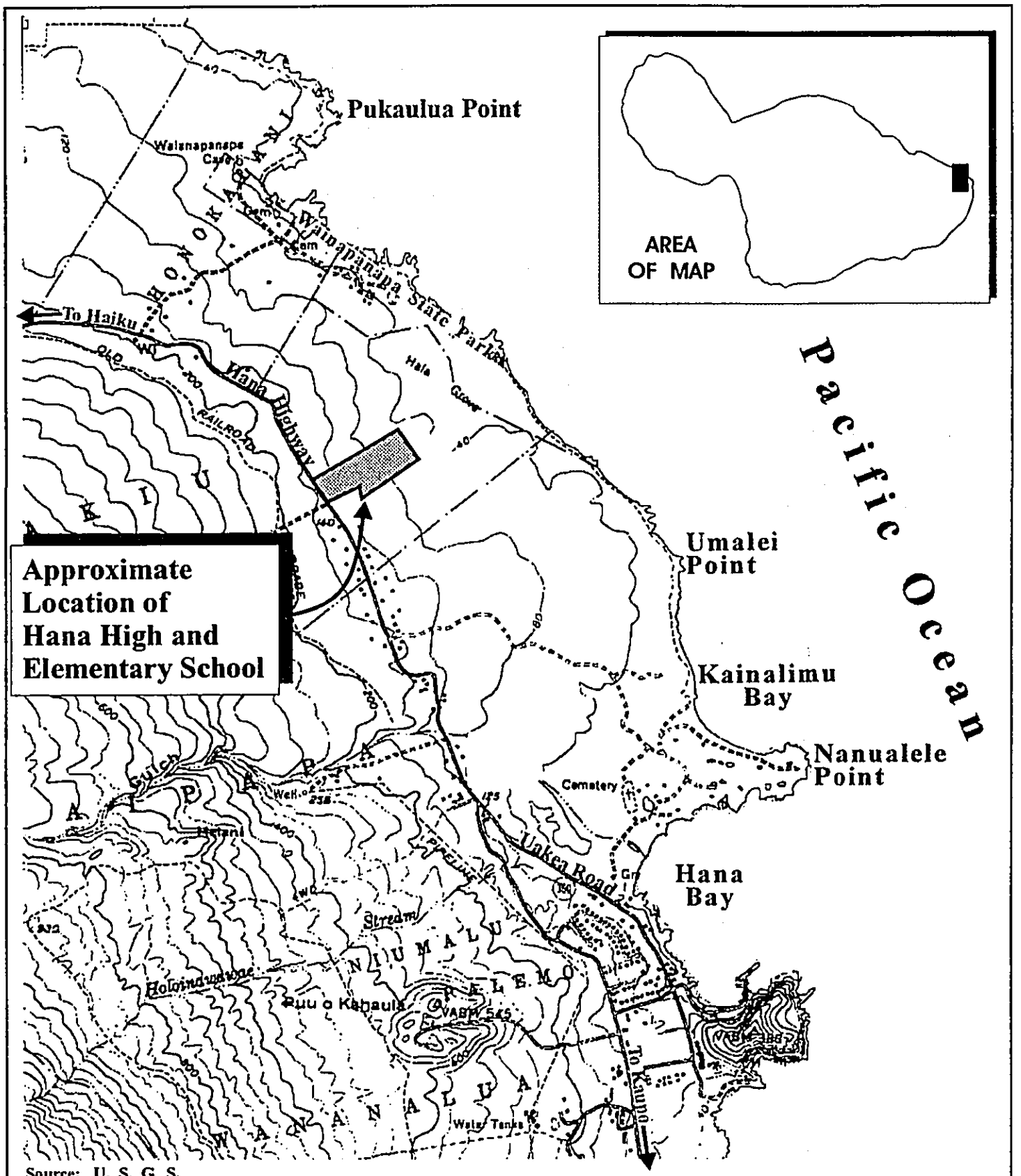

Figure 1

Proposed Improvements to Hana High and Elementary School

Regional Location Map

Prepared for: State of Hawaii, Department of Accounting and General Services

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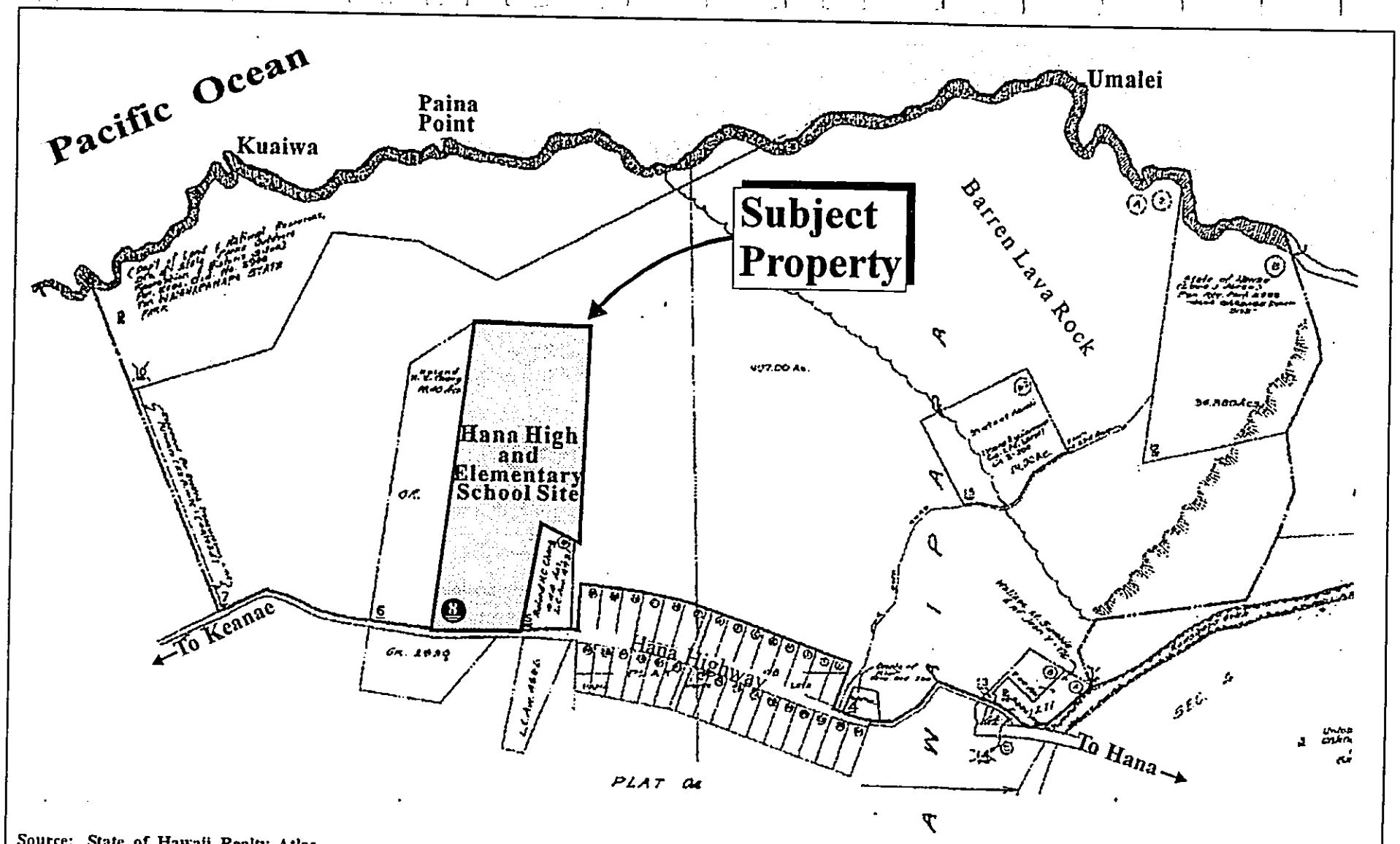

Source: State of Hawaii Realty Atlas

Figure 2

Proposed Improvements to Hana High and Elementary School

Property Location Map

NOT TO SCALE

Prepared for: State of Hawaii, Department of Accounting and General Services

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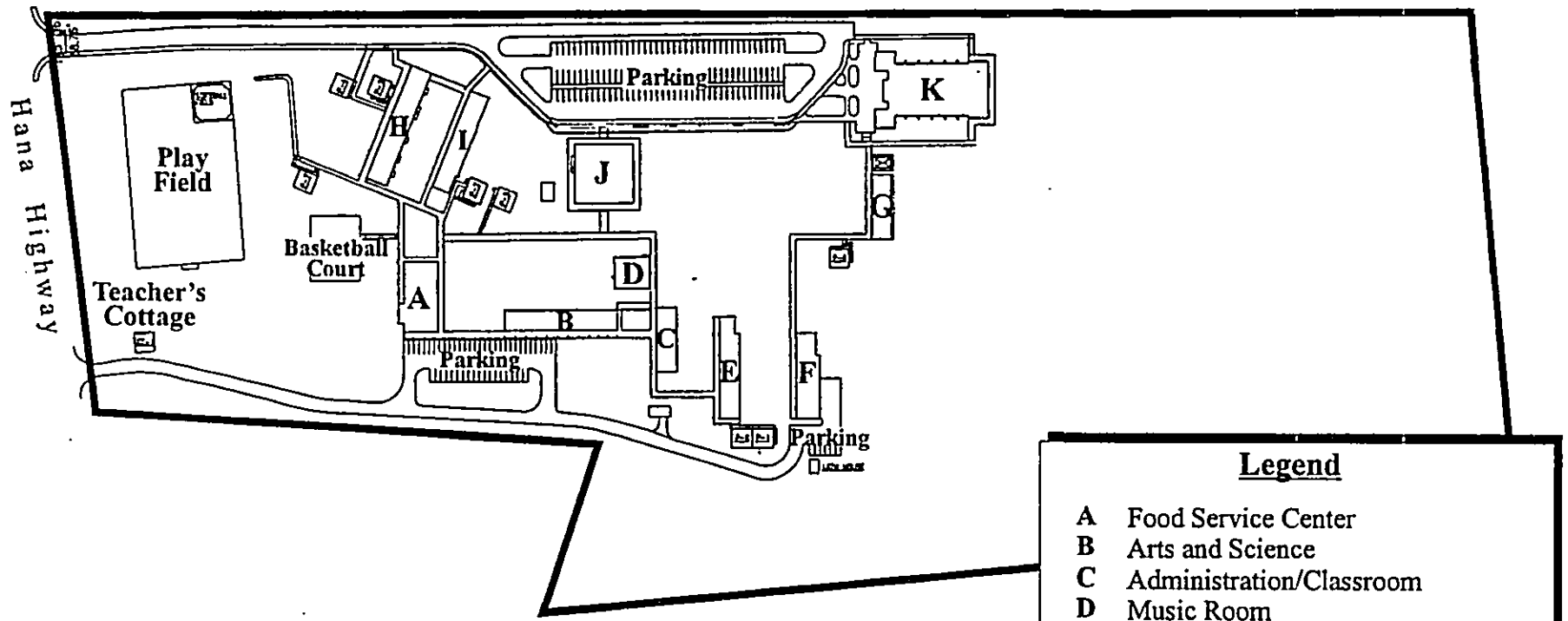


Legend

- **A** Food Service Center
- **B** Arts and Science
- **C** Administration/Classroom
- **D** Music Room
- **E** Classroom
- **F** Industrial/Arts Rooms
- **G** Health and Physical Ed Classrooms
- **H** Classrooms
- **I** Classrooms
- **J** Library
- **K** Gymnasium

Source: Mitsunaga & Associates, Inc.

Figure 3

Proposed Improvements to Hana High and Elementary School

Existing Site Plan

NOT TO SCALE

Prepared for: State of Hawaii, Department of Accounting and General Services

MUNEKIYO & HIRAGA, INC.

C. PROPOSED ACTIONS

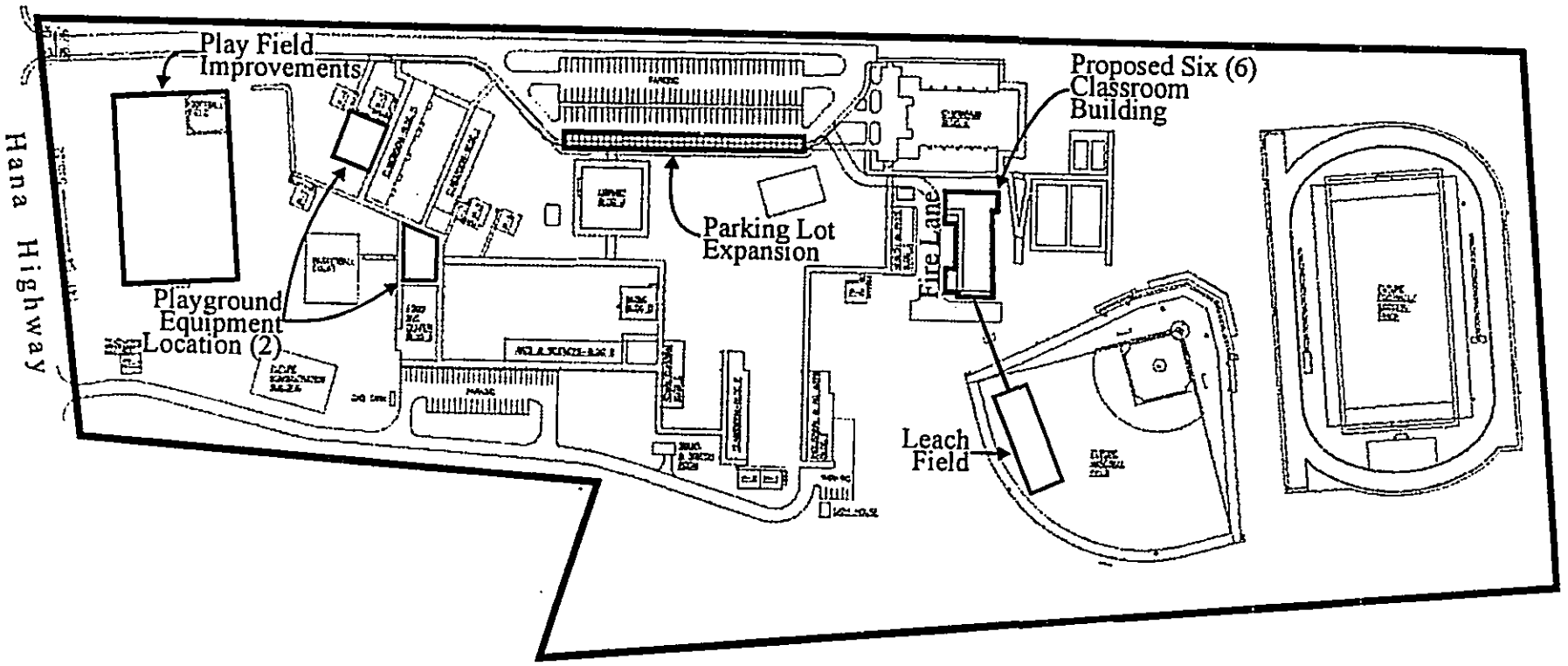
1. Project Need

The proposed 6-classroom building will be for Grades 6 to 8 (middle school). The middle school presently occupies classroom space within the high school portion of the campus. The middle school lacks the specialty classroom facilities required for delivery of the middle school curriculum in subject areas of arts and science. The proposed 6-classroom building will provide facilities to address the arts and science space requirements as well as provide a distinct area of the school campus to help foster an identity for the middle school. Relocation of the middle school from the high school area will also provide more classroom space for Grades 9 to 12.

The playground equipment improvements are required to correct the safety deficiencies and to comply with American with Disabilities Act Accessibility Guidelines, as noted in an evaluation report carried out by the Department of Education, Facilities and Support Services Branch in June 2001. The softball field improvements are required to comply with Federal Gender Equity Legislation (Title IX, Patsy T. Mink Equal Opportunity in Education Act).

2. Proposed Action

Proposed improvements to the school facilities include a new 2-story building located to the south of the gymnasium and housing six (6) classrooms for the middle school (Grades 6 to 8). See Figure 4. The first floor will house an arts and crafts classroom, a special education classroom, a special education itinerant room, a faculty center, an office, washrooms and mechanical rooms. The



Source: Mitsunaga & Associates, Inc.

Figure 4

Proposed Improvements to Hana High and Elementary School

Proposed Site Plan

NOT TO SCALE

Prepared for: State of Hawaii, Department of Accounting and General Services

MUNEKIYO & HIRAGA, INC.

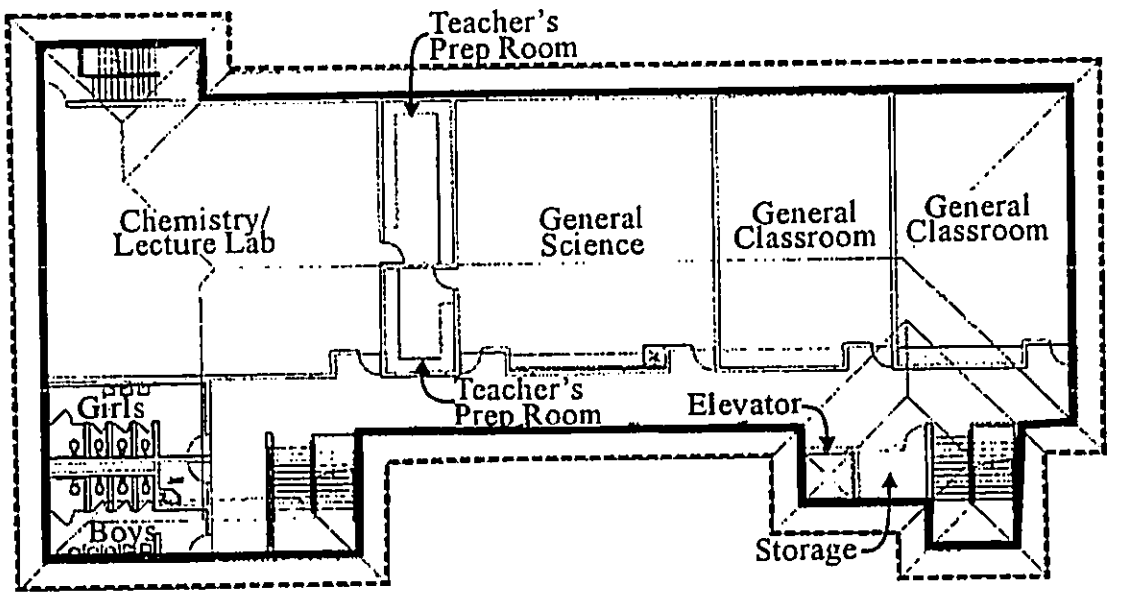
second floor will house two (2) general classrooms, a chemistry room, a general science room, two (2) teachers' preparation rooms and washrooms. Access between the floors will be provided by an elevator as well as three (3) stairwells. See Figure 5 and Figure 6. Related improvements to support the classroom building include grading, walkway, water system, drainage, expansion to the main parking lot, an individual wastewater disposal system, leach field, paved fire lane and landscaping.

Proposed improvements to the elementary school facilities include installation of new playground equipment at two (2) play centers. Refer to Figure 4. Proposed improvements to the existing softball field include two (2) dugouts, a storage building, a scorer's booth, fencing, batting cage, bleachers, irrigation system, hose bibs, drinking fountain and related water lines, walkways, grading, placement of topsoil, grassing, skinning of the infield and related water system upgrades. A portable scoreboard and outfield fence will also be provided. Refer to Figure 4.

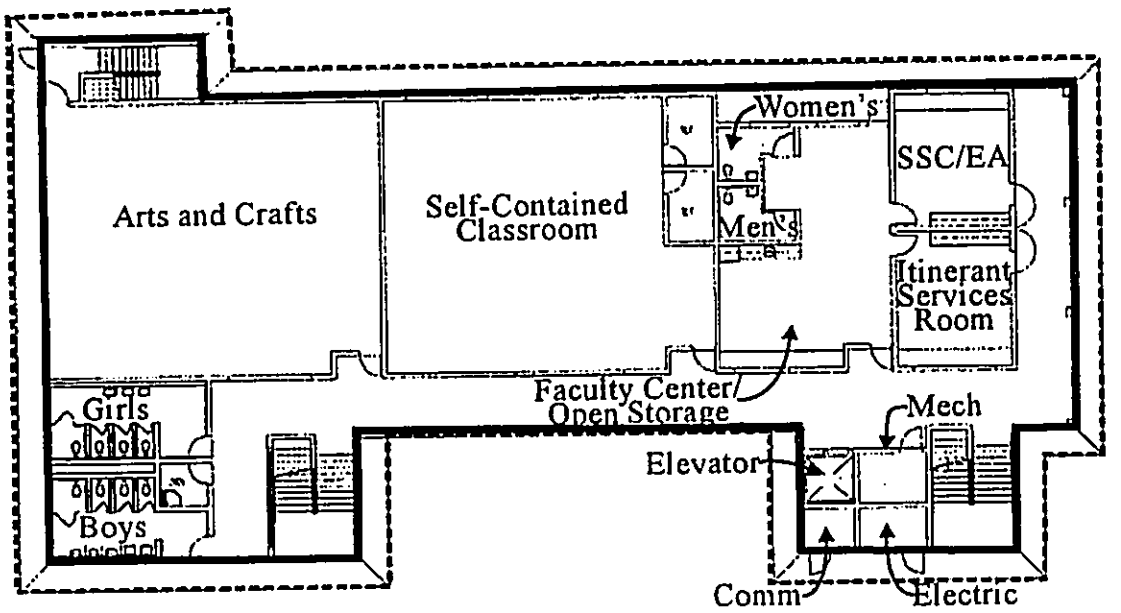
The proposed project is intended to accommodate the educational requirements for the delivery of the middle school curriculum, Gender Equity in Education (Title IX) and ADA compliance for elementary school playground facilities.

D. ***CHAPTER 343, HAWAII REVISED STATUTES***

The proposed project will involve the commitment of State land and funds which is a trigger to Chapter 343, Hawaii Revised Statutes. As such, an environmental assessment is being prepared pursuant to Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. Accordingly, this document (prepared for the approving



Second Floor Plan



First Floor Plan

Source: Mitsunaga & Associates, Inc.

Figure 5 Proposed Improvements to Hana High and Elementary School
Classroom Building Floor Plans

NOT TO SCALE

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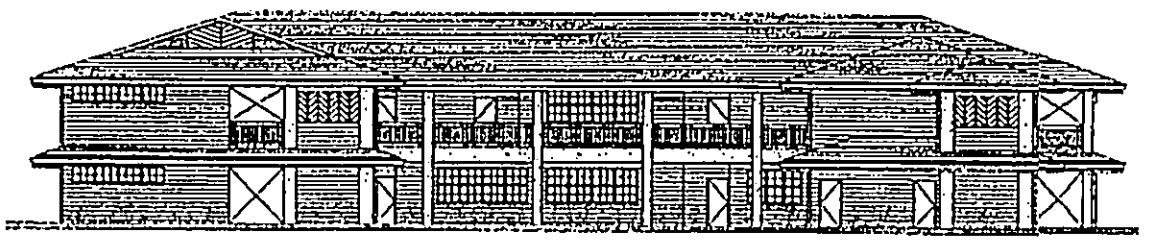
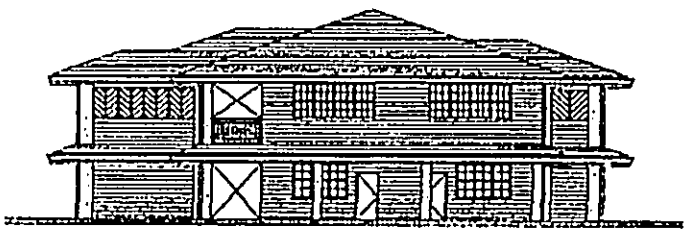
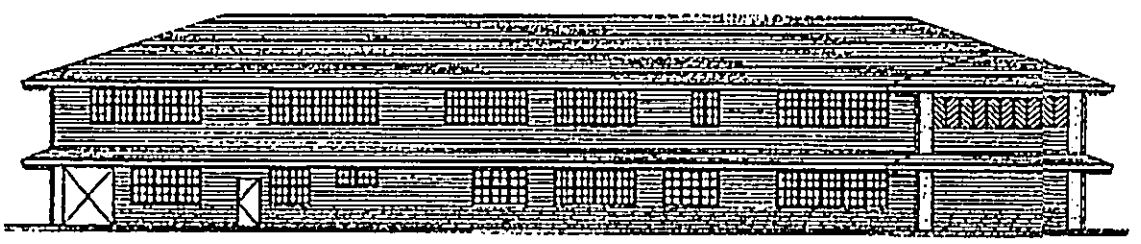


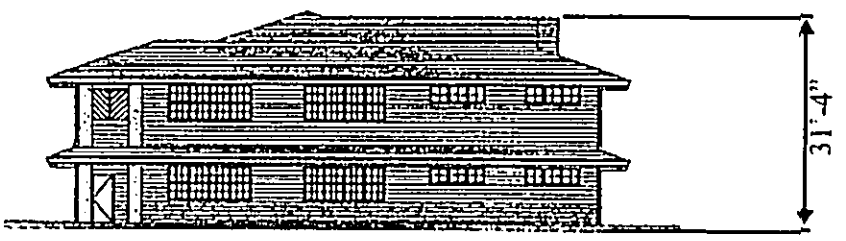
South Elevation



East Elevation



North Elevation



West Elevation

Source: Mitsunaga & Associates, Inc.

Figure 6 Proposed Improvements to Hana High and Elementary School
Classroom Building Elevations

NOT TO SCALE

Prepared for: State of Hawaii, Department of Accounting and General Services

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agency, the State of Hawaii, Department of Accounting and General Services) addresses the project's technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the proposed action.

In addition, the subject property is located within the limits of the County of Maui's Special Management Area (SMA). Accordingly, an application for a SMA Use Permit has been prepared for review and action by the Maui Planning Commission.

E. PROJECT COSTS AND SCHEDULE

The estimated construction cost for the proposed improvements is approximately $5.0 million. Construction of the proposed improvements will commence upon the receipt of all necessary regulatory permits and approvals and upon project funding.

The proposed improvements will be constructed in two (2) phases. The first phase will include the ballfield and playground improvements. The six (6) classroom building will be constructed in the second phase.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The project site is located approximately 2 miles north of Hana Town, fronting Hana Highway. The State of Hawaii owns the adjacent property to the north and east of the project site, identified by TMK 1-3-6:7. The State parcel is approximately 407 acres in size and is leased for cattle grazing. The parcel to the west of the subject property is used for growing tropical plants. South of the project site is a rural residential subdivision. Beyond the agricultural lands to the east is the Waianapanapa State Park and the Pi'ilani Trail.

2. Climate

Like most areas of Hawaii, Hana's climate is relatively uniform year-round. Hana's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions, then, is largely left to local terrain.

Average temperatures in Hana range between 63 degrees and 84 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest.

Rainfall at Hana is highly seasonal, with most precipitation occurring between October and April when winter storms hit the area. This region receives most of its rainfall in late afternoon and early evening, after seabreezes take moisture upslope during the day. Precipitation data collected in the region indicate the project site receives approximately 77 inches of rain a year.

Wind patterns in the Hana area are also seasonal. The northeasterly tradewind occurs 90 percent of the time during the summer, and just 50 percent of the time in the winter. Wind patterns also vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

3. ***Topography and Soils***

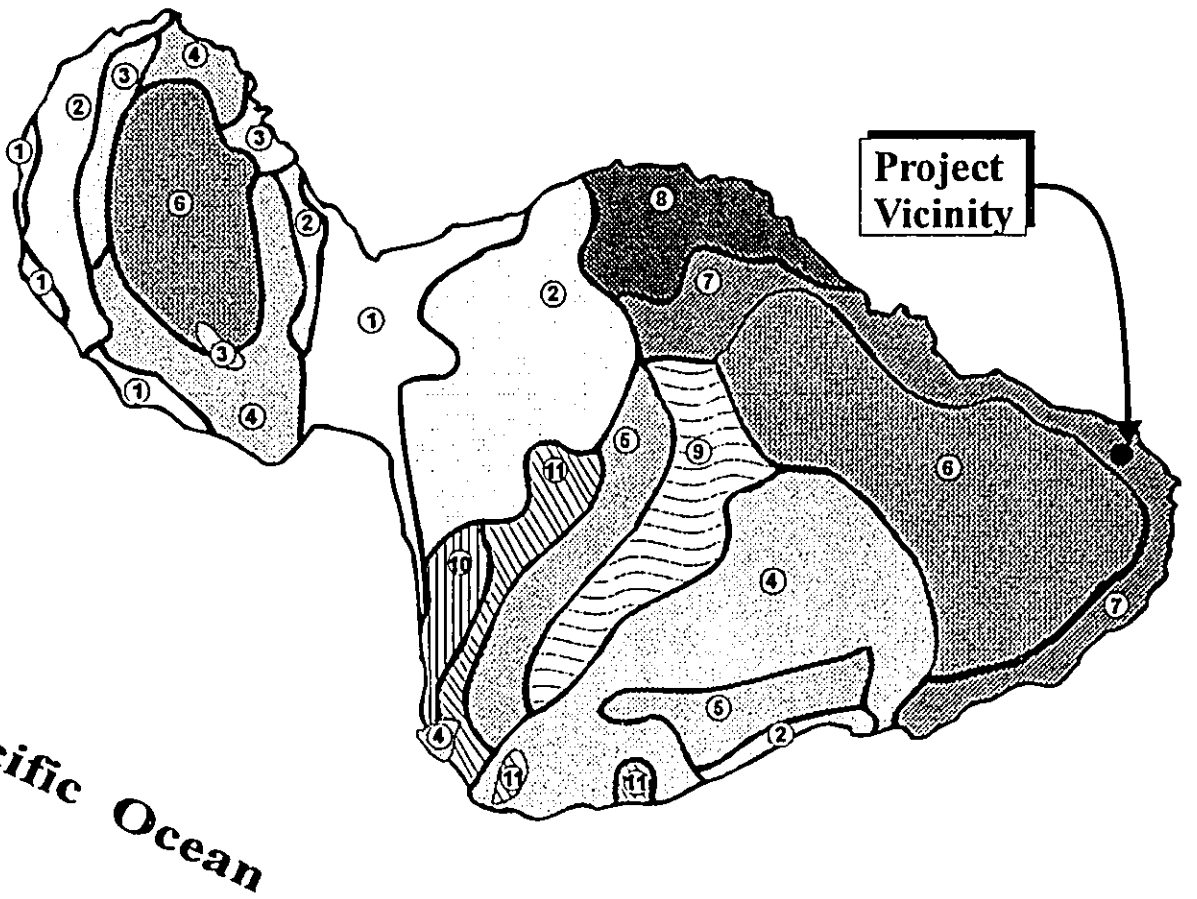
The U.S. Department of Agriculture Soil Conservation Service designates various associations on the island of Maui and classifies the soil in its *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai.* The project site is located within the Hana-Makaalae-Kailua association. See Figure 7. This area contains moderately deep and deep and gently sloping well-drained soils. The texture ranges from moderately fine to fine subsoils.

The soil type specific to the project site are Malama (MYD) series in the western portion of the site, Hana (HKNC) series in the eastern portion of the site, and a'a (rLw) lava in the southwestern portion of the site. See Figure 8. Malama soils consists of shallow, organic soils and excessively-drained soils. The surface layer is black muck and the substratum is fragmented a'a lava. Permeability is very rapid and runoff is slow. The Hana soil is silty clay loam. In this series the runoff is slow to medium and the erosion hazard is slight to moderate (U.S. Department of Agriculture Soil Conservation Service). A'a soils consist of geologically recent lava flows.

Topography underlying the subject site slopes gently in an west to

LEGEND

- ① Pulehu-Ewa-Jaucas association
- ② Waiakoa-Keahua-Molokai association
- ③ Honolua-Olelo association
- ④ Rock land-Rough mountainous land association
- ⑤ Puu Pa-Kula-Pane association
- ⑥ Hydrandepts-Tropaquods association
- ⑦ Hana-Makaalae-Kailua association
- ⑧ Pauwela-Haiku association
- ⑨ Laumaia-Kaipoipoi-Olinda association
- 10 Keawakapu-Makena association
- 11 Kamaole-Oanapuka association



Map Source: U.S. Department of Agriculture, Soil Conservation Service

Figure 7

Proposed Improvements to Hana High and Elementary School

Soil Association Map

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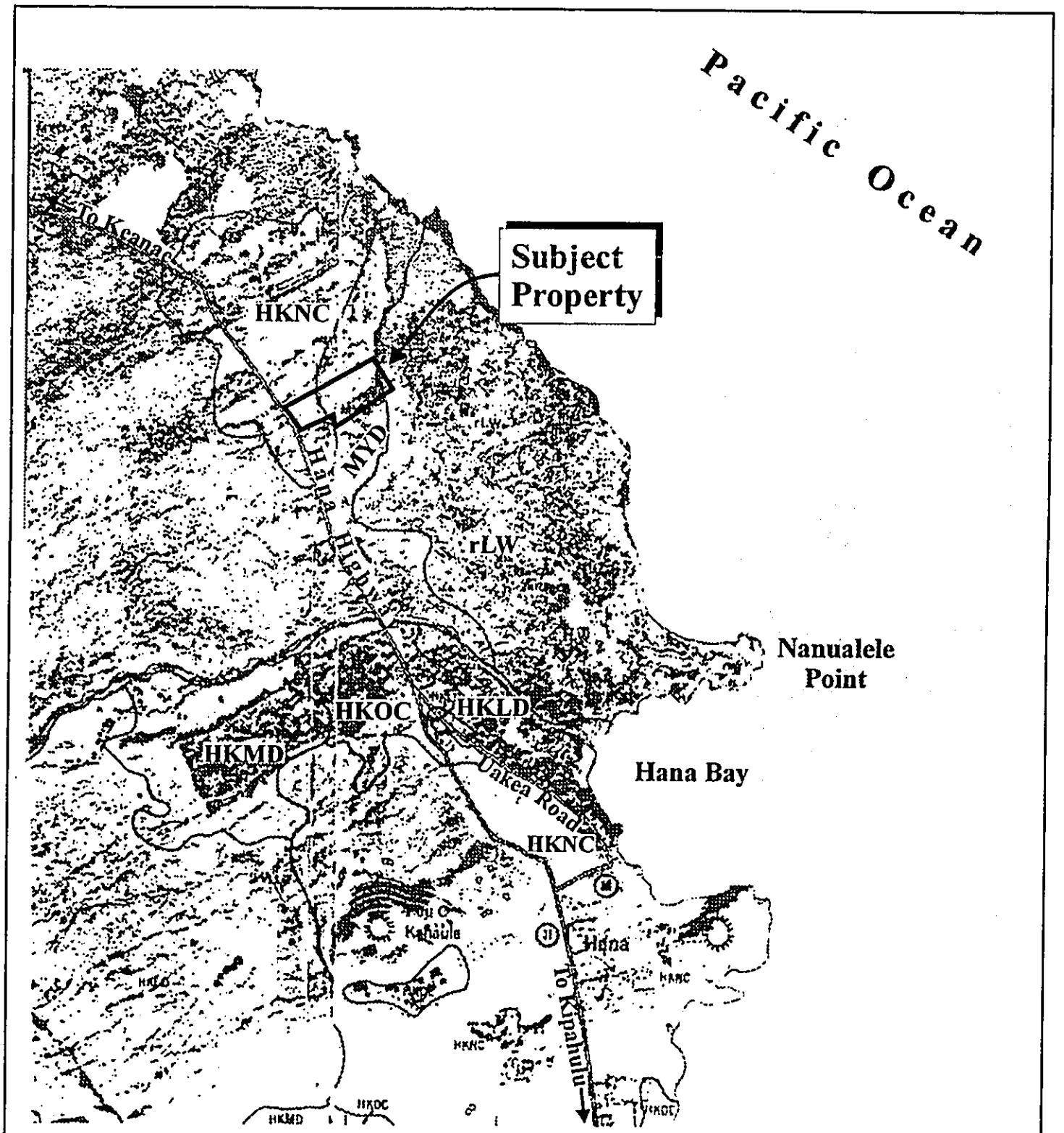

Source: U.S. Department of Agriculture, Soil Conservation Service

Figure 8 Proposed Improvements to Hana High and Elementary School
Soil Classification Map

0 500 1000 2000 Feet

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east direction, and is not subject to landslides or other types of mass movement.

4. ***Flood and Coastal Hazards***

The Flood Insurance Rate Map (FIRM) for this region indicates that the subject site is located in Zone C, areas of minimal flooding. See Figure 9. In addition, the subject property is located beyond the reaches of the tsunami inundation zone.

5. ***Streams and Wetlands***

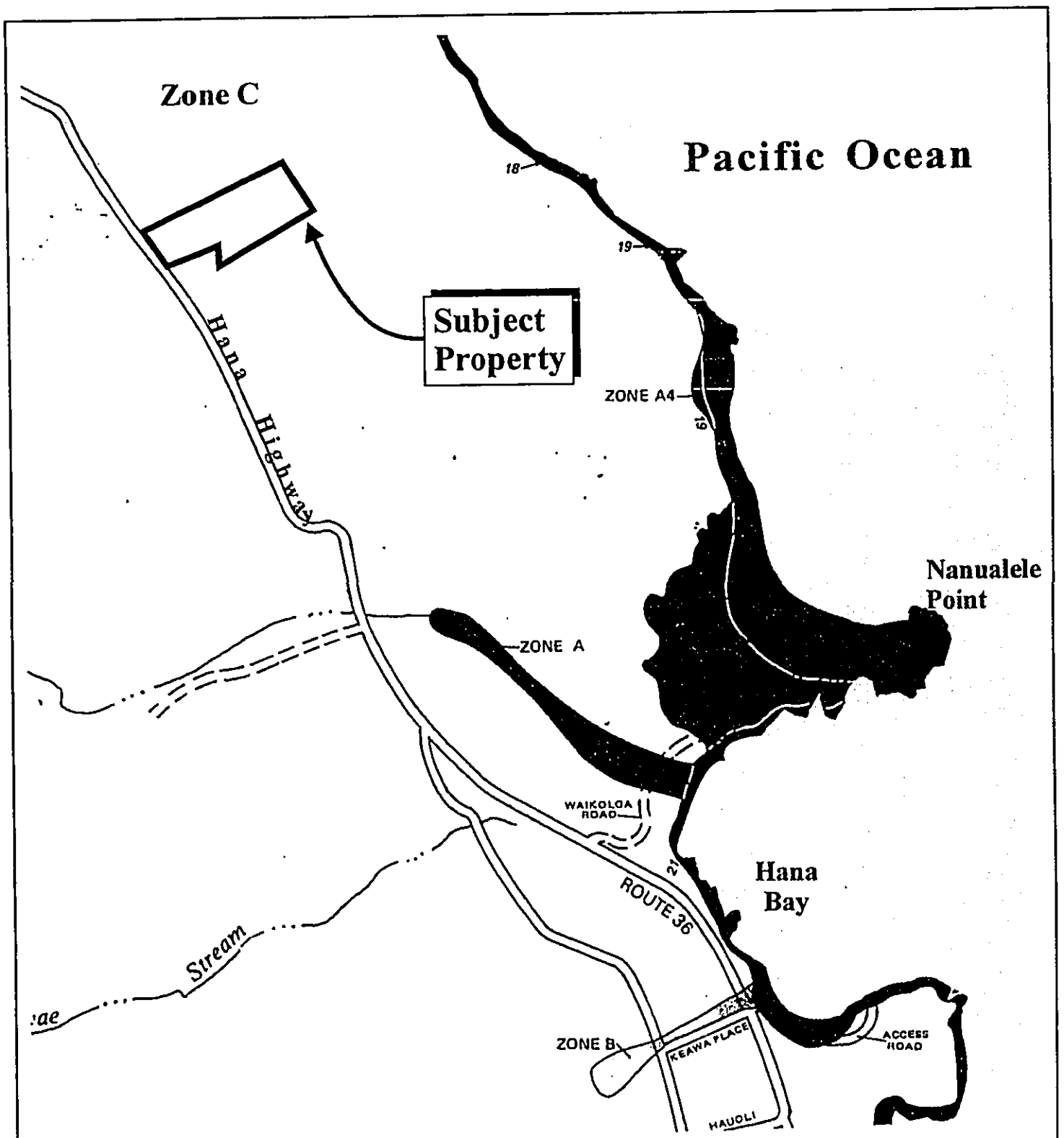
There are no streams or wetlands located in the immediate vicinity of the subject property.

6. ***Flora, Fauna and Avifauna***

The Hana High and Elementary School campus is landscaped with grass lawns and ornamental trees and shrubs commonly associated with the Hana Region. A variety of trees which include avocado, mango, and monkeypod are found on the school campus. Some previously cleared sections to the west of the classroom building site are generally heavily vegetated. There are also isolated *kukui* (Aleurites moluccana) and *hala* (Pandanus tectorius) trees on campus. The project site for the proposed classroom building is presently landscaped with grassed lawns.

Mammal species common to the area include mice, rats, cats, dogs, bufo toads and mongoose. Avifauna typical to the area include mynah, spotted doves, house sparrows, finches and cardinals.

There are no identified rare, threatened or endangered species



Source: FEMA

Figure 9 Proposed Improvements to Hana High and Elementary School
Flood Insurance Rate Map

0 500 1000 Feet

MUNEKIYO & HIRAGA, INC.

Prepared for: State of Hawaii, Department of Accounting and General Services

located on the subject property.

7. *Archaeological Resources*

The subject property has been cleared and historically used for sugar cane cultivation in the mid-19th century and early 20th century. Later when the sugar mill closed, the subject property was used for grazing cattle up until the time the school was built. The level of previous disturbance during the early agricultural uses on the property and from grading and filling operations associated with the school improvements have likely eliminated any evidence of former land use on the subject property. An archaeological assessment carried out on the subject property did not identify significant material culture remains, nor did it note significant above-ground structural remains on the property improvement sites. See Appendix "A".

8. *Air and Noise Quality*

The project site is located in a rural area, absent of large developments and intensive air source contaminants. The Hana region is consistently exposed to trade winds, which contributes to excellent air quality in the region. Ambient noise levels are also influenced by the region's rural atmosphere.

Ambient noise in the area is largely attributed to traffic on Hana Highway.

B. *SOCIO-ECONOMIC ENVIRONMENT*

1. *Population and Economy*

The Hana region includes Hana Town and the neighboring coastal communities of Keanae, Kipahulu and Kaupo. Situated 55 miles

east of the County seat in Wailuku, Hana Town serves as the major population center of the Hana area. The economy in Hana is primarily based on diversified agriculture, the visitor industry, government services and subsistence activities. Diversified agricultural activities include ranching, as well as the cultivation of taro and tropical fruits, flowers and foliage. Businesses, government services and visitor accommodations are centered in Hana Town.

In the 1990s, the population of Hana was 1,895, while the population for the year 2000 has been estimated at 1,867. By the year 2010, the baseline population of Hana is projected to increase to 2,012 (SMS, Socio-Economic Forecast: Phase 1 Report, May 2002).

In 1990, there were approximately 680 jobs in the Hana region, while in the year 2000, there were approximately 840. By the year 2010, the baseline number of jobs in Hana is anticipated to be approximately 882 (SMS, Socio-Economic Forecast: Phase 1 Report, May 2002).

C. PUBLIC SERVICES

1. Police and Fire Protection

Headquartered in Wailuku, police protection service for the island of Maui is provided by the Maui Police Department, which includes Wailuku, Lahaina and Hana patrol districts. The Hana patrol division covers the area from Kailua to Kaupo, and is based out of the Hana substation, located near the intersection of Hana Highway and Uakea Road, southeast of the project site.

Fire prevention, suppression and protection services are provided for the County of Maui by the Department of Fire Control. The department maintains a fire station in Hana which is located on the same property as the Police substation.

2. ***Medical Facilities***

Maui Memorial Medical Center is the only major medical facility on the island. Acute, general and emergency care services are provided by the approximately 200-bed facility. In Hana, the Hana Community Health Clinic is located 0.5 mile west of the project site, providing general health care, dental services and 24-hour acute care services.

3. ***Schools***

The State of Hawaii, Department of Education operates two (2) public schools in the Hana region, Hana High and Elementary School and Keanae School. Hana High and Elementary School has a total enrollment of 386 students for the 2003-2004 school year (Hana High and Elementary School, February 2004).

4. ***Solid Waste***

Solid waste in the vicinity of the project is collected by the County of Maui, Department of Public Works and Environmental Management (DPWEM) or by private collection services, and transported to the Hana landfill.

Single-family solid waste collection service is provided by the County of Maui on a once-a-week basis. The project site also accepts commercial waste generated by the region's limited commercial activity, including The Hana Hotel, The Hana Ranch,

and the Hana High and Elementary School.

5. *Recreational Resources*

Major recreational resources in the Hana region include the County-maintained Hana Ball Park, Hana Bay Beach Park in Hana Town and Koki Beach Park near Hamoa. In addition, the State of Hawaii maintains the Waianapanapa State Park approximately 0.5 mile west of the subject property. The National Park Service maintains the Oheo Gulch Recreational area, part of the larger Haleakala National Park.

Portions of the Pi'ilani Trail, also known as the King's Highway, traverse the shoreline area to the west of the project site and within the State Park boundaries.

D. *INFRASTRUCTURE*

1. *Roadways*

Hana Highway is a two-way, two-lane State Highway, serving as the main transportation arterial with rural collector road status for the Hana region. The Hana Highway is noted for its scenic beauty and historic nature, which includes 59 bridges and 8 culverts, all of which are over 50 years old.

Access to Hana High and Elementary School is off of Hana Highway.

2. *Water*

The Hana region is serviced in part by the County of Maui, Department of Water Supply, which includes two deep wells, one located at Hamoa and one at Wakiu. These wells service a series

of pipelines which in turn service the area of Hana Town. The subject property is serviced by the Wakiu wells and the Kawaipapa aquifer. There is a 12-inch water line and one fire hydrant along Hana Highway. The Hana school is served by a 1-inch water meter. Average water use for the school was 1,715 gallons per day during 2002.

3. ***Wastewater***

There are no County wastewater collection or treatment facilities currently servicing the Hana region. Individual properties are generally serviced by individual wastewater systems (IWS), including septic tanks, cesspools and packaged treatment plants. The existing wastewater and disposal method of the school is by cesspool.

4. ***Drainage System***

Storm water drainage in the vicinity of the project site generally follows natural contours, sheet flowing into streams and gullies and discharging into coastal waters. Within the limits of the project area, buildings, extensive grass and landscaping covers the lands surrounding the proposed improvements. The existing runoff from the approximately 0.7-acre site of the new classroom building is 2.62 cubic feet per second (cfs). See Appendix "B".

5. ***Electric and Telephone Systems***

Electrical and telephone services for the Hana region of Maui are provided by Maui Electric Company, Ltd. and Verizon Hawaii, respectively.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL SETTINGS

1. Surrounding Land Uses

The Hana High and Elementary School has been located on the subject property since 1977. The proposed improvements are not anticipated to result in adverse impacts to surrounding land uses in the project vicinity.

2. Topography and Soils

The proposed improvements will not result in significant ground altering activities or major changes to existing topographical conditions. Grading and excavation activities associated with the improvements will be completed in accordance with Chapter 20.08, Soil Erosion and Sedimentation Control of the Maui County Code and the permit requirements of the State of Hawaii, Department of Health and the National Pollutant Discharge Elimination System (NPDES). Adverse impacts to topography and soil conditions in the vicinity of the project site are not anticipated as a result of project implementation.

3. Flood and Coastal Hazards

The subject property is located within Zone C, areas of minimal flooding and located beyond the reaches of the tsunami inundation zone. Runoff from project sites will be channeled to landscaping areas where it will collect and percolate into the ground.

4. Streams

There are no streams located in the immediate vicinity of the project site. Nevertheless, BMPs will be utilized during grading activities in order to prevent the contamination of downstream

properties.

5. ***Flora, Fauna and Avifauna***

There are no identified rare, threatened or endangered species located on the project site. No impacts to localized flora, fauna or avifauna are anticipated as a result of the proposed project.

6. ***Archaeological Resources***

An archaeological assessment carried out on the school campus did not identify significant culture remains. The proposed improvements are not anticipated to adversely impact archaeological resources. Nevertheless, archaeological monitoring will be carried out during all ground-altering activities to document any historic properties which may be encountered and to provide mitigation measures, as necessary.

7. ***Cultural Impact Assessment***

a. ***Cultural Impact Assessment***

(1) ***Historical Context***

Pre-Contact

The subject property is located within the Wakiu ahupua'a, part of the larger moku or district of Hana, which extends from Ko'olau to Kaupo. The Hana moku was noted for bountiful production of upland taro, bananas, yams, wakue, olana and 'awa (Handy, 1940). The Hana district is also distinguished by its rich cultural history. Hana's closeness to the island of Hawaii permitted frequent interaction between the two islands in times of war and peace. In pre-contact times, Hana was a desirable district to reside in due to its abundant agricultural resources and numerous coastal fishponds. The Hana district was also noted for its fine surfing, excellent supply of natural woods

(used for crafting scaffolds and ladders) and having the best round, smooth stones used in slingshots.

Hana was also called "a land beloved by chiefs because of the fortress of Ka'uiki and the ease of living in that place". Ka'uiki, a *pu'u* located on the southern edge of Hana Bay, had a summit at a height of approximately 400 feet and was covered with a natural vegetative mat that provided the chiefs and chiefesses with a comfortable sleeping environment. Fishponds immediately below Ka'uiki provided unlimited fish supplies, while large quantities of awa root delighted the chiefs. Pi'ilani, who built the great road around Maui, was said to have dwelt at Ka'uiki.

Notable figures of old Hawaii were known to have resided at Ka'uiki, including Kaahumanu, who was born and raised in the Kawaipapa ahupua'a. According to Handy,Pi'ilani and Kihapi'ilani resided at Ka'uiki. Pi'ilani was the older brother of Kihapi'ilani, who built the great road around Maui. Kihapi'ilani stayed at Ka'uiki with Pi'ilani until he apparently grew tired of his brother's continued insults. With the aid of a fleet of canoes sent by Umi from the island of Hawaii, Kihapi'ilani defeated Pi'ilani and later extended his rule throughout the island of Maui.

As chief of Maui, Kihapi'ilani built the "Long Road", or Alaloa around the island of Maui, around 1516 (Handy, 1940). The trail was paved with flat hard beach stones, bordered in the open country by large boulders sunk into the ground. Maui ali'i organized human chains to pass shoreline stones from the coast to the trail areas. The trail was useful during times of war, with runners carrying messages along the trails for the ali'i. The trail was also used during the Makahiki by tax collectors, the priests who released land from the kapu after the ho'okupu or taxes had been received and the bearers of the symbol of Lono. (Handy, Handy and Pukui, 1972). Eventually, the Maui trail would come to be known as the King's Trail, the only island trail in Hawaii to traverse the whole island.

(2) *Local Resident Interviews*

Melody Cosma-Gonsalves

The interviewee was referred by the Hana High and Elementary School Native Studies instructor due to her Native Hawaiian background, knowledge of the area and her standing in the community as a Native cultural representative. The interview with Melody Cosma-Gonsalves was carried out at the Hana Public and School Library on December 11, 2003.

Melody Cosma-Consalves was born in Hana. Her mother is half Hawaiian and her grandmother is full Hawaiian. Her grandmother's maiden name was Hoopai. Her mother's family comes from the Honokalani ahupua'a which is north of the school site. Melody is a respected cultural resource person in Hana and is regularly called upon to welcome canoes and visitors during Hawaiian cultural gatherings and ceremonies.

Melody is very familiar with the Wakiu area around Hana High and Elementary School. In her early years, she spent a lot of time in the area because of her mother's ties to the Honokalani ahupua'a which is adjacent to the Wakiu area. She also attended Hana High and Elementary school through the elementary and intermediate grades. She recalls the lands surrounding the school site were used for pasture and cattle grazing. There is still evidence of pasture lands near the coast. Prior to that, the lands were used for sugar cane cultivation. Based on her knowledge of cultural history and stories, the Wakiu area was a fishing village. Beyond the school's westerly boundary is a heiau called "ohala". It is a fisherman's shrine to Kuula the god of fishermen. It is preserved. Her mother's family and families in the area still fish the entire coastline with pole and nets. They use the King's trail which is east of the school property to get to the fishing areas.

Melody also mentioned the hala grove to the north and east of the school site which is very famous in Hawaiian folklore. It is the largest hala grove in the

State of Hawaii. The grove stretches from 'Ula'ino to Hana. The hala leaf is used for weaving. Her grandmother still collects the hala leaf for weaving mats. She collects it near the beach by Honokalani.

Melody is not aware of any Native Hawaiian gathering or cultural practices presently carried out on the school campus, except for the teachings/practices done by cultural practitioners and teachers for the students. She indicated the proposed improvements to the Hana High and Elementary School would not impact any known cultural resources. The heiau, fishing trails and hala grove were beyond the school property and would not be impacted by the proposed project.

Ku'uipo Kanakaole and Kaui Kanakaole

Ku'uipo (Ipo) Kanakaole and Kaui Kanakaole were selected due to their Native Hawaiian heritage, familiarity of the site and their knowledge of Native Hawaiian culture. Ku'uipo is the wife of the late Parley Kanakaole and Kaui is their daughter. Ku'uipo is the on the Board of Trustees and is Treasurer of the Hana Cultural Center & Museum. She is employed as the registrar at Hana High and Elementary School. Kaui teaches Native Hawaiian Studies at the school. The interview was carried out at the Hana High and Elementary School on December 11, 2003.

Ipo's Interview

Ipo was born and raised in Hana. She graduated from Hana High School. Her knowledge of Hawaiian culture was obtained through her grandmother who was of Hawaiian/Japanese ancestry. Her grandmother taught her Hawaiian folklore and told her many stories of the early plantation life in Hana. Her great grandmother was Kahele Ishii. She was pure Hawaiian and married Sentaro Ishii, a former samurai who left Japan and arrived in Hawaii around 1850. Sentaro Ishii is a historic figure in Hawaii. He was

honored with the Emperor's Cup in 1915 as the oldest Japanese in Hawaii at the age of 82. He died in 1936 at the age of 103. The story of Sentaro Ishii and his Native Hawaiian wife, Kahele, is recorded in the recent book, Every Grain of Rice: Portraits of Maui's Japanese Community, by Rita Goldman. They had four (4) children and their daughter, Marie Ishii Starkey, was Ku'uipo's grandmother.

In 1949 her grandmother bought one of the home lots that was offered by the Territorial government near the present school property. She recalled there were many trails around the area to the coast. She mentioned the King's trail which passes near the school campus which was and still is used to access the shoreline. She mentioned that Hana is very rich in resources. She mentioned the area of Wakiu is known for the largest hala grove in the state. She remembers her grandmother picking hala in their backyard and weaving mats. She also mentioned "olona", a waterplant which grows near streams, and is one of the world's strongest natural cordage materials. The Hawaiians used it to make fishing nets, rope and used it in lashing their houses. It was traded throughout the Islands. Ipo also mentioned the Hana coastline was known for the opihi. She said people would come to pick the opihi.

Ipo is not aware on any cultural gathering practices presently being carried out in the vicinity of the proposed improvements or on the school campus. The farmer on the adjacent property to the northwest grows tropical flowers. She recalled his father previously leased the school lands to graze cattle before the school was built.

Kaui's Interview

Kaui got her interest in Hawaiian culture from her father and from spending time with her father's family on the Big Island when she attended college at Hilo. Her father, Parley Kanakaole was born on the Big Island, but spent many years in Hana. He was a highly respected community leader in Hana and was a teacher and a former Vice-Principal of the school.

Long ago, there was a lot of interaction between the chiefs of the Big Island and Hana. Kaui's father found reference to a family named Kanakaole long ago in Hana history.

When Kaui Kanakaole was growing up she heard many stories of local place names. There are many mountain names above the school campus. Below the school is the King's trail. There used to be a trail to the King's trail from the school, but it is now overgrown. She mentioned the Piilani heiau on the walk to Hana Bay and sites along the trail. There are fishing shrines or temples with specific names. However, they are not used today. Kaui mentioned the trail is very significant for the people of Hana. She said, *"When the trail was built, the Native people brought the stones from Hana and carried them to Ulaino. So when people now walk on the trail they can connect to the past. Many of the children can trace their family heritage back to the time the trail was built."*

The coastline is still used for fishing. Native Hawaiians get to the King's trail by the Hana Landfill site in the Waikaloa area and drive to the trail. There is a shack along the trail set up and used by Native fishers for camping.

Kaui also mentioned the hala grove that made the Wakiu area famous. She mentioned that people still gather hala leaves to weave baskets. Kaui collects it at Waianapanapa because it is easily accessible. Kaui gave the following significance of the hala plant:

> *Hawaiian weavers come to Hana twice a year to gather the hala leaves. Some people return to a special tree every trip because it has a special color. The fruit is also used to make leis, especially for funerals. Hala in Hawaiian means "to pass", lau means "leaf" and lauhala means "leaf to pass". Therefore, it is significant to use the fruit for leis at funerals. The flesh of the fruit is used to make the lei. It has a nice orange*

color and sweet smell. You have to be very skillful in making the lauhala leis.

Kaui also provided the following comment about the importance of the land and how the people of Hana feel towards the land.

There is a strong feeling of the people and ancestors who used to frequent the area. There is a strong special feeling in the lauhala grove. I can't quite put the feeling into words but it is present. People in Hana feel close to the land and history. The mountains and ocean are so close. That is why people in Hana are so careful about development. They do not want to lose the special feeling.

Kaui does not believe the proposed improvements to the school will have an adverse impact on the cultural resources of the area nor will it negatively impact the special feeling people have with the land.

b. ***Cultural Impact Analysis***

The Hana district is noted as being significant from a historical and cultural perspective. However, lands in the vicinity of the project site have been significantly altered through prior sugar cane cultivation, cattle grazing and development of the property for the Hana High and Elementary School campus. In addition, local resident interviews indicate there are no historic properties or significant cultural or religious activities which will be adversely impacted by the proposed action. The heiau which was identified by the local resident interviews will not be impacted by the proposed action since it is beyond the project limits.

8. *Air and Noise Quality*

Short-term construction-related impacts associated with the grading of the classroom site, disposal field and the playfield will include dust and other air pollutant emissions. Appropriate BMPs will be utilized during grading activities in order to mitigate the potential for adverse impacts to air quality and ambient noise levels. The temporary effects associated with the proposed project are not anticipated to be significant or adverse.

B. *SOCIO-ECONOMIC ENVIRONMENT*

1. *Population and Economy*

The proposed project will involve use of lands on the school campus for the classroom buildings and playground improvements. The proposed project will include grading activities associated with the construction of the classroom building and individual wastewater system and improvements to the baseball field. Construction of the project will have a positive short-term impact on the local economy. No short- or long-term adverse impacts to the region's economy and population are anticipated as a result of the proposed project.

C. *PUBLIC SERVICES*

1. *Police and Fire Protection*

The proposed project is not anticipated to adversely impact the existing level of police and fire protection services in the Hana area.

2. *Medical Facilities*

The proposed project is not anticipated to adversely impact the existing level of medical services currently provided by the Hana

Community Health Clinic.

3. ***Schools***

The proposed project involves improvements to the educational facilities and will result in a beneficial impact to the existing school facilities in the East Maui region.

4. ***Solid Waste***

No adverse impacts to the County's solid waste disposal capacity are anticipated as a result of project implementation. Solid waste generated by the proposed grading activities will be utilized onsite. Solid waste disposed at the County's Hana Landfill facility will be minimal.

5. ***Recreational Resources***

The proposed project is not anticipated to adversely impact the existing level of recreational resources available to the residents of East Maui. Further, the Pi'ilani Trail, east of the project site, will not be impacted as a result of project implementation.

D. *INFRASTRUCTURE*

1. ***Roadways***

No adverse impacts to existing roadways in the vicinity of the project site are anticipated as a result of project implementation.

2. ***Water***

It is anticipated that average daily demand for the proposed classroom building will be 1,190 gallons per day and approximately 2,580 gallons per day for irrigation of landscaped improvements. Conservation measures, such as the elimination of single-pass

cooling on equipment and appliances, utilization of low-flow fixture devices, regular maintenance and inspection schedule of water improvements to prevent leaks and the use of climate adapted plants in site landscaping, will be employed as appropriate to minimize water use. Project implementation is not anticipated to adversely impact the County of Maui's water service capacity in the vicinity of the project site. Refer to Appendix "B".

3. ***Wastewater***

The proposed project will be serviced by an individual wastewater system. The system will be designed and constructed in accordance with State Department of Health criteria.

4. ***Drainage System***

The increase in runoff due to the proposed improvements based on a 10-year storm is 0.98 cfs. Refer to Appendix "B". The County of Maui's drainage standards require that the increase in runoff be detained to limit the runoff to pre-construction levels. A drainage plan will be prepared to minimize adverse impacts to adjacent and downstream properties. The detention requirements to provide adequate stormwater disposal for onsite generated runoff will be designed to comply with the County of Maui Drainage Standards and Standard Details. No adverse impacts to downstream environments or to natural drainage patterns surrounding the project site are anticipated as a result of project implementation.

5. ***Electrical and Telephone Service***

The proposed project is not anticipated to adversely impact the existing level of electrical and telephone services in the East Maui region.

Chapter IV

Relationship to Governmental Plans, Policies and Controls

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICT

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural" and "Conservation". The subject property is located within the "Urban" district. See Figure 10. The proposed improvements to the Hana High and Elementary School are uses permitted within the Urban district.

B. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter,

> *The general plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

The proposed action is in keeping with the following objectives and policies of the Maui County General Plan.

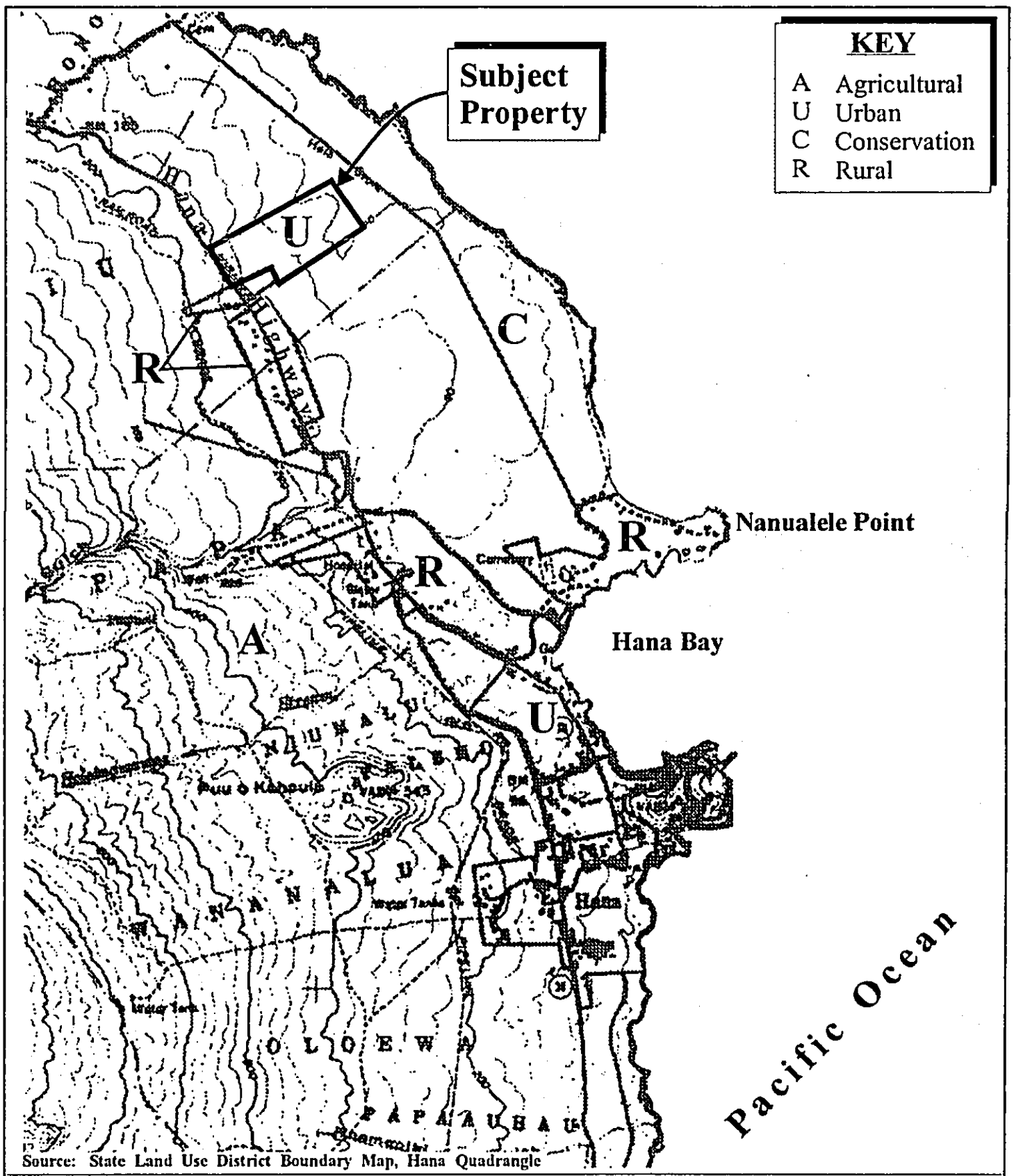


Figure 10 Proposed Improvements to Hana High and Elementary School
State Land Use District Boundaries

Prepared for: State of Hawaii, Department of Accounting and General Services

MUNEKIYO & HIRAGA, INC.

Objective:

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:

* * *

b. Require that quality educational facilities and services be available to all residents.

c. Seek continual improvement in the quality of education at all levels for all residents.

* * *

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

* * *

g. Support the State and the Maui community in the provision of:

* * *

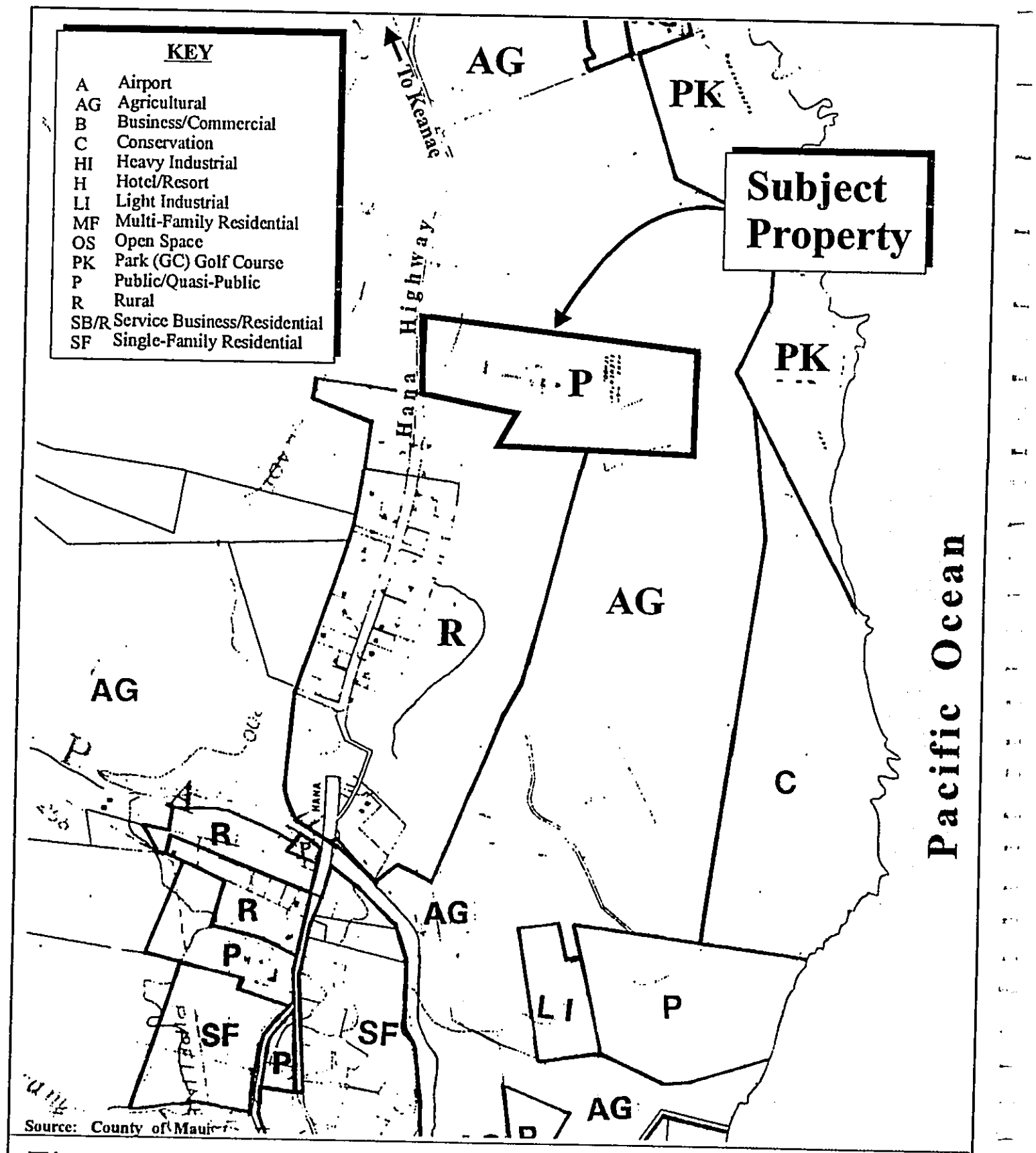
- Improvement and timely development of facilities
- Lower student/teacher ratios
- Expansion of the community school library concept

C. *HANA COMMUNITY PLAN*

The subject property is designated by the Hana Community Plan for Public/Quasi-Public land use. See Figure 11. The proposed improvements to the school facilities are consistent with the underlying community plan designation. In addition, the proposed project is consistent with the following Goal, Objectives and Policies for the Social Infrastructure component of the Hana Community Plan.

Goal

An efficient and responsive system of people-oriented public services which enable residents to live a safe, healthy and enjoyable lifestyle, and offer the youth and adults of the region opportunities and choices for self and community improvement.



Source: County of Maui

Figure 11 Proposed Improvements to Hana High and Elementary School
Community Plan Land Use Map

0 250 500 1000 Feet

Prepared for: State of Hawaii, Department of Accounting and General Services

MUNEKIYO & HIRAGA, INC.

Objectives and Policies

Encourage recreational programs for all age groups, and provide opportunities for passive recreation.

* * *

Education

* * *

10. Maintain and expand educational opportunities for adults.
11. Expand vocational programs.

* * *

13. Enhance educational quality of schools within the Hana region through collaborative efforts with community-based groups such as the PTSA.

D. ZONING

Permitted uses and performance standards are set forth by Title 19 of the Maui County Code relating to zoning.

The Hana High and Elementary School site is County zoned P-1, Public/Quasi-Public District. The proposed improvements to the school facilities are permitted uses in the P-1 District.

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

The proposed project site is located within the County of Maui's Special Management Area (SMA). Pursuant to Chapter 205A, Hawaii Revised Statutes, and the SMA Rules and Regulations for the Maui Planning Commission, actions proposed within the SMA are evaluated with respect to SMA objectives, policies and guidelines. This section addresses the proposed action as related to applicable coastal zone management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Maui Planning Commission.

(1) ***Recreational Resources***

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

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

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

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

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

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

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

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

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

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

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and

county authorities; and crediting such dedication against the requirements of Section 46-6, HRS.

Response: The subject property is located approximately 1,500 feet from the shoreline. Construction of the proposed improvements will not result in adverse impacts to coastal recreational resources. Further, access to and along the shoreline environment, including the ancient Pi'ilani Trail, will not be impeded by the proposed project.

(2) ***Historic Resources***

Objective:

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

Policies:

(A) Identify and analyze significant archeological resources;
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: An archaeological assessment was conducted on the subject property, indicating that the lands underlying the project site have been significantly altered during prior grading activities. No significant material cultural remains were identified by the inspection. Archaeological monitoring will be conducted during ground-altering activities to protect historic resources. A monitoring plan will be submitted to the State Historic Preservation Division for approval prior to ground-altering activities. In the event that any subsurface archaeological resources are encountered during

grading activities all work will be halted in the vicinity of the find and SHPD will be contacted immediately to determine an appropriate mitigation strategy.

(3) Scenic and Open Space Resources

Objective:

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

Policies:

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

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

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

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

Response: The subject property is zoned P-1, Public/Quasi-Public. The maximum height in the P-1 district is 35 feet. The height of the proposed classroom building is 31-feet, 4-inches, which is well below the maximum allowable height. The building will be setback approximately 1,200 feet from Hana Highway. The top of the building will be approximately 41 feet below the sight line from Hana Highway towards the ocean. See Appendix "C". The proposed improvements to Hana High and Elementary School facilities are not anticipated to result in adverse impacts to shoreline views or open space resources.

(4) ***Coastal Ecosystems***

Objective:

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

Policies:

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

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

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

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

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Response: During project construction, BMPs will be utilized to ensure that grading activities do not adversely impact coastal ecosystems.

(5) ***Economic Uses***

Objective:

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

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

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

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

(i) Use of presently designated locations is not feasible;
(ii) Adverse environmental effects are minimized; and
(iii) The development is important to the State's economy.

Response: The Hana High and Elementary School has been located to provide an accessible site to serve the East Maui region. The proposed improvements to the educational facilities will provide for long-term balance in school facility development in Maui County.

(6) Coastal Hazards

Objective:

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

Policies:

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

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;

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

(D) Prevent coastal flooding from inland projects.

Response: According to the Flood Insurance Rate Map for the area, the subject property is located within Zone C, an area of minimal flooding. The proposed improvements are not anticipated to increase the region's susceptibility to coastal hazards.

(7) ***Managing Development***

Objective:

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

Policies:

(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
(B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: In compliance with the requirements of Chapter 343, Hawaii Revised Statutes, this Environmental Assessment has been prepared to facilitate public understanding and involvement with the proposed project. Compliance with applicable regulatory requirements, including the SMA permit process, advances the objective and policies for Managing Development.

(8) ***Public Participation***

Objective:

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

Policies:

(A) Promote public involvement in coastal zone management processes;
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: As previously noted, public awareness of the project is being promoted through the Environmental Assessment and SMA permit processes. The proposed project is not contrary to the objectives of public awareness, education and participation.

(9) ***Beach Protection***

Objective:

Protect beaches for public use and recreation.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: During grading activities associated with the proposed improvements, appropriate BMP's will be utilized to ensure the downstream coastal environment is not adversely impacted. The subject property is approximately 1,500 feet from the shoreline.

Beach process will not be impacted by the proposed action.

(10) ***Marine Resources***

Objective:

Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: The proposed actions will not adversely impact coastal marine resources. The proposed improvements to Hana High and Elementary School are not located in proximity to shoreline areas.

Chapter V

Summary of Adverse Environmental Effects Which Cannot Be Avoided

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed improvements to Hana High and Elementary School facilities will result in certain unavoidable construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures, including noise-generated impacts and air quality impacts associated with the operation of construction equipment. Air quality will also be impacted by dust generated from site work. However, all construction-related impacts will be temporary and mitigated through implementation of appropriate BMP's. The proposed project is not anticipated to create any long-term, adverse environmental impacts.

Chapter VI

Alternatives to the Proposed Action

VI. ALTERNATIVES TO THE PROPOSED ACTION

During the concept phase of this project, fifteen (15) different site alternatives were studied for the location of the new 6-classroom building in one- and two-story configurations. Three (3) schemes, all incorporating two-story buildings, were selected for further consideration. In addition, an alternative to expand the 50-stall parking lot in the southern portion of the campus was identified for further consideration.

A. PREFERRED ALTERNATIVE

The proposed location of the 6-classroom building next to the gymnasium represents the preferred alternative because it will create a separate middle school area and help establish an identity for the middle school at the makai portion of the campus. The building will also be located near the play court area east of the gymnasium. The undeveloped areas to the south of the building will also provide opportunities to develop the middle school portion of the campus in the future. This site also required the least amount of site preparation and grading.

B. SITE ALTERNATIVE B

Site alternative B was located adjacent to the arts and science building (Building B) and the administration building (Building C). This site also provided separation from the high school facilities and was ranked second. However, programmatically, the site was considered to be too far from the athletic facilities and in conflict with the agriculture program facilities. The site was also rejected due to the difficulty in locating a septic system and leach field due to space constraints. The site also had poor natural cross ventilation.

C. SITE ALTERNATIVE C

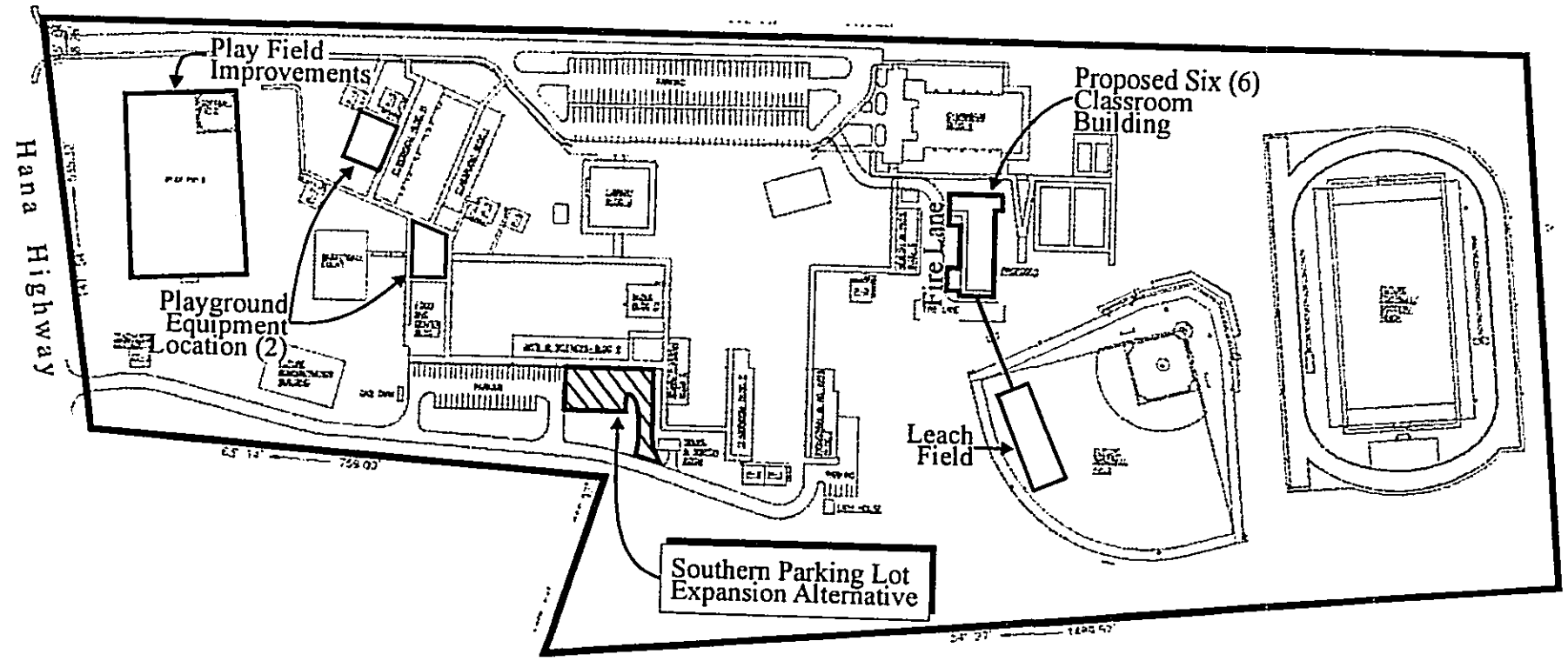
Site alternative C was located adjacent to the roadway and across from

the administration building (Building C) and Classroom Building E. This site was the least preferred because of its proximity to the adjacent high school facilities. A new building at this location also eliminated the open space values of the area and would adversely impact large historic trees, and outdoor play area.

D. SOUTHERN PARKING LOT EXPANSION ALTERNATIVE

This alternative involves expanding the existing 50-stall paved parking area on the southern side of the school campus and maintaining the existing parking lot and bus loading area adjacent to the library. Under this alternative, the 50-stall parking lot will be expanded eastward to provide an additional capacity for 35 parking stalls . See Figure 12. The expansion area is level and covered in grass lawn with a few mature trees. Egress and ingress to the parking expansion area will be provided directly by the southern driveway. This alternative presented a primary advantage in maintaining the existing bus loading area adjacent to the library. This parking lot expansion alternative is also in closer proximity to and visible from the administrative offices, providing convenience for school visitors and greater campus security for school administration.

If implemented, this alternative is not anticipated to result in impacts different from those assessed under the preferred alterative with the parking expansion area located adjacent to the library building. The parking will be configured around the existing trees. It is noted that the expansion of the parking area, in the southern portion of the campus will be accessed by the southern driveway. Spreading the traffic more evenly between the two (2) driveways may facilitate traffic flow by reducing traffic volume on the northern driveway, during special events when more cars and busses are on campus. As recommended by State Historic Preservation Division, archaeological monitoring will be carried out during



Source: Mitsunaga & Associates, Inc.

Figure 12

Proposed Improvements to Hana High and Elementary School

Southern Parking Lot Expansion Alternative

NOT TO SCALE

Prepared for: State of Hawaii, Department of Accounting and General Services

MUNEKIYO & HIRAGA, INC.

ground-altering activities to mitigate potential adverse impacts to cultural resources should this alternative be implemented. No other substantive changes to project impacts are anticipated with the southern parking lot expansion alternative.

E. NO ACTION ALTERNATIVE

The "no action alternative" would mean the Hana High and Elementary School would not keep pace with educational program needs. Students in the service area would not be provided with the appropriate program delivery. The "no action alternative" could negatively impact learning conditions at the school. As a result, the students' academic achievement could also be negatively impacted by the "no action alternative".

Chapter VII

Irreversible and Irretrievable Commitment of Resources

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed action will involve the commitment of additional lands, fuel, labor, funding and material resources. Given the need to expand the school facilities in the Hana region, the commitment of resources is justified based on the eventual benefits to be realized through project implementation.

Chapter VIII

Findings and Conclusions

VIII. FINDINGS AND CONCLUSIONS

The proposed project has been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Hawaii Administrative Rules. Based on the following analysis, the proposed project is not anticipated to result in any significant impacts. Discussion of project conformance to the criteria is noted as follows:

1. ***No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resources Would Occur as a Result of the Proposed Project***

   According to an archaeological assessment completed for the proposed improvements, implementation of the project is not anticipated to result in adverse impacts to archaeological resources. No identified rare, endangered or threatened species of flora, fauna or avifauna have been identified within the vicinity of the project site. The proposed project is not anticipated to result in destruction of natural or cultural resources.

2. ***The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment***

   The proposed project involves recreational facility improvements to the Hana High and Elementary School and construction of a 6-classroom building and ancillary facilities. The proposed project is not anticipated to curtail the range of beneficial uses of the environment.

3. ***The Proposed Action Does Not Conflict with the State's Long-Term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawaii Revised Statutes***

   The State Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is not contrary to the policies and guidelines set forth in Chapter 344, HRS.

4. ***The Economic or Social Welfare of the Community or State Would Not Be Substantially Affected***

There are no adverse long-term economic or social welfare impacts anticipated as a result of project implementation.

5. ***The Proposed Action Does Not Affect Public Health***

The proposed project will not adversely impact public health. No negative impacts to the public's health and welfare are anticipated as a result of the proposed action.

6. ***No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities are Anticipated***

The proposed project is not anticipated to result in secondary impacts such as population changes or increased demands on regional public facilities.

7. ***No Substantial Degradation of Environmental Quality is Anticipated***

During grading operations associated with the construction of the proposed improvements, appropriate BMPs will be utilized to ensure that potential adverse environmental effects are mitigated. No substantial degradation of the environment is anticipated as a result of project implementation.

8. ***The Proposed Project Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects on the Environment***

The proposed project does not represent a commitment to larger actions. The proposed project is not anticipated to create or contribute to any significant long-term environmental effects.

9. ***No Rare, Threatened or Endangered Species or Their Habitats Would Be Adversely Affected by the Proposed Action***

There are no known or identified habitats of rare, threatened or endangered species of flora or fauna in the vicinity of the project site. Given the scale and location of the proposed improvements, no habitats or natural environments are anticipated to be adversely affected by the proposed project.

10. ***Air Quality, Water Quality or Ambient Noise Levels Would Not Be Detrimentally Affected by the Proposed Project***

Appropriate BMPs will be implemented during grading operations to ensure that adverse environmental impacts on air quality and ambient noise levels are mitigated.

In the long term, the proposed project is not anticipated to have a significant impact on air quality, water quality or noise parameters.

11. ***The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters***

The lands utilized for the proposed improvements are not considered to be erosion prone or geologically hazardous. There are no estuaries or coastal waters which are adversely impacted by the proposed project. The proposed improvements are not anticipated to adversely impact environmentally sensitive areas.

12. ***The Proposed Action Would Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies***

The proposed project site is not identified as a scenic vista or viewplane. The proposed improvements will not affect scenic corridors and coastal scenic and open space resources.

13. ***The Proposed Action Would Not Require Substantial Energy Consumption***

The proposed project will result in the short-term commitment of fuel for equipment, vehicles and machinery during grading activities. However, the short-term energy demand is not considered substantive or excessive within the context of the region's overall energy consumption. In the long term, the project is not anticipated to create significant demands for energy consumption.

Based on the foregoing findings, it is anticipated that the proposed action will result in a finding of no significant impacts (FONSI).

Chapter IX

Agencies Contacted During the Preparation of the Draft Environmental Assessment; Letters Received and Responses to Substantive Comments

IX. AGENCIES CONTACTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were contacted prior to the preparation of the Draft Environmental Assessment. Letters received and responses to substantive comments are included in this section.

1. Neal Fujiwara, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

2. William Lennan
Department of the Army
Regulatory Branch
U.S. Army Engineer District, Hnl.
Building 230
Fort Shafter, Hawaii 96858-5440

3. Robert P. Smith
Pacific Islands Manager
U. S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

4. Chiyome L. Fukino, M.D., Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

5. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

6. Peter Young, Chairperson
State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96807

7. Holly McEldowney, Acting Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

8. Davis K. Yogi, Airports Administrator
State of Hawaii - Airports Division
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819

9. Fred Cajigal, Maui District Engineer
State of Hawaii
Department of Transportation
Highways Division
650 Palapala Drive
Kahului, Hawaii 96732

10. Colin Kippen, Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

11. Carl Kaupalolo, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

12. Alice Lee, Director
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

13. Michael Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

14. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

15. Tom Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

16. Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawaii 96793

17. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

18. **Maui Electric Company, Inc.**
P.O. Box 398
Kahului, Hawaii 96733

19. **Hana Community Association**
P.O. Box 202
Hana, Hawaii 96713

20. Dan Omer
Hana Ranch Partners
P.O. Box 519
Hana, Hawaii 96713

FEB 02 2004

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

January 29, 2004

Regulatory Branch

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

This letter responds to your request for comments concerning the proposed improvements to Hana High and Elementary Schools, dated January 27, 2004. The material contained in your letter did not provide enough information for me to determine if a Department of the Army (DA) permit will be required for this project. Please include information concerning the presence or absence of streams, drainage channels and wetlands at the site in the Environmental Assessment for the project.

If you have any questions concerning this matter, please contact William Lennan of my staff at (808) 438-6986 or FAX (808) 438-4060, and reference File No. 200400149.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

MUNEKIYO & HIRAGA, INC.

May 19, 2004

George P. Young, P.E., Chief
Regulatory Branch
U. S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Mr. Young:

Thank you for your letter dated January 29, 2004 in response to the request for early consultation on the subject project.

We acknowledge that the information provided in the request for early consultation did not provide enough information to determine if a Department of Army permit will be required for this project.

The Draft Environmental Assessment will include information on streams, drainage channels and wetlands. This document will be forwarded to your agency for your further review and comment.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
mai/hanaelhs/army.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

environment
planning
government

FEB 17 2004

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 12, 2004

LD-NAV
HANAHIGHDAGS.RCM

Munekiyo and Hiraga, Inc.
Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii - TMK: (2) 1-3-006: DAGS for State of Hawaii Department of Education

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed a copy of your letter (summary of the project) and site map to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office
- Land-Planning and Development

Based on the attached responses, the Department of Land and Natural Resources has no comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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COMMISSION ON WATER RESOURCE MANAGEMENT
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 30, 2004

LD/NAV L-433
Ref.: HANAHIGHDAGS.CMT Suspense Date: 2/11/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Maui District Land Office
- XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Signed: Jason K. Koga Date: 2-10-04

Name: Jason K. Koga Division: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 30, 2004

LD/NAV
Ref.: HANAHIGHDAGS.CMT

L-433
Suspense Date: 2/11/04

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LAND DIVISION
2004 FEB 10 A 8:51

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Maui District Land Office
- XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments.

( ) Comments attached.

Signed: _____

Date: FEB - 4 2004

Name: MICHAEL G. BUCK, ADMINISTRATOR
~~DIVISION OF FORESTRY AND WILDLIFE~~

Division: _____

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: HANA HIGHWAY . OMT

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone C.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

(X) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments:_____

_____

( ) Other:_____

_____

Should you have any questions, please call Mr. Eric Yuasa of the Planning Branch at 587-0254.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 2/10/04

LINDA LINGLE
GOVERNOR OF HAWAII

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 30, 2004

LD/NAV
Ref.: HANAHIGHDAGS.CMT

L-433
Suspense Date: 2/11/04

MEMORANDUM:

TO:
Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Maui District Land Office
XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments.
(X) Comments attached.

Signed: [signature]
Date: 2/10/04

Name: ERIC T. HIRANO, CHIEF ENGINEER
Division: Engineering

LINDA LINGLE
GOVERNOR OF HAWAII

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2004 FEB -4 A 10:00

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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ENGINEERING
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 30, 2004

LD/NAV
Ref.: HANAHIGHDAGS.CMT

L-433
Suspense Date: 2/11/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Maui District Land Office
- XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Signed: KC Date: 2-3-04

Name: KEITH CHUN Division: LAND DIVISION
PLANNING & DEVELOPMENT MGR.

MAR 12 2004

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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LAND
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 11, 2004

LD-NAV
HANAHIGHDAGS.RCM2

Munekiyo and Hiraga, Inc.
Mich Hirano, AICP
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-008:
DAGS for State of Hawaii Department of Education

This is a follow-up to our letter to you dated February 12, 2004, pertaining to the subject matter.

Enclosed please find a copy of the Commission on Water Resource Management comment and State Parks response.

The Department of Land and Natural Resources has no other comment to offer on the subject matter at this time.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
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CONSERVATION AND RESOURCES ENFORCEMENT
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
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AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 30, 2004

LD/NAV
Ref.: HANAHIGHDAGS.CMT

Suspense Date: 2/11/04

L-433
RECEIVED
2004 FEB 18 A 9:24
LAND DIVISION

MEMORANDUM:

TO:
Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Maui District Land Office
XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments.
(X) Comments attached.

Signed: _____ Date: FEB 13 2004

Name: Ernest Y.W. Lau Division: CWRM

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

February 13, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Early Consultation for EISPN, Hana High and Elementary School, Hana, Maui

FILE NO.: HANAHIGHDAGS.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[ ] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[x] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and an amendment of the instream flow standard for the affected stream(s).

[x] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact David Higa at 587-0249.

2334 -

LINDA LINGLE
GOVERNOR OF HAWAII

DEPT OF PARKS
STATE PARKS
FEB 4 9 28 AM '04

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

TO:
__ ADMINISTRATOR
__ ASST ADMIN
__ PERSONNEL
__ PUBLIC INFO
__ PLANNING BR
__ ENGINEERING
__ ADMIN ASST
__ INTERP BR
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January 30, 2004

L-433
Suspense Date: 2/11/04

LD/NAV
Ref.: HANAHIGHDAGS.CMT

MEMORANDUM:

TO: Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Maui District Land Office
XXX Planning and Development Manager (Keith Chun)

FROM: Dierdre S. Mamiya, Administrator
Land Division

RECEIVED
LAND DIVISION
2004 FEB 17 A 10:04
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

SUBJECT: Early Consultation for Preparation of a Draft Environmental Assessment for Proposed Improvements to Hana High and Elementary School, Hana, Maui, Hawaii
Tax Map Key: (2) 1-3-006: 008
DAGS for State Department of Education
Consultant: Munekiyo & Hiraga, Inc. (Mich Hirano, AICP)

Please review the attached document (project summary) and exhibits pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Signed: _____ Date: FEB 13 2004

Name: Daniel S. Quinn, Administrator Division: State Parks

MUNEKIYO & HIRAGA, INC.

May 19, 2004

Dierdre S. Mamiya, Administrator
Land Division
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Ms. Mamiya:

Thank you for your letters dated February 23 and March 11, 2004 providing comments from the divisions within the Department in response to the request for early consultation on the subject project. We wish to provide the following response to comments from the Engineering Division and Commission on Water Resource Management.

1. ***Response to Comments from the Engineering Division.***

We note the project site is in Flood Insurance Rate Map Zone C and will provide this information in the Draft EA. We confirm, the applicant will provide the water demands and calculation for the proposed project to the Engineering Division so it may be included in the State Water Projects Plan Update.

2. ***Response to Comments from the Commission on Water Resource Management***

The proposed project does not include construction of a stream diversion. Therefore, a stream diversion works permit is not anticipated for the proposed improvements. The proposed project does not involve alteration to the bed or banks of a stream. As such, a stream channel alteration permit is not anticipated for the proposed project.

environment
planning
government

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Again, thank you for your Department's comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
mai/hanaelhs/dlnr.res

MAR 22 2004

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EPO-04-015

March 18, 2004

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: Proposed Improvements to Hana High and Elementary School
TMK: 1-3-06:08

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer. If you have any questions about these comments please contact Ryan Davenport at 586-4346.

Clean Water Branch Standard Comments

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

   a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

   b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**

c. Discharges of treated effluent from leaking underground storage tank remedial activities.

d. Discharges of once through cooling water less than one (1) million gallons per day.

e. Discharges of hydrotesting water.

f. Discharges of construction dewatering effluent.

g. Discharges of treated effluent from petroleum bulk stations and terminals.

h. Discharges of treated effluent from well drilling activities.

i. Discharges of treated effluent from recycled water distribution systems.

j. Discharges of storm water from a small municipal separate storm sewer system.

k. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.state.hi.us/health/eh/cwb/forms/genl-index.html.

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA receiving waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.state.hi.us/health/eh/cwb/forms/indiv-index.html.

4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

Solid and Hazardous Waste Branch

1)
The OSWM recommends the development of a solid waste management plan that encompasses all project phases including construction, and occupation/operation of the completed project.

Specific examples of elements that the plan should address include:

- The recycling of green-waste during clear and grub activities;
- Recycling construction and demolition wastes, if appropriate;
- The use of locally produced compost in landscaping;
- The use of recycled content building materials;
- The use of crushed glass aggregate for the construction of roads in base-course and/or sub-base.

---

2)
The developer shall ensure that all solid waste generated during project construction is directed to a Department of Health permitted solid waste disposal or recycling facility.

If you have any questions, please contact the OSWM at 586-4226.

Wastewater Branch

We have reviewed the subject document, which proposes improvements to the high school facilities, which include a new two (2) story six (6) classroom building. The first floor of the new building will house an arts and crafts classroom, a special education classroom, a special education itinerant room, a faculty center, an office, washrooms, and mechanical rooms. The second floor of the new building will house two (2) general classrooms, a chemistry room, a general science room, two (2) teacher's preparation rooms and washrooms. Related improvements to support the classroom building includes grading, walkway, water system, drainage, expansion to the main parking lot, an individual disposal system, leach filed and landscaping.

We have the following comments. The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Maui County Wastewater Advisory Committee where no new cesspools will be allowed. As there is no County sewer service system in the vicinity, wastewater will need to be treated and disposed of by means of an on site wastewater system meeting the requirements of our administrative rules, Chapter 11-62.

In addition to the new construction and improvements proposed by the project, we have been informed by the Department of Education that there are at least 5 existing large capacity cesspools on this site. Under federal regulations, such large capacity cesspools must be taken out of service by April 5, 2005. As of this date, no plans have been submitted to the Department to eliminate these cesspools. We recommend that the elimination of these cesspools take priority over any new construction or be included in

the project as failure to meet the federal deadlines can involve fines and penalties of up to $27,500 per day. As the State has no jurisdiction in this matter, we recommend that Ms. Laura Tom Bose, Water Division, U.S. EPA, Region IX be contacted at (415) 972-3538 for further information on large capacity cesspools.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at telephone (808)586-4294.

Noise, Radiation & Indoor Air Quality Branch

Project activities shall comply with the Administrative Rules of the Department of Health:

* Chapter 11-46 Community Noise Controll

Should there be any questions, please contact Russell S. Takata, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch, at 586-4107.

Sincerely,

June F. Harrigan-Lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: SHWB
NRAIQ
CWB
WWB

MUNEKIYO & HIRAGA, INC.

May 19, 2004

June F. Harrigan-Lum, Manager
Environmental Planning Office
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu Hawaii 96801-3378

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Ms. Harrigan-Lum:

Thank you for your letter dated March 18, 2004 providing comments on the subject project. We wish to provide the following responses to your comments in the same order as in your letter.

A. *Response to Clean Water Branch Standard Comments*

1. *Army Corps of Engineers Permit*

A letter requesting early consultation for the subject project was sent to the US Army Corps of Engineers. Further coordination will be carried out with the Corps of Engineers to determine if a Department of Army permit and a Section 401 Water Quality Certification will be required for the proposed project.

2. *A National Pollution Discharge Elimination System (NPDES)*

Further coordination will be carried out with the Department of Health to determine if a NPDES permit will be required for the proposed project.

3. *NPDES Individual Permit and Coordination with State Historic Preservation Division*

We note the requirements of Hawaii Administrative Rules, Section 11-55-38 and will coordinate with the Department of Land and Natural Resources, State

Historic Preservation Division, if a Notice of Intent and NPDES individual permit are required for the proposed project.

B. ***Response to Solid and Hazardous Waste Branch Comments***

1. Solid Waste Management Plan

We confirm a solid waste management plan will be submitted during the building permit application process. The solid waste management plan will encompass all project phases including construction, and occupation/operation of the completed project.

2. Permitted Facility

We confirm that the solid wastes generated during project construction will be directed to a Department of Health permitted solid waste disposal or recycling facility.

C. ***Response to Wastewater Branch Comments***

1. Wastewater Disposal

We confirm the wastewater will be treated and disposed of by means of an onsite individual wastewater system which includes a septic tank and disposal field for the proposed classroom building. The onsite system will be designed by a qualified licensed engineer and meet the requirements of Hawaii Administrative Rules, Chapter 11-62.

2. Large Capacity Cesspools

We note the federal regulations which require the five (5) existing large capacity cesspools on the Hana High and Elementary School campus to be taken out of service by April 5, 2005. These plans are outside the scope of the proposed project. Your comments in this regard will be forwarded to the State of Hawaii Department of Education and the Department of Accounting and General Services for consideration and action.

D. Response to Noise, Radiation & Indoor Air Quality Branch Comments

1. Community Noise Control

We confirm the project activities will comply with the Administrative Rules of the Department of Health, Chapter 11-46, regarding community noise control permit requirements.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
George Coates, Project Management Branch, State of Hawaii, Department of Accounting and General Services
Patricia Hamamoto, State of Hawaii, Department of Education
mal/hanaelhs/dohcwb.res

LINDA LINGLE
GOVERNOR OF HAWAII

FEB 19 2004

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

February 17, 2004

Mr. Mich Hirano
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Hirano:

Subject: Proposed Improvements to Hana High and Elementary School
TMK: (2) 1-3-06: 08

Thank you for the opportunity to participate in the early consultation process for the environmental assessment. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

2. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.

3. Plan approval for the new wastewater disposal system will be required prior to construction of the systems. The wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems".

4. If dry wells will be used for drainage disposal, Underground Injection Control permit coverage may be required. The Safe Drinking Water Branch should be contacted at 808 586-4258.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

MUNEKIYO & HIRAGA, INC.

May 19, 2004

Herbert S. Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Mr. Matsubayashi:

Thank you for your letter dated February 17, 2004 in response to the request for early consultation on the subject project. We would like to provide the following information in response to your comments.

Response to Comment No. 1

We confirm the proposed project will be in compliance with Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". An application for a noise permit, as appropriate, will be submitted to the Department of Health prior to construction.

Response to Comment No. 2

The Clean Water Branch will be contacted regarding an application for a National Pollutant Discharge Elimination System (NPDES) for the proposed project.

Response to Comment No. 3

We confirm the wastewater plans will be in conformance with the applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems". We confirm the plans for the individual wastewater disposal system will be submitted to the Department of Health for approval.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Response to Comment No. 4

We understand that the proposed project related drainage will be handled onsite and directed to landscaping features for retention and infiltration into the ground. We note the requirements that an Underground Injection Control permit may be required if drainage disposal by dry wells is considered. In the event dry wells are proposed for drainage disposal, the project design team will consult the Safe Drinking Water Branch as required.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
mai/hanaelhs/doh.res

MAR 18 2004

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

March 16, 2004

Mich Hirano
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawaii 96793

LOG NO: 2004.0778
DOC NO: 0403CD38

Dear Mr. Hirano,

SUBJECT: **Chapter 6E-8 Historic Preservation Review – Information Request Pertaining to The Proposed Improvements to Hana High and Elementary School Kawaipapa Ahupua`a, Hana District, Island of Maui**
TMK: (2) 1-3-006:008

Thank you for the opportunity to provide comments for the proposed Improvements to Hana High and Elementary School Project, which was received by our staff February 2, 2004. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject property.

Based on the submitted information request, we understand the proposed undertaking consists of the construction of a new two-story building, walkway, water system, drainage, expansion to main parking lot, an individual wastewater system, leaching field, landscaping, and grading.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. Previously identified historic sites in close proximity to the proposed project area include SIHP - 50-50-13-110 (Kauleilepo Heiau); SIHP - 109 (Kauleiula Heiau); SIHP - 107 (Waikoloa Platform), SIHP – 1491 (Kaianalimu habitation site), and SIHP – 1230 (Waianapanapa State Park Complex), which is comprised of numerous features and located immediately adjacent of the subject property. Given the above information and the close proximity of the subject property to the Waianapanapa State Park Complex, we believe it is possible that historic sites may be present in the subsurface deposits of the school property, even though the area has been developed. Ground altering activities associated with the proposed improvements may have an effect on any sites which are present in the subsurface deposits. Any effect on historic sites due to the proposed improvements may be mitigated through precautionary monitoring.

Therefore, we recommend the following conditions be attached to any permitted actions associated with the proposed improvements to the Hana High and Elementary Schools.

1) A qualified archaeological monitor shall be present during all ground-altering activities in order to document any historic properties which may be encountered during the proposed undertaking and to provide mitigation measures as necessary. An acceptable

archaeological monitoring plan will need to be submitted to the State Historic Preservation Division for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following nine specifications: (1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (2) How the remains and deposits will be documented; (3) How the expected types of remains will be treated; (4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; (5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (6) What laboratory work will be done on remains that are collected; (7) A schedule of report preparation; (8) Details *concerning the archiving of any collections that are made; and (9) An acceptable report* documenting the findings of the monitoring activities shall be submitted to the State Historic Preservation Division for review upon 180 days following the completion of the proposed undertaking.

2) The State Historic Preservation Division (Maui and O`ahu offices) shall be notified via facsimile upon the on-set and completion of the proposed undertaking.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793
Michael Foley, Director, Dept of Planning, 250 South High Street, Wailuku, HI 96793

MUNEKIYO & HIRAGA, INC.

May 19, 2004

P. Holly McEldowney, Administrator
State of Hawaii
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Honolulu, Hawaii 96707

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Ms. McEldowney:

Thank you for your Division's letter, dated March 16, 2004, on the subject project.

An archaeological assessment undertaken by a qualified archaeologist has been completed and will be incorporated in the Draft Environmental Assessment. In keeping with your recommendations, a qualified archaeological monitor will be present during all ground-altering activities. An acceptable monitoring plan will be submitted to the State Historic Preservation Division (SHPD) for review prior to the commencement of any ground-altering activities. The monitoring plan will contain the nine (9) specifications referenced in your letter. We also confirm that SHPD (Maui and Oahu offices) will be notified via facsimile upon the on-set and completion of the proposed project.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
mai/hanaelhs/shpd.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

planning environment government

LINDA LINGLE
GOVERNOR

FEB 11 2004

RODNEY K. HARAGA
DIRECTOR

DEPUTY DIRECTOR
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAUI DISTRICT
650 PALAPALA DRIVE
KAHULUI, HAWAII 96732-2321

IN REPLY FERER TO:
HWY-M 2.064-04

February 6, 2004

MEMORANDUM

TO: **Mich Hirano**
Munekiyo & Hiraga, Inc.

FROM: **Paul M. Chung**
State Highways

SUBJECT: **Proposed Improvements to Hana High and Elementary School**
Hana, Maui, Hawaii

Thank you for the opportunity to review and provide early comments as part of the environmental assessment process. Based upon our review of the submittal, it does not appear that the proposed improvements will have any significant impacts to our facilities.

If there are any questions or concerns, please call me at 873-3535.

/pmc

PHONE (808) 594-1888

FAX (808) 594-1865

FEB 02 2004

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

NRCD 04-1253

January 30, 2004

Mich Hirano
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: **Early Consultation**
Proposed Improvements to Hana High and Elementary School
Hana, Maui, Hawaii
TMK 1-3-006:008

Thank you for the opportunity to review and comment on the above-referenced request. The Office of Hawaiian Affairs has no comments at this time. Should you have any questions, please feel free to contact Pomaialoha Cox at 594-1970 or by email at pomaialohac@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

FEB 2 4 2004

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 19, 2004

Mr. Mich Hirano, AICP
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

RE: Pre-consultation Comments on the Draft EA Prepared for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006: 008, Hana Highway, Hana, Maui, Hawaii (LTR 2004/0313)

The Maui Planning Department (Department) has received the above request and provides the following comments:

1. The State land use designation is Urban, Hana Community Plan land use designation is Public/Quasi Public, and County Zoning is P-1 Public/Quasi-Public District.

2. The property is located within the Special Management Area, and all proposed activities are subject to review in accordance with Chapter 205A, HRS, Coastal Zone Management, and Chapter 202, Special Management Area Rules for the Maui Planning Commission.

Thank you for the opportunity to provide comments. Should you need clarification, please contact Ms. Kivette A. Caigoy, Environmental Planner, at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar
c: Kivette A. Caigoy, Environmental Planner
Project File
General File
K:\WP_DOCS\PLANNING\LETTERS\ltr2004\313_HanaHighElemSchool.wpd

MUNEKIYO & HIRAGA, INC.

May 19, 2004

Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Mr. Foley:

Thank you for your letter dated February 19, 2004 providing comments on the subject project. We wish to provide the following information in response to your comments.

1. ***Response to Comment No. 1***

   The State Land Use designation, Hana Community Plan designation and County zoning district as provided are noted and this information will be included in the draft EA.

2. ***Response to Comment No. 2***

   The proposed project will be evaluated with respect to the SMA objectives, policies and guidelines pursuant to Chapter 205 A, Hawaii Revised Statutes, and the Special Management Area Rules and Regulations for the Maui Planning Commission. Findings will be documented in the draft EA.

Again, thank you for your comments and participation in the early consultation review.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
mai/hanaelhs/planning.res

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

FEB 23 2004

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2 , Wailuku, Hawaii 96793

February 17, 2004

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: PROPOSED IMPROVEMENTS TO HANA HIGH AND ELEMENTARY SCHOOL

We have reviewed the proposed improvements for the subject project and have no comments or objections.

Thank you for the opportunity to review and comment. Should there be any questions, please contact Mr. Patrick Matsui, Chief of Parks Planning and Development, at 270-7387.

Sincerely,

GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

February 23, 2004

Mr. Mich Hirano, AICP
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: EARLY CONSULTATION FOR PROPOSED DRAFT ENVIRONMENTAL ASSESSMENT
HANA HIGH AND ELEMENTARY SCHOOL IMPROVEMENTS
TMK: (2) 1-3-006:008

We reviewed the subject application and have the following comments:

1. Submit a plan for composting and disposal of cleared and grubbed material and recycling and disposal of construction waste.

2. The applicant should be advised that the County does not provide for septic tank pumping/cleaning as the contents to be removed include sewage sludge. As such, the applicant should be made aware that they will need to seek private vendor(s) to pump out their septic tank(s).

3. The grading for the project shall comply with the provisions of the grading ordinance. Best Management Practices shall be implemented to the maximum extent practicable to prevent pollutants including dust and sediment from discharging off the project site.

4. The drainage system designed by a licensed civil engineer shall comply with the provisions of the drainage rules and shall create no additional adverse impacts to adjacent and downstream properties.

5. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with building codes. We will review the project for building code requirements during the building permit application process.

If you have any questions regarding this letter, please call Milton Arakawa at 270-7845.

Very truly yours,

GILBERT S. COLOMA-AGARAN
Director

GSCA:MA:sw
S:\LUCA\ALL\PERMITS\JLH\CZM_route\HanaHigh&Elementary_ec_13006008_sw.wpd

MUNEKIYO & HIRAGA, INC.

May 19, 2004

Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and
Environmental Management
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Mr. Coloma-Agaran:

Thank you for your department's letter dated February 23, 2004 providing comments to the early consultation request on the subject project. We provide the following responses to the comments in the order as presented in your letter.

Response to Comment No. 1

A solid waste management plan for construction and demolition waste recycling and disposal at an approved landfill will be submitted to the department for review.

Response to Comment No. 2

We confirm that private vendors will be contacted to pump out the septic tank.

Response to Comment No. 3

We confirm the grading for the project shall comply with the provisions of the grading ordinance. Best Management Practices will be implemented to the maximum extent possible to prevent pollutants including dust and sediment from discharging off the project site.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Response to Comment No. 4

We confirm the drainage system will be designed by a licensed civil engineer and will comply with the provisions of the drainage rules and shall create no additional adverse impacts to adjacent and downstream properties.

Response to Comment No. 5

Project plans and specifications will be developed in compliance with the County building codes. Plans will be submitted for review during the building permit application process.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
mai/hanaelhs/dpwem.res

FEB 12 2004

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 S. High Street
WAILUKU, MAUI, HAWAII 96793-2155
Telephone (808) 270-7816 • Fax (808) 270-7199

February 9, 2004

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku HI 96793

SUBJECT: Improvements to Hana High and Elementary School

Dear Mr. Hirano,

Thank you for the opportunity to provide comments in preparation of the Draft Environmental Assessment (DEA). The Department of Water Supply provides the following information:

Source Availability and Consumption
The DEA should include the sources and expected potable and non-potable water usage. This area is serviced by the Wakiu wells and the Kawaipapa aquifer. The Hana School is served by a 1-inch meter. Average water use for the school was 1,715 gallons per day during 2002. System water use standards for schools is 1,700 gallons per acre or 60 gallons per student. Domestic calculations to determine meter size adequacy will be required in the building permit process.

System Infrastructure
The property is served by a 12-inch water line and one fire hydrant along Hana Highway, in addition to private on-site fire protection system. Fire flow calculations will be required in the building permit process. Actual fire demand for structures is determined by fire flow calculations prepared, signed and stamped by a certified engineer or architect. The approved fire flow calculation methods for use include Guidance for Determination of Fire Flow- Insurance Service Office, 1974 and Fire Flow- Hawaii Insurance Bureau, 1991

Pollution Prevention
The project overlies the Kawaipapa aquifer. The Department of Water Supply strives to protect the integrity of surface and groundwater resources by encouraging the applicant to adopt best management practices (BMPs) designed to minimize infiltration and runoff from all construction and vehicle operations. We have attached sample BMPs for principle operations for reference. Additional information can be obtained from the State Department of Health.

Conservation
We recommend that the following water conservation measures be included in the DEA and implemented in project design and construction:
Eliminate Single-Pass Cooling: Single-pass, water-cooled system should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air-conditioners, freezers, and commercial refrigerators.
Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip". The applicant should establish a regular maintenance program.
Use Climate-adapted Plants: The project is located in the "Maui County Planting Plan" - Plant Zones 1 and 5. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. Please refer to the attached brochure: "Saving Water In The Yard - What and How to Plant in Your Area".
Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapotranspiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Should you have any questions, please call our Water Resources and Planning Division at 270-7199.

Sincerely,

George Y. Tengan
Director
emb

attachments:

"The Costly Drip"
"Saving Water in the Yard-What and How to Plant in your Area"
"Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters"
Ordinance 2108 - An Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code

cc: engineering division

By Water All Things Find Life

MUNEKIYO & HIRAGA, INC.

May 19, 2004

George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Pre-Consultation on the Draft Environmental Assessment (EA) for the Proposed Improvements to Hana High and Elementary School Located at TMK 1-3-006:008, Hana, Maui, Hawaii

Dear Mr. Tengan:

Thank you for your letter dated February 9, 2004 in response to the request for early consultation on the subject project. We would like to provide the following information in response to your comments.

1. ***Response to Comment on Source Availability and Consumption***

   The draft EA will include the sources and expected potable and non-potable water usage for the proposed improvements. Domestic calculations to determine the meter size will be carried out during the building permit application process.

2. ***Response to Comment on Infrastructure***

   Fire flow calculations will be prepared by a certified engineer and submitted during the building permit application process for review by the appropriate agencies.

3. ***Response to Comment on Pollution Prevention***

   Best management practices will be adopted during construction to minimize infiltration and runoff from all construction and vehicle operations.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

4. Response to Comment on Conservation

Conservation measures as suggested will be included in the draft EA and provided to the project design team for consideration in the proposed project.

Again, thank you for your comments and participation in the early consultation process.

Very truly yours,

Mich Hirano, AICP

MH:tn
cc: Rodney Lee, Mitsunaga & Associates, Inc.
msl/hanaelhs/dws.res

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

FEB 04 2004

ALAN M. ARAKAWA
Mayor

ALICE L. LEE
Director

HERMAN T. ANDAYA
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165

January 28, 2004

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

SUBJECT: PROPOSED IMPROVEMENTS TO HANA HIGH AND ELEMENTARY SCHOOL

We have reviewed your January 27, 2004 letter and enclosures and have no comment to offer.

Thank you for the opportunity to comment.

Very truly yours,

ALICE L. LEE
Director

ETO:hs

c: Housing Administrator

Chapter X

Letters Received During the Draft Environmental Assessment Public Comment Period and Responses to Substantive Comments

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

A Draft Environmental Assessment for the subject project was filed and published in the Office of Environmental Quality Control's The Environmental Notice on July 8, 2004. During the 30-day public comment period, agencies were provided the opportunity to comment on the proposed action. This section incorporates the comments received during the 30-day comment period between July 8, 2004 and August 7, 2004. Responses to the substantive comments are also incorporated herein.

AUG 0 4 2004

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

'04 JUL 20 P1:16
COUNTY OF MAUI
DEPT OF PLANNING
RECEIVED

July 19, 2004

Mr. Paul Fasi, Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793

Subject: I.D.: SM1 2004/0016
TMK: (2) 1-3-006:008
Project Name: Hana High & Elem.
Applicant: Dags, State of Hawaii

Dear Mr. Fasi,

I have no comments at this time.

Thank you for the opportunity to comment.

Sincerely,

Ranae Ganske–Cerizo
Acting District Conservationist

JUL 19 2004

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

July 16, 2004

Regulatory Branch

Mr. Mich Hirano, AICP
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Hirano:

This letter responds to your request for comments on the draft Environmental Assessment (DEA) for the Proposed Improvements to Hana High and Elementary School, dated July 6, 2004. Based on the applicant's assertion in the DEA that there are no streams or wetlands at the project site and the lack of water features indicated on the U.S. Geologic Survey Map for the area, I have determined that there are no waters of the U.S. present at the project site and therefore a Department of the Army (DA) permit will not be required for this project.

If you have any questions concerning this matter, please contact William Lennan of my staff at (808) 438-6986 or FAX (808) 438-4060, and reference File No. 200400149.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

AUG 04 2004

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-EC-T

'04 JUL 20 P1:16

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

July 19, 2004

Civil Works Technical Branch

Mr. Paul Fasi, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku, Maui 96793

Dear Mr. Fasi:

Thank you for the opportunity to review and comment on the Special Management Area Use Application Draft Environmental Assessment (DEA) for the Hana High and Elementary Schools, Hana, Maui (TMK 1-3-6: 8). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project.

b. The flood hazard information provided on page 15 of the DEA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

for James Pennaz, P.E.
Chief, Civil Works
Technical Branch

LINDA LINGLE
GOVERNOR

AUG 0 4 2004

RUSS K. SAITO
Comptroller

KATHERINE H. THOMASON
Deputy Comptroller

'04 AUG -3 A11 :57

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

August 2, 2004

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

ATTN: Paul Fasi, Staff Planner

FROM: Melvin M. Masuda, Acting State Land Surveyor
DAGS, Survey Division

SUBJECT: SM1 2004/0016
TMK: 1-3-006:008
Project Name: Hana High & Elem.
Applicant: DAGS, State of Hawaii

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.

AUG 0 4 2004

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

'04 JUL 19 P3:38

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

July 19, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai`i 96793

Attention: Paul Fasi

Dear Mr. Foley:

Subject: **Hana High & Elementary School Improvements**
TMK: (2) 1-3-006:008
SM1 2004/0016

Thank you for the opportunity to comment on the Special Management Area Permit application for the Hana High & Elementary School Improvements. Our concerns remain as documented in my February 17, 2004, letter to Mr. Mich Hirano of Munekiyo & Hiraga, Inc. The letter was a response to the early consultation process of the environmental assessment. We have no further comments to offer at this time.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

AUG 04 2004

July 29, 2004

SM1 2004-0016.RCM
Hana High

LD-NAV

'04 AUG -2 P1:22
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Honorable Michael W. Foley
Planning Director
County of Maui
Planning Department
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: I.D. No.: SM1 2004-0016
Applicant: DAGS, State of Hawaii
Project: Hana High and Elementary School
Authority: County of Maui Department of Planning
TMK: (2) 1-3-006: 008

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office
- Land-Land Development

Enclosed please find a copy of the Commission on Water Resource Management comment and Engineering Division response.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION

2004 JUL 20 A 10:20

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIIKE, M.D., J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

July 19, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Yvonne Y. Izu, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: 6-Classroom Addition at Hāna High and Elementary School SMAPA

FILE NO.: SM1 2004-0016.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[X] We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact Charley Ice at 587-0251.

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION
2004 JUL 26 A 10:17

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

July 9, 2004
SM1 2004-0016.CMT

LD/NAV
Suspense Date: 7/21/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Engineering Division
- Division of State Parks
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office (RD)
- XXX Land-Land Development

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT (May 2004)

I. D. No.:	SM1 2004/0016
Applicant:	DAGS, State of Hawaii
Project:	Hana High and Elementary School
Address:	4111 Hana Highway, Hana, Maui, Hawaii
TMK:	2nd/ 1-3-006: 008
Authority:	County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments.

( ) Comments attached.

Division: MPLO

Signed: Jason K. Koga

Date: 7-21-04

Print Name: Jason K. Koga

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 9, 2004
SM1 2004-0016.CMT

LD/NAV

Suspense Date: 7/21/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Engineering Division
- Division of State Parks
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office (RD)
- XXX Land-Land Development

RECEIVED
LAND DIVISION
2004 JUL 26 A 8:11
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT (May 2004)

I. D. No.:	SM1 2004/0016
Applicant:	DAGS, State of Hawaii
Project:	Hana High and Elementary School
Address:	4111 Hana Highway, Hana, Maui, Hawaii
TMK:	2nd/ 1-3-006: 008
Authority:	County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no additional comments. Our comments dated 2/10/04 still apply. ( ) Comments attached.

Division: _____

Signed: Eric T. Hirano

Date: 7/23/04

Print Name: ERIC T. HIRANO, CHIEF ENGINEL..

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

LD/NAV

July 9, 2004
SM1 2004-0016.CMT

Suspense Date: 7/21/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Engineering Division
- Division of State Parks
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office (RD)
- XXX Land-Land Development

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT (May 2004)

I. D. No.:	SM1 2004/0016
Applicant:	DAGS, State of Hawaii
Project:	Hana High and Elementary School
Address:	4111 Hana Highway, Hana, Maui, Hawaii
TMK:	2nd/ 1-3-006: 008
Authority:	County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Division: MDLO

Signed: Jason K. Koga

Date: 7-21-04

Print Name: Jason K. Koga

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
04 JUL 12 A11 : 30

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

LD/NAV

July 9, 2004
SM1 2004-0016.CMT

Suspense Date: 7/21/04

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- Na Ala Hele Trails
- XXX Engineering Division
- Division of State Parks
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Maui District Land Office (RD)
- XXX Land-Land Development

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT (May 2004)

I. D. No.:	SM1 2004/0016
Applicant:	DAGS, State of Hawaii
Project:	Hana High and Elementary School
Address:	4111 Hana Highway, Hana, Maui, Hawaii
TMK:	2nd/ 1-3-006: 008
Authority:	County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. ( ) Comments attached.

Division: _____ Signed: _____

Date: _____ Print Name: _____

MUNEKIYO & HIRAGA, INC.

August 23, 2004

Dierdre S. Mamiya, Administrator
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Hana High and Elementary School (SM1 2004/0016)
Draft Environmental Assessment (EA)

Dear Ms. Mamiya:

Thank you for providing comments from the various divisions within the Department of Land and Natural Resources on the subject project. On behalf of the applicant, the following information is provided in response to the comments from the Commission on Water Resource Management.

Coordination will be carried out with the Department of Water Supply to incorporate the project into the County's Water Use Development Plan. Coordination will also be carried out with the Engineering Division, Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

Again, thank you for your comments and review of the draft EA.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: George Coates, State of Hawaii, Department of Accounting and General Services
Rodney Lee, Mitsunaga & Associates, Inc.
ma\hanaelhs\dlnr.deares

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

LINDA LINGLE
GOVERNOR OF HAWAII

PETE
CHA
BOARD OF LAND A
COMMISSION ON WATI

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DEPT OF PLANNING
COUNTY OF MAUI

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

August 6, 2004

Mr. Michael Foley, Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

LOG NO: 2004.24
DOC NO: 0408CL

Dear Mr. Foley,

SUBJECT: **Chapter 6E-8 Historic Preservation Review – Application for Special Management Area Use Permit for the Proposed Improvements to Hana High and Elementary School (subject I.D.: SM1 2004/0016) [County/Planning] Kawaipapa Ahupua`a, Hana District, Island of Maui**
TMK: (2) 1-3-006:008

Thank you for the opportunity to review and comment on the Application for Special Management Area Use Permit (SMA) for the proposed Improvements to Hana High and Elementary School Project, which was received by our staff July 7, 2004. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject property.

Based on the submitted SMA, we understand the proposed undertaking consists of the construction of a new two-story building, the installation of new playground equipment at two play centers, improvements to the softball field, walkway, water system, drainage, expansion to main parking lot, an individual wastewater system, leaching field, landscaping, and grading.

A search of our records indicates an archaeological inventory survey has not been conducted of the subject property. Previously identified historic sites in close proximity to the proposed project area include SIHP - 50-50-13-110 (Kauleilepo Heiau); SIHP - 109 (Kauleiula Heiau); SIHP - 107 (Waikoloa Platform), SIHP – 1491 (Kaianalimu habitation site), and SIHP – 1230 (Waianapanapa State Park Complex), which is comprised of numerous features and located immediately adjacent to the subject property. Given the above information and the close proximity of the subject property to the Waianapanapa State Park Complex, we believe it is possible that historic sites may be present in the subsurface deposits of the school property, even though the area has been developed. Ground altering activities associated with the proposed improvements may have an effect on any sites which are present in the subsurface deposits. Any effect on historic sites due to the proposed improvements may be mitigated through precautionary monitoring.

Therefore, we recommend the following conditions be attached to the subject SMA permit application.

1) A qualified archaeological monitor shall be present during all ground-altering activities in order to document any historic properties which may be encountered during the proposed undertaking and to provide mitigation measures as necessary. An acceptable archaeological monitoring plan will need to be submitted to the State Historic Preservation Division for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following nine specifications: (1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (2) How the remains and deposits will be documented; (3) How the expected types of remains will be treated; (4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; (5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (6) What laboratory work will be done on remains that are collected; (7) A schedule of report preparation; (8) Details concerning the archiving of any collections that are made; and (9) An acceptable report documenting the findings of the monitoring activities shall be submitted to the State Historic Preservation Division for review upon 180 days following the completion of the proposed undertaking.

2) The State Historic Preservation Division (Maui and O`ahu offices) shall be notified via facsimile upon the on-set and completion of the proposed undertaking.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793

MUNEKIYO & HIRAGA, INC.

August 23, 2004

P. Holly McEldowney, Administrator
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

SUBJECT: *Hana High and Elementary School (SMI 2004/0016)*
Draft Environmental Assessment (EA)

Dear Ms. McEldowney:

Thank you for your letter dated August 6, 2004 addressed to Michael W. Foley, Planning Director, providing comments on the subject project. On behalf of the applicant, Department of Accounting and General Services, we wish to provide the following information in response to your comments.

We confirm that a qualified archaeological monitor will be present during all ground-altering activities to document any historic properties which may be encountered during the proposed undertaking. We also confirm that an acceptable archaeological monitoring plan will be submitted to the State Historic Preservation Division (SHPD) for review as required prior to the commencement of any ground-altering activities. This monitoring plan will contain the nine (9) specifications contained in your letter.

We have forwarded a copy of your letter to the Department of Accounting and General Services and the project architect to ensure they are informed of the SHPD requirements for the project.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Thank you again for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: George Coates, State of Hawaii, Department of Accounting and General Services.
Rodney Lee, Mitsunaga & Associates, Inc.
mail\hanaelhs\shpd.deares

LINDA LINGLE
GOVERNOR

JUL 26 2004

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

AIR-P
04.0141

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

July 22, 2004

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Draft Environmental Assessment
Proposed Improvements to Hana High and Elementary School

Thank you for allowing us to review the Draft Environmental Assessment for the proposed improvements to Hana High and Elementary School. We do not see any impacts to Hana Airport. Hana High and Elementary School is situated outside of our airport noise contours determined in the 1998 Hana Airport FAA Part 150 Noise Compatibility Program.

If you should have any questions, please contact Mr. Stephen Takashima, Senior Head Planner at (808) 838-8810.

Sincerely,

DAVIS K. YOGI
Airports Administrator

LINDA LINGLE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

JUL 26 2004

IN REPLY REFER TO:

AIR-P
04.0141

July 22, 2004

Mr. Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

Subject: Draft Environmental Assessment
Proposed Improvements to Hana High and Elementary School

Thank you for allowing us to review the Draft Environmental Assessment for the proposed improvements to Hana High and Elementary School. We do not see any impacts to Hana Airport. Hana High and Elementary School is situated outside of our airport noise contours determined in the 1998 Hana Airport FAA Part 150 Noise Compatibility Program.

If you should have any questions, please contact Mr. Stephen Takashima, Senior Head Planner at (808) 838-8810.

Sincerely,

DAVIS K. YOGI
Airports Administrator

LINDA LINGLE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1270

August 2, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: Hana High & Elementary School
Special Management Area Use Permit Application (SM1 2004/0016)
TMK: (2) 1-3-006: 008

In reply to your request for our review of the subject application, this is to advise you that the proposed improvements to the school are not expected to impact our State highway facilities.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

JUL 15 2004

HRD04-1253B

June 13, 2004

Michael Munekiyo
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Subject: Draft Environmental Assessment, Proposed Improvements to Hana High and Elementary School, Hana, Maui, HI, TMK: (2) 1-3-06: Parcel 8

Dear Mr. Munekiyo:

Thank for your letter dated July 6, 2004 regarding the Draft Environmental Assessment (DEA) for the proposed Improvements to Hana High and Elementary School, located at Hana, Maui, HI, TMK: (2) 1-3-06: Parcel 8. Your letter requests that the Office of Hawaiian Affairs (OHA) review and comment on the proposed project.

Project Scope

The project description notes the State of Hawaii, Department of Accounting and General Services (DAGS) is proposing the following facility improvements to Hana High and Elementary School:

> "Proposed improvements to the school facilities include a new 2-story building located to the south of the gymnasium and housing six (6) classrooms for the middle school (Grades 6 to 8)."

Arts and craft, general, special education, itinerant room, et. al. classrooms are included in the proposed project.

Flora and Fauna

The DEA application indicates there do not appear to be rare, threatened or endangered species in the proposed project area.

Archaeological Sites

An archaeological assessment carried out on the subject property did not identify significant material cultural remains, nor did it note significant above-ground structural remains on the property improvement sites.

It is still important to note (despite the impacts to the subject property) as the project proceeds, in accordance with Hawaii Revised Statutes (HRS), §6E-43.6 and Hawaii Administrative Rules (HAR), Title 13, Subtitle 13, Chapter 300, Rules of Practice and Procedure Relating to Burial Sites and Human Remains, if any significant cultural deposits or human burials are encountered on the site[1], work will cease in this particular area and the SHPD will be contacted.

If you have questions or concerns please contact Matthew Myers, Policy Advocate at 594-1945 or matthewm@oha.org.

'O wau iho nō,

Clyde W. Namu'o
Administrator

[1]OHA staff notes that during the trenching, digging, grading, grubbing for the proposed improvements to Hana High and Elementary School Project burials sites may be found on (subsurface) portions of the parcel.

MUNEKIYO & HIRAGA, INC.

August 23, 2004

Clyde W. Namu`o, Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapi`olani Boulevard, Suite 500
Honolulu, Hawaii 96813

SUBJECT: Hana High and Elementary School (SM1 2004/0016)
Draft Environmental Assessment (EA)

Dear Mr. Namu`o:

Thank you for your letter dated June 13, 2004 commenting on the subject project. The following information is provided in response to your comment regarding potential archaeological sites. Archaeological monitoring will be carried out during all ground-altering activities. If any significant cultural deposits or human burials are encountered on the site during the undertaking, all work will cease in the particular area of the find and the State Historic Preservation Division will be contacted to determine appropriate protocols, in accordance with applicable laws and rules.

Thank you again for your comments and participation in the EA review process.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: George Coates, State of Hawaii, Department of Accounting and General Services.
Rodney Lee, Mitsunaga & Associates, Inc.
mail\hana\elhs\oha.deares

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

AUG 09 2004

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

August 6, 2004

Mr. George Coates
Department of Accounting and General Services, State of Hawai'i
1151 Punchbowl Street, Room 427
Honolulu, Hawai'i 96813

Mr. Michael T. Munekiyo
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Messrs. Coates and Munekiyo:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Hana High and Elementary School Proposed Improvements Project, May 2004, prepared by Munekiyo & Hiraga, Tax Map Key No. 1-3-06:08 in the judicial district of Hana, and offers the following comments for your consideration and response.

1. SUSTAINABLE BUILDING GUIDANCE: Please visit our Internet site at http://www.state.hi.us/health/oeqc/index.html and consider using elements contained in the guidance for Sustainable Building.
2. PHOTOGRAPHS AND VISUAL IMPACTS: Thank you for including the beautiful color photographs of the campus. We would like to know if it would be possible for you to trace an overlay of the projected building on the photographs so that the reader may be able to gauge the visual impact, if any.

Thank you for the opportunity to comment. We look forward to commenting on the DEIS and the Federal FEIS. If there are any questions, please contact Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

MUNEKIYO & HIRAGA, INC.

August 23, 2004

Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Hana High and Elementary School (SM1 2004/0016)
Draft Environmental Assessment (EA)

Dear Ms. Salmonson:

Thank you for your letter dated August 6, 2004 providing comments on the Draft EA for the subject project. On behalf of the applicant, Department of Accounting and General Services, the following information is provided in response to your comments.

1. ***Response to Comment on Sustainable Building Design***

Sustainable building design considerations employed in reviewing development alternatives and selection of the preferred alternative included the following: location of building on the property to take advantage of air circulation for natural ventilation; accessibility of building from parking areas and school bus loading area; and minimize alteration to natural and environmental features. Discussion of these considerations were included in the draft EA in Chapter VI, Alternatives. The sustainable building design guidelines have been forwarded to the project design team for consideration in the development of the detailed design and material specifications. Sustainable building design considerations will be incorporated, as appropriate.

2. ***Response to Comment on Visual Impacts***

The subject property is zoned P-1, Public/Quasi-Public. The maximum height in the P-1 district is 35 feet. The height of the proposed classroom building is 31-feet, 4-inches, which is well below the maximum allowable height. A site section has been prepared to illustrate and assess building height in relation to overall site topography. This drawing is enclosed for your review and information. The building will be setback approximately 1,200 feet from Hana Highway. The top of the building will be approximately 41 feet below the sight line from Hana Highway towards the ocean. The

environment
planning
government

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proposed building is not anticipated to have an adverse impact on visual resources. This information will also be included in the final EA document.

Again, thank you for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
Enclosure
cc George Coates, State of Hawaii Department of Accounting and General Services (w/out enclosure)
Rodney Lee, Mitsunaga & Associates, Inc. (w/out enclosure)
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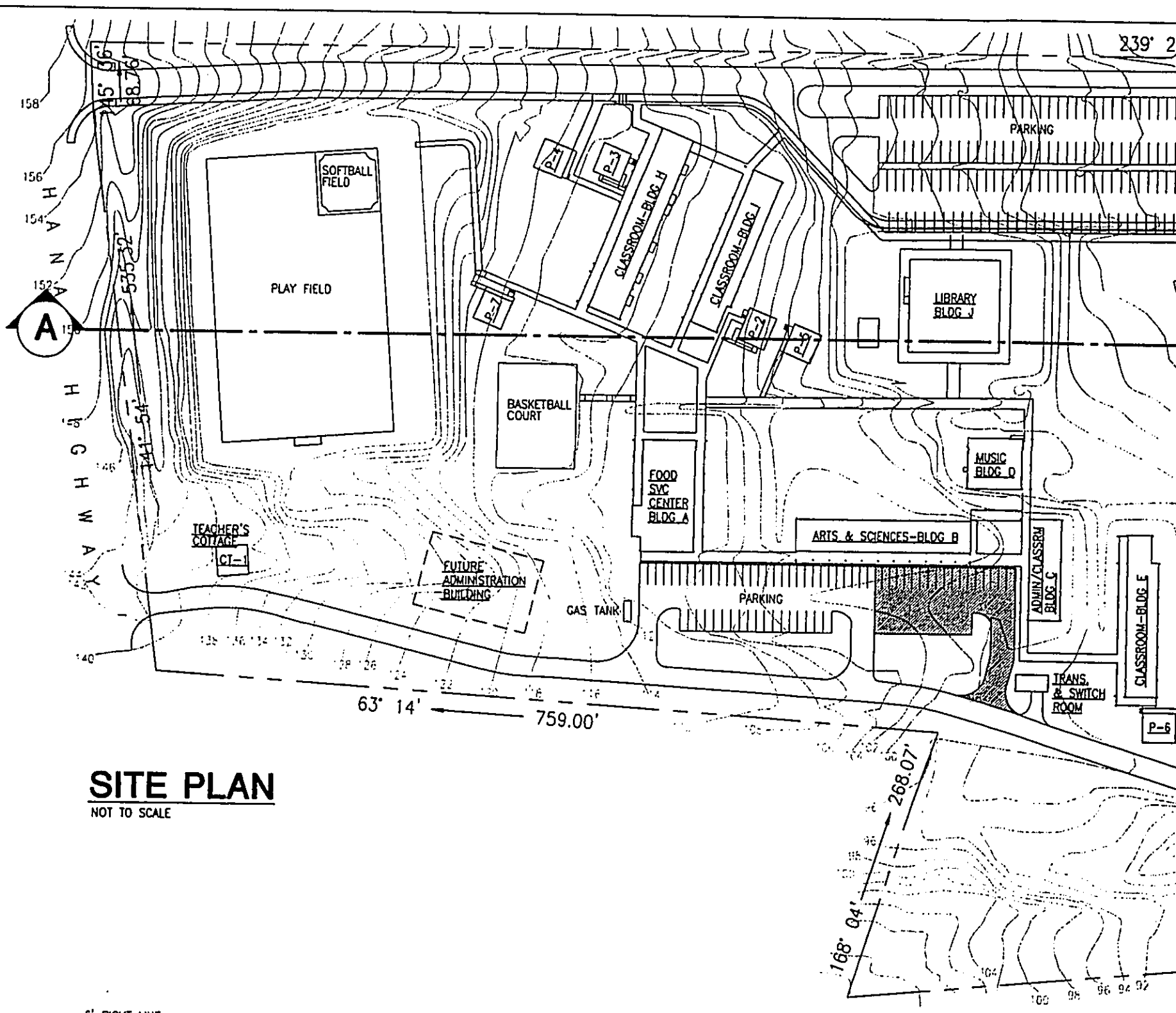

SITE PLAN

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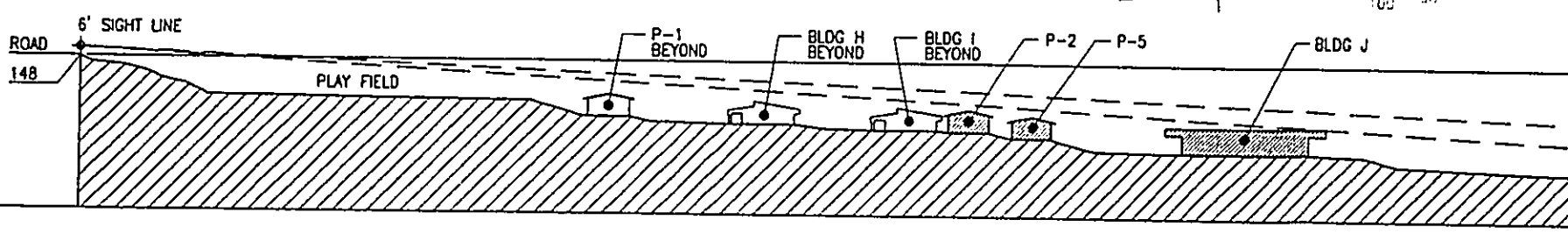

SITE SECTION A

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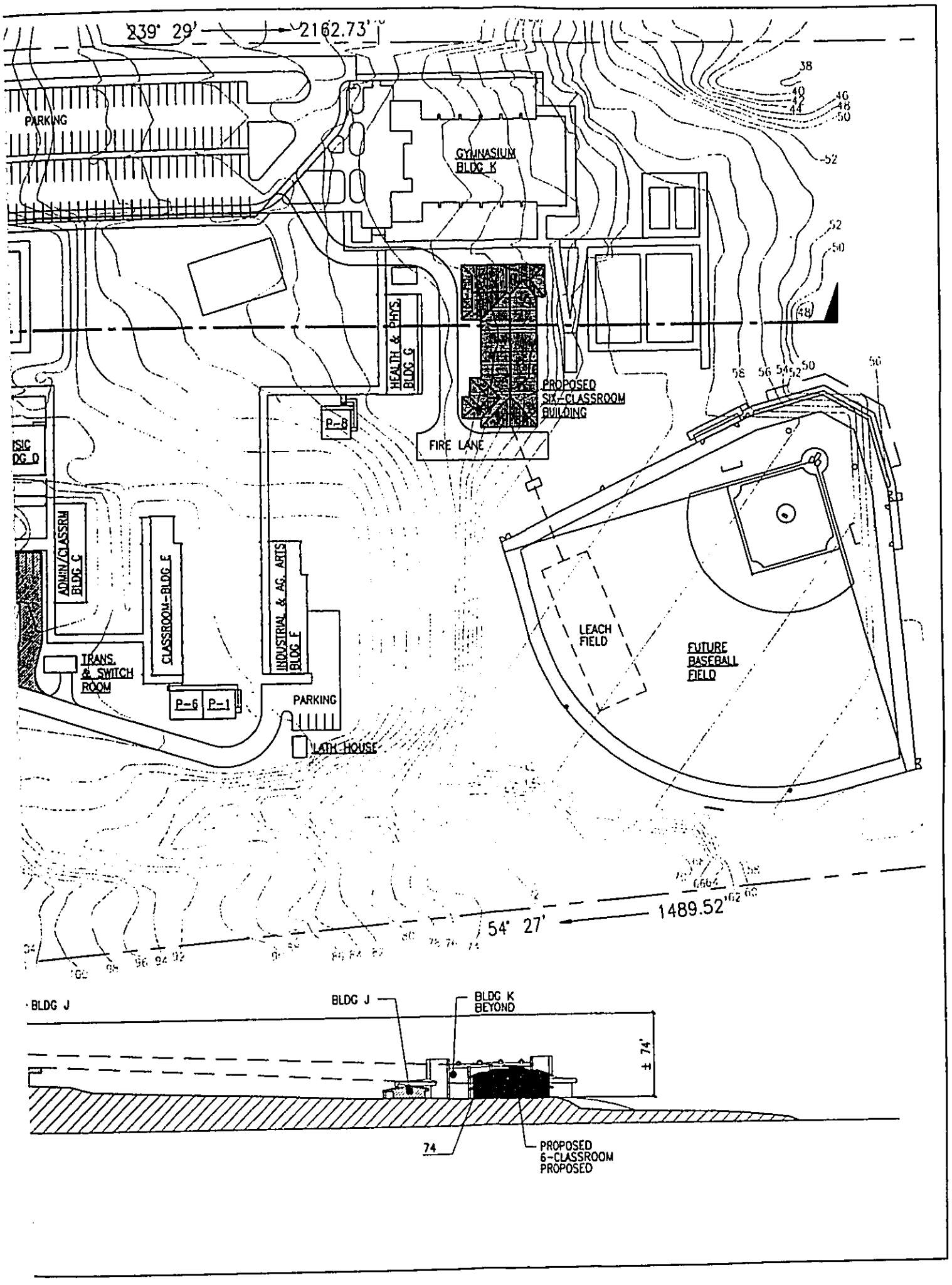
239° 29'
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GYMNASIUM BLDG K
HEALTH & PHYS. BLDG G
PROPOSED SIX-CLASSROOM BUILDING
FIRE LANE
P-8
ADMIN/CLASSROOM BLDG C
CLASSROOM-BLDG E
INDUSTRIAL & AG. ARTS BLDG F
TRANS. & SWITCH ROOM
P-6
P-1
PARKING
LATH HOUSE
LEACH FIELD
FUTURE BASEBALL FIELD
54° 27'
1489.52'
BLDG J
BLDG J
BLDG K BEYOND
± 74'
74
PROPOSED 6-CLASSROOM PROPOSED

ALAN M. ARAKAWA
MAYOR

CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

'04 AUG 16 A9:48

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

August 12, 2004

Michael W. Foley, Staff Planner
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Subject: SM1 2004/0016 Hana High & Elem.

Dear Michael W. Foley,

Thank you for the opportunity to comment on the above subject. After reviewing the application for the Hana High School improvements, it appears that the development may need an additional hydrant within 300 ft. of the proposed six classroom building. A thorough review will be conducted when the plans are submitted to us during the permit process. Some of the topics that we will address include street widths and minimum requirements for fire protection. As soon as detailed plans are submitted, we will be able clarify these issues.

Please feel free to contact Lt. Scott English at 270-7122 if there are any questions.

Sincerely,

Jeff Drechsel
Fire Prevention Bureau

MUNEKIYO & HIRAGA, INC.

August 23, 2004

Jeff Drechsel
Fire Prevention Bureau
Department of Fire and Public Safety
County of Maui
200 Dairy Road
Kahului, Hawaii 96732

SUBJECT: Hana High and Elementary School (SMI 2004/0016)
Draft Environmental Assessment (EA)

Dear Mr. Drechsel:

Thank you for your letter dated August 12, 2004 addressed to Michael W. Foley, Planning Director, providing comments on the draft EA and Special Management Area Use Permit application for the subject project. On behalf of the applicant, Department of Accounting and General Services, we would like to provide the following information in response to your comments.

We acknowledge your comment that the proposed project may require an additional fire hydrant within 300 feet of the proposed classroom building. This information has been forwarded to the project engineer for review and consideration.

In regards to street widths and minimum requirements for fire protection, we note that a 17-foot wide fire lane from the parking lot to the new classroom building will be provided. This fire lane is designed to accommodate a 40-foot fire truck. A hammer head turn-around area is provided adjacent to the south side of the new classroom building. We confirm this information will be submitted with the building plans and undergo more detailed review during the building permit process.

305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph. (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Thank you again for your comments.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: George Coates, State of Hawaii, Department of Accounting and General Services
Rodney Lee, Mitsunaga & Associates, Inc.
mai\hanaelhs\firedept.deares

ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

JUL 2 8 2004

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2 , Wailuku, Hawaii 96793

July 26, 2004

Michael Munekiyo
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

SUBJECT: **Proposed Improvements to Hana High and Elementary School**

We have reviewed the above subject Draft EA for the proposed improvements and find that we have no comments or objections.

Thank you for the opportunity to review and comment. Should you have any questions or concerns, please feel free to call me, or Patrick Matsui, Chief of our Planning and Development Division at extension 7387.

Sincerely,

GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development Division
File

AUG 04 2004

POLICE DEPARTMENT

COUNTY OF MAUI

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ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE ti

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

July 28, 2004

MEMORANDUM

TO : MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM : THOMAS M. PHILLIPS, CHIEF OF POLICE

SUBJECT :

I.D.	:	SM1 2004/0016
TMK	:	(2) 1-3-006:008
Project Name	:	Hana High & Elementary
Applicant	:	DAGS, State of Hawaii

____ No recommendation or comment to offer.

__x__ Refer to enclosed comments and/or recommendations.

Thank you for giving us the opportunity to comment on this project.

Acting Assistant Chief Glenn Miyahira
For: THOMAS M. PHILLIPS
Chief of Police

Enclosure

AUG 04 2004 for transmittal to the Dept. of Plan

COPY

TO	:	**THOMAS PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT**
VIA	:	**CHANNELS**
FROM	:	**HARRY W. MATSUURA JR., P.O. III SRO, HANA PATROL**
SUBJECT	:	**PROPOSED IMPROVEMENTS TO HANA HIGH & ELEMENTARY SCHOOL**

Sir, this communication is in regards to the proposed improvements to Hana High and Elementary School's play field, playground equipment, parking lot expansion and a new two story Middle school building.

I have reviewed the proposed improvements and have found no concerns for changes in the current plan. I have been working in the Hana District for 3 years and have been Hana High and Elementary School's School Resource Officer, I have found that a defined separation between the High school and the Middle school is needed.

The school is composed of Kindergarten through High School students that are often times forced to share classrooms during the day causing problems with two different age groups that should not be interacting under normal settings. I feel the new Middle school building will put an end to the problem of High school and Middle school interaction by making a defined separation between the two age groups.

I agree with the placement of the building as it is located behind of the classrooms presently used by the High school classes. The new rooms will open up the present Middle school rooms for the High school students and again define the sections were the High school and Middle school are located. By defining areas where Elementary, Middle and High school classes are held, the interaction between the different grades will occur thus improving the learning environment for all.

I also agree for the expansion of the parking lot area near the library. Most of the year the parking lot is not at it's full capacity but during times of special events and school functions many vehicles park along the grass shoulders. I have spoke with the head of the grounds crew, Patrick COSMA who related that as a result of the constant parking on the grassy areas, it causes major erosion and hampers their attempts to mow the lawn with their tractor.

I agree with the placement and the need for better play field and playgrounds for the Elementary school. There are play equipment located in and around the Elementary school that is aged and in need of replacement. The current play field is uneven and in need of landscaping that the improvements will provide.

I have reviewed the construction sites during the improvements and have found that traffic safety and traffic congestion to be minimal. The construction to the two story Middle school building will be the bulk of the improvements and will cause the least amount of traffic or other safety concerns. The reason for the lack of traffic congestion is that the proposed building site is located at lower part of the campus and is not accessed by vehicular traffic. It does not pose a major safety concern as the classes held near the construction site are few.

The improvement to the parking lot will however pose a larger traffic backup as the location is presently used as a bus stop. The improvement will cause congestion to the parking lot as they will have to redirect the buses to possibly drop students off at the gym or further up at the Elementary school portion during construction. As of this time I have not heard of a change of location for the present bus stop. I do not see it posing as a safety concern as the parking lot is off limits to students during normal school hours.

The improvements to the play ground and play field will not pose a traffic problem due to their locations but might pose a safety concern during construction. The play ground construction will cause a safety concern to all students as it is near the cafeteria. The students will need to access the cafeteria at various times in the day and during the lunch period where the student traffic will be at its highest. If the construction company sticks with the safety laws that govern construction sites, I do not see any problems arising as the teachers are more than capable of handling this situation.

I do not see any traffic problems related to the improvements to the school. I know that the parking lot improvements may even help access to the school as it expands the present roadway. I do not see any access problems for emergency vehicles for the new building, play grounds and play field as the present access is more than is needed for the expansion.

Overall I feel any improvements that can be made to Hana High & Elementary School will benefit all that attend and work at the school.

I have reveiwed the proposed
improvement plan and I concur
with officer MATSUURA'S recommendations.

LT. G. KRONOSKI
HANA DISTRICT COMMANDER
07/27/04 @ 1130 HOURS

Respectfully submitted,

OFC. H. MATSUURA JR E11514
HANA PATROL DISTRICT III
07/27/04 @ 0929 HOURS

MUNEKIYO & HIRAGA, INC.

August 23, 2004

Thomas Phillips, Chief of Police
Maui Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Hana High and Elementary School (SM1 2004/0016)
Draft Environmental Assessment

Dear Chief Phillips:

Thank you for your memorandum dated July 28, 2004 to Michael W. Foley, Planning Director, providing comments from Officer Matsuura Jr., Hana Patrol. On behalf of the applicant, Department of Accounting and General Services, we would like to provide the following information in response to the comments.

We acknowledge the comments regarding the need for the project and appreciate the law enforcement perspective provided in Officer Matsuura's assessment.

In response to comments regarding traffic in and around the parking lot expansion area and the bus stop, the applicant along with representatives of the Department of Education are reviewing an alternative location for the parking lot expansion. Further review and consideration will be given to expanding the existing 50-stall parking area located on the south side of the campus. This parking area will be accessed from the southern driveway. Development of this alternative will not impact the existing bus stop location. This alternative will be incorporated in the final EA document.

environment
planning
305 High Street, Suite 104 · Wailuku, Hawaii 96793 · ph: (808)244-2015 · fax: (808)244-8729 · planning@mhinconline.com

Again, thank you for your comments and review of the draft EA document.

Very truly yours,

Mich Hirano, AICP

MH:yp
cc: George Coates, State of Hawaii, Department of Accounting and General Services
Rodney Lee, Mitsunaga & Associates, Inc.
mai\hanaelhs\mpd.deares

AUG 06 2004

ALAN M. ARAKAWA
Mayor

GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI

200 South High Street
WAILUKU, MAUI, HAWAII 96793-2155
Telephone (808) 270-7816 • Fax (808) 270-7833
www.mauiwater.org

August 3, 2004

Mr. Paul Fasi
Department of Planning
County of Maui
250 South High Street
Wailuku HI 96793

Re: I.D.: SM1 2004/0016
TMK: 1-3-06:008
Project Name: Hana High & Elem.

Dear Mr. Fasi:

Thank you for the opportunity to comment on this application. We note that our comment letter of February 9, 2004 to the Draft Environmental Assessment for this project is included in the application material.

Source Availability and Consumption
This area is serviced by the Wakiu wells and the Kawaipapa aquifer. The Hana School is served by a 1-inch meter. Average water use for the school during 2003 was 2,834 gallons per day. As stated in the application material, water use for the new building would be about 1,190 gpd. Based on system standards, irrigation demand would be about 930 gpd. According to the applicant's landscape architect, irrigation demand would be about 2,580 gpd. Domestic and irrigation calculations to determine meter size adequacy will be required in the building permit process.

System Infrastructure
The property is served by a 12-inch water line and one fire hydrant along Hana Highway, in addition to private on-site fire protection system. Fire flow calculations will be required in the building permit process. Actual fire demand for structures is determined by fire flow calculations prepared, signed and stamped by a certified engineer or architect. The approved fire flow calculation methods for use include Guidance for Determination of Fire Flow- Insurance Service Office, 1974 and Fire Flow- Hawaii Insurance Bureau, 1991

System Infrastructure
Fire flow calculations should be submitted to the Department to determine adequate fire flow. Actual fire demand for structures is determined by fire flow calculations prepared, signed and stamped by a certified engineer or architect. The approved fire flow calculation methods for use include Guidance for Determination of Fire Flow- Insurance Service Office, 1974 and Fire Flow- Hawaii Insurance Bureau, 1991. Installation of a reduced pressure back-flow preventer approved by the Department is also required.

Conservation
The applicant states that water conservation measures suggested in the Department February 9, 2004 letter will be employed as appropriate.

ALAN M. ARAKAWA
Mayor

GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E
Deputy Director

Pollution Prevention
The project overlies the Kawaipapa aquifer. The Department of Water Supply strives to protect the integrity of surface and groundwater resources by encouraging the applicant to adopt best management practices (BMPs) designed to minimize infiltration and runoff from all construction and vehicle operations. We have attached sample BMPs for principle operations for reference. Additional mitigation measures are enumerated below and should be implemented during construction.

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work
- Retain ground cover until the last possible date
- Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil I amendments, fertilizers and temporary irrigation. Use high seeding rates to ensure rapid stand establishment
- Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
- Keep run-off on site
- Construct drainage control features, such as berms
- Maintain drainage structures, detention, silting and debris basins
- Control dust by proper stockpiling and use non-potable water for dust control
- Cover open vehicles carrying soils, gravel or other particulate matter.

Should you have any questions, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,

George Y. Tengan
Director

emb

c: engineering division
applicant, with attachments:

Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

C:\WPdocs\Permcomm\Hana High & Elem SM1.wpd

United States
Environmental Protection
Agency

Office of Water
Washington, DC 20460

840-B-92-002
January 1993

EPA

Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters

Issued Under the Authority of
Section 6217(g) of the Coastal Zone Act
Reauthorization Amendments of 1990

III. CONSTRUCTION ACTIVITIES

A. Construction Site Erosion and Sediment Control—Management Measure

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction, and

(2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

1. Applicability

This management measure is intended to be applied by States to all construction activities on sites less than 5 acres in areas that do not have an NPDES permit[3] in order to control erosion and sediment loss from those sites. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformity with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The goal of this management measure is to reduce the sediment loadings from construction sites in coastal areas that enter surface waterbodies. This measure requires that coastal States establish new or enhance existing State erosion and sediment control (ESC) programs and/or require ESC programs at the local level. It is intended to be part of a comprehensive land use or watershed management program, as previously detailed in the Watershed and Site Development Management Measures. It is expected that State and local programs will establish criteria determined by local conditions (e.g., soil types, climate, meteorology) that reduce erosion and sediment transport from construction sites.

Runoff from construction sites is by far the largest source of sediment in urban areas under development (York County Soil and Water Conservation District, 1990). Soil erosion removes over 90 percent of sediment by tonnage in urbanizing areas where most construction activities occur (Canning, 1988). Table 4-14 illustrates some of the

[3] On May 27, 1992, the United States Court of Appeals for the Ninth Circuit invalidated EPA's exemption of construction sites smaller than 5 acres from the storm water permit program in *Natural Resources Defense Council* v. *EPA*, 965 F.2d 759 (9th Cir. 1992). EPA is conducting further rulemaking proceedings on this issue and will not require permit applications for construction activities under 5 acres until further rulemaking has been completed.

measured sediment loading rates associated with construction activities found across the United States. As seen in Table 4-14, erosion rates from natural areas such as undisturbed forested lands are typically less than one ton/acre/year, while erosion from construction sites ranges from 7.2 to over 1,000 tons/acre/year.

Table 4-14. Erosion and Sediment Problems Associated With Construction

Location	Problem	Reference
United States	Sediment loading rates vary from 36.5 to 1,000 ton/ac/yr. These are 5 to 500 times greater than those from undeveloped land. Approximately 600 million tons of soil erodes from developed sites each year. Construction site sediment in runoff can be 10 to 20 times greater than that from agricultural lands.	York County Soil and Water Conservation District, 1990
Franklin County, FL	Sediment yield (ton/ac/yr): forest < 0.5 rangeland < 0.5 tilled 1.4 construction site 30 established urban < 0.5	Franklin County, FL
Wisconsin	Erosion rates range from 30 to 200 ton/ac/yr (10 to 20 times those of cropland).	Wisconsin Legislative Council, 1991
Washington, DC	Erosion rates range from 35 to 45 ton/ac/yr (10 to 100 times greater than agriculture and stabilized urban land uses).	MWCOG, 1987
Anacostia River Basin, VA, MD, DC	Sediment yields from portions of the Anacostia Basin have been estimated at 75,000 to 132,000 ton/yr.	U.S. Army Corps of Engineers, 1990
Washington	Erosion rates range from 50 to 500 ton/ac/yr. Natural erosion rates from forests or well-sodded prairies are 0.01 to 1.0 ton/ac/yr.	Washington Department of Ecology, 1989
Anacostia River Basin, VA, MD, DC	Erosion rates range from 7.2 to 100.8 ton/ac/yr.	USGS, 1978
Alabama	1.4 million tons eroded per year.	Woodward-Clyde, 1991
North Carolina	6.7 million tons eroded per year.	
Louisiana	5.1 million tons eroded per year.	
Oklahoma	4.2 million tons eroded per year.	
Georgia	3.8 million tons eroded per year.	
Texas	3.5 million tons eroded per year.	
Tennessee	3.3 million tons eroded per year.	
Pennsylvania	3.1 million tons eroded per year.	
Ohio	3.0 million tons eroded per year.	
Kentucky	3.0 million tons eroded per year.	

Eroded sediment from construction sites creates many problems in coastal areas including adverse impacts on water quality, critical habitats, submerged aquatic vegetation (SAV) beds, recreational activities, and navigation (APWA, 1991). For example, the Miami River in Florida has been severely affected by pollution associated with upland erosion. This watershed has undergone extensive urbanization, which has included the construction of many commercial and residential buildings over the past 50 years. Sediment deposited in the Miami River channel contributes to the severe water quality and navigation problems of this once-thriving waterway, as well as Biscayne Bay (SFWMD, 1988).

ESC plans are important for controlling the adverse impacts of construction and land development and have been required by many State and local governments, as shown in Table 4-13 (in the Site Development section of this chapter). An ESC plan is a document that explains and illustrates the measures to be taken to control erosion and sediment problems on construction sites (Connecticut Council on Soil and Water Conservation, 1988). It is intended that existing State and local erosion and sediment control plans may be used to fulfill the requirements of this management measure. Where existing ESC plans do not meet the management measure criteria, inadequate plans may be enhanced to meet the management measure guidelines.

Typically, an ESC plan is part of a larger site plan and includes the following elements:

- Description of predominant soil types;
- Details of site grading including existing and proposed contours;
- Design details and locations for structural controls;
- Provisions to preserve topsoil and limit disturbance;
- Details of temporary and permanent stabilization measures; and
- Description of the sequence of construction.

ESC plans ensure that provisions for control measures are incorporated into the site planning stage of development and provide for the reduction of erosion and sediment problems and accountability if a problem occurs (York County Soil and Water Conservation District, 1990). An effective plan for urban runoff management on construction sites will control erosion, retain sediments on site, to the extent practicable, and reduce the adverse effects of runoff. Climate, topography, soils, drainage patterns, and vegetation will affect how erosion and sediment should be controlled on a site (Washington State Department of Ecology, 1989). An effective ESC plan includes both structural and nonstructural controls. Nonstructural controls address erosion control by decreasing erosion potential, whereas structural controls are both preventive and mitigative because they control both erosion and sediment movement.

Typical nonstructural erosion controls include (APWA, 1991; York County Soil and Water Conservation District, 1990):

- Planning and designing the development within the natural constraints of the site;
- Minimizing the area of bare soil exposed at one time (phased grading);
- Providing for stream crossing areas for natural and man-made areas; and
- Stabilizing cut-and-fill slopes caused by construction activities.

Structural controls include:

- Perimeter controls;
- Mulching and seeding exposed areas;
- Sediment basins and traps; and
- Filter fabric, or silt fences.

Some erosion and soil loss are unavoidable during land-disturbing activities. While proper siting and design will help prevent areas prone to erosion from being developed, construction activities will invariably produce conditions where erosion may occur. To reduce the adverse impacts associated with construction, the construction management measure suggests a system of nonstructural and structural erosion and sediment controls for incorporation into an

ESC plan. Erosion controls have distinct advantages over sediment controls. Erosion controls reduce the amount of sediment transported off-site, thereby reducing the need for sediment controls. When erosion controls are used in conjunction with sediment controls, the size of the sediment control structures and associated maintenance may be reduced, decreasing the overall treatment costs (SWRPC, 1991).

3. Management Measure Selection

This management measure was selected to minimize sediment being transported outside the perimeter of a construction site through two broad performance goals: (1) reduce erosion and (2) retain sediment onsite, to the extent practicable. These performance goals were chosen to allow States and local governments flexibility in specifying practices appropriate for local conditions.

While several commentors responding to the draft (May 1991) guidance expressed the need to define "more measurable, enforceable ways" to control sediment loadings, other commentors stressed the need to draft management measures that do not conflict with existing State programs and allow States and local governments to determine appropriate practices and design standards for their communities. These management measures were selected because virtually all coastal States control construction activities to prevent erosion and sediment loss.

The measures were specifically written for the following reasons:

(1) Predevelopment loadings may vary greatly, and some sediment loss is usually inevitable;

(2) Current practice is built on the use of systems of practices selected based on site-specific conditions; and

(3) The combined effectiveness of erosion and sediment controls in systems is not easily quantified.

4. Erosion Control Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Erosion controls are used to reduce the amount of sediment that is detached during construction and to prevent sediment from entering runoff. Erosion control is based on two main concepts: (1) disturb the smallest area of land possible for the shortest period of time, and (2) stabilize disturbed soils to prevent erosion from occurring.

a. *Schedule projects so clearing and grading are done during the time of minimum erosion potential.*

Often a project can be scheduled during the time of year that the erosion potential of the site is relatively low. In many parts of the country, there is a certain period of the year when erosion potential is relatively low and construction scheduling could be very effective. For example, in the Pacific region if construction can be completed during the 6-month dry season (May 1 - October 31), temporary erosion and sediment controls may not be needed. In addition, in some parts of the country erosion potential is very high during certain parts of the year such as the spring thaw in northern areas. During this time of year, melting snowfall generates a constant runoff that can erode soil. In addition, construction vehicles can easily turn the soft, wet ground into mud, which is more easily washed offsite. Therefore, in the north, limitations should be placed on grading during the spring thaw (Goldman et al., 1986).

b. Stage construction.

Avoid areawide clearance of construction sites. Plan and stage land disturbance activities so that only the area currently under construction is exposed. As soon as the grading and construction in an area are complete, the area should be stabilized.

By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins. Physical markers, such as tape, signs, or barriers, indicating the limits of land disturbance, can ensure that equipment operators know the proposed limits of clearing. The area of the watershed that is exposed to construction is important for determining the net amount of erosion. Reducing the extent of the disturbed area will ultimately reduce sediment loads to surface waters. Existing or newly planted vegetation that has been planted to stabilize disturbed areas should be protected by routing construction traffic around and protecting natural vegetation with fencing, tree armoring, retaining walls, or tree wells.

c. Clear only areas essential for construction.

Often areas of a construction site are unnecessarily cleared. Only those areas essential for completing construction activities should be cleared, and other areas should remain undisturbed. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that only the required land area is cleared. Avoid disturbing vegetation on steep slopes or other critical areas.

d. Locate potential nonpoint pollutant sources away from steep slopes, waterbodies, and critical areas.

Material stockpiles, borrow areas, access roads, and other land-disturbing activities can often be located away from critical areas such as steep slopes, highly erodible soils, and areas that drain directly into sensitive waterbodies.

e. Route construction traffic to avoid existing or newly planted vegetation.

Where possible, construction traffic should travel over areas that must be disturbed for other construction activity. This practice will reduce the area that is cleared and susceptible to erosion.

f. Protect natural vegetation with fencing, tree armoring, and retaining walls or tree wells.

Tree armoring protects tree trunks from being damaged by construction equipment. Fencing can also protect tree trunks, but should be placed at the tree's drip line so that construction equipment is kept away from the tree. The tree drip line is the minimum area around a tree in which the tree's root system should not be disturbed by cut, fill, or soil compaction caused by heavy equipment. When cutting or filling must be done near a tree, a retaining wall or tree well should be used to minimize the cutting of the tree's roots or the quantity of fill placed over the tree's roots.

g. Stockpile topsoil and reapply to revegetate site.

Because of the high organic content of topsoil, it cannot be used as fill material or under pavement. After a site is cleared, the topsoil is typically removed. Since topsoil is essential to establish new vegetation, it should be stockpiled and then reapplied to the site for revegetation, if appropriate. Although topsoil salvaged from the existing site can often be used, it must meet certain standards and topsoil may need to be imported onto the site if the existing topsoil is not adequate for establishing new vegetation.

h. Cover or stabilize topsoil stockpiles.

Unprotected stockpiles are very prone to erosion and therefore stockpiles must be protected. Small stockpiles can be covered with a tarp to prevent erosion. Large stockpiles should be stabilized by erosion blankets, seeding, and/or mulching.

i. Use wind erosion controls.

Wind erosion controls limit the movement of dust from disturbed soil surfaces and include many different practices. Wind barriers block air currents and are effective in controlling soil blowing. Many different materials can be used as wind barriers, including solid board fence, snow fences, and bales of hay. Sprinkling moistens the soil surface with water and must be repeated as needed to be effective for preventing wind erosion (Delaware DNREC, 1989); however, applications must be monitored to prevent excessive runoff and erosion.

j. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drain.

Earth dikes, perimeter dikes or swales, or diversions can be used to intercept and convey runoff above disturbed areas. An earth dike is a temporary berm or ridge of compacted soil that channels water to a desired location. A perimeter dike/swale or diversion is a swale with a supporting ridge on the lower side that is constructed from the soil excavated from the adjoining swale (Delaware DNREC, 1989). These practices should be used to intercept flow from denuded areas or newly seeded areas to keep the disturbed areas from being eroded from the uphill runoff. The structures should be stabilized within 14 days of installation. A pipe slope drain, also known as a pipe drop structure, is a temporary pipe placed from the top of a slope to the bottom of the slope to convey concentrated runoff down the slope without causing erosion (Delaware DNREC, 1989).

k. On long or steep, disturbed, or man-made slopes, construct benches, terraces, or ditches at regular intervals to intercept runoff.

Benches, terraces, or ditches break up a slope by providing areas of low slope in the reverse direction. This keeps water from proceeding down the slope at increasing volume and velocity. Instead, the flow is directed to a suitable outlet, such as a sediment basin or trap. The frequency of benches, terraces, or ditches will depend on the erodibility of the soils, steepness and length of the slope, and rock outcrops. This practice should be used if there is a potential for erosion along the slope.

l. Use retaining walls.

Often retaining walls can be used to decrease the steepness of a slope. If the steepness of a slope is reduced, the runoff velocity is decreased and, therefore, the erosion potential is decreased.

m. Provide linings for urban runoff conveyance channels.

Often construction increases the velocity and volume of runoff, which causes erosion in newly constructed or existing urban runoff conveyance channels. If the runoff during or after construction will cause erosion in a channel, the channel should be lined or flow control BMPs installed. The first choice of lining should be grass or sod since this reduces runoff velocities and provides water quality benefits through filtration and infiltration. If the velocity in the channel would erode the grass-lined channel, riprap, concrete, or gabions can be used.

n. Use check dams.

Check dams are small, temporary dams constructed across a swale or channel. They can be constructed using gravel or straw bales. They are used to reduce the velocity of concentrated flow and, therefore, to reduce the erosion in

a swale or channel. Check dams should be used when a swale or channel will be used for a short time and therefore it is not feasible or practical to line the channel or implement flow control BMPs (Delaware DNREC, 1989).

o. *Seed and fertilize.*

Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once a dense vegetative cover has been established. However, often seeding and fertilizing do not produce as thick a vegetative cover as do seed and mulch or netting. Newly established vegetation does not have as extensive a root system as existing vegetation and therefore is more prone to erosion, especially on steep slopes. Care should be taken when fertilizing to avoid untimely or excessive application. Since the practice of seeding and fertilizing does not provide any protection during the time of vegetative establishment, it should be used only on favorable soils in very flat areas and not in sensitive areas.

p. *Use seeding and mulch/mats.*

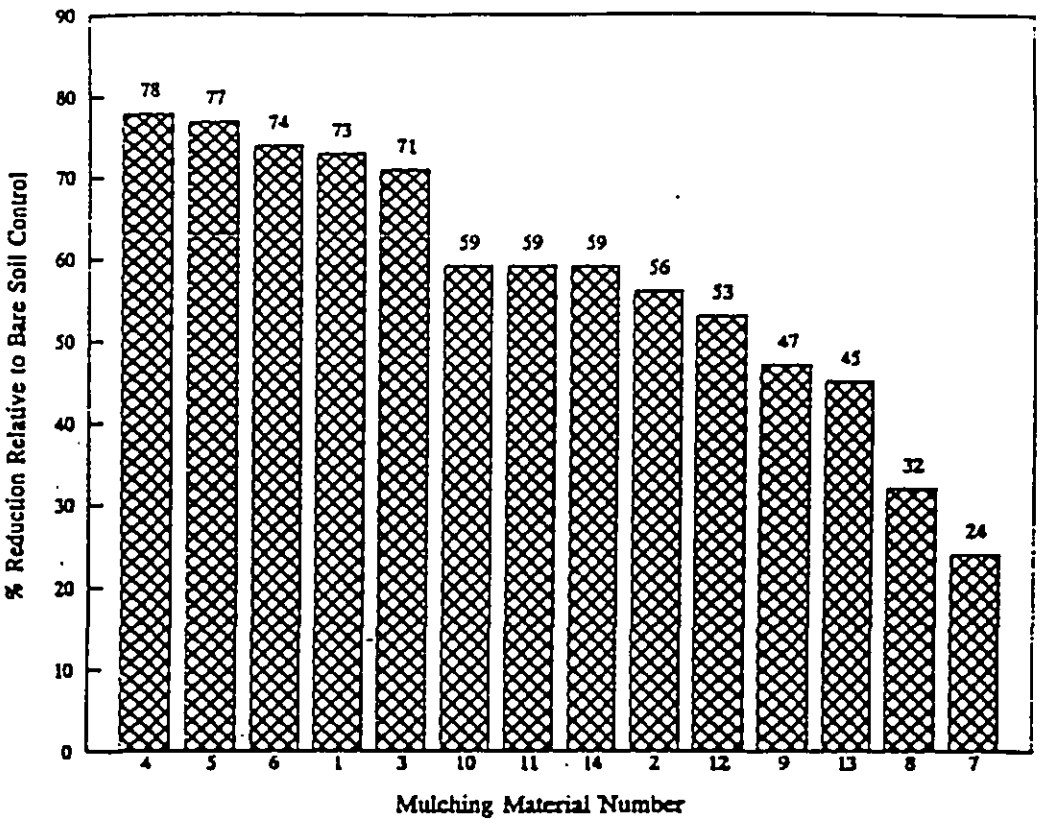
Seeding establishes a vegetative cover on disturbed areas. Seeding is very effective in controlling soil erosion once the vegetative cover has been established. The mulching/mats protect the disturbed area while the vegetation becomes established.

The management of land by using ground cover reduces erosion by reducing the flow rate of runoff and the raindrop impact. Bare soils should be seeded or otherwise stabilized within 15 calendar days after final grading. Denuded areas that are inactive and will be exposed to rain for 30 days or more should also be temporarily stabilized, usually by planting seeds and establishing vegetation during favorable seasons in areas where vegetation can be established. In very flat, non-sensitive areas with favorable soils, stabilization may involve simply seeding and fertilizing. Mulching and/or sodding may be necessary as slopes become moderate to steep, as soils become more erosive, and as areas become more sensitive.

q. *Use mulch/mats.*

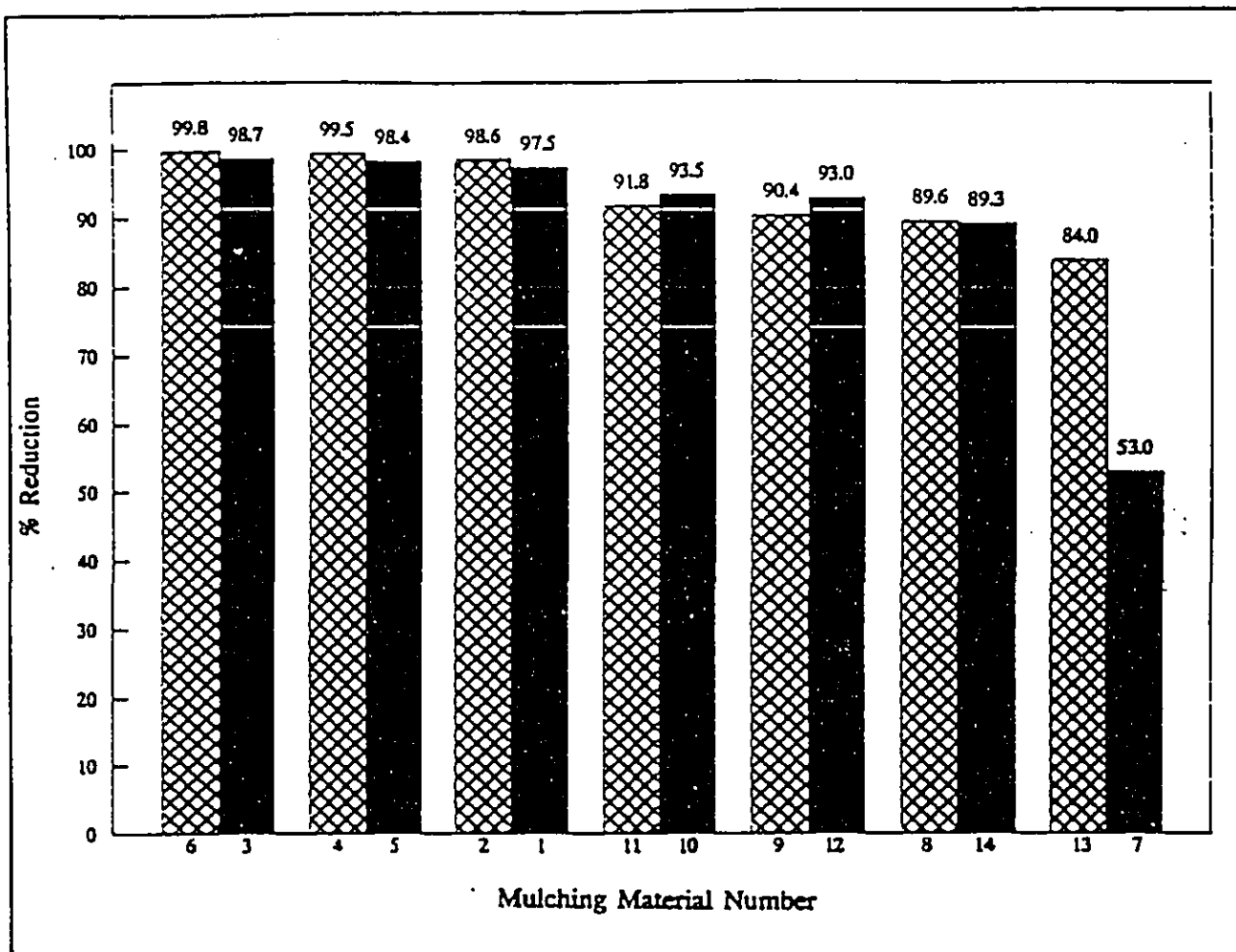
Mulching involves applying plant residues or other suitable materials on disturbed soil surfaces. Mulchs/mats used include tacked straw, wood chips, and jute netting and are often covered by blankets or netting. Mulching alone should be used only for temporary protection of the soil surface or when permanent seeding is not feasible. The useful life of mulch varies with the material used and the amount of precipitation, but is approximately 2 to 6 months. Figure 4-5 shows water velocity reductions that could be expected using various mulching techniques. Similarly, Figure 4-6 shows reductions in soil loss achievable using various mulching techniques. During times of year when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are not highly erodible. On steep slopes or highly erodible soils, multiple mulching treatments should be used. On a high-elevation or desert site where grasses cannot survive the harsh environment, native shrubs may be planted. Interlocking ceramic materials, filter fabric, and netting are available for this purpose. Before stabilizing an area, it is important to have installed all sediment controls and diverted runoff away from the area to be planted. Runoff may be diverted away from denuded areas or newly planted areas using dikes, swales, or pipe slope drains to intercept runoff and convey it to a permanent channel or storm drain. Reserved topsoil may be used to revegetate a site if the stockpile has been covered and stabilized.

Consideration should be given to maintenance when designing mulching and matting schemes. Plastic nets are often used to cover the mulch or mats; however, they can foul lawn mower blades if the area requires mowing.



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw — 2,242 kg/ha
14	Uncrimped wheat straw — 4,484 kg/ha

Figure 4-5. Water velocity reductions for different mulch treatments (adapted from Harding, 1990).



Mulch Material	Characteristics
1	100% wheat straw/top net
2	100% wheat straw/two nets
3	70% wheat straw/30% coconut fiber
4	70% wheat straw/30% coconut fiber
5	100% coconut fiber
6	Nylon monofilament/two nets
7	Nylon monofilament/rigid/bonded
8	Vinyl monofilament/flexible/bonded
9	Curled wood fibers/top net
10	Curled wood fibers/two nets
11	Antiwash netting (jute)
12	Interwoven paper and thread
13	Uncrimped wheat straw – 2,242 kg/ha
14	Uncrimped wheat straw – 4,484 kg/ha

Figure 4-6. Actual soil loss reductions for different mulch treatments (adapted from Harding, 1990).

r. Use sodding.

Sodding permanently stabilizes an area. Sodding provides immediate stabilization of an area and should be used in critical areas or where establishment of permanent vegetation by seeding and mulching would be difficult. Sodding is also a preferred option when there is a high erosion potential during the period of vegetative establishment from seeding.

s. Use wildflower cover.

Because of the hardy drought-resistant nature of wildflowers, they may be more beneficial as an erosion control practice than turf grass. While not as dense as turfgrass, wildflower thatches and associated grasses are expected to be as effective in erosion control and contaminant absorption. Because thatches of wildflowers do not need fertilizers, pesticides, or herbicides, and watering is minimal, implementation of this practice may result in a cost savings (Brash et al., undated). In 1987, Howard County, Maryland, spent $690.00 per acre to maintain turfgrass areas, compared to only $31.00 per acre for wildflower meadows (Wilson, 1990).

A wildflower stand requires several years to become established; maintenance requirements are minimal once the area is established (Brash et al., undated).

5. Sediment Control Practices[4]

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

Sediment controls capture sediment that is transported in runoff. Filtration and detention (gravitational settling) are the main processes used to remove sediment from urban runoff.

a. Sediment Basins

Sediment basins, also known as silt basins, are engineered impoundment structures that allow sediment to settle out of the urban runoff. They are installed prior to full-scale grading and remain in place until the disturbed portions of the drainage area are fully stabilized. They are generally located at the low point of sites, away from construction traffic, where they will be able to trap sediment-laden runoff.

Sediment basins are typically used for drainage areas between 5 and 100 acres. They can be classified as either temporary or permanent structures, depending on the length of service of the structure. If they are designed to function for less than 36 months, they are classified as "temporary"; otherwise, they are considered permanent structures. Temporary sediment basins can also be converted into permanent urban runoff management ponds. When sediment basins are designed as permanent structures, they must meet all standards for wet ponds.

b. Sediment Trap

Sediment traps are small impoundments that allow sediment to settle out of runoff water. Sediment traps are typically installed in a drainageway or other point of discharge from a disturbed area. Temporary diversions can be

[4]Adapted from Goldman (1986).

used to direct runoff to the sediment trap. Sediment traps should not be used for drainage areas greater than 5 acres and typically have a useful life of approximately 18 to 24 months.

c. Filter Fabric Fence

Filter fabric fence is available from many manufacturers and in several mesh sizes. Sediment is filtered out as urban runoff flows through the fabric. Such fences should be used only where there is sheet flow (i.e., no concentrated flow), and the maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Filter fabric fences have a useful life of approximately 6 to 12 months.

d. Straw Bale Barrier

A straw bale barrier is a row of anchored straw bales that detain and filter urban runoff. Straw bales are less effective than filter fabric, which can usually be used in place of straw bales. However, straw bales have been effectively used as temporary check dams in channels. As with filter fabric fences, straw bale barriers should be used only where there is sheet flow. The maximum drainage area to the barrier should be 0.25 acre or less per 100 feet of barrier. The useful life of straw bales is approximately 3 months.

e. Inlet Protection

Inlet protection consists of a barrier placed around a storm drain drop inlet, which traps sediment before it enters the storm sewer system. Filter fabric, straw bales, gravel, or sand bags are often used for inlet protection.

f. Construction Entrance

A construction entrance is a pad of gravel over filter cloth located where traffic leaves a construction site. As vehicles drive over the gravel, mud, and sediment are collected from the vehicles' wheels and offsite transport of sediment is reduced.

g. Vegetated Filter Strips

Vegetated filter strips are low-gradient vegetated areas that filter overland sheet flow. Runoff must be evenly distributed across the filter strip. Channelized flows decrease the effectiveness of filter strips. Level spreading devices are often used to distribute the runoff evenly across the strip (Dillaha et al., 1989).

Vegetated filter strips should have relatively low slopes and adequate length and should be planted with erosion-resistant plant species. The main factors that influence the removal efficiency are the vegetation type, soil infiltration rate, and flow depth and travel time. These factors are dependent on the contributing drainage area, slope of strip, degree and type of vegetative cover, and strip length. Maintenance requirements for vegetated filter strips include sediment removal and inspections to ensure that dense, vigorous vegetation is established and concentrated flows do not occur. Maintenance of these structures is discussed in Section II.A of this chapter.

6. Effectiveness and Cost Information

a. Erosion Control Practices

The effectiveness of erosion control practices can vary based on land slope, the size of the disturbed area, rainfall frequency and intensity, wind conditions, soil type, use of heavy machinery, length of time soils are exposed and unprotected, and other factors. In general, a system of erosion and sediment control practices can more effectively reduce offsite sediment transport than can a single system. Numerous nonstructural measures such as protecting natural or newly planted vegetation, minimizing the disturbance of vegetation on steep slopes and other highly

erodible areas, maximizing the distance eroded material must travel before reaching the drainage system, and locating roads away from sensitive areas may be used to reduce erosion.

Table 4-15 contains the available cost and effectiveness data for some of the erosion controls listed above. Information on the effectiveness of individual nonstructural controls was not available. All reported effectiveness data assume that controls are properly designed, constructed, and maintained. Costs have been broken down into annual capital costs, annual maintenance costs, and total annual costs (including annualization of the capital costs).

b. Sediment Control Practices

Regular inspection and maintenance are needed for most erosion control practices to remain effective. The effectiveness of sediment controls will depend on the size of the construction site and the nature of the runoff flows. Sediment basins are most appropriate for drainage areas of 5 acres or greater. In smaller areas with concentrated flows, silt traps may suffice. Where concentrated flow leaves the site and the drainage area is less than 0.5 ac/100 ft of flow, filter fabric fences may be effective. In areas where sheet flow leaves the site and the drainage area is greater than 0.5 acre/100 ft of flow, perimeter dikes may be used to divert the flow to a sediment trap or sediment basin. Urban runoff inlets may be protected using straw bales or diversions to filter or route runoff away from the inlets.

Table 4-16 describes the general cost and effectiveness of some common sediment control practices.

c. Comparisons

Figure 4-7 illustrates the estimated TSS loading reductions from Maryland construction sites possible using a combination of erosion and sediment controls in contrast to using only sediment controls. Figure 4-8 shows a comparison of the cost and effectiveness of various erosion control practices. As can be seen in Figure 4-8, seeding or seeding and mulching provide the highest levels of control at the lowest cost.

Table 4-15. ESC Quantitative Effectiveness and Cost Summary

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sod	Immediate erosion protection where there is high erosion potential during vegetative establishment.	Average: 99% Observed range: 98% - 99% References: Minnesota Pollution Control Agency, 1989; Pennsylvania, 1983 cited in USEPA, 1991	2	Average: $0.2 per ft^2 [$11,300 per acre] Range: $0.1 - $1.1 References: SWRPC, 1991; Schueler, 1987; Virginia, 1980	Average: 5% Range: 5% Reference: SWRPC, 1991	$0.20 per ft^2 $7,500 per acre
Seed	Establish vegetation on disturbed area.	After vegetation established- Average: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: $400 per acre Range: $200 - $1000 per acre References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1980	Average: 20% Range: 15% - 25% References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991	$300 per acre
Seed and Mulch	Establish vegetation on disturbed area.	After vegetation established- Average: 90% Observed range: 50% - 100% References: SCS, 1985 cited in EPA, 1991; Minnesota Pollution Control Agency, 1989; Oberts, 1984 cited in City of Austin, 1988; Delaware Department of Natural Resources, 1989	2	Average: $1,500 per acre Range: $800 - $3,500 per acre References: Goldman, 1986; Washington DOT, 1990; NC State, 1990; Schueler, 1987; Virginia, 1980; SWRPC, 1991	Average: NA[b] Range: NA References: None	$1,100 per acre

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Mulch	Temporary stabilization of disturbed area.	Observed range: sand: 20% slope / 50% slope wood fiber @ 1500 lb/ac 50-60% / 0-20% wood fiber @ 3000 lb/ac 50-85% / 50-70% straw @ 3000 lb/ac 90-100% / 85% Silt-loam: 20% slope / 50% slope wood fiber @ 1500 lb/ac 20-60% / 40-60% wood fiber @ 3000 lb/ac 60-90% / 60-70% straw @ 3000 lb/ac 80-95% / 70-90% Silt-clay-loam: 10-30% slope / 30-50% slope wood fiber @ 1500 lb/ac 5% / -- wood fiber @ 3000 lb/ac 40% / -- jute netting 30-60% / 30% straw @ 3000 lb/ac 40-70% / 20-40% wood chips @ 10,000 lb/ac 60-80% / 50-60% mulch blanket 60-80% / 50-60% excelsior blanket 60-80% / 50-60% multiple treatment (straw and jute) 90% / 90% References: Minnesota Pollution Control Agency, 1989; Kay, 1983 cited in Goldman, 1986	Straw mulch: 0.25 Wood fiber mulch: 0.33 Jute netting: 0.33 Straw and jute: 0.33	Straw mulch: Average: $1,700 per acre Range: $500 - $5,000 per acre References: Wisconsin DOT cited in SWRPC, 1991; Washington DOT, 1990; Virginia, 1980 Wood fiber mulch: Average: $1,000 per acre Range: $100 - $2,300 per acre References: Washington DOT, 1990; Virginia, 1980 Jute netting: Average: $3,700 per acre Range: $3,500-$4,100 per acre References: Washington DOT, 1990; Virginia, 1980 Straw and jute: Average: $5,400 per acre Range: $4,000-$9,100 per acre References: Washington DOT, 1990; Virginia, 1980	Average: NA[b] Range: NA References: None	Straw mulch: $7,500 per acre Wood fiber mulch: $3,500 per acre Jute netting: $12,500 per acre Straw and jute: $18,000 per acre

Table 4-15. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Terraces	Break up long or steep slopes.	Observed range: Land Slope — Reduction in Erosion 1-12% — 70% 12-18% — 60% 18-24% — 55% Additionally, if the slope steepness is halved, while other factors are held constant, the soil loss potential decreases 2-1/2 times. If both the slope and length are halved, the soil loss potential is decreased 4 times. References: Goldman, 1986; Beasley, 1972	2	Average: $5 per lin ft Range: $1 - $12 References: SWRPC, 1991; Goldman, 1986; Virginia, 1991	Average: 20% Range: 20% Reference: SWRPC, 1991	$4 per lin ft
All Erosion Controls	Reduce amount of sediment entering runoff.	Average: 85% Observed range: 85% Reference: Schueler, 1990	--	Varies but typically low	Varies but typically low	Varies but typically low

NA - Not available.
[a] Useful life estimated as length of construction project (assumed to be 2 years).
[b] For Total Annual Cost, assume Annual Maintenance Cost = 2% of construction cost.

Table 4-16. ESC Quantitative Effectiveness and Cost Summary for Sediment Control Practices

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Sediment basin	Minimum drainage area = 5 acres, maximum drainage area = 100 acres	Average: 70% Observed range: 55% - 100% References: Schueler, 1990; Engle, BW and Jarrett, AR, 1990; Baumann, 1990	2	Less than 50,000 ft^3 storage Average: \$0.60 per ft^3 storage (\$1,100 per drainage acre[c]) Range: \$0.20 - \$1.30 per ft^3 Greater than 50,000 ft^3 storage Average: \$0.3 per ft^3 storage (\$550 per drainage acre[c]) Range: \$0.10 - \$0.40 per ft^3 References: SWRPC, 1991	Average: 25% Range: 25% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	Less than 50,000 ft^3 storage \$0.40 per ft^3 storage \$700 per drainage acre[b] Greater than 50,000 ft^3 storage \$0.20 per ft^3 storage \$900 per drainage acre[c]
Sediment trap	Maximum drainage area = 5 acres	Average: 60% Observed range: (-7%) - 100% References: Schueler, et al., 1990; Tahoe Regional Planning Agency, 1989; Baumann, 1990	1.5	Average: \$0.60 per ft^3 storage (\$1,100 per drainage acre[c]) Range: \$0.20 - \$2.00 per ft^3 References: Denver COG cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986	Average: 20% Range: 20% References: Denver COG cited in SWRPC, 1991; SWRPC, 1991	\$0.70 per ft^3 storage \$1,300 per drainage acre[c]
Filter Fabric Fence	Maximum drainage area = 0.5 acre per 100 feet of fence. Not to be used in concentrated flow areas.	Average: 70% Observed range: 0% - 100% sand: 80% - 99% silt-loam: 50% - 80% silt-clay-loam: 0% - 20% References: Munson, 1991; Fisher et al., 1984; Minnesota Pollution Control Agency, 1989	0.5	Average: \$3 per lin ft (\$700 per drainage acre[c] Range: \$1 - \$8 per lin ft References: Wisconsin DOT cited in SWRPC, 1991; SWRPC, 1991; Goldman, 1986; Virginia, 1991; NC State, 1990	Average: 100% Range: 100% References: SWRPC, 1991	\$7 per lin ft \$850 per drainage acre[c]

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Straw Bale Barrier	Maximum drainage area = 0.25 acre per 100 feet of barrier. Not to be used in concentrated flow areas.	Average: 70% Observed Range: 70% References: Virginia, 1980 cited in EPA, 1991	0.25	Average: $4 per lin ft ($1,600 per drainage acre[d] Range: $2 - $6 per lin ft References: Goldman, 1986; Virginia, 1991	Average: 100% Range: 100% References: SWRPC, 1991	$17 per lin ft $6,800 per drainage acre[d]
Inlet Protection	Protect storm drain inlet.	Average: NA Observed Range: NA References: None	1	Average: $100 per inlet Range: $50 - $150 References: SWRPC, 1991; Denver COG cited in SWRPC, 1991; Virginia, 1991; EPA cited in SWRPC, 1991	Average: 60% Range: 20% - 100% References: SWRPC, 1991; Denver COG cited in SWRPC, 1991	$150 per inlet
Construction Entrance	Removes sediment from vehicles wheels.	Average: NA Observed Range: NA References: None	2	Average: $2,000 each Range: $1,000 - $4,000 References: Goldman, 1986; NC State, 1990	Average: NA[e] Range: NA References: None	$1,500 each
				With washrack: Average: $3,000 each Range: $1,000 - $5,000 References: Virginia, 1991		$2,200 each

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Vegetative Filter Strip	Must have sheet flow.	Average: 70% Observed Range: 20% - 80% References: Hayes and Hairston, 1983 cited in Casman, 1990; Dillaha et al., 1989, cited in Glick et al., 1991; Virginia Department of Conservation, 1987; Nonpoint Source Control Task Force, 1983 cited in Minnesota PCA, 1989; Schueler, 1987	2	Established from existing vegetation- Average: $0 Range: $0 References: Schueler, 1987 Established from sod- Average: $11,300 per acre Range: $4,500 - $48,000 per acre References: Schueler, 1987; SWRPC, 1991	Average: NA Range: NA References: None	NA

NA - Not available.
[a] Useful life estimated as length of construction project (assumed to be 2 years)
[e] For Total Annual Cost, assume Annual Maintenance Cost=20% of construction cost.
[b] Assumes trap volume = 1800 cf/ac (0.5 inches runoff per acre).
[c] Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).
[d] Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).

Table 4-16. (Continued)

Practice	Design Constraints or Purpose	Percent Removal of TSS	Useful Life (years)[a]	Construction Cost	Annual Maintenance Cost (as % construction cost)	Total Annual Cost
Vegetative Filter Strip	Must have sheet flow.	Average: 70% Observed Range: 20% - 80% References: Hayes and Hairston, 1983 cited in Casman, 1990; Dillaha et al., 1989, cited in Glick et al., 1991; Virginia Department of Conservation, 1987; Nonpoint Source Control Task Force, 1983 cited in Minnesota PCA, 1989; Schueler, 1987	2	Established from existing vegetation- Average: $0 Range: $0 References: Schueler, 1987 Established from sod- Average: $11,300 per acre Range: $4,500 - $48,000 per acre References: Schueler, 1987; SWRPC, 1991	Average: NA Range: NA References: None	NA

NA - Not available.
[a] Useful life estimated as length of construction project (assumed to be 2 years)
[e] For Total Annual Cost, assume Annual Maintenance Cost=20% of construction cost.
[b] Assumes trap volume = 1800 cf/ac (0.5 inches runoff per acre).
[c] Assumes drainage area of 0.5 acre per 100 feet of fence (maximum allowed).
[d] Assumes drainage area of 0.25 acre per 100 feet of barrier (maximum allowed).

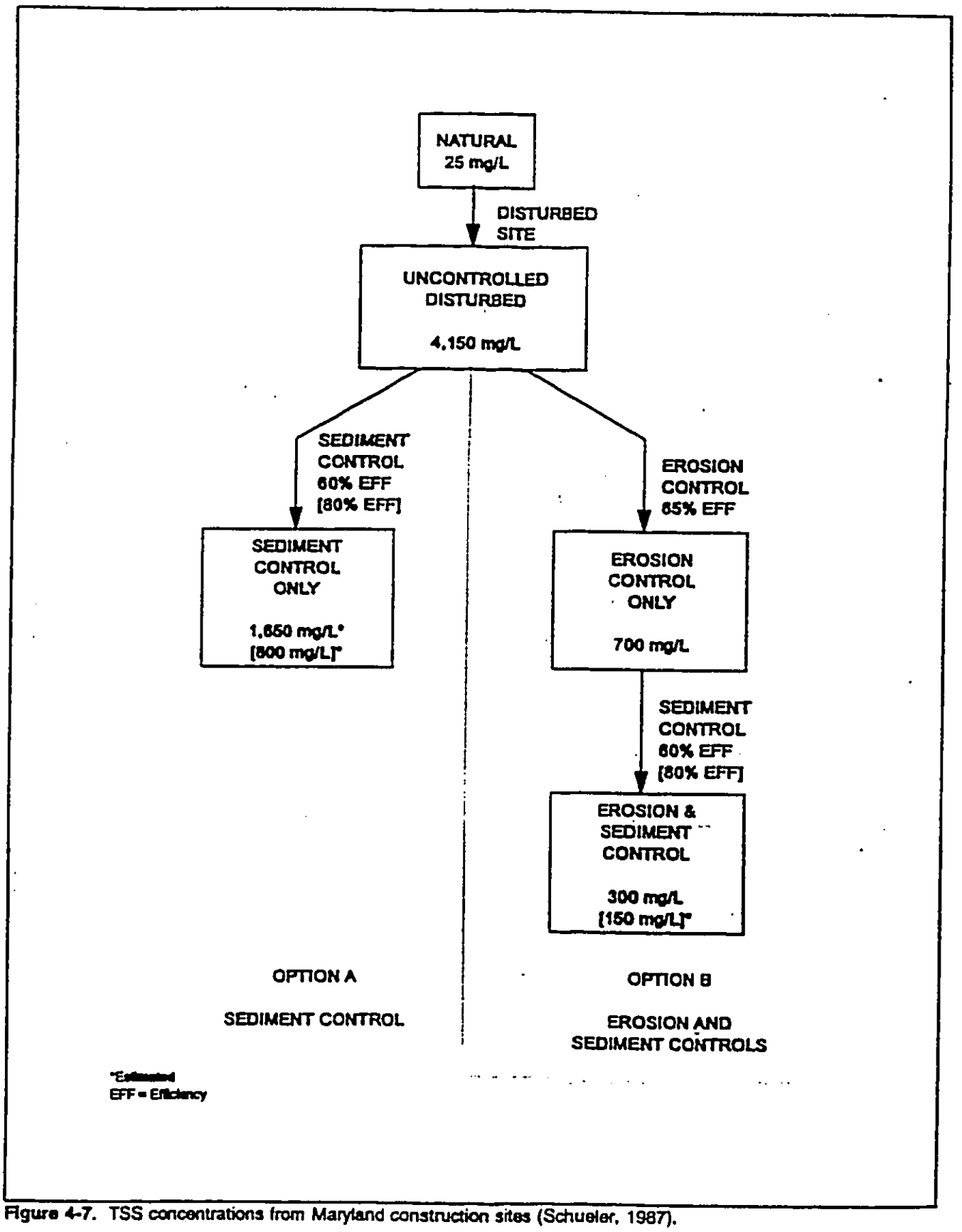


Figure 4-7. TSS concentrations from Maryland construction sites (Schueler, 1987).

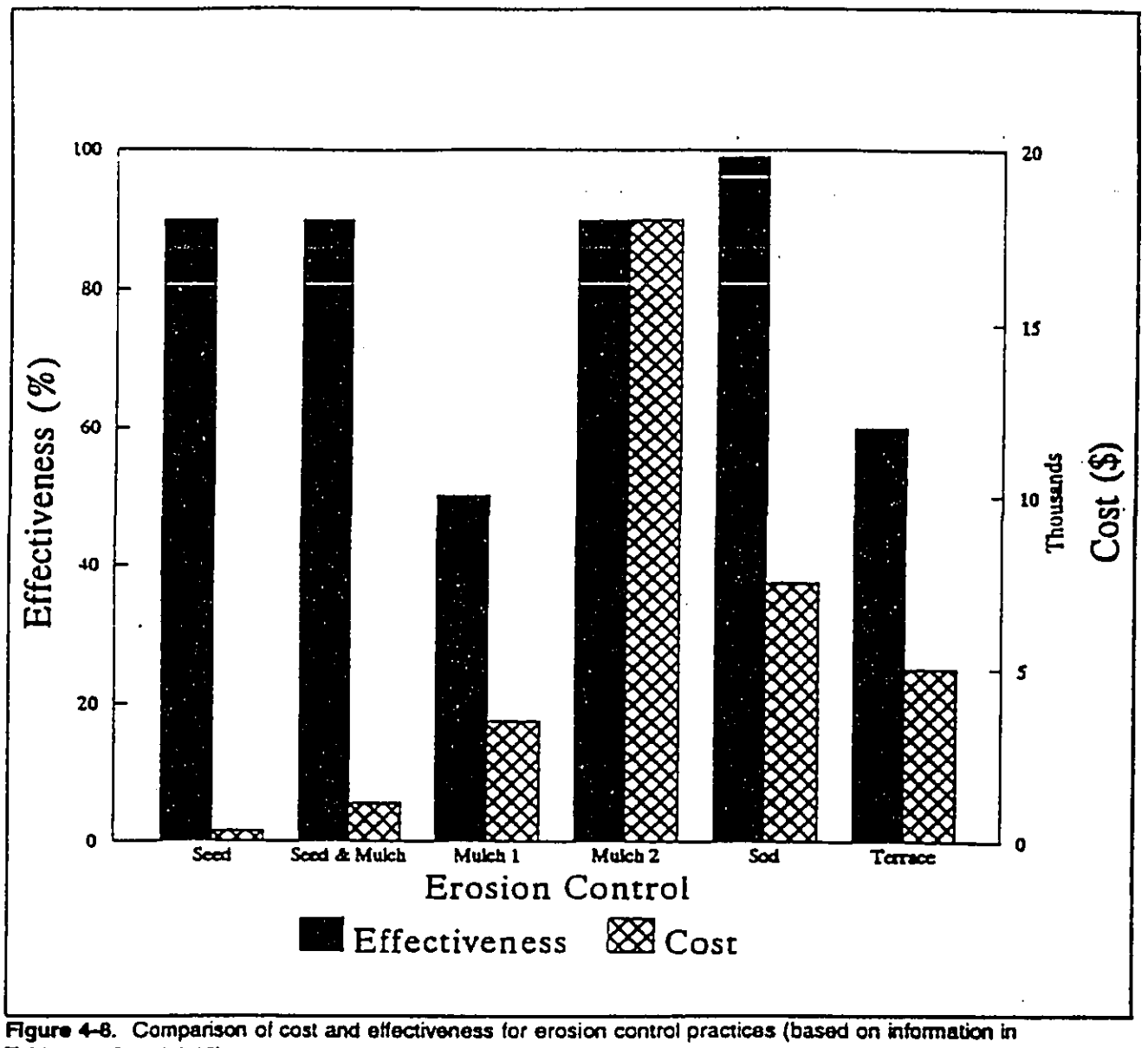


Figure 4-8. Comparison of cost and effectiveness for erosion control practices (based on information in Tables 4-15 and 4-16).

B. Construction Site Chemical Control Management Measure

(1) Limit application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

1. Applicability

This management measure is intended to be applied by States to all construction sites less than 5 acres in area and to new, resurfaced, restored, and reconstructed road, highway, and bridge construction projects. This management measure does not apply to: (1) construction of a detached single family home on a site of 1/2 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site. (NOTE: All construction activities, including clearing, grading, and excavation, that result in the disturbance of areas greater than or equal to 5 acres or are a part of a larger development plan are covered by the NPDES regulations and are thus excluded from these requirements.) Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformance with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides (insecticides, fungicides, herbicides, and rodenticides); fertilizers used for vegetative stabilization; petrochemicals (oils, gasoline, and asphalt degreasers); construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary wastes (Washington State Department of Ecology, 1991).

The variety of pollutants present and the severity of their effects are dependent on a number of factors:

(1) **The nature of the construction activity.** For example, potential pollution associated with fertilizer usage may be greater along a highway or at a housing development than it would be at a shopping center development because highways and housing developments usually have greater landscaping requirements.

(2) **The physical characteristics of the construction site.** The majority of all pollutants generated at construction sites are carried to surface waters via runoff. Therefore, the factors affecting runoff volume,

such as the amount, intensity, and frequency of rainfall; soil infiltration rates; surface roughness; slope length and steepness; and area denuded, all contribute to pollutant loadings.

(3) The proximity of surface waters to the nonpoint pollutant source. As the distance separating pollutant-generating activities from surface waters decreases, the likelihood of water quality impacts increases.

a. Pesticides

Insecticides, rodenticides, and herbicides are used on construction sites to provide safe and healthy conditions, reduce maintenance and fire hazards, and curb weeds and woody plants. Rodenticides are also used to control rodents attracted to construction sites. Common insecticides employed include synthetic, relatively water-insoluble chlorinated hydrocarbons, organophosphates, carbamates, and pyrethrins.

b. Petroleum Products

Petroleum products used during construction include fuels and lubricants for vehicles, for power tools, and for general equipment maintenance. Specific petroleum pollutants include gasoline, diesel oil, kerosene, lubricating oils, and grease. Asphalt paving also can be particularly harmful since it releases various oils for a considerable time period after application. Asphalt overloads might be dumped and covered without inspection. However, many of these pollutants adhere to soil particles and other surfaces and can therefore be more easily controlled.

c. Nutrients

Fertilizers are used on construction sites when revegetating graded or disturbed areas. Fertilizers contain nitrogen and phosphorus, which in large doses can adversely affect surface waters, causing eutrophication.

d. Solid Wastes

Solid wastes on construction sites are generated from trees and shrubs removed during land clearing and structure installation. Other wastes include wood and paper from packaging and building materials, scrap metals, sanitary wastes, rubber, plastic and glass, and masonry and asphalt products. Food containers, cigarette packages, leftover food, and aluminum foil also contribute solid wastes to the construction site.

e. Construction Chemicals

Chemical pollutants, such as paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, soil additives used for stabilization, and concrete-curing compounds, may also be used on construction sites and carried in runoff.

f. Other Pollutants

Other pollutants, such as wash water from concrete mixers, acid and alkaline solutions from exposed soil or rock, and alkaline-forming natural elements, may also be present and contribute to nonpoint source pollution.

Revegetation of disturbed areas may require the use of fertilizers and pesticides, which, if not applied properly, may become nonpoint source pollutants. Many pesticides are restricted by Federal and/or State regulations.

Hydroseeding operations, in which seed, fertilizers, and lime are applied to the ground surface in a one-step operation, are more conducive to nutrient pollution than are the conventional seedbed-preparation operations, in which fertilizers and lime are tilled into the soil. Use of fertilizers containing little or no phosphorus may be required by

local authorities if the development is near sensitive waterbodies. The addition of lime can also affect the pH of sensitive waters, making them more alkaline.

Improper fueling and servicing of vehicles can lead to significant quantities of petroleum products being dumped onto the ground. These pollutants can then be washed off site in urban runoff, even when proper erosion and sediment controls are in place. Pollutants carried in solution in runoff water, or fixed with sediment crystalline structures, may not be adequately controlled by erosion and sediment control practices (Washington Department of Ecology, 1991). Oils, waxes, and water-insoluble pesticides can form surface films on water and solid particles. Oil films can also concentrate water-soluble insecticides. These pollutants can be nearly impossible to control once present in runoff other than by the use of very costly water-treatment facilities (Washington Department of Ecology, 1991).

After spill prevention, one of the best methods to control petroleum pollutants is to retain sediments containing oil on the construction site through use of erosion and sediment control practices. Improved maintenance and safe storage facilities will reduce the chance of contaminating a construction site. One of the greatest concerns related to use of petroleum products is the method for waste disposal. The dumping of petroleum product wastes into sewers and other drainage channels is illegal and could result in fines or job shutdown.

The primary control method for solid wastes is to provide adequate disposal facilities. Erosion and sediment control structures usually capture much of the solid waste from construction sites. Periodic removal of litter from these structures will reduce solid waste accumulations. Collected solid waste should be removed and disposed of at authorized disposal areas.

Improperly stored construction materials, such as pressure-treated lumber or solvents, may lead to leaching of toxics to surface water and ground water. Disposal of construction chemicals should follow all applicable State and local laws that may require disposal by a licensed waste management firm.

3. Management Measure Selection

This management measure was selected based on the potential for many construction activities to contribute to nutrient and toxic NPS pollution.

This management measure was selected because (1) construction activities have the potential to contribute to increased loadings of toxic substances and nutrients to waterbodies; (2) various States and local governments regulate the control of chemicals on construction sites through spill prevention plans, erosion and sediment control plans, or other administrative devices; (3) the practices described are commonly used and presented in a number of best management practice handbooks and guidance manuals for construction sites; and (4) the practices selected are the most economical and effective.

4. Practices

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

a. Properly store, handle, apply, and dispose of pesticides.

Pesticide storage areas on construction sites should be protected from the elements. Warning signs should be placed in areas recently sprayed or treated. Persons mixing and applying these chemicals should wear suitable protective clothing, in accordance with the law.

Application rates should conform to registered label directions. Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State, and local regulations that govern their usage, handling, storage, and disposal. Pesticides and herbicides should be used only in conjunction with Integrated Pest Management (IPM) (see Chapter 2). Pesticides should be the tool of last resort; methods that are the least disruptive to the environment and human health should be used first.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage, and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.

Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage area, and notifying neighboring property owners prior to spraying.

b. *Properly store, handle, use, and dispose of petroleum products.*

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Oil and oily wastes such as crankcase oil, cans, rags, and paper dropped into oils and lubricants should be disposed of in proper receptacles or recycled. Waste oil for recycling should not be mixed with degreasers, solvents, antifreeze, or brake fluid.

c. *Establish fuel and vehicle maintenance staging areas located away from all drainage courses, and design these areas to control runoff.*

Proper maintenance of equipment and installation of proper stream crossings will further reduce pollution of water by these sources. Stream crossings should be minimized through proper planning of access roads. Refer to Chapter 3 for additional information on stream crossings.

d. *Provide sanitary facilities for constructions workers.*

e. *Store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff of pollutants and contamination of ground water.*

f. *Develop and implement a spill prevention and control plan. Agencies, contractors, and other commercial entities that store, handle, or transport fuel, oil, or hazardous materials should develop a spill response plan.*

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Spill control plan components should include:

- Stop the source of the spill.
- Contain any liquid.
- Cover the spill with absorbent material such as kitty litter or sawdust, but do not use straw. Dispose of the used absorbent properly.

g. *Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.*

Thinners or solvents should not be discharged into sanitary or storm sewer systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled. Do not discharge any solvents into sewers.

Washout from concrete trucks should be disposed of into:

- A designated area that will later be backfilled;
- An area where the concrete wash can harden, can be broken up, and then can be placed in a dumpster; or
- A location not subject to urban runoff and more than 50 feet away from a storm drain, open ditch, or surface water.

Never dump washout into a sanitary sewer or storm drain, or onto soil or pavement that carries urban runoff.

n. *Develop and implement nutrient management plans.*

Properly time applications, and work fertilizers and liming materials into the soil to depths of 4 to 6 inches. Using soil tests to determine specific nutrient needs at the site can greatly decrease the amount of nutrients applied.

i. *Provide adequate disposal facilities for solid waste, including excess asphalt, produced during construction.*

j. *Educate construction workers about proper materials handling and spill response procedures. Distribute or post informational material regarding chemical control.*

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Appendices

Appendix A

Archaeological Assessment Report

AN ARCHAEOLOGICAL ASSESSMENT FOR THE SCHEDULED IMPROVEMNETS TO THE HANA HIGH AND ELEMENTARY SCHOOL CAMPUS, WAKIU *AHUPUA`A*, HANA DISTRICT, ISLAND OF MAUI (TMK 1-3-06: Parcel 8)

Prepared on behalf of

State of Hawai`i
Dept. of Accounting and General Services

Prepared by

Xamanek Researches
Pukalani, Maui

Erik Fredericksen
Demaris Fredericksen

4 March 2004

INTRODUCTION

Mr. Michael Munekiyo of Munekiyo & Hiraga, Inc. contacted Xamanek Researches about a State of Hawai'i Department of Accounting and General Services project for proposed improvements to the Hana High and Elementary School campus in the spring of 2003 (TMK 1-3-06: Parcel 8). At this time, it was not known what level of work was necessary for the study parcel (Figures 1, 2 and 3). Proposed impact areas included improvements to the upper playfield, the installation of playground equipment, the expansion of the main parking lot, and the construction of a future classroom building and an associated leach field (Figure 3). We contacted Dr. Melissa Kirkendall of the State Historic Preservation Division (SHPD), in order to discuss the appropriate level of study for the proposed project area. It was subsequently determined that an archaeological assessment would likely be sufficient, because the general area had been impacted by previous grading and construction activities associated with the construction of the school campus. However, Dr. Kirkendall indicated that given the location of the school campus, additional work might be required, pending results of the archaeological assessment. Mr. Michael Munekiyo asked that we submit a proposal for the necessary work, and we were subsequently awarded the contract to carry out an archaeological assessment for the Hana High and Elementary School project.

The school campus is located in Wakiu *Ahupua'a*, Hana District, Island of Maui (TMK: 1-3-06: Parcel 8) [Figures 1-3]. As previously noted above, the study area is currently utilized as a high school and an elementary school. The following report presents the results of our archaeological assessment for the project area.

The Hana High and Elementary School property borders the Hana Highway and extends to the northeast of this road. The school is bordered by mostly undeveloped privately owned agricultural property on its northwestern and southeastern sides and State land on the campus's northeastern side. The Hana coastline lies an estimated 300 meters to the northeast of the campus. A small drainage area lies to the southeast of the school grounds (Photo 5).[3] It is estimated that this near coastal portion of Maui receives between 100 and 120 inches of annual rainfall.

BACKGROUND INFORMATION

Previous Archaeology in the general area

In general, there has been relatively little archaeological investigation in the culturally rich Hana region. There has been one previous walk through of the project area prior to the development of the campus in 1972 (Bevacqua, R.). This early study noted one partially destroyed habitation structure of unknown age. The nearest known sites in Wakiu *ahupua`a* include numbers of features contained in Wai`anapanapa State Park, which lies on the *makai* side of the school grounds.[4] In addition, a probable precontact through post-contact cemetery lies to the northeast of the campus in Wakiu *ahupua`a*. Other sites that are contained in the adjacent Kawaipapa *ahupua`a* to the southeast of the school grounds include Kauleilepo Heiau (SIHP[5] 50-50-13-110), Kauleiula Heiau (Site 109), Waikoloa Platform (Site 107), and Kaianalimu habitation site (Site 1491). In addition, a post-contact cemetery lies well southeast of the school campus on the southern side of Kawaipapa Gulch.

Four studies have been carried out in Wakiu *ahupua`a*. These studies include a 1970 reconnaissance survey of Wai`anapanapa State Park, a 1975 walk through study of a portion of a large burial area to the northeast of the campus, a 1984 reconnaissance of this burial area and cemetery, and a 2002-2003 inventory survey of Wai`anapanapa State Park.

Wai`anapanapa State Park lies as close as 100 meters to the northeast of the current project area. Richard Pearson (1970) carried out a reconnaissance survey of this park. He identified 34 archaeological features within the park during this earlier survey, including a *heiau*, a trail, a petroglyph, five shelter caves, six *ahu*, two U-shaped enclosures, three shelter walls, two *hale* platforms, and several walls and enclosures.

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[3] This area is presently used for pasture by cattle and goats.
[4] A total of 59 sites with at least 119 features have been reported in a draft inventory survey of the park that was conducted in 2002-2003.
[5] SIHP = State Inventory of Historic Places.

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CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

AN ARCHAEOLOGICAL ASSESSMENT FOR THE SCHEDULED IMPROVEMNETS TO THE HANA HIGH AND ELEMENTARY SCHOOL CAMPUS, WAKIU *AHUPUA`A*, HANA DISTRICT, ISLAND OF MAUI (TMK 1-3-06: Parcel 8)

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THE STUDY AREA

Erik Fredericksen visited the project area on 25 November and again on 22 December 2003 to inspect the school grounds. The bulk of the fieldwork for this archaeological assessment was conducted on the former date, while additional photographs were taken on the latter date. At the time of the inspection, it was possible to view the portions of the campus that are scheduled for the improvements noted previously in this report. It is estimated that the developed portion of the project area ranges from c. 50 feet to 100 feet AMSL. The study area is composed of sloping land, the majority of which appears to have been impacted by earthmoving activities associated with the development of the existing campus.

The campus lies to the northwest of an area that essentially is comprised of weathered *a`a* flow and generally thin soil cover.[1] Undisturbed portions of land adjacent to the school campus and some sections to the southeast and west of the study area are heavily vegetated. In addition, the lower (northeastern) portion of the school property is undeveloped and is overgrown with what appear to be secondary growth trees (Photo 5).[2] The bulk of the plants observed in the vicinity of the developed portion of the campus survey area consisted of non-native species, including grasses and annual weeds near the ground surface, along with various landscaping trees on the campus. However, isolated *kukui* (*Aleurites moluccana*) and *hala* (*Pandanus tectorius*) trees were noted in some areas near the campus. Several varieties of landscaping plants—including avocado (*Persea americana*), mango (*Mangifera indica*) and Monkeypod (*Albizia saman*) trees—were noted on and near the school grounds.

It was evident at the time of the surface inspection that the general campus area had been previously disturbed by the development of the school. In particular, three of the areas previously listed appeared to have been substantially altered in the past. These previously impacted areas include the upper playground area adjacent to and north of Hana Highway (Photos 1 and 2), the proposed location for new playground equipment, and the proposed parking lot expansion (Figure 3). The site of the planned leach field for the planned classroom building was located in a grass field on the *makai* (northeastern) portion of the campus (Photos 4 and 5). There are no construction proposals for the heavily vegetated, undeveloped northeastern section of the school property at the writing of this archaeological assessment report (Photo 4).

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[1] This relatively barren area that lies to the southwest of Hana High and Elementary School contains the Hana Landfill facility. Xamanek Researches carried out an archaeological assessment of the landfill facility in the summer of 2003 (Fredericksen, July 2003).

[2] It is estimated that 20% of the school parcel is undeveloped.

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BACKGROUND INFORMATION

Previous Archaeology in the general area

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Four studies have been carried out in Wakiu *ahupua`a*. These studies include a 1970 reconnaissance survey of Wai`anapanapa State Park, a 1975 walk through study of a portion of a large burial area to the northeast of the campus, a 1984 reconnaissance of this burial area and cemetery, and a 2002-2003 inventory survey of Wai`anapanapa State Park.

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A recent inventory survey of Wai`anapanapa State Park (c. 111 acres) was carried out in 2002-2003 (Haun et al., 2003 [Draft]) and is currently under review by the SHPD. This more intensive study documented at total of 59 sites with at least 119 features. Sites included walls, rock cairns, rock mounds, terraces, enclosures, U- and L-shaped enclosures, C-shapes, platforms, trails, stone uprights, overhangs, caves, alignments, cemeteries, and miscellaneous (modern) sites. Functional types included temporary and permanent habitation, ceremonial, agriculture, burial, marker, boundary, rock art, livestock containment, and transportation. As noted previously, this report is in draft form and is currently under review by the SHPD.

Two other studies carried out in Wakiu *ahupua`a* include a reconnaissance survey by Kennedy in 1984, and an earlier walk through by Morton and Lum Ho in 1975. Both studies took place to the northeast of the school grounds and partly described a large burial area.

Several other archaeological investigations have been carried out in the general area to the southeast of Hana High and Elementary School in the adjacent Kawaipapa *ahupua`a*. One of these projects consists of a 1984 reconnaissance study of a c. 14-acre parcel of land to the southeast (Landrum, 1984). There were no significant precontact cultural resources located during this reconnaissance level investigation. A second reconnaissance survey was carried out by Kennedy in 1990. This study documented Kauleiula *Heiau* (Site 109). The closest archaeological inventory surveys conducted in the vicinity of the Hana High and Elementary School in Kawaipapa *ahupua`a* include a parcel that lies nearly 1 km to the southwest (*mauka*) of the school campus (i.e. the Hana Medical Center), and the Hana Fire Station (southwest of Hana Medical Center).

The Hana Medical Center inventory survey was conducted by PHRI in 1993 (Henry and Graves, 1993). This archaeological study located four sites—two complexes (Site 3150 and Site 3153), and two boundary walls (Site 3151 and Site 3152). Sites 3150 and 3153 were interpreted as temporary habitation areas that appeared to have been utilized periodically, possibly during the plantation era. All sites were interpreted as post-contact features.

The next closest inventory survey was conducted for the Hana Fire Station complex in 1993 by Xamanek Researches. This parcel of land lies slightly farther to the southwest of the school. There were no significant material culture remains encountered during testing on this previously disturbed portion of land (Fredericksen et al., 1993).

Settlement Pattern and Land Use

Previous archaeological work in the general vicinity of the school campus suggests that this coastal portion of Maui was likely utilized in precontact times for permanent and temporary habitation, agriculture, coastal marine exploitation and ceremonial purposes (Fredericksen et al., 1993; Haun et al., 2003 [Draft]; Henry and Graves, 1993; Kirch, 1985; Pearson, 1970). It does not appear that much of the more

rugged inland portion of the Hana coast was heavily utilized for post-contact commercial sugar and ranching activities in this area, because it contains little soil and is very rocky.

Land Commission Awards and Grants

There are two Land Commission awards and two Land Grants that lie adjacent to or in close proximity to the Hana High and Elementary School project area. The following information is from the Waihona `Aina data base (www.waihona.com).

LCA 4666, R.P. 6566 [Puakamalii Wakiu Hana; 1 *apana*; 5.14 acres]
Claimant: Puhake

N.R. 189v6
To the Land Commissioners: I hereby tell you of my `ili in Waikiu, East Maui. The name of the `ili is Puakamalii. On the east is the Government Road, one the southwest is the land of Kamai, on the northeast is the land of Kuaana, on the west id Opuakau. This land was given me by Aki, and I desire to secure it for myself and my heirs forever.
PUHAKE

F.T. 263v8
Kaahaaina, sworn, Aki gave the claimant the ili "Puakanalii" in Wakiu in the year 1865.

[It is bounded]
Mauka by waste land
Koolau by Kupuka's land
Makai by the highway
Kipahulu by Kamai's land

LCA 4931 [Kawaokapuna Hana; 1 ap.--1.6 Acs.; Haliiea Wakiu Hana; 1 ap.—5 Acs.]
Claimant: Kaahina

N.R. 222v6
Greetings to the Land Commissioners in Honolulu, Oahu. I hereby state to you my claim for land at Waikui in Hana. The dimensions of that claim are 13 chains long by 11 chains wide. The main defect is a ridge of Aa lava which runs along the length, 4 chains. On the east House lot of Aki, on the West is a government Road, on the north east is the trail going down to the sea, on the southwest is the large hala grove of Haloaka.

Our right to this land was acquired in the year 1832, when the Fort was built in Lahaina, and we have had the right to it for 15 years. In 1845 the land became mine, when I was the konohiki of that land. This claim was fenced on one side by our makuas and the punaluas. I am thinking of enclosing the land with a fence/or wall/. Kinolau gave me the land and he and Kaiheekai are the witnesses. I desire to secure this land for myself and my descendants.
KAAHAAINA

Haiku, 22 Dec. 1847

N.T. 399v5
Puhake, sworn, Haliea and a half of Honoakala ili are for Kaahaaina. He received this land in 1819 and lived there at that time. Puhake is on this land.

Mauka by Road
Koolau to descend road
Makai by Kolokolo's land
Kipahulu by Kahalaowaka

House lot at Kawakapuna
Mauka by Naohe
Koolau by Naaloko'a land
Makai by Government road
Kipahulu by Opunui.

No one has objected to Kaahaaina.

Additionally, Grant 2405 was awarded to Roland H.C. Chang, and is adjacent to and northwest of campus, as well as Grant 290, which is located across Hana Hwy.[6]

Expected Site Types in Study Area

Given that the school grounds is located in an area that has been previously impacted by clearing actions associated with the development of Hana High and Elementary School, we did not anticipate finding any above surface architectural remains, with the possible exception of remnants of trails, enclosures and/or ranch-era walls on the peripheral portions of the campus and in nearby areas.

FIELD METHODS

As mentioned earlier in this report, the pedestrian inspection of the project area was undertaken on 25 November and 22 December 2003. Pedestrian sweeps were spaced c. 5 meters apart and followed the contour of the existing built-up portion of the school campus in each of the five impact areas. Surface visibility was excellent to good, and was dependent upon vegetative cover. Written notes were kept and photographs were taken with a digital camera. Erik Fredericksen carried out the assessment-level

[6] Information via personal communication from Mitch Hirano, Munekiyo and Hiraga, Inc.

fieldwork, and was also the project director for this archaeological study. There was no subsurface testing carried out for the Hana High and Elementary School archaeological assessment study.

RESULTS

There were no significant material culture remains noted during the pedestrian inspection of the surface of the developed campus. In addition, there were no significant above ground structural remains noted on the proposed improvement portions of the school grounds. However, a possible rock enclosure remnant was noted in a drainage area portion of a pasture in an adjacent parcel to the southwest of the school grounds. This possible site lies in the general vicinity of the planned leach field for the future classroom building on the northwestern portion of the campus. In addition, a possible rock alignment lies on a heavily vegetated parcel that lies adjacent to and northwest of the school.

SUMMARY AND CONCLUSIONS

Based on the results of the walkover, it does not appear likely that significant material culture remains are contained on some portions of the project area that are proposed for improvements. Areas that have been heavily impacted include the upper playfield and the playground equipment location (Figure 3). Portions of the campus that have likely been less disturbed include the planned parking lot expansion area, the proposed location for the future classroom building and its leach field. The lower grassy field of the campus lies next to the drainage area that contains a possible rock enclosure. This pasture does not appear to have been heavily disturbed in the past. While not directly part of this project, it should be noted that the northeastern portion of the campus is undeveloped and contains some secondary growth tree cover as well as very thick surface vegetation.

Mitigation Recommendations

It is recommended that the State Historic Preservation Division evaluate any future Department of Accounting and General Services improvement proposals for the Hana High and Elementary School campus. It is recommended that precautionary monitoring be undertaken during earthmoving activities associated with the construction of the parking lot expansion, the future classroom building and the installation of the leach field. No further work is recommended for the heavily impacted upper field or the proposed locations for new playground equipment. In addition, it may be necessary to conduct archaeological inventory survey level investigation on the heavily vegetated undeveloped northeastern portion of the school campus, should this area ever be developed.

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RECEIVED AS FOLLOWS

PHOTOGRAPHS

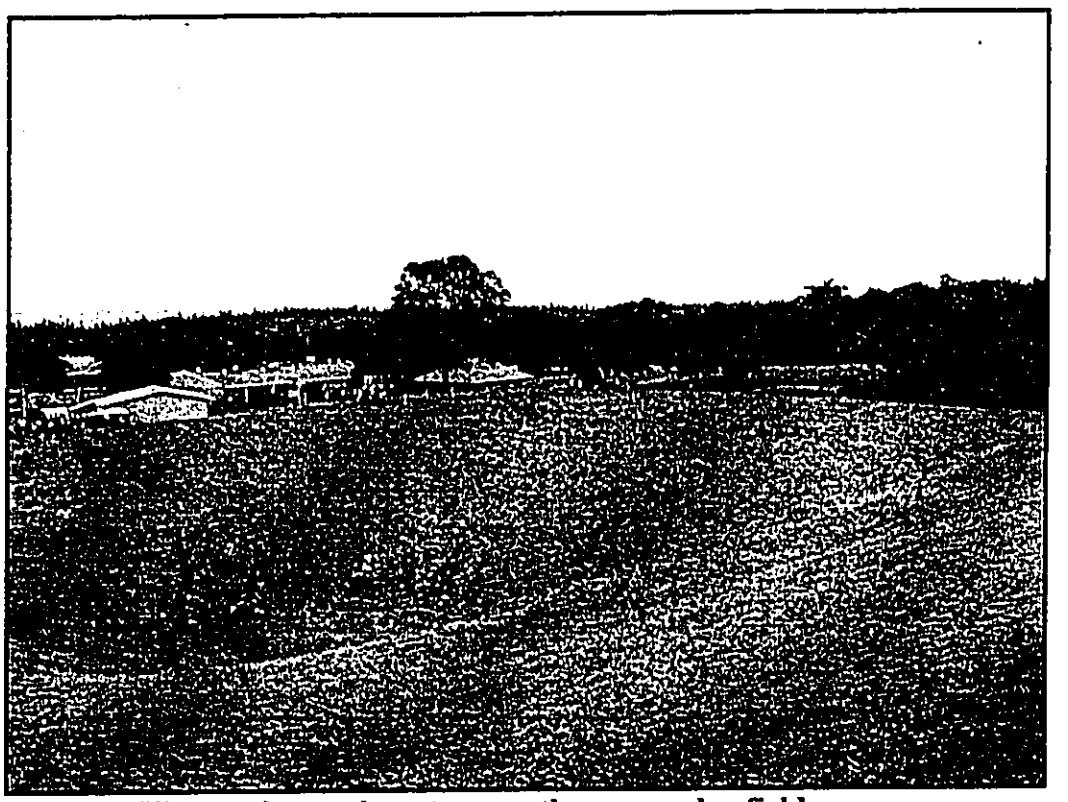

Photo 1 – View to the southwest across the upper play field.

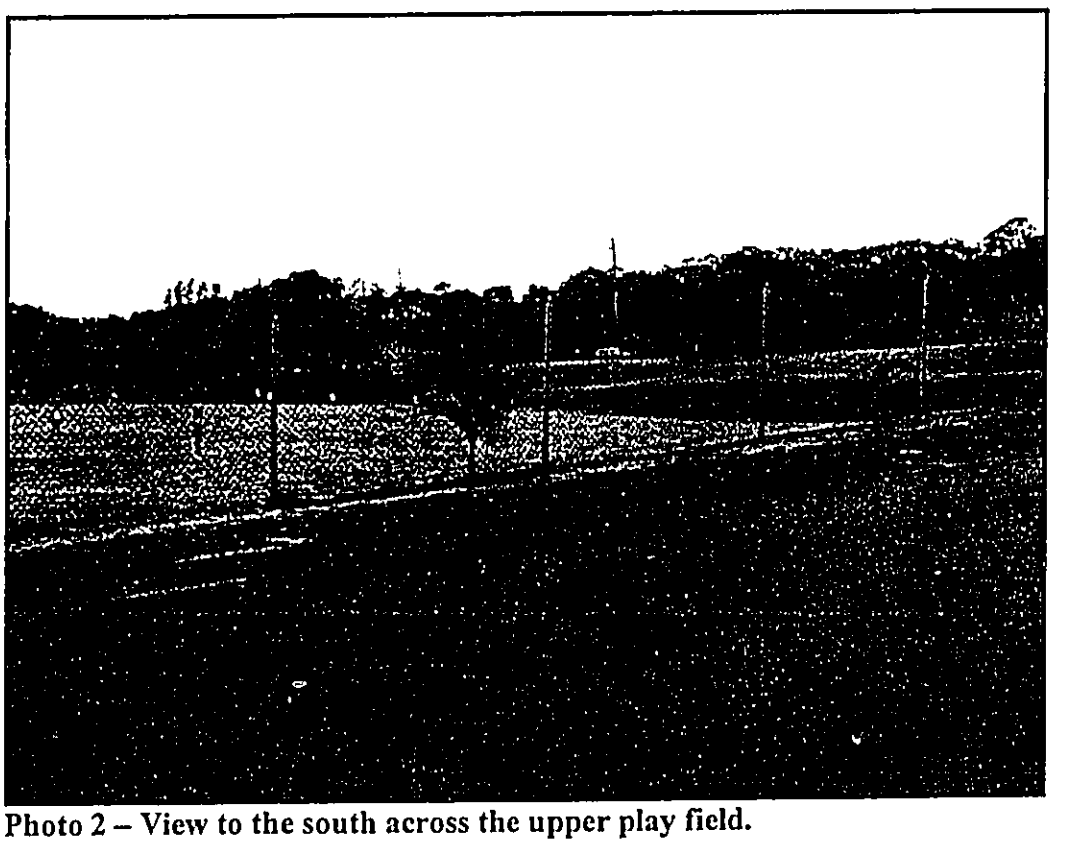

Photo 2 – View to the south across the upper play field.

RECEIVED AS FOLLOWS

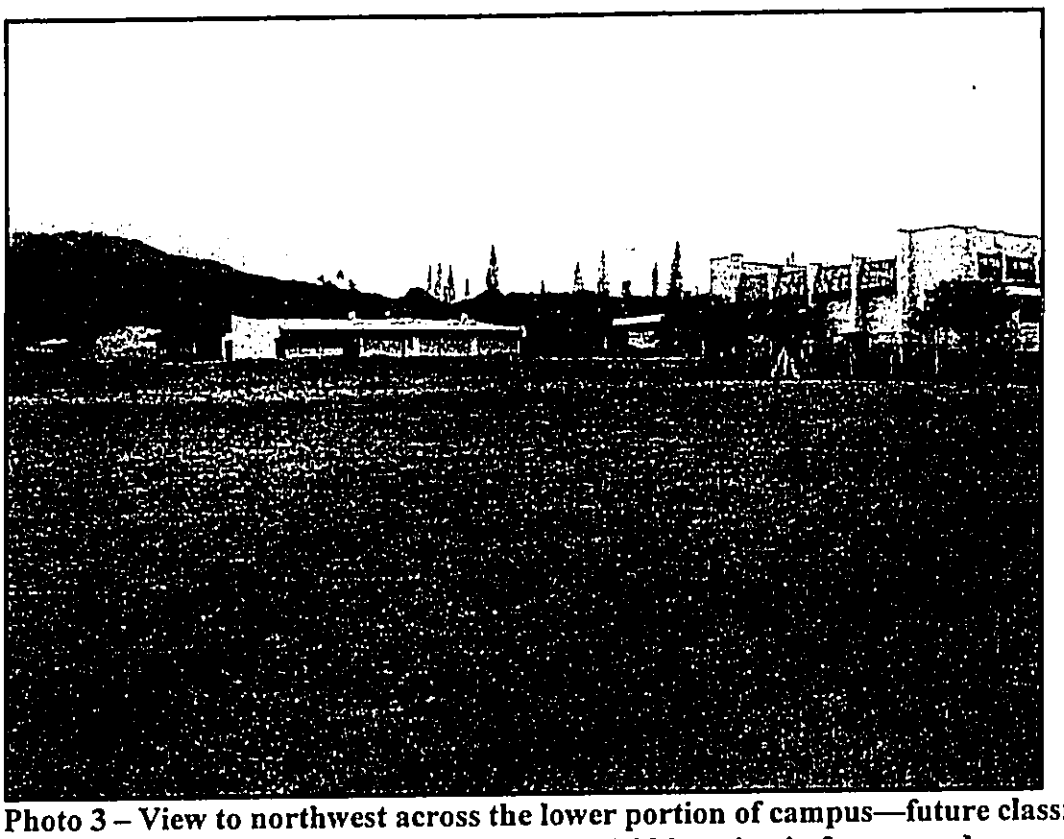

Photo 3 – View to northwest across the lower portion of campus—future classroom building site near center right, future leach field location in foreground.

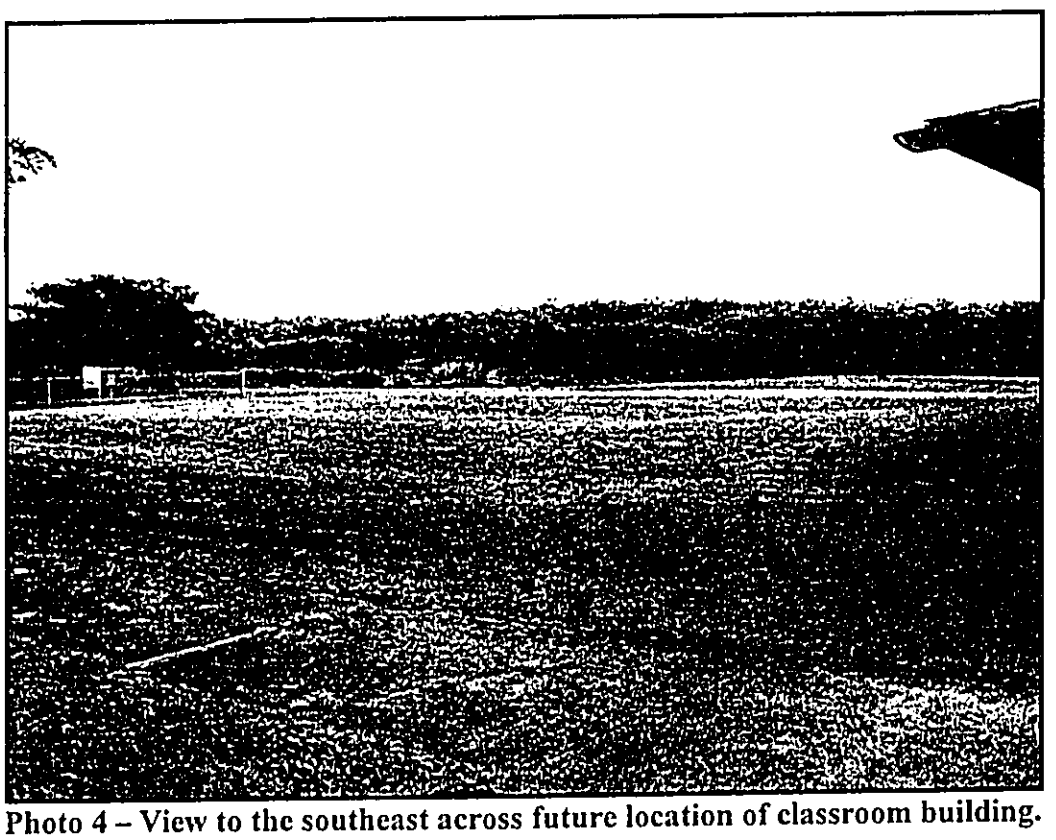

Photo 4 – View to the southeast across future location of classroom building.

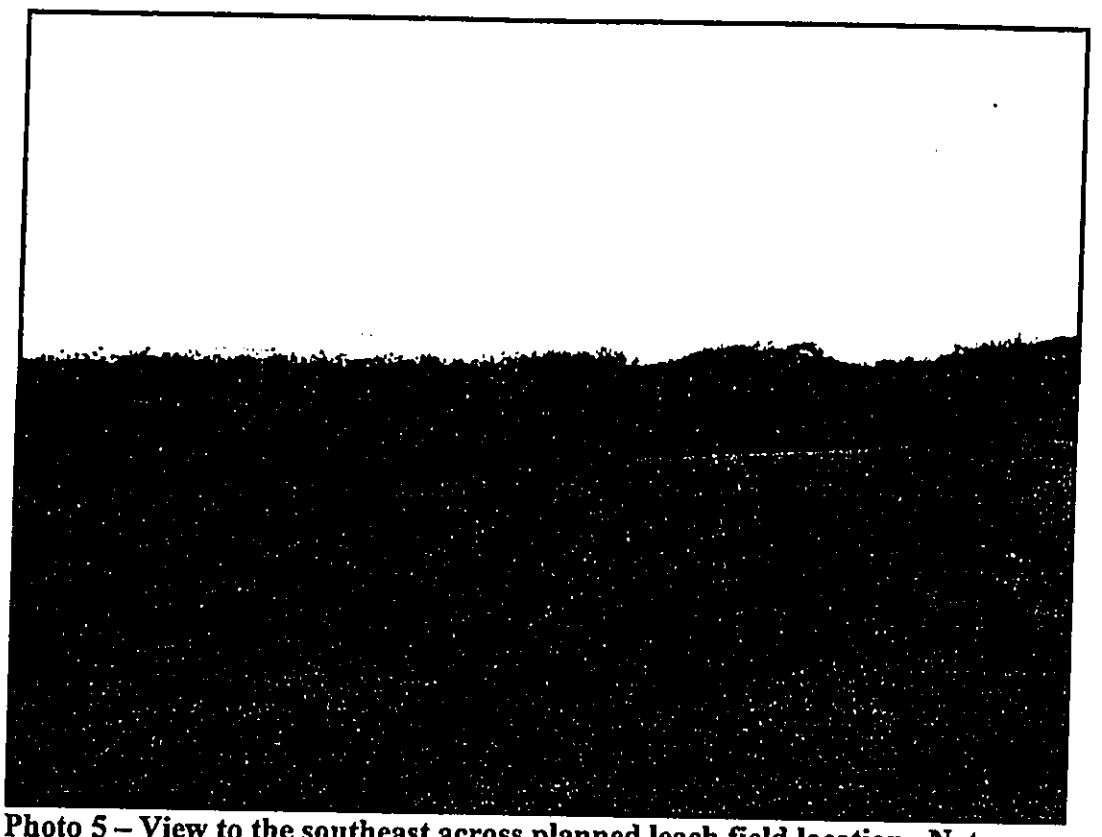

Photo 5 – View to the southeast across planned leach field location. Note drainage area in center background, off of campus.

Appendix B

Preliminary Engineering Report, Mitsunaga & Associates, Inc.

WATER SYSTEM REPORT

HANA HIGH & ELEMENTARY SCHOOL
Hana, Maui, Hawaii
4111 Hana Highway
(TMK: 1-3-06:08)

WATER SUPPLY DEMANDS

Service Reservoir: Bottom Elev.= 307 ft.
(Per Department of Water Supply)

FLOW REQUIREMENTS:
(Reference: Mechanical Flow Requirements/ Fixture Counts)

Fixture Units: 157.4 f.u.
Flow Volume: 82 gallons per minute (gpm) – Flush Valve System

WATER SUPPLY REQUIREMENTS:
(Reference: Water System Standards, Department of Water Supply, 2002)

School Use: 1700 gallons/acre or 60 gallons/student (Table 100-18)
Building/ Facility Area = 0.70 acres
Students = 346

(1700 gal/acre) x acres = gallons per day (gpd)

- Average Daily Demand: 1,190 gpd
- Maximum Day Demand: 1.5 x 1,190 gpd = 1,785 gpd (Table 100-20)
- Peak Hour Demand: 3.0 x 1,190 gpd = 3,570 gpd (Table 100-20)

Fire flow: 2000 gpm, 2 hrs, 250' spacing of fire hydrants. (Table 100-19)

LANDSCAPE WATER DEMANDS:
(Per Landscape Architect – Email dated 2/26/04)

Total Estimated Landscape Area: 23,800 SF

- Estimated Average Daily Water Usage: 2,580 gpd
- Estimated Maximum Demand: 60 gpm

WATER SYSTEM REPORT

HANA HIGH & ELEMENTARY SCHOOL
Hana, Maui, Hawaii
4111 Hana Highway
(TMK: 1-3-06:08)

WATER SUPPLY DEMANDS

Service Reservoir: Bottom Elev.= 307 ft.
(Per Department of Water Supply)

FLOW REQUIREMENTS:
(Reference: Mechanical Flow Requirements/ Fixture Counts)

Fixture Units: 157.4 f.u.
Flow Volume: 82 gallons per minute (gpm) – Flush Valve System

WATER SUPPLY REQUIREMENTS:
(Reference: Water System Standards, Department of Water Supply, 2002)

School Use: 1700 gallons/acre or 60 gallons/student (Table 100-18)
Building/ Facility Area = 0.70 acres
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(Per Landscape Architect – Email dated 2/26/04)

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WASTEWATER SYSTEM REPORT

HANA HIGH & ELEMENTARY SCHOOL
Hana, Maui, Hawaii
4111 Hana Highway
(TMK: 1-3-06:08)

WASTEWATER SYSTEM

References:

Design Standards of the Department of Wastewater Management, Vol. 1, (DSDWM) Department of Wastewater Management, C&C of Honolulu, July 1993

IWS Design Reference Guide (IWS), Hawaii State Department of Health Wastewater Branch, 1994.

The existing wastewater disposal method of the school is by cesspool. The State Department of Health requires that all new projects install a septic system. The size of the septic system will be based on the following

ESTIMATED WASTEWATER DEMANDS:

Assumptions: 346 students
25 gallons per student per day (Paragraph 22.2.2.j, DSDWM)
60 minute percolation rate

Average Wastewater Flow (Q): 346 * 25 = 8,650 gallons per day

Septic tank size: 1000 + (Q – 800) * 1.25 (Table 1, IWS)
1000 + (8,650 – 800) * 1.25 = 10,812.5 → 11,000 gallons

Equivalent Bedrooms: 8,650 gpd/ 200 gpd = 43.25 → 44 equivalent bedrooms
Leach field size: 330 sf / equivalent bedroom * 44 = 14,520 sf

DRAINAGE REPORT

HANA HIGH & ELEMENTARY SCHOOL
Hana, Maui, Hawaii
4111 Hana Highway
(TMK: 1-3-06:08)

Grading and Drainage

The project is located within the Hana District of Maui along Hana Highway. The purpose of the grading is to prepare the site for a new 6-classroom building, in which a building structure and a fire department access lane will be provided.

The grading of the 0.70 acre project site will be in conformance with the County of Maui grading and drainage requirements and the recommendations of the Geotechnical Engineer. On-site fill meeting the specification requirements will be utilized within the project limits, as directed by the Engineer. Site grading will have slopes of 3:1 or flatter.

Existing Conditions

The existing site is presently developed and open with limited ground cover. A moderately sloping terrain utilizes overland sheet flow to direct accumulated runoff from the site. Presently, the area surrounding the proposed building has been developed and stormwater runoff flows makai off of the property.

The proposed project area does not fall within any 100-year flood zone or within the Coastal High Hazard Area, as shown on FIRM Panel 150003 0310 (June 1, 1981). The total existing runoff generated by the project site based on a 10-year flow is 2.62 cubic feet per second (cfs).

Proposed Drainage Plan

The intent of the drainage plan is to minimize the drainage impact of the proposed classroom building, and provide adequate storm water disposal for on-site generated runoff. The on-site drainage system will be designed to comply with the County of Maui Drainage Standards and Standard Details.

Overland sheet flow, drain inlets, and underground drain lines will be used to intercept the on-site runoff. The accumulated runoff will be directed to landscaped and unimproved vegetated areas. The flow generated within the project site will increase from 2.62 cfs to 3.60 cfs due to the proposed development and the increase in impervious surface area. This increase in flow is unlikely to impact any drainage system because the runoff sheet flows into a heavily forested area in the Waianapanapa State Park approximately 2000' from the ocean. The County of Maui's drainage standards may require that the increase in runoff be detained to limit the runoff to pre-construction levels. Any detention requirements will be addressed during the design phase of the project.

Drainage Summary

Item	*Description*	*Area (acres)*	*Runoff (cfs)*
1E	Existing Conditions	0.70 acres	2.62 cfs
1P	Proposed Development	0.70 acres	3.60 cfs
	Net Increase in runoff	N/A	0.98 cfs

The total increase in runoff due to the proposed improvements based on a 10-year storm is 0.98 cfs. This increase is due to the construction of additional impervious surface at the classroom and access lane, and will not affect the existing flow conditions within the project area. The additional runoff attributed to the proposed project will sheet flow into a heavily forested portion of the Waianapanapa State Park. Therefore, no adverse affects to off-site or "downstream" drainage systems are anticipated with the proposed improvements.

References:

1. Flood Insurance Rate Map (FIRM), County of Maui.

2. *Rules for the Design of Storm Drainage Facilities in the County of Maui.* Department of Public Works and Waste Management, County of Maui, November 1995.

Drainage Summary

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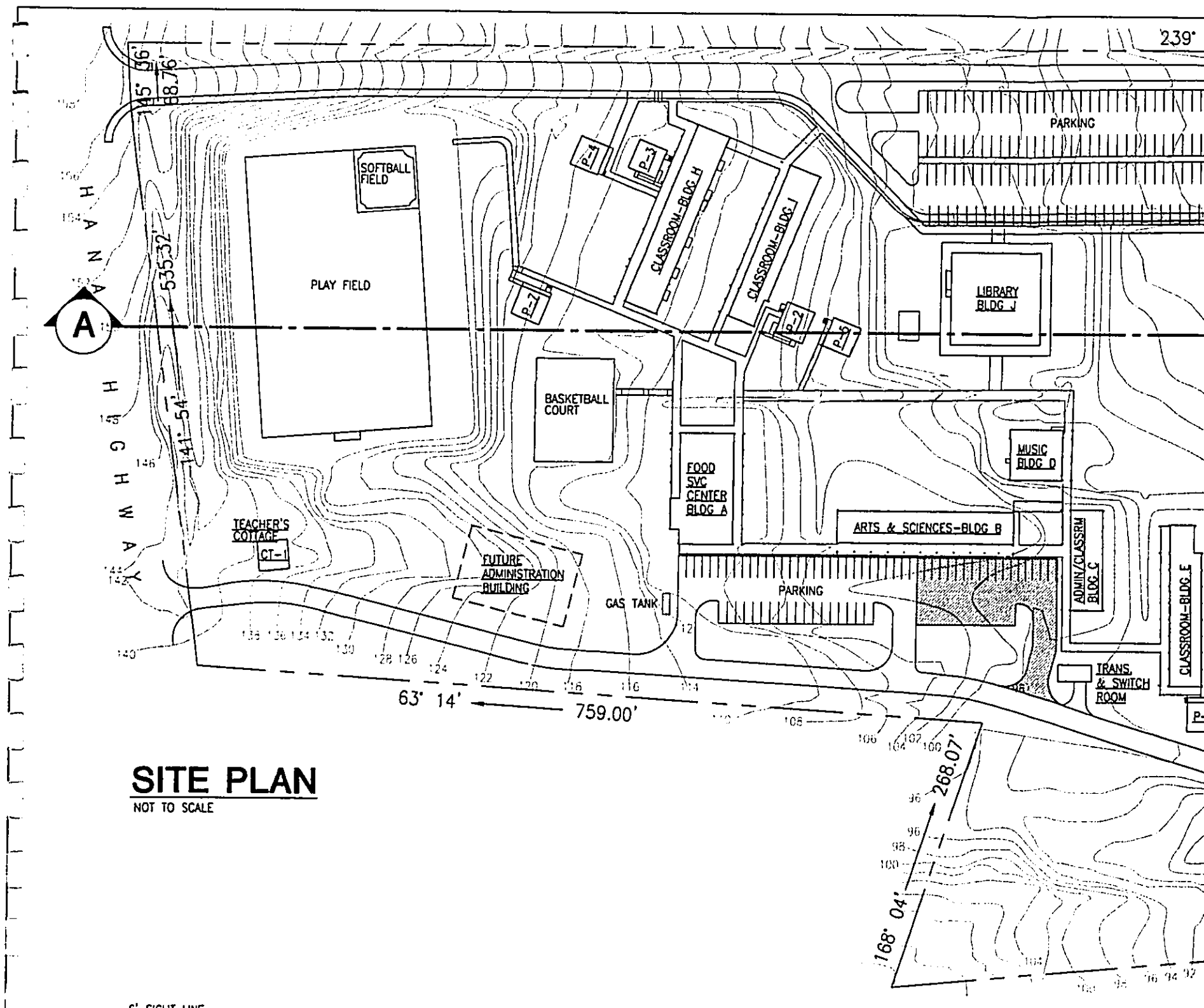
2. *Rules for the Design of Storm Drainage Facilities in the County of Maui.* Department of Public Works and Waste Management, County of Maui, November 1995.

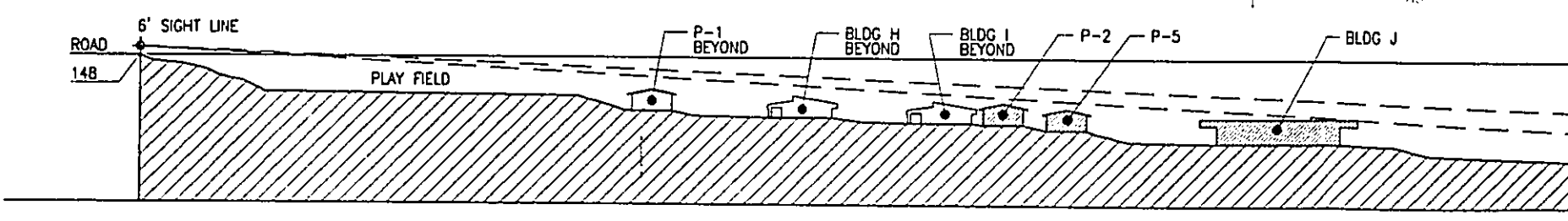
Appendix C

Site Section A



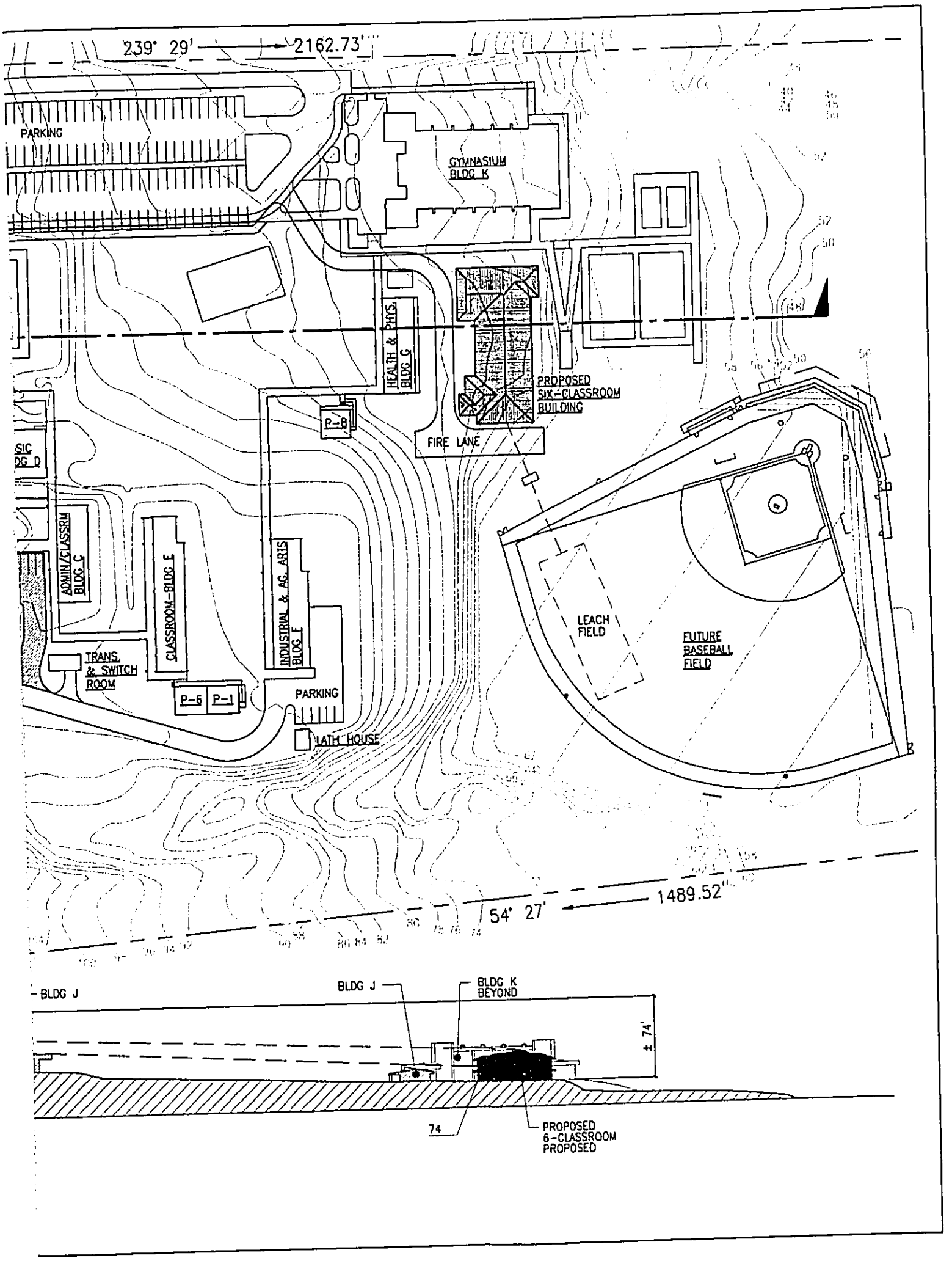
SITE PLAN

NOT TO SCALE



SITE SECTION A

NOT TO SCALE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PARKING
GYMNASIUM
BLDG K
HEALTH & PHYS.
BLDG G
PROPOSED
SIX-CLASSROOM
BUILDING
P-8
FIRE LANE
ADMIN/CLASSRM
BLDG C
CLASSROOM-BLDG E
INDUSTRIAL & AG. ARTS
BLDG F
TRANS.
& SWITCH
ROOM
P-6
P-1
PARKING
LATH HOUSE
LEACH
FIELD
FUTURE
BASEBALL
FIELD
54° 27'
1489.52'
BLDG J
BLDG J
BLDG K
BEYOND
± 74'
74
PROPOSED
6-CLASSROOM
PROPOSED