

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

September 26, 2014

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

**AUTHORIZE THE APPROVAL TO REVISE DLNR DAM SAFETY
CONSTRUCTION/ALTERATION PERMIT NO. 44 –
TO REMOVE UPPER KAPAHI RESERVOIR (KA-0013)
KAPAA, KAUAI, HAWAII**

The Engineering Division hereby submits a revised application for your approval and authorization for the Chairperson and Department to stipulate conditions and issue a revised Dam Safety Construction/Alteration Permit for the subject application, "Removal of the UPPER KAPAHI RESERVOIR", pursuant to Chapter 179D Hawaii Revised Statutes.

APPLICANT:

James K. Kurata
Public Works Administrator
State of Hawaii
Department of Accounting and General Services
1151 Punchbowl Street, Room 426
Honolulu, HI 96813

CO-LANDOWNER:

Russell Y. Tsuji, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
1151 Punchbowl Street, Room 220
Honolulu, HI 96813
TMK: (4) 4-6-007:011

CO-LANDOWNER:

Larry Dill, Chief Engineer
County of Kauai
4444 Rice Street, #275
Lihue, Hawaii 96766
TMK: (4) 4-6-007:011

SUMMARY OF REQUEST:

An original Dam Safety Construction/Alteration Permit No. 44 for the Upper Kapahi Reservoir, Dam Remediation project was issued on June 1, 2011, after Board of Land and Natural Resources (BLNR) approval on May 13, 2011. Construction was started in June 2011, and after initial clearing, actual site conditions were found to be far different from the design assumptions. After further investigation and evaluation of alternate designs, construction was placed on hold, the reservoir was to remain empty, and a new design for a dam removal project was chosen as the desired option.

A revised Dam Safety Construction/Alteration Permit application was submitted on August 1, 2014 and this submittal is to revise the original BLNR approval from May 13, 2011, as the project has changed from a dam remediation to a dam removal project. (See Exhibit 1)

LOCATION: Kapaa, Kauai, Hawaii, TMK: (4) 4-6-007:011. (See Exhibit 2)

BACKGROUND:

The Upper Kapahi Reservoir Dam was constructed around 1910, by Lihue Plantation to supply irrigation water to nearby sugarcane fields. The reservoir is currently used to supply irrigation water downstream and is managed by the East Kauai Water Users Cooperative, lessee from the State of Hawaii, and is being operated as a flow through system.

The Upper Kapahi Reservoir Dam is approximately 40 ft. high, 1,080 ft. long. The dam crest is about 19-ft wide and the County of Kauai's Kainahola Road runs on top of the dam crest. The surface area of the reservoir at the dam crest is approximately 6.7 acres. The reservoir impounds a maximum of 310 ac-ft. The outlet works consisted of a slide gate to a 184-ft long discharge tunnel through the foundation of the dam. Gate control was via an operator previously accessed on a catwalk structure. The gate and catwalk were removed for repair under a separate project by the Department of Agriculture. The dam has a size classification of "small" and hazard potential classification of "high".

A 2009 Phase I Visual Inspection Report by Kleinfelder West, Inc. identified that the dam has a history of poor maintenance; including excessive vegetation, over steepened slopes, sediment and debris in the reservoir, and embankment erosion.

An application for the remediation of the Upper Kapahi Reservoir Dam was filed on July 22, 2010 by the State of Hawaii, Department of Accounting and General Services (DAGS), on behalf of the co-owners, State of Hawaii, Department of Land and Natural Resources (DLNR), the County of Kauai, Bernadine Martins Trust, and Erika and Christopher Martins. The Dam Safety Permit No. 44 was issued through the BLNR on June 1, 2011 and construction was originally initiated in June 2011. The project has now been changed from a remediation project to a removal project.

In replacement of the storage lost by the dam removal of the Upper Kapahi Reservoir Dam, a "New" Upper Kapahi Dam is scheduled to be built upstream of the removed dam, within the reservoir area, and will provide minimal storage in a non-regulated dam facility.

PROJECT DESCRIPTION:

The owner is proposing to remove the regulated dam structure by breaching the dam and installing a flow through box culvert system to adequately pass the appropriate design flood. The road will be rebuilt on top of the culvert to allow for continued roadway access. The project will include demolishing a 200-ft section of Kainahola Road, excavating through the embankment, constructing a 138-ft long box culvert spillway through the open excavation, backfilling the embankment, and reconstructing of Kainahola Road, access roads, and other support structures. The existing outlet structure is to remain and is scheduled to be rehabilitated as part of the "New" Upper Kapahi dam project. During construction Kainahola Road will be closed. (See Exhibit 3)

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

Review pending BLNR action on the September 26, 2104 Board submittal from the Land Division titled:

Amend Prior Board Action “Issuance of a Right-of-Entry Permit to the Department of Accounting and General Services on State Encumbered Lands, Dams and Reservoirs on Kauai; Dam Maintenance and Remediation Improvements for Aahoaka, Hanamaulu Field 21, Wailua, Upper Kapahi and Lower Kapahi Dams and Reservoirs, in Wailua, Kapaia, and Kapahi, Kauai; Tax Map Keys: (4) 3-9-2:1, 20; 4-2-1:4, 5, 8; 4-6-7:11; 4-4-4:4; 4-6-6:7; 4-6-32:22”, approved as amended on September 22, 2010, under Agenda Item D-1, to revise the Declaration for Exemption from the Preparation of an Environmental Assessment for the Upper Kapahi Reservoir, located on Tax Map Key No.: (4) 4-6-007:011

REMARKS:

The applicant (DAGS), their client (DLNR Land Division), and the applicant’s consultant, GEI Consultants, Inc., have completed a basis of design, plans and specifications and requests for the approval of a dam safety construction/alteration permit. The Engineering Division and its engineering consultant, Kleinfelder, Inc., have reviewed the documents and concluded that it is sufficient for its intended purposes, (See **Exhibit 4**). Staff recommends approval of this revised permit application with the Dam Safety Permit General Conditions (See **Exhibit 5**) and conditions specified under the Special Conditions.

SPECIAL CONDITIONS:

1. The DLNR Dam Safety Construction/Alteration Permit No. 44, shall not be closed out, nor the dam removed from the regulated inventory, until the rehabilitation of the outlet works is completed.

Section 9.3.3 Existing Outlet Works, of the Upper Kapahi Dam Breach Design Summary Report, dated August 2014, states that, rehabilitation of the outlet works is to be included in a separate New Upper Kapahi Dam Project. Also, the report states that “while the design of the box culvert was performed assuming a full blockage of the existing outlet works, collapse of the existing outlet works could result in a deformation of the embankment and embankment slopes around the existing outlet works” and “If the New Upper Kapahi Dam Project does not proceed, the Owner should consider proceeding with rehabilitation of the existing outlet works as a separate project.”

RECOMMENDATION:

That the Board:

1. Authorize the approval to revise Dam Safety Construction/Alteration Permit No. 44 to include the Removal of the Upper Kapahi Reservoir (KA-0013);
2. Authorize the Chairperson to issue a revised dam safety permit for the removal of the Upper Kapahi Reservoir (DLNR Dam Safety Construction/Alteration Permit No. 44), subject to HRS Chapter 343 BLNR action and such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State;

3. Authorize the Department to oversee the permitted work and take appropriate action including, but not limited to selecting and procuring testing or professional services to verify construction work, approval of minor revisions and changes, issuance of fines and /or revocation of the permit, if necessary; and
4. Authorize the Department to remove this dam from dam safety regulatory oversight and the requirements of Hawaii Revised Statutes Chapter 179D, upon satisfactory completion of the construction project and special conditions.

Respectfully submitted,



CARTY S. CHANG
Chief Engineer

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.
Chairperson

- Exhibit(s):
- 1 Owner Permit Application
 - 2 Location Map
 - 3 Partial Construction Drawing set
 - 4 Kleinfelder, Inc. Correspondence on Approval of Plans
 - 5 Dam Safety Permit General Conditions
 - 6 May 11, 2011 Dam Safety Permit No. 44 - Board Submittal

Revised Dam Safety Permit Application for
change of project scope

DLNR-Dam Safety-Sheet 1

State of Hawaii
BOARD OF LAND AND NATURAL RESOURCES
Department of Land and Natural Resources
Engineering Division

APPLICATION FOR APPROVAL OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION,
ENLARGEMENT, REPAIR, ALTERATION, OR REMOVAL OF A DAM

11 APR 03 PM 07:30 ENGINEERING

Applicant: James K. Kuwata
Contact Name: Ernest Y. W. Lau
Date of Application: July 12th, 2010 8/01/2014
Department of Accounting &
Firm / Company: General Services (DAGS), State of Hawaii

Mailing Address 1151 Punchbowl Street, Room 426, Honolulu, HI 96813

Telephone: 808-586-0526 Fax: 808-586-0521 Email: ernest.y.lau@hawaii.gov

The Applicant hereby applies to the Board of Land and Natural Resources for the approval of the attached plans and specification for the Upper Kapahā Dam Safety Improvements Removal (construction, etc.) in accordance with Chapter 179D HRS (as amended by Act 262, SLH 2006), and subject to the provisions, conditions, and limitations of the current Hawaii Administrative Rules and various DLNR dam safety guidelines.

Accompanying this application are:

	(please check)
1. Filing fee (\$25.00) (Waived for government agencies)	Waived
2. Three (3) copies of the Detailed Cost Estimate	<u>X</u>
3. Three (3) copies of the Final Design Report	<u>X</u>
4. Three (3) copies of the Plans	<u>X</u>
5. Three (3) copies of the Specifications	<u>X</u>
6. Proposed Construction Schedule	<u>X</u>
7. Supporting documents:	<u>X</u>
<u>Three (3) copies of the Emergency Action Plan for Construction</u>	<u>X</u>
<u>Three (3) copies of the letters of exemption</u>	<u>X</u>

NAME OF STRUCTURE: Upper Kapahā Dam

DAM OR RESERVOIR LOCATION: Kapa'a, Kaua'i County, two miles north west of Kapa'a

Island: Kaua'i

Tax Map Key: (4) 4-6-007-011

Attach USGS topographic map (scale 1" = 2000') and property tax map (showing location access to site, proposed work)

State Land Use District: Agriculture Urban Rural Conservation

BRIEF DESCRIPTION OF WORK TO BE PERFORMED

~~install new box culvert spillway to satisfy PMF discharge requirements, up and downstream~~
~~stability/embankment improvements to satisfy factor of safety, upstream erosion control improvements.~~
Dam Removal

Exhibit 1

TECHNICAL INFORMATION:

1. Drainage Area 0.186 sq. miles or 119 acres
2. Classification of Dam Dam size: SMALL, Hazard Classification: HIGH
3. Type of Structure Earthen embankment
4. Elevation-Area-Capacity Data:

	Elevation	Surface Area (acres)	Total Storage Volume (acre-feet)
Natural Streambed	-320'	N/A	N/A
Primary Spillway	-364'	N/A	N/A
Secondary Spillway	N/A	N/A	N/A
Top of Dam	-366.5'	N/A	N/A
Design Water Level	-363.5'	-6.3	272
Invert of Drain	-323'	N/A	N/A
5. Spillway Details (Type, Dimensions, Material)

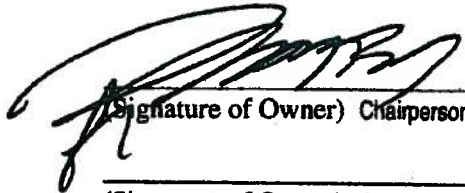
Primary: Existing grass lined, earth channel

Secondary: None
6. Purpose of Structure Agricultural water supply.
(water supply, irrigation, recreation, real estate development, etc.)
7. Attach rainfall and stream flow records, and flood-flow records and estimates (as accurately as may be readily obtained) See section 2.2 of Design Memorandum - Pertinent Data, Table 2.1: Median annual rainfall is 60-80 inches.

ADDITIONAL INFORMATION

1. Primary Owner Contact (if different from applicant) Kevin E. Moore, Acting Land Administrator
Morris Aita, Acting Administrator
Owner Company or Entity: DLNR - Land Division
Mailing Address 1151 Punchbowl St. Room 220, Honolulu, HI 96813
Telephone: 808-587-0422 Fax: 808-587-0455 Email: dlnr.land@hawaii.gov
2. Registered Hawaii Professional Engineer who prepared the plan GEI Consultants, Inc.
Steve Verigin
Mailing Address 10860 Gold Center Drive, Suite 350, Rancho Cordova, CA 95670
Registration No. 13646-CE
Telephone: 916-631-4574 Fax: 916-631-4501 Email: sverigin@geiconsultants.com
3. Registered Professional Engineer to be responsible for inspection during construction Steve Verigin, GEI Consultants Inc.
4. Contractor (If known) Unknown at this time
Mailing Address _____
Telephone: _____ Fax: _____ Email: _____
5. List all other permits applications submitted to other governmental agencies:
Pending submittal by Contractor: Kaua'i County Road Permit, DOH - Community Noise Permit
NPDES (Form C & G). Submitted: 404 to USACE (AG exemption), SCAP (not required).
6. Anticipated effect of proposed structure on natural environment: Minor increased footprint of project embankment on downstream side of dam and box culvert under county roadway.

1. List all other parties that have ownership or other interest on the parcels where the dam and reservoir are located and identify their interest in the property. The Owners herein listed below concur with the work proposed within this application by the applicant and by his/her signing hereto, the owner of the land extends to the Board of Land and Natural Resources, and its designated representatives, a right-of-entry onto the project site to conduct any investigations or inspections required in compliance with the provisions of Chapter 13-190, Hawaii Administrative Rules. (Submit additional copies of this sheet should there be more owners)



(Signature of Owner) Chairperson

1151 Punchbowl St., #220; Honolulu, HI 96813; Owner

(Address / Interest in Dam or Reservoir)

(Signature of Owner) County Engineer

4444 Rice St., #275; Lihue, HI 96766; Owner

(Address / Interest in Dam or Reservoir)

~~_____
(Signature of Owner) Bernadine Martins~~

~~_____, Kapaa, HI 96746; TMK: (4) 4-6-007-032

(Address / Interest in Dam or Reservoir)~~

~~_____
(Signature of Owner) Erika Martins~~

~~_____, Kapaa, HI 96746; TMK: (4) 4-6-007-029

(Address / Interest in Dam or Reservoir)~~

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

James K. Kuratow
I, ~~Ernest Y. W. Lau~~ the applicant, hereby certify that the information herein is true and factual to the best of my knowledge. Signing below indicates that the applicant understands that, if the permit requested is granted by the Board of Land and Natural Resources, the proposed work is to be initiated and completed within two (2) years of the approval date, unless specifically permitted in the approved permit terms and conditions.





(Signature of Applicant & Title)

Date: 9/2/14
9/2/14

Public Works Administrator;
Dept. of Accounting and General Services (DAGS)

1. List all other parties that have ownership or other interest on the parcels where the dam and reservoir are located and identify their interest in the property. The Owners herein listed below concur with the work proposed within this application by the applicant and by his/her signing hereto, the owner of the land extends to the Board of Land and Natural Resources, and its designated representatives, a right-of-entry onto the project site to conduct any investigations or inspections required in compliance with the provisions of Chapter 13-190, Hawaii Administrative Rules. (Submit additional copies of this sheet should there be more owners)

(Signature of Owner) Chairperson 1151 Punchbowl St., #220, Honolulu, HI 96813; Owner
(Address / Interest in Dam or Reservoir)


(Signature of Owner) County Engineer 4444 Rice St., #275, Lihue, HI 96766; Owner
(Address / Interest in Dam or Reservoir)

~~_____
(Signature of Owner) Bernadine Martins _____, Kapaa, HI 96748; TMK: (4) 4-6-007-052
(Address / Interest in Dam or Reservoir)~~

~~_____
(Signature of Owner) Erika Martins _____, Kapaa, HI 96748; TMK: (4) 4-6-007-029
(Address / Interest in Dam or Reservoir)~~

(Signature of Owner) _____
(Address / Interest in Dam or Reservoir)

(Signature of Owner) _____
(Address / Interest in Dam or Reservoir)

(Signature of Owner) _____
(Address / Interest in Dam or Reservoir)

(Signature of Owner) _____
(Address / Interest in Dam or Reservoir)

I, ~~Tanaka K. Kanda~~
I, Ernest Y. W. Lau the applicant, hereby certify that the information herein is true and factual to the best of my knowledge. Signing below indicates that the applicant understands that, if the permit requested is granted by the Board of Land and Natural Resources, the proposed work is to be initiated and completed within two (2) years of the approval date, unless specifically permitted in the approved permit terms and conditions.

(Signature of Applicant & Title) Date: _____

D.A.G.S. Job No. 14-23-7391

DLNR DAMS & RESERVOIRS ON KAUAI'I DAM BREACH AND RECLAMATION PROJECT UPPER KAPAHI RESERVOIR (NID HI-00013)

KAUAI'I, HAWAII'I
TMK: (4) 4-6-007: 011

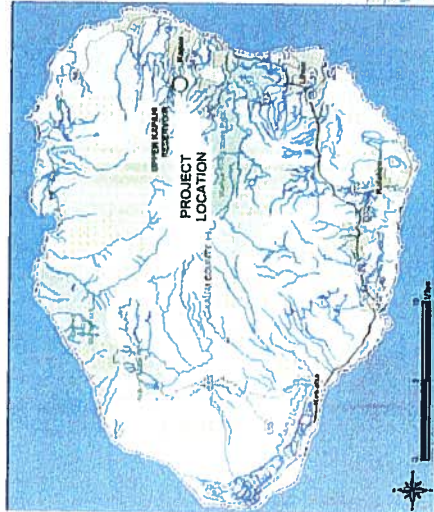
PREPARED FOR:
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII'I**

PREPARED BY:



GEI Consultants
4601 DTC BOULEVARD, SUITE 900
DENVER, COLORADO 80237

LOCATION MAP



DRAWING INDEX

SHEET No.	DWG. No.	DRAWING TITLE
1	G-01	TITLE SHEET, DRAWING INDEX, LOCATION MAPS, AND APPROVALS
2	G-02	SYMBOLS AND ABBREVIATIONS
3	G-03	COUNTY NOTES - SHEET 1 OF 2
4	G-04	COUNTY NOTES - SHEET 2 OF 2
5	G-05	TRAFFIC CONTROL PLAN
6	G-06	DETOUR PLAN
7	G-07	HYDRAULIC INFORMATION
8	G-08	GEOTECHNICAL LOGS
9	C-01	EXISTING SITE, SUBSURFACE INVESTIGATION, AND SURVEY CONTROL PLAN
10	C-02	TEMPORARY CONTROL PLAN
11	C-03	TEMPORARY CONTROL DETAILS
12	C-101	PLAN OF MODIFICATIONS
13	C1-02	EXCAVATION PLAN
14	C1-03	EXCAVATION SECTIONS
15	C2-01	BOX CULVERT - PLAN
16	C2-02	BOX CULVERT - PROFILE
17	C2-03	BOX CULVERT - SECTIONS
18	C2-04	ROADWAY REPLACEMENT
19	C3-01	UPSTREAM ACCESS ROAD PLAN AND PROFILE
20	C3-02	DOWNSTREAM ACCESS ROAD PLAN AND PROFILE
21	C3-03	ACCESS ROADS SECTIONS (SHEET 1 OF 3)
22	C3-04	ACCESS ROADS SECTIONS (SHEET 2 OF 3)
23	C3-05	ACCESS ROADS SECTIONS (SHEET 3 OF 3)
24	S-01	STRUCTURAL GENERAL NOTES
25	S-02	STRUCTURAL CONCRETE NOTES
26	S-03	STRUCTURAL PLANS AND SECTION
27	S-04	STRUCTURAL ELEVATIONS & SECTIONS
28	S-05	STRUCTURAL DETAILS
29	S-06	TYPICAL STRUCTURAL DETAILS

APPROVED

CHAMBERSON
STATE OF HAWAII

COMPTROLLER
STATE OF HAWAII

PUBLIC WORKS ADMINISTRATOR
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

COUNTY ENGINEER
COUNTY OF KAUAI
STATE OF HAWAII

DATE

DATE

DATE

DATE

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	
2	ISSUED FOR PERMIT	
3	ISSUED FOR PERMIT	
4	ISSUED FOR PERMIT	
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FINAL DRAFT
05/14/2014

THIS DRAWING WAS PREPARED BY AN ENGINEER REGISTERED WITH THE BOARD OF PROFESSIONAL ENGINEERS OF THE STATE OF HAWAII.

PROJECT NO. 14-23-7391
DATE: MAY 14, 2014

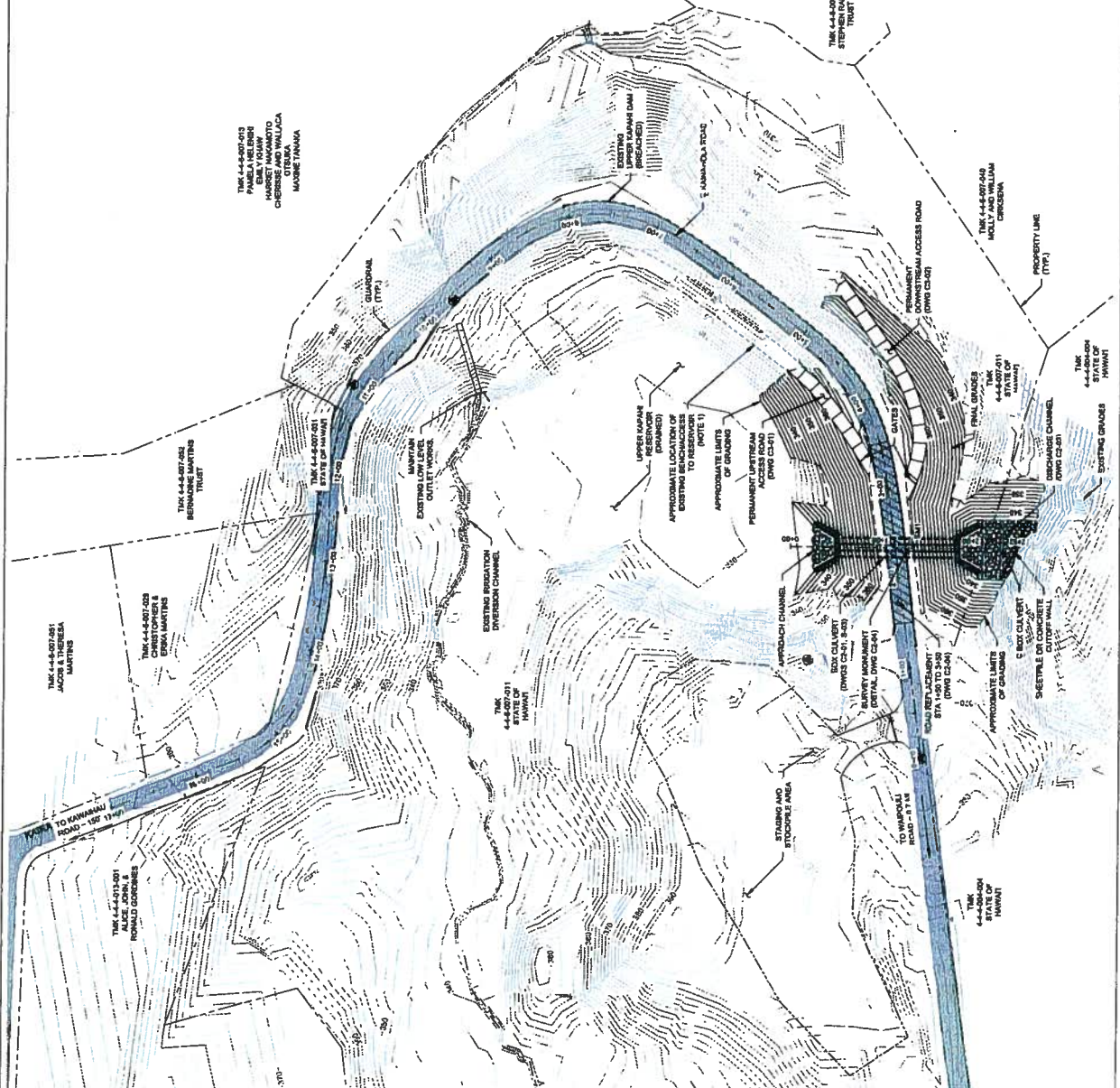
SCALE: AS SHOWN

DATE: JAN 20 11 1 OF 28

PROJECT NO. 14-23-7391
DATE: JAN 20 11 1 OF 28

PROJECT NO. 14-23-7391
DATE: JAN 20 11 1 OF 28

NOTES:
 1. UPSTREAM ACCESS ROAD TO CONNECT TO EXISTING BENCHMARCHES TO RESERVOIR. CONTRACTOR TO UPGRADE EXISTING BENCHMARCH NECESSARY TO PROVIDE ACCESS TO THE RESERVOIR.



NO.	REVISIONS	DATE	BY	CHK.	DESCRPTION

FINAL DRAFT
05/14/2014

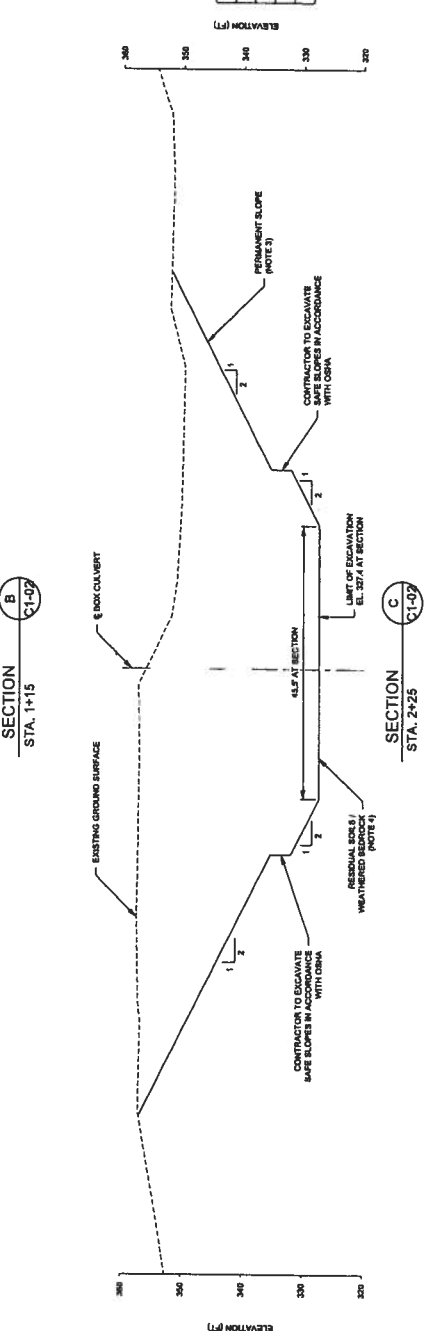
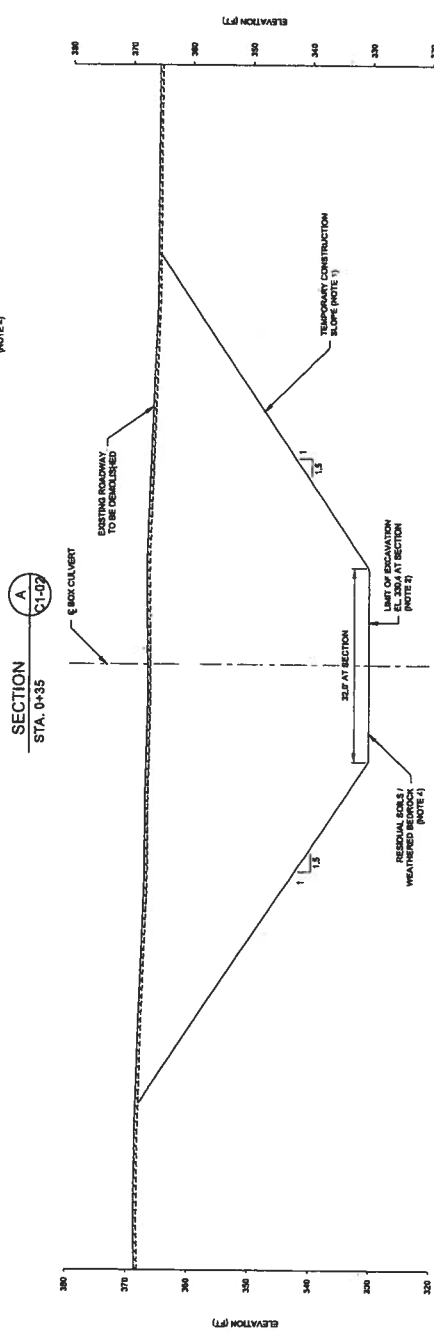
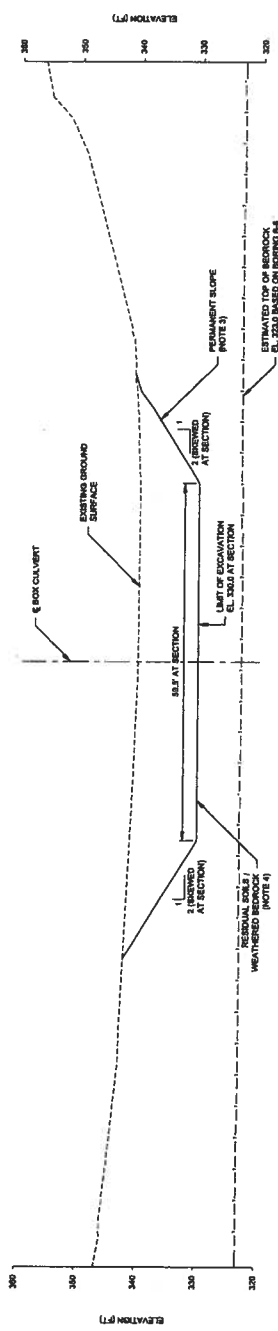
DLNR DAMS & RESERVOIRS ON KAUAI
UPSTREAM ACCESS ROAD FOR
DAM BREACH DESIGN
KAUAI, HAWAII

DEPT. OF ACCOUNTING & GENERAL SERVICES
 DIVISION OF LAND & NATURAL RESOURCES
 STATE OF HAWAII

PLANNING		DESIGNED BY		DRAWN BY		CHECKED BY	
PROJECT NO.	14-3-7091	DESIGNER	S. MITCHELL	DRAWER	S. MITCHELL	CHECKER	C1-01
DATE	MAR 2014	SCALE	AS SHOWN	PROJECT	RESERVOIR	NO.	12 of 28

Exhibit 3

- NOTES:
1. TEMPORARY EXCAVATION SLOPES HAVE BEEN ASSUMED TO BE 1:1.4. CONTRACTOR TO EXCAVATE SAFE SLOPES IN ACCORDANCE WITH OSHA.
 2. FINAL LIMITS OF EXCAVATION AND FOUNDATION TO BE APPROVED BY CONTRACTING OFFICER.
 3. PERMANENT SLOPES SHALL BE NO STEEPER THAN 2:1.
 4. BOX CULVERT SLOPES ARE ANTICIPATED TO CONSIST OF RESIDUAL SOIL OR WEATHERED BEDROCK BASED ON BORING B-4. BEDROCK LOCATIONS TO BE DETERMINED BY GEOTECHNICAL ENGINEERING. ALL LOCATIONS TO BE SHOWN ON DRAWING. DRILLING LOCATIONS AND MAY VARY BETWEEN LOCATIONS.

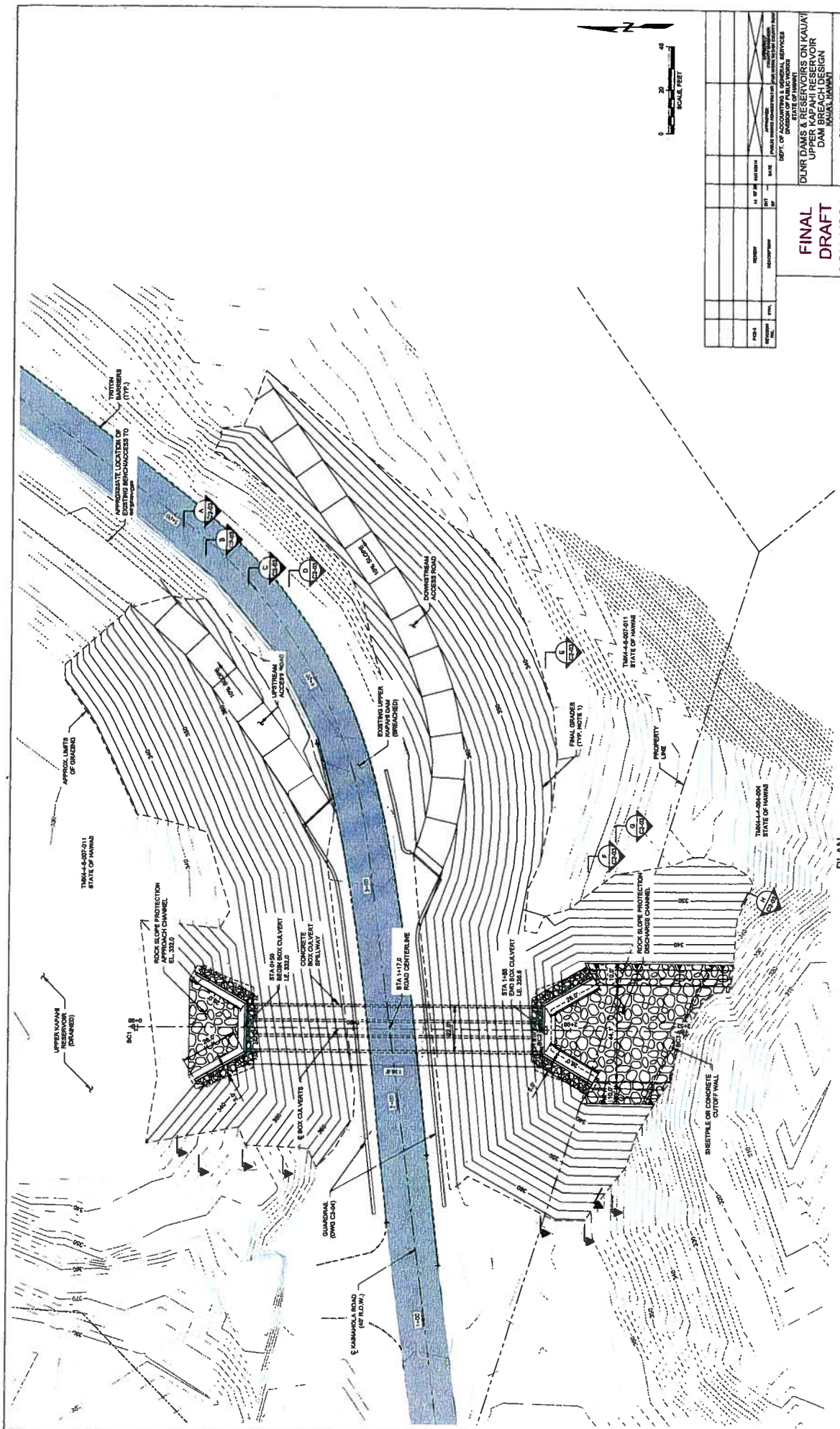


PROJECT NO.	13 SP 100 0000	DATE	05/14/2014
PROJECT TITLE	UPPER KAPAHU RESERVOIR DAM BREACH DESIGN	DESIGNED BY	WILLIAMS BIRDSEIGH WILLIAMS
DESIGNED BY	WILLIAMS BIRDSEIGH WILLIAMS	CHECKED BY	WILLIAMS BIRDSEIGH WILLIAMS
APPROVED BY		DATE	05/14/2014
CITY OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS			

FINAL DRAFT
05/14/2014

PROJECT NO.	13 SP 100 0000	DATE	05/14/2014
PROJECT TITLE	UPPER KAPAHU RESERVOIR DAM BREACH DESIGN	DESIGNED BY	WILLIAMS BIRDSEIGH WILLIAMS
DESIGNED BY	WILLIAMS BIRDSEIGH WILLIAMS	CHECKED BY	WILLIAMS BIRDSEIGH WILLIAMS
APPROVED BY		DATE	05/14/2014
CITY OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS			

Exhibit 3



PLAN
BOX CULVERT

NOTES:
1. DISTURBED AREAS SHALL BE REBUILT IN ACCORDANCE WITH HDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2003, SECTION 411 - HYDRO-MECHANICAL BEDDING.

PROJECT NO.	14-02-1281
DATE	JAN. 2014
DESIGNED BY	AS NOTED
CHECKED BY	
APPROVED BY	
SCALE	AS NOTED
DEPT. OF ACCOUNTING & GENERAL SERVICES STATE OF HAWAII DIVISION OF WATER RESOURCES UPPER KAPAHU RESERVOIR DAM DAM REPAIR DESIGN TAKA-A-001	
BOX CULVERT - PLAN SHEET NO. 15 OF 29 PROJECT NO. 14-02-1281 DATE JAN. 2014	

Exhibit 3



September 8, 2014
Project: 113312

Denise Manuel, P.E.
State of Hawaii
Department of Land and Natural Resources
P.O. Box 373
Honolulu, HI 96809

RE: Permit Review for Upper Kapahi Reservoir

Dear Denise,

We are providing this letter to state that Kleinfelder has completed a review of the design and construction documents for the modifications to Upper Kapahi Dam and Reservoir prepared by GEI Consultants, Inc (GEI). These documents consisted of the Design Summary Report dated August 2014, Review Draft Drawings Dated March 18, 2014, Specifications dated August 2014, Hydrology and Hydraulics Report dated April 2014. This review was completed with the understanding that the outlet will be repaired and fully operational. Confirmation from the Owner and GEI that this will be completed needs to be provided to DLNR Dam Safety. Comments were provided to the DLNR and copied to GEI. GEI provided responses to these comments. With the exception of comments 51 and 62, listed below, GEI has responded to our comments satisfactorily. While Kleinfelder has no further comment on these items, they should be resolved amongst the Owner, DLNR Dam Safety, and GEI.

Comment 51: It would be simpler to make a uniform, 14-inch thick section for the roof slab, and avoid issues with cover thickness, construction joints, etc. This produces a potential source for error in the field.

Comment 62: Perhaps fencing would be more appropriate than handrails, but tend to catch trash. Without the reservoir there, what access is there to the structure? Consider that when significant rain events happen, the public may be attracted to watch flows through the structures. This warrants a barricade.

We appreciate this opportunity to be of service to you. Please call me at (303) 237-6601 ext. 5723 or email llariviere@kleinfelder.com if you have any questions.

Respectfully submitted,

KLEINFELDER, INC.



Laura A. LaRiviere, P.E.
Project Manager

DAM SAFETY PERMIT GENERAL CONDITIONS

APPROVAL OF PLANS AND SPECIFICATIONS FOR DAM AND RESERVOIR CONSTRUCTION, ENLARGEMENT, REPAIR, ALTERATION OR REMOVAL

The following General Conditions shall be adhered to for all Dam Safety permits unless otherwise authorized in writing.

1. Actual construction, enlargement, repair, alteration or removal shall be completed within 5 years of issuance of the permit application approval unless an extension authorized in writing by the Board is issued.
2. Prior to the start of work the owner or applicant shall provide a construction engineer to ensure compliance with the approved plans and specifications and who shall have ultimate responsibility for the supervision of all inspection tasks. The construction engineer may assign some inspection tasks to a duly authorized agent under the construction engineer's supervision. The engineer shall be licensed in the State of Hawaii.
3. The construction engineer shall maintain a record of construction that at a minimum, shall include, daily activity, and progress reports, all test results pertaining to construction; photographs sufficient to provide a record of foundation conditions and various stages of the construction through completion, all geologic information obtained; and construction problems and remedies.
4. A construction quality assurance plan shall be prepared and submitted to the Department for approval prior to the start of construction, which details the minimum requirements of the construction engineer's observation of construction.
5. A construction schedule, which includes the notice to proceed date and estimated project duration and a construction emergency action plan shall be submitted prior to the preconstruction meeting.
6. A preconstruction meeting shall be held subsequent to submitting the quality assurance plan, construction schedule and construction emergency action plan, but not later than 14 days prior to the start of construction. All parties actively involved in the construction should be requested to attend, such as the dam owner, the design engineer, the construction engineer, the contractor and the Department.
7. The Department shall be notified 5 calendar days prior to the commencement of construction.
8. Any changes from the approved plans and specifications shall be approved by the design engineer and a change order, including details and supporting calculations, must be provided to the Department. Major changes must be submitted in writing with supporting documentation and approved in writing by the Department. No work shall be initiated until the approval by the Department or Board is received. Minor changes may be transmitted verbally and approved by the Department verbally provided that documentation of the change is provided to the Department within 10 days of the approval.

9. For new dam construction and for dams and reservoirs that have lowered the water level or have been drained to facilitate construction, the construction engineer shall file and obtain approval of a filling plan with the Department. The applicant/owner shall not proceed with the filling of the reservoir until it receives permission from the Department. The construction engineer shall provide documentation of monitoring during the filling operation.
10. Prior to the filling of the reservoir, the construction engineer shall submit one copy each of the approved Operations Manual and the approved Emergency Action Plan for the facility upon completion of the project as applicable.
11. The construction engineer shall give the Department at least ten days advanced notice of initial materials placement of the dam's foundation, in the cutoff trench, outlet backfill, outlet foundation, and any appurtenance requested by the Department in the approval of the plan for construction observation, to allow for observation by the Department.
12. Notice of substantial completion shall be issued by the construction engineer to the Department stating that the permitted improvements are functionally complete such that filling of the reservoir can be initiated with an approved filling plan.
13. The construction engineer shall give the Department fifteen (15) calendar days advance written notice prior to the project's final construction inspection. The construction engineer shall coordinate with the Department to conduct this inspection in the presence of the Department's dam safety personnel.
14. The construction engineer shall provide notice at least ten (10) days prior to initiating filling the reservoir, unless agreed at the final inspection.
15. If conditions are revealed which will not permit the construction, enlargement, repair, alteration, or removal of a safe dam or reservoir, the application for approval for construction, enlargement, repair, alteration, or removal shall be revoked.
16. A topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features, when required by the Department shall be completed.
17. The applicant/owner shall utilize appropriate erosion control best management practice measures during construction to minimize turbidity (such as scheduling of work during period of low stream flow) and prevent debris and construction materials, including concrete, petroleum products, and other pollutants from enter the waters of the State. Construction related water and debris should be properly disposed of in a legal and environmentally safe manner and in accordance with the Department of Health and other Federal regulations.
18. The applicant/owner shall submit a copy of the dam safety application and the plans and specifications of the proposed improvements to the County Engineer of the County for which the dam resides for compliance with County codes.
19. Within fifteen (15) calendar days of completing the project, the applicant/owner or its representative shall provide the Department with a confirmation letter of compliance, signed and stamped by the construction engineer, indicating that the construction

was completed in accordance to approved plans and specifications including any field changes. The construction engineer shall submit the remaining construction completion documents which may include, but not be limited to, as-constructed drawing, final construction report, topographic survey, record of the location of permanent monuments, log of recorded water levels and other readings from the refilling operation, long-term instrumentation monitoring plan, and affidavit showing the actual cost of construction including engineering costs, within 60 calendar days of the submittal of the final construction inspection.

20. Construction completion documents and the construction engineer's certification shall be provided to the Department within 60 days of the final construction inspection. The Department will review the submitted items and furnish acceptance or denial within 60 days of receipt of satisfactorily completed construction completion documents and close out the dam safety permit.
21. This permit does not relieve the applicant/owner of their obligations to comply with all applicable Federal, State, and County regulations.
22. Compliance with Hawaii Revised Statutes 179D, and Hawaii Administrative Rules 13-190.1.

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

May 13, 2011

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

**APPLICATION FOR A DLNR DAM SAFETY CONSTRUCTION/ALTERATION PERMIT
PERMIT NO. 44 – UPPER KAPAHI RESERVOIR (KA-0013)
DAM REMEDIATION, KAPAA, KAUAI, HAWAII**

The Engineering Division hereby submits an application for your approval and authorization for the Chairperson and Department to stipulate conditions and issue a Dam Safety Construction/Alteration Permit for the subject application, "Remediation of the UPPER KAPAHI RESERVOIR", pursuant to Chapter 179D Hawaii Revised Statutes.

APPLICANT:

Mr. Ernest Y.W. Lau
Public Works Administrator
State of Hawaii
Department of Accounting and General Services
1151 Punchbowl Street, Room 426
Honolulu, HI 96813

CO-LANDOWNER:

Russell Y. Tsuji, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
1151 Punchbowl Street, Room 220
Honolulu, HI 96813
TMK: (4) 4-6-007:011

CO-LANDOWNER:

Larry Dill, Chief Engineer
County of Kauai
4444 Rice Street, #275
Lihue, Hawaii 96766
TMK: (4) 4-6-007:011

CO-LANDOWNER:

Bernadine Martins
6651 Kawaihau Road
Kapaa, Hawaii 96746
TMK: (4) 4-6-007:052

CO-LANDOWNER:

Erika and Christopher Martins
P.O. Box 40
Kapaa, Hawaii 96746
TMK: (4) 4-6-007:029

Approved by the Board of
Land & Natural Resources
at the meeting held on

5/13/11

SUMMARY OF REQUEST:

Application for a Dam Safety Construction/Alteration Permit for the remediation of the Upper Kapahi Reservoir, Kapaa, Hawaii, See Exhibit 1.

LOCATION: Kapaa, Kauai, Hawaii, TMK: (4) 4-6-007:011, 052, 029. See Exhibit 2.

Item L-3

Exhibit 6

BACKGROUND:

The Upper Kapahi Reservoir was constructed around 1910 by Lihue Plantation to supply irrigation water to nearby sugarcane fields. The reservoir is currently used to supply irrigation water downstream and managed by the East Kauai Water Users Cooperative, lessee from the State of Hawaii.

The Upper Kapahi Reservoir Dam is approximately 40 ft. high, 1,080 ft. long. The dam crest is about 19-ft wide and the County of Kauai's Kainahola Road runs on top of the dam crest. The surface area of the reservoir at the dam crest is approximately 6.7 acres. The reservoir impounds a maximum of 310 ac-ft. The existing outlet works consist of a slide gate that leads to a 184-ft long discharge tunnel through the foundation of the dam. Gate control is via an operator accessed on the catwalk structure. The gate and catwalk are scheduled for repair in the near future under a separate project by the Department of Agriculture. The dam has a size classification of "small" and hazard potential classification of "high".

A 2009 Phase I Visual Inspection Report by Kleinfelder West, Inc. identified that the dam has a history of poor maintenance including excessive vegetation, oversteepened slopes, sediment and debris in the reservoir, and embankment erosion.

An application for the remediation of the Upper Kapahi Reservoir was filed on July 22, 2010 by the State of Hawaii, Department of Accounting and General Services (DAGS), on behalf of the co-owners, State of Hawaii, Department of Land and Natural Resources (DLNR), the County of Kauai, Bernadine Martins Trust, and Erika and Christopher Martins.

PROJECT DESCRIPTION:

The owner is proposing to remediate the entire dam structure. The project will include clearing of all the vegetation, stabilizing portions of the upstream slope, adding a rock slope protection, widening the crest, and extending and stabilizing the downstream embankment. For the spillway a new 46-ft long, six-barrel 6-ft x 6-ft a concrete box culvert is being installed to pass the appropriate design flood and ensure adequate freeboard. Construction of the spillway will require alteration to Kainahola Road and a bypass will be built to allow traffic flow during construction. There will also be a new staff gage and survey monuments installed. See Exhibit 3.

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

In accordance with the Division of Land Management's Environmental Impact Statement Exemption List, approved by the Environmental Council dated April 28, 1986, the subject request is considered exempt from the preparation of an environmental assessment pursuant to Exemption Class No. 1 that states: "Operations, repairs or maintenance of existing structures, facilities, equipment or topographical features, involving negligible or no expansion or change of use beyond that previously existing." See Exhibit 4.

REMARKS:

The applicant (DAGS) and their client, DLNR and the applicant's consultant, GEI Consultants, Inc., have completed a basis of design, plans and specifications and requests for the approval of a dam safety construction/alteration permit. The Department and its engineering consultant, Kleinfelder, Inc. have reviewed the documents and concluded that it is sufficient for its intended purposes, (see Exhibit 5). Staff recommends approval of this permit application with the Dam Safety Permit General Conditions (see Exhibit 6) and condition specified under the Special Conditions.

SPECIAL CONDITIONS:

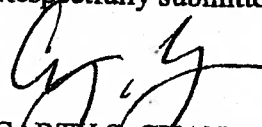
1. DLNR Dam Safety Construction/Alteration Permit No. 44 shall be constructed in coordination and conjunction with DLNR Dam Safety Construction/Alteration Permit No. 42, Upper Kapahi Reservoir – Gate and Catwalk Repair. The construction completion and approval of either permit may be contingent on the other.
2. Provide adequate evidence that revisions to the original construction drawings and specifications that were submitted and approved by DLNR and reviewed by their consultant, Kleinfelder West, Inc. have been incorporated into the construction work (such as in the form of approved change orders or shop drawings).

RECOMMENDATION:


That the Board:

1. Authorize the approval and issuance of the Dam Safety Construction/Alteration Permit for this project; and
2. Direct the Chairperson to issue a dam safety permit for the remediation of the Upper Kapahi Reservoir (DLNR Dam Safety Construction/Alteration Permit No. 44) subject to such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.
3. Authorize the Department to oversee the permitted work and take appropriate action including but not limited to selecting and procuring testing or professional services to verify construction work, approval of minor revisions and changes, issuance of fines and /or revocation of the permit, if necessary.

Respectfully submitted,


CARTY S. CHANG
Chief Engineer

APPROVED FOR SUBMITTAL:


WILLIAM J. AILA, JR.
Chairperson

- Exhibit(s):
- 1 Owner Permit Application
 - 2 Location map
 - 3 Partial Construction Drawing set
 - 4 DAGS Right-of-Entry, including Environmental assessment exemption justification (Chapter 343 HRS)
 - 5 Kleinfelder, Inc. correspondence on approval of plans (to be provided at Board meeting)
 - 6 Dam Safety Permit General Conditions

SECTION 100

1. The first part of the document is a list of names of persons who have been appointed to various positions in the organization. The names are listed in alphabetical order.
2. The second part of the document is a list of names of persons who have been appointed to various positions in the organization. The names are listed in alphabetical order.

SECTION 101

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SECTION 102

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2. The second part of the document is a list of names of persons who have been appointed to various positions in the organization. The names are listed in alphabetical order.
3. The third part of the document is a list of names of persons who have been appointed to various positions in the organization. The names are listed in alphabetical order.
4. The fourth part of the document is a list of names of persons who have been appointed to various positions in the organization. The names are listed in alphabetical order.

CHAPTER 343 ANALYSIS

CUMULATIVE IMPACT

Exemptions are inapplicable when the cumulative impact of planned successive actions 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.

Additional Notes

No physical work is to be done. Engineering calculations remove the dam from DLNR
Jurisdiction.

Exhibit 6

