



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

STAFF SUBMITTAL

for the meeting of the  
COMMISSION ON WATER RESOURCE MANAGEMENT

August 25, 2010  
Honolulu, Hawaii

Application for Stream Channel Alteration Permit (SCAP.2616.3)  
Three Rock Retaining Walls and Terraces, Kalihi Stream  
Kalihi, Oahu, TMK: (1) 1-3-008:004

APPLICANT:

Kalihi Ahupuaa Ulu Pono Ahahui (KAUPA)  
P.O. Box 17673  
Honolulu, HI 96817

LANDOWNER:

State of Hawaii  
Department of Education  
P.O. Box 2360  
Honolulu, HI

SUMMARY OF REQUEST:

Application for a Stream Channel Alteration Permit (SCAP.2616.3) for three rock retaining walls and terraces, Kalihi Stream in Kalihi, Oahu at TMK: (1) 1-3-008:004.

LOCATION: Exhibits 1a and 1b.

BACKGROUND:

Kalihi Ahupuaa Ulu Pono Ahahui (KAUPA) is non-profit, community-based organization located in Kalihi Valley, whose goal is to restore the natural and cultural resources within the Kalihi ahupuaa through education, outreach and action. KAUPA conducts Kalihi Stream cleanups and restoration activities, partners with school and community groups to provide environmental education programs and activities, and supports environmentally sound work opportunities, such as community food production.

The Department of Education (DOE) has jurisdiction over the property under Executive Order Numbers 1854, 1909 and 4233 to the DOE and is aware of the KAUPA project to build dry-stack walls to serve as retaining walls within the upper stream bank. DOE has given conditional approval to KAUPA to build the retaining walls provided that KAUPA meets the requirements of a number of agencies.

DESCRIPTION:

Three rock retaining walls will be built using the traditional Hawaiian dry-stack technique. Rocks are laid in horizontal courses, one row at a time. The *niho* foundation stones are the biggest, widest, longest and

flattest stones which are placed below the surface at a slight inward tilt so that the outer wall will be slanted inward. The second course follows the “*kipapa*” style of retaining wall with the outer wall face slanting at a minimum angle of 22 degrees. All the rocks on the wall face slant inward and downward towards the inside of the wall, using gravity to lock (*hoopiha*) them together in place. *Hakahaka* (smaller fill stones) will be used to fill the spaces between the rocks. See Exhibit 3.

Footings, approximately 8 to 12 inches deep, will be dug for the retaining walls. Each retaining wall, approximately 45 feet long by 3 feet high by 3 feet wide, will be built by hand and be located between the 55 and 60-foot contours of Kalihi Stream to reduce the slope of the eroded areas; 51 cubic yards of lava rock will be used for the retaining walls. The contours of the land will dictate the placement of the rocks for erosion control, and site specific conditions will be incorporated as part of the best management practices plan. See Exhibits 2 and 4. The use of dry-stack retaining walls will ensure that if the site does eventually erode into the streambed, the rocks will become an integral part of the streambed and will not cause damming or an inappropriate visual impact to the riparian zone. Native plants and trees will be planted on the terraces behind the retaining walls to secure the soil, and compost and straw bales will be used to minimize erosion impacts to the stream.

Student volunteers, 16 years and older, will help construct the retaining walls and will be supervised by field supervisors and foremen who have experience in building traditional Hawaiian rock retaining walls. Construction of the retaining walls is expected to take 60 days.

#### ANALYSIS:

##### Agency Review:

U.S. Army Corps of Engineers: the project is not subject to the Corps regulatory authority or permit.

The Department of Education (DOE): has given conditional approval to KAUPA to build the three-tier, dry-stack retaining walls provided that KAUPA meets the requirements of a number of agencies.

The Department of Health (DOH) Clean Water Branch (CWB):

- The construction of the rock retaining walls and associated terrace construction activity should be located above the ordinary high water mark (OHWM). A Section 401 Water Quality Certification will be required if the placement of dredged fill, including boulders, below the OHWM is unavoidable.
- The construction and operation of the constructed facility shall comply with “Kalihi Ahupuaa Ulu Pono Ahahui, 319 Clean Water Grant, Operation and Maintenance Plan” that was accepted by the DOH CWB.

City and County Department of Planning and Permitting:

- The project is not located in the Special Management Area (SMA) and is not subject to a SMA use permit requirements.
- Since the project does not appear to involve any grading, a grading permit is not required.
- The project is located within the AE floodway district. A licensed professional engineer shall certify that the work completed will not result in any increase to the regulatory flood elevations.
- The applicant is responsible for compliance with environmental assessment requirements of Chapter 343, HRS.
- The applicant should consult with the owner of the existing drainage pipe near the project vicinity to ascertain whether the project may have any potential impacts to their infrastructure.
- The applicant shall provide a plan view which clearly shows the location of the proposed work with respect to the existing sewer lines. Sufficient information should be included so that the Wastewater Branch can properly assess whether the project may have any potential impacts to the City sewer infrastructure.

U.S. Fish and Wildlife Service (USFWS): had no objections to the proposal provided that USFWS best management practices (BMPs) are implemented.

The Department of Hawaiian Home Lands had no objections to the project.

The Office of Hawaiian Affairs and the University of Hawaii Environmental Center did not submit comments as of the date of preparation of this submittal.

DLNR Review:

- **Division of Aquatic Resources:** previously commented that Kalihi Stream provided habitats for six species of native macrofauna including four native fish species and two native crustaceans, as well as habitat for two native damsel flies. The proposed activity is not expected to have any significant impact on the aquatic resources in this area. Mitigative measures should be implemented during the excavation and construction of the three-tier, dry-stack retaining walls to minimize the potential for erosion, siltation and pollution of the aquatic environment.
- **Land Division:** the affected state-owned land is currently encumbered by several executive orders that give DOE jurisdictional control and management. Land Division concurs with the DOE's comments to the Commission concerning the stream channel alteration to the subject land.
- **Historic Preservation:** no objections. If historic sites, including human burials, are uncovered during routine construction activities, all working the vicinity must stop, and the State Historic Preservation Division must be contacted.
- **State Parks:** not subject to its statutory authority and permit.

The Engineering Division did not submit comments as of the date of preparation of this submittal.

Chapter 343 Environmental Assessment (EA) Compliance Review:

**EA Triggers:** In accordance with HRS §343-5 (a), the applicant's propose action triggers the need for an EA based on the use of state land.

**EA Exemptions:** The proposed action qualifies for an exemption from an environmental assessment based on HAR §11-200-8 (a) Exempt Classes of Action, Class #4, "Minor alterations in the conditions of lands, water, or vegetation." The proposed construction of three, rock retaining walls and terraces will not create a significant disturbance to any environmental resource based on the above agency review comments. The retaining walls and terraces will be built by hand, and no work will occur in Kalihi Stream. KAUPA's best management practices (BMP) plan which was accepted by the DOH CWB will minimize the potential for erosion, siltation and pollution of the stream environment.

**Cumulative Impacts HAR §11-200-8 (b):** Even where a categorical exemption appears to include a proposed action, that action cannot be declared exempt if the cumulative impact of planned successive action in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.

No significant cumulative impacts are anticipated as a result of this activity because the proposed project is a single-action activity which will take approximately eight weeks and is not part of a larger project.

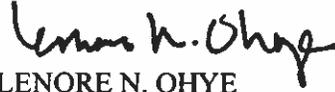
Staff Review

KAUPA, a community-based, non-profit organization, will enlist students and community volunteers to construct three rock retaining walls on the bank of Kalihi Stream to control erosion and provide an environmental educational opportunity to the community. The retaining walls will be built by hand, and no work will occur in Kalihi Stream. The proposed project is located above the ordinary high water mark (OHWM) and is not subject to the regulatory authority or permit of the U.S. Army Corps of Engineers. The proposed project is not expected to have any significant impact to the stream or the aquatic resources in the area. KAUPA's best management practices (BMP) plan which was accepted by the DOH CWB will minimize the potential for erosion, siltation and pollution of the stream environment. A copy of the City and County of Honolulu, Department of Planning and Permitting comments has been forwarded to the applicant for follow-up.

RECOMMENDATION:

That the Commission approve a Stream Channel Alteration Permit (SCAP.2616.3) for three rock retaining walls and terraces, Kalihi Stream in Kalihi, Oahu at TMK: (1) 1-3-008:004. The permit shall be subject to the Commission's standard conditions in Exhibit 5.

Respectfully submitted,



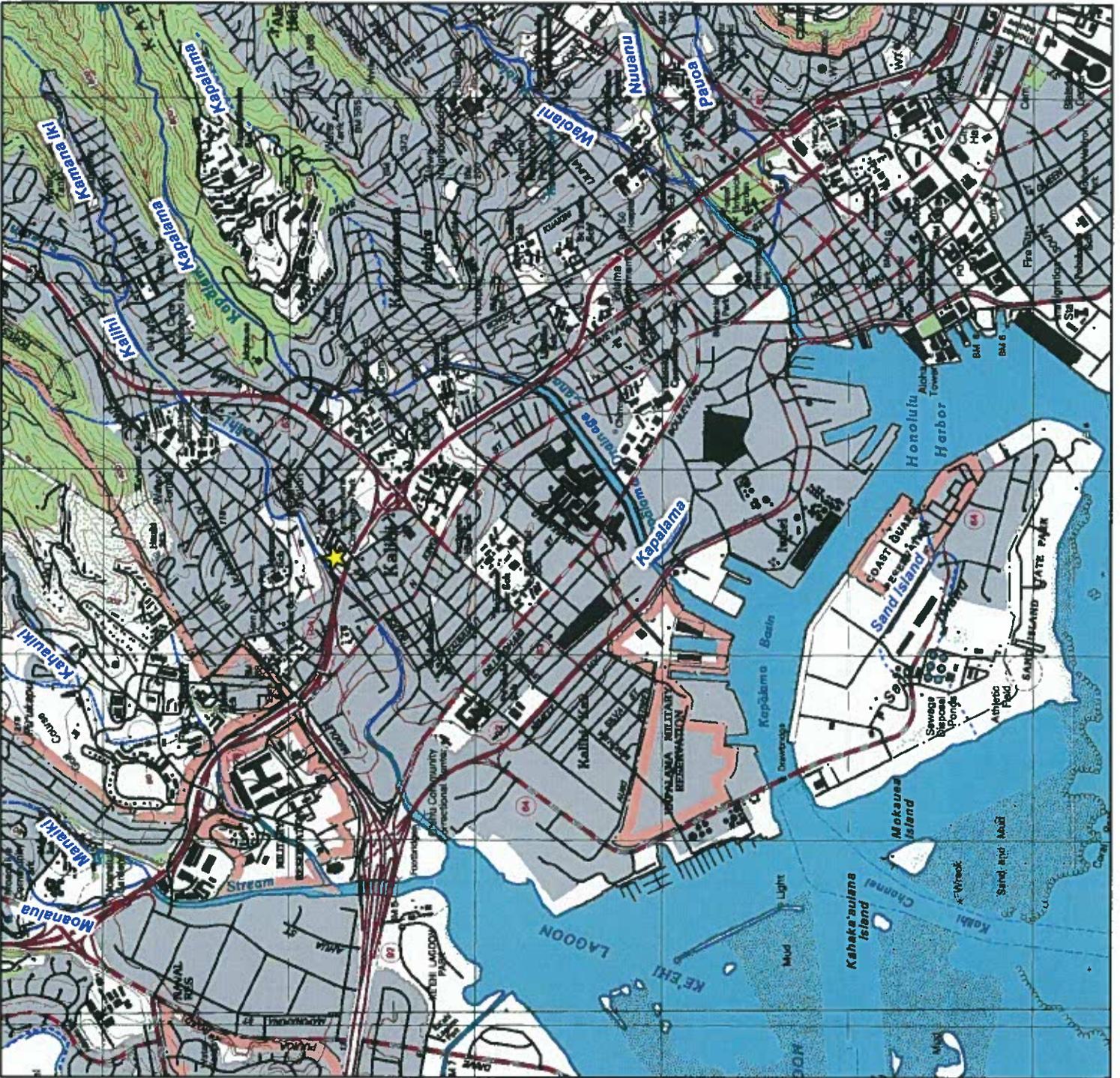
LENORE N. OHYE  
Acting Deputy Director

- Exhibits:
1. Location Maps 1a and 1b
  2. Conceptual Site Plan
  3. Cross-Section Diagram of Hawaiian Retaining Wall
  4. Photos of Kalihi Stream Bank
  5. Standard Stream Channel Alteration Permit Conditions

APPROVED FOR SUBMITTAL:



LAURA H. THIELEN  
Chairperson



Department of Land and Natural Resources  
 Commission on Water Resource Management  
 Stream Protection and Management Branch

### ISLAND OF OAHU

#### LEGEND

Streams

- ..... Ephemeral
- Intermittent
- Perennial

★ (1) 1-3-008:004

This map was produced by the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management for planning purposes. It should not be used for boundary interpretations or other spatial analysis beyond the limitations of the data. Information regarding compilation dates and accuracy of the data presented can be obtained from DLNR.

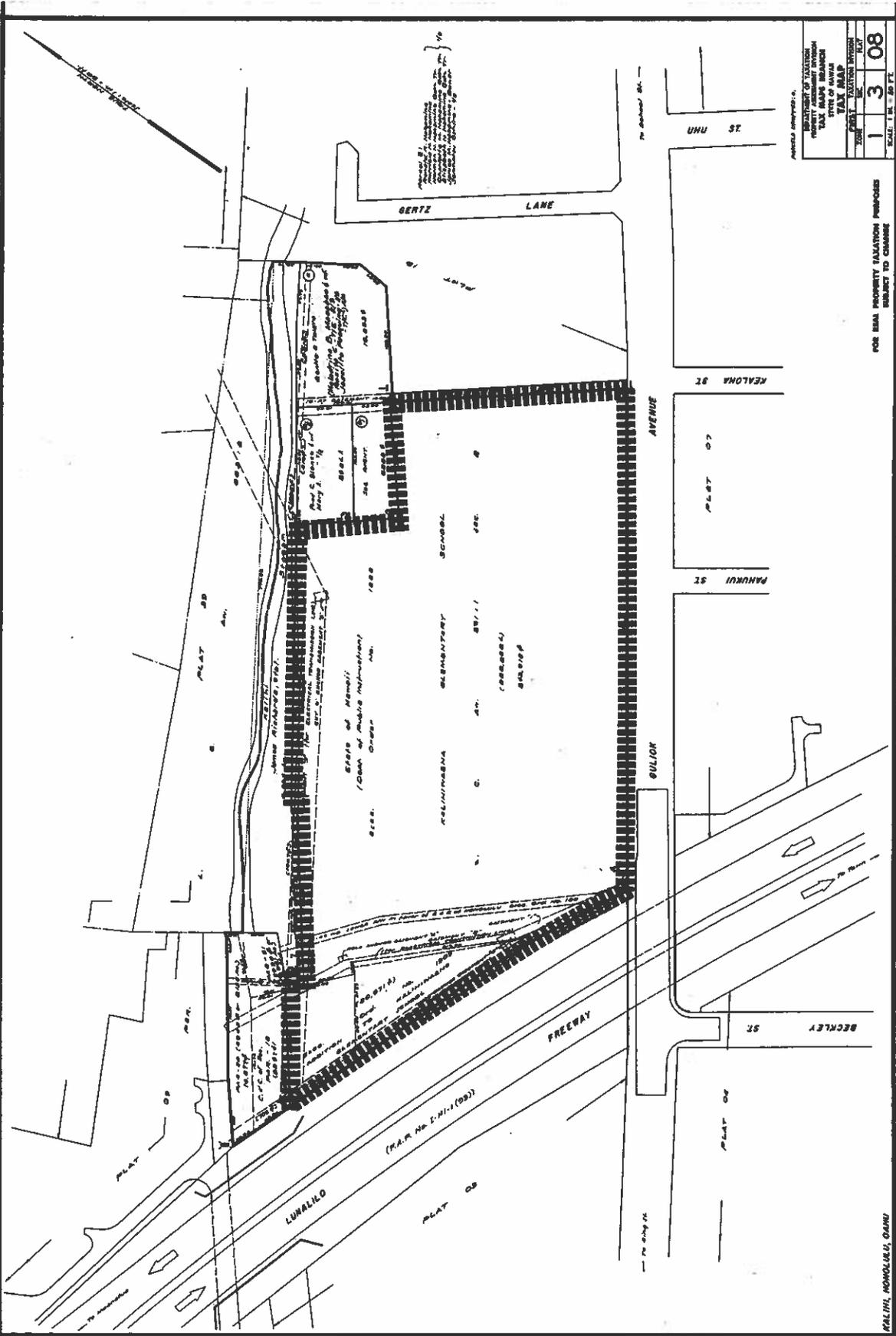
Datum: North American Datum 1983

Tax Map Key (TMK) layer is comprised of tax assessor parcels derived from paper plat maps with attributes from public tax assessor records and is updated by each respective county



## EXHIBIT 1a

1 - 3 - 08



REPUBLICAN PROPERTY TAX MAP	
PROPERTY TAX MAP	
COUNTY OF HAWAII	
TAX MAP	
DATE	1 3 08
SCALE	1 IN. = 20 FT.

FOR BSA PROPERTY TAXATION PURPOSES  
SUBJECT TO CHANGE

KALAH, HONOLULU, OAHU

# EXHIBIT 1b

DWA, HONOLULU, OAHU  
 DATE: 1/3/08  
 BY: [Signature]  
 FOR: [Signature]

DWA, HONOLULU, OAHU  
 DATE: 1/3/08  
 BY: [Signature]  
 FOR: [Signature]

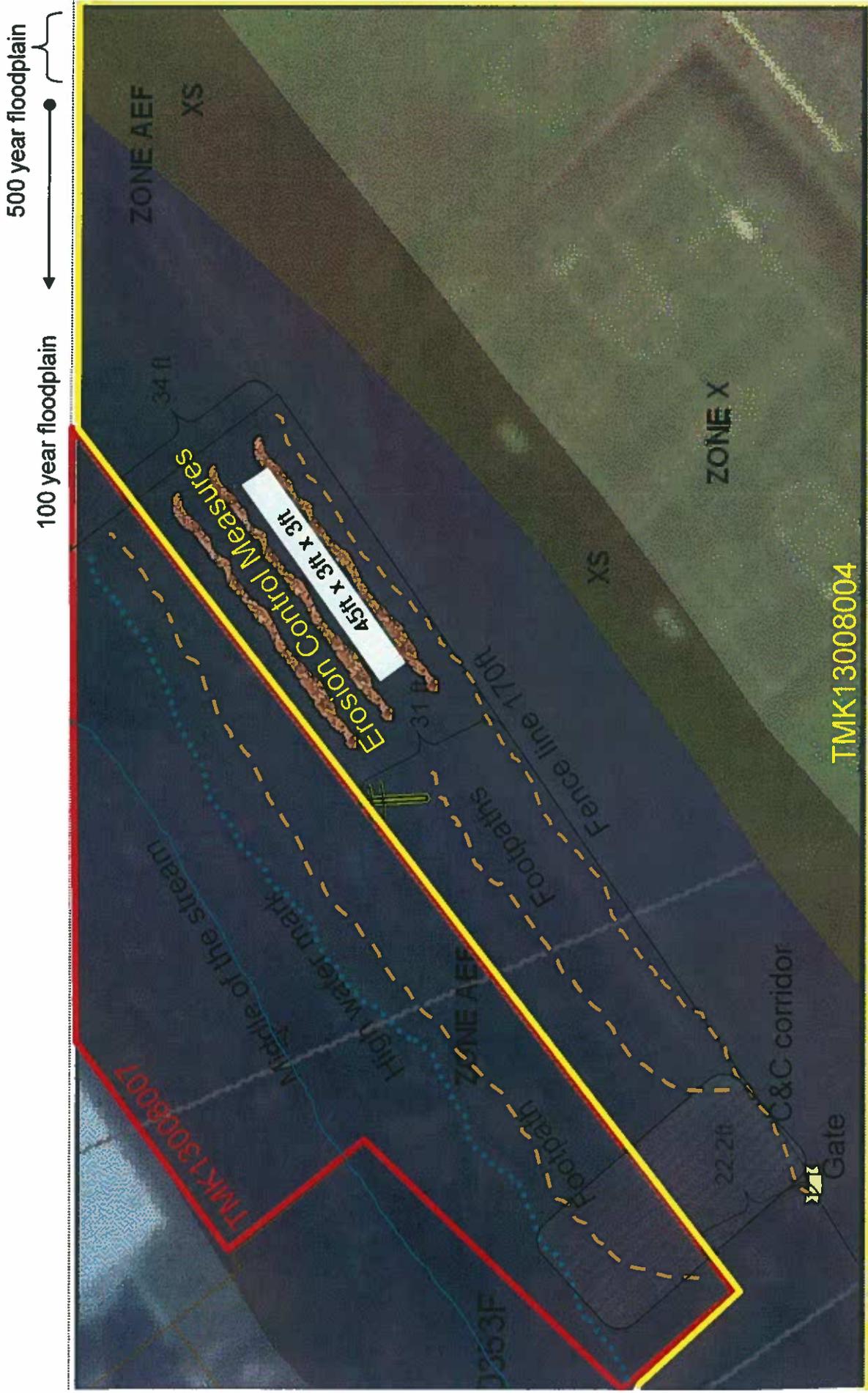
# KAUPA Restoration Site

## Conceptual Site Plan 2008

Access to Site



Proposed erosion control measures: Three tiers of large boulders (30ft x 45ft x 2.5ft) will be installed to reduce the slope of the eroded areas. A 1.5ft footing will dug to secure the boulders and large native Hawaiian trees will be planted behind the boulders to further secure the soil.



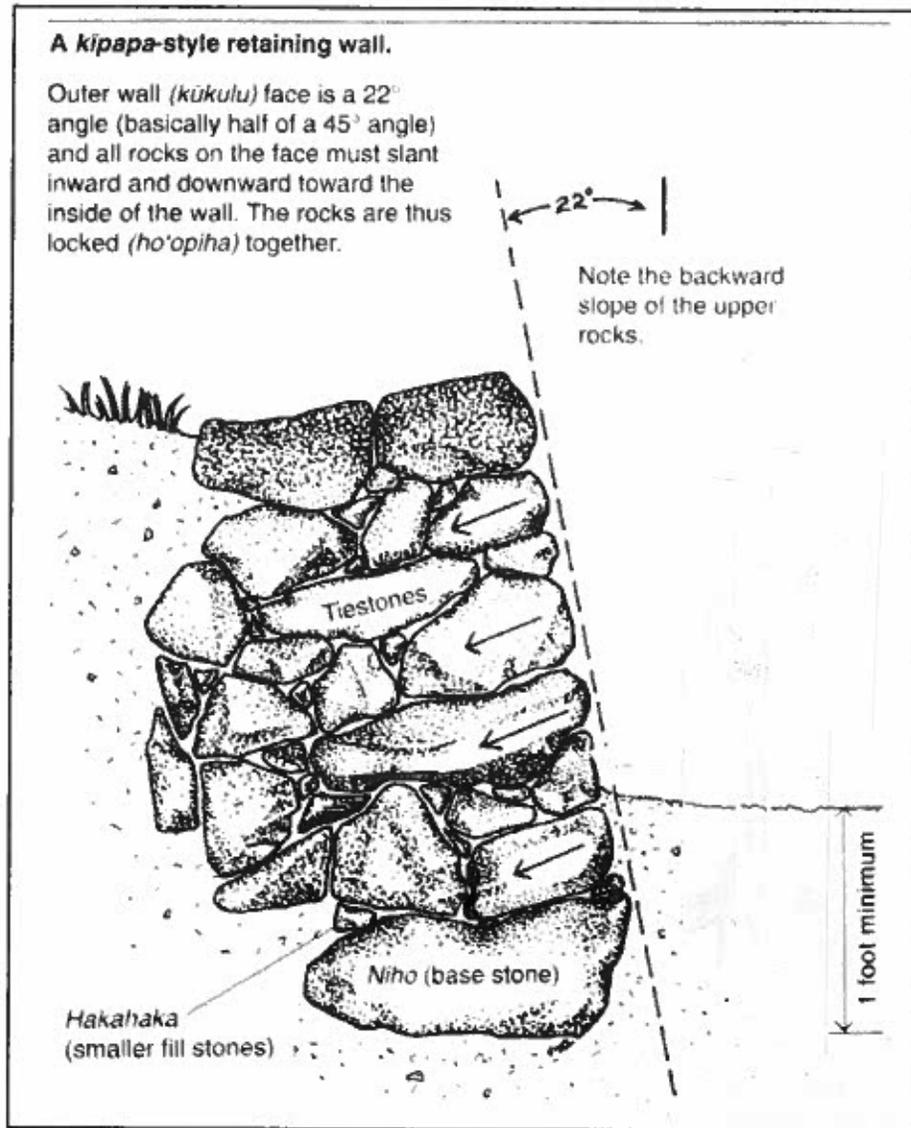
Proposed erosion control measures: Three tiers of dry-stack retainer walls (45ft x 3ft x 3ft) will be installed to reduce the slope of the eroded areas. A 1.5ft footing will dug to secure the walls and large native Hawaiian trees will be planted behind the wall to further secure the soil. 51 cu. yds. of man-sized or smaller lava rock will be used.



The placement of the rocks for the erosion control measure will be dictated by the contours of the land and site specific details will be incorporated on site in the field to maximize erosion control, as part of best management practices. The vegetation will also be installed with the retainer walls along with compost and straw bales to minimize erosion impacts to the stream. The rocks we place on site will supplement those that are already located onsite. The use of dry-stack retainer walls will ensure that if the site does eventually erode into the streambed, the rocks will become an integral part of the stream bed and will not cause damming or an inappropriate visual impact to the riparian zone as could be the case by using bricks or other unnatural materials.

**Cross-Section Diagram of Hawaiian Retaining Wall**

Image from: College of Tropical Agriculture & Human Resources, University of Hawaii at Manoa (CTAHR).





55 ft

60 ft

25 ft

EXHIBIT 4



STANDARD STREAM CHANNEL ALTERATION PERMIT CONDITIONS  
(Revised 9/19/07)

1. The permit application and staff submittal approved by the Commission at its meeting on August 25, 2010, shall be incorporated herein by reference.
2. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State and county governments.
3. The applicant, his successors, assigns, officers, employees, contractors, agents, and representatives, shall indemnify, defend, and hold the State of Hawaii harmless from and against any claim or demand for loss, liability, or damage including claims for property damage, personal injury, or death arising out of any act or omission of the applicant or his successors, assigns, officers, employees, contractors, and agents under this permit or related to the granting of this permit.
4. The applicant shall notify the Commission, by letter, of the actual dates of project initiation and completion. The applicant shall submit a set of as-built plans and photos of the completed work to the Commission upon completion of this project. This permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The proposed work under this stream channel alteration permit shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.
5. Before proceeding with any work authorized by the Commission, the applicant shall submit one set of construction plans and specifications to determine consistency with the conditions of the permit and the declarations set forth in the permit application.
6. The applicant shall develop site-specific, construction best management practices (BMPs) that are designed, implemented, operated, and maintained by the applicant and its contractor to properly isolate and confine construction activities and to contain and prevent any potential pollutant(s) discharges from adversely impacting state waters. BMPs shall control erosion and dust during construction and schedule construction activities during periods of low stream flow.
7. The applicant shall protect and preserve the natural character of the stream bank and stream bed to the greatest extent possible. The applicant shall plant or cover lands denuded of vegetation as quickly as possible to prevent erosion and use native plant species common to riparian environments to improve the habitat quality of the stream environment.
8. In the event that subsurface cultural remains such as artifacts, burials or deposits of shells or charcoal are encountered during excavation work, the applicant shall stop work in the area of the find and contact the Department's Historic Preservation Division immediately. Work may commence only after written concurrence by the State Historic Preservation Division.