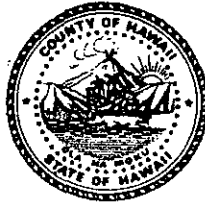


William P. Kenoi  
Mayor



Duane Kanuha  
Director

Bobby Command  
Deputy Director

West Hawai'i Office  
74-5044 Ane Keohokalole Hwy  
Kailua-Kona, Hawai'i 96740  
Phone (808) 323-4770  
Fax (808) 327-3563

## County of Hawai'i PLANNING DEPARTMENT

East Hawai'i Office  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720  
Phone (808) 961-8288  
Fax (808) 961-8742

February 19, 2014

David S. DeLuz, Jr.  
Kūka'iau Ranch LLC  
811 Kamehameha Avenue  
Hilo, HI 96720

Dear Mr. DeLuz:

**SUBJECT:**     **Application:**     **VARIANCE DECISION VAR-13-000184**  
                  **Applicant:**     **KŪKA'IAU RANCH, LLC**  
                  **Owner:**        **KŪKA'IAU RANCH, LLC**  
                  **Request:**     **Variance from Chapter 23, Subdivisions, Article 6, Division 2,**  
                                      **Improvements Required, Section 23-84, Water Supply**  
                  **Tax Map Key:**   **4-2-008:007           (SUB-13-001274)**

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Upon review of your variance application, the Planning Director certifies the **approval** of Variance VAR-13-000184 subject to variance conditions. The variance grants relief for SUB-13-001274 from constructing minimum County dedicable water supply system improvements required by Hawai'i County Code (HCC), Chapter 23 (Subdivisions).

The variance is from the proposed subdivision's minimum requirements pursuant to HCC, Chapter 23 (Subdivisions), Article 6, Division 2, Improvements Required, Section 23-84, Water Supply, (1)(2).

### **BACKGROUND**

1. **Location.** The referenced TMK property, Lot 19-C-1, 'Umikoa Village Subdivision, also being a Portion of Royal Patent 4528, Maheie Award 26-B, containing approximately 1,212.503 acres, is situated in Koholālele, Hāmākua, Hawai'i.
2. **County Zoning.** Agricultural – forty acres minimum (A-40a).
3. **State Land Use.** Agricultural (A).

4. **General Plan.** Land Use Pattern Allocation Guide (LUPAG) map designates the property as Important Agricultural Lands (ial) and Extensive Agriculture (ea).
5. **Subdivision Code Requirements.** The subdivision code requires that subdivisions be served by a water system meeting the minimum requirements of the County Department of Water Supply (DWS) and be provided with water mains and fire hydrants installed to and within the subdivision in accordance with the rules and regulations of the DWS.
6. **Subdivision Request/PPM.** Subdivision application SUB-13-001274 was submitted to subdivide Lot 19-C-1 into 6 lots consistent with the A-40a zoning. Further action on the subdivision application was deferred pursuant to letter dated October 22, 2013 in the subdivision file.
7. **Variance Application.** The variance request from water supply improvements was acknowledged by Planning Department letter dated December 31, 2013. This variance application requests the use of individual rainwater catchment systems in lieu of extending and/or upgrading the DWS water system or constructing a private water system conforming to DWS standards.
8. **Agency Comments and Requirements.**
  - a. State of Hawai'i-Department of Health (DOH): see attached memorandum dated January 7, 2014.
  - b. County of Hawai'i Fire Department (HFD): see attached memorandum dated January 7, 2014.
  - c. Department of Water Supply (DWS): see attached memorandum dated January 10, 2014.
  - d. No other agency comments were solicited and none were received.
9. **Notice to Surrounding Owners/Posted Sign.** The applicant submitted evidence, dated January 13, 2014, regarding the posting of a public notification sign on the subject property pursuant to Section 23-17(c) of the HCC. Pictures of the posted sign were also submitted. Further, verification was submitted that a notice of the application was sent on January 6, 2014 to the surrounding property owners as required by Section 23-17(a).
10. **Comments from Surrounding Property Owners or Public.** No written objections to this application were received from the surrounding property owners or the public.

#### ANALYSIS OF GROUNDS FOR VARIANCE

No variance will be granted unless it is found that:

- (a) *There are special or unusual circumstances applying to the subject real property which exist*

***either to a degree which deprives the owner or applicant of substantial property rights that would otherwise be available or to a degree which obviously interferes with the best use or manner of development of that property.***

The Variance application meets criterion (a) for the following reasons(s):

The subdivision request is for six (6) lots in keeping with the existing A-40a zoning. Although a dedicable water system is a requirement of the code, the subject property is not served by the existing DWS system facilities and it would be unreasonable to expect the owners to upgrade the existing DWS water system. Therefore, it is reasonable that, in lieu of constructing water system improvements to either extend/upgrade the DWS facilities or provide a private water system to DWS standards for the pending 6-lot subdivision, a more reasonable alternative can be allowed pursuant to Planning Department Rule 22-6, Exceptions for large lot subdivisions. Rule 22-6 allows for "Exceptions to the minimum rainfall requirement ... may be granted if ... lots averaging at least 20 acres in size **and** averaging at least four times the minimum lot size..." The proposed 6 lots average 202± acres in the A-40a zoning district and therefore, the 60 inch minimum rainfall requirement of Rule 22-4 does not apply (although rainfall is 60 to 120 inches annually).

The above special and unusual circumstances would deprive the applicant from developing this property and interferes with the best use of this property. Therefore, for this rural, large lot subdivision, the best use and manner of the development allows for the use of individual rainwater catchment systems.

***(b) There are no other reasonable alternatives that would resolve the difficulty.***

The Variance application meets criterion (b) for the following reasons(s):

Constructing water system improvements to either extend/upgrade the DWS facilities or provide a private water system to DWS standards for the pending 6-lot subdivision (which does have sufficient annual rainfall to support individual rainwater catchment systems) would be placing excessive demands upon the applicant because of the extensive improvements required to the existing DWS water system facilities. Therefore, there are no reasonable alternative that would resolve the difficulty.

***(c) The variance will be consistent with the general purpose of the district, the intent and purpose of this chapter, and the County general plan and will not be materially detrimental to the public welfare or cause substantial, adverse impact to an area's character or to adjoining properties.***

The Variance application meets criterion (c) for the following reasons(s):

For this rural, large lot agricultural subdivision, the granting of this variance would be consistent with the general purpose of the district. Water catchment is consistent with the intent of the policies of the general plan

for this large lot agricultural area. This will not be materially detrimental to the public welfare as it serves only private parties. Granting of the variance will not cause substantial, adverse impact to the area's character or to adjoining properties. It may actually be beneficial to the area by reducing rain water runoff.

Given that the subject property has sufficient annual rainfall and qualifies as an exception, a water variance would be consistent with the general purpose of the zoning district and the intents and purposes of the Zoning Code, Subdivision Code, Planning Department Rule 22-6 and the Hawai'i County General Plan.

### **DETERMINATION-VARIANCE CONDITIONS**

The variance to permit the proposed 6-lot subdivision of the subject TMK property without providing dedicable water system improvements meeting DWS standards is hereby **approved** subject to the following variance conditions:

1. The applicant, owners, their assigns, or successors shall be responsible for complying with all stated conditions of approval.
2. Should the Council adopt a Unified Impact Fees Ordinance setting forth criteria for the imposition of exactions or the assessment of impact fees, conditions included herein shall be credited towards the requirements of the Unified Impact Fees Ordinance.
3. The owners, their assigns, or successors shall file a written agreement document with the Planning Department within one (1) year from the issuance of tentative subdivision approval. This written agreement shall contain deed language, being covenants, conditions, and restrictions, as outlined in this variance, affecting the lots created by the proposed subdivision which are not serviced by a County dedicable public water system. The agreement shall be duly recorded at the Bureau of Conveyances of the State of Hawai'i by the applicant. A copy of the recorded declaration document shall be submitted to the Planning Department.

In the event that there are any amendments or changes to the subdivision after the agreement is signed, the applicant shall be responsible for informing the County Planning Department of such amendments or changes so that the agreement can be amended concomitantly. Further, the recorded agreement shall be binding upon the owner(s), their successors or assigns and shall be incorporated as an exhibit and made part of each agreement of sale, deed, lease, or similar documents affecting the title of the existing property or approved subdivided lots.

4. The subdivider and all grantees, successors, and assigns acknowledge that the parcels were created by a variance from the normal subdivision requirements of Hawai'i County, and that there are no longer any special or unusual circumstances applying to the property, and hence, no grounds exist or will exist for

*another variance from the Subdivision Code to permit further subdivision of the properties.*

5. The owners, grantees, successors, and assigns agree and accept the fact that a County dedicable public water system will not be extended to serve the lots within proposed subdivision SUB-13-001274.
6. The owners, grantees, successors, and assigns agree and accept the fact that the County will not bear the responsibility of supplying dedicable public water improvements to the proposed lots. No further subdivision of the lots created will be permitted unless County dedicable public water system requirements and other requirements of HCC Chapter 23, Subdivisions, are met.
7. No condominium property regime shall be allowed on any lot created, nor shall an Ohana Dwelling Unit be permitted or allowed.
8. Any dwelling constructed on any created lot not serviced by the DWS water system shall be provided with and maintain a private rainwater catchment system which includes a minimum 6,000-gallon water storage capacity for domestic consumption or potable uses. This private water storage system shall adhere to the University of Hawai'i's College of Tropical Agriculture and Human Resources' "Guidelines on Rainwater Catchment Systems for Hawai'i" as well as the DOH requirements related to water testing and water purifying devices.
9. Each permitted dwelling shall also be provided with a minimum 3,000 gallon water storage capacity dedicated for fire fighting and emergency purposes. The location and capacity of the emergency water supply system, including the necessary compatible fire apparatus connector system, shall be as required by the HFD. The HFD also advises, as a precautionary measure for other uninhabited structures, that consideration be given to the provision of a similar water storage system for fire fighting and emergency purposes.
10. In the event that the County notifies the owner(s) of the lot(s) created, that the County water system has been upgraded or an improvement district initiated to enable dedicable service to these lots, the owner(s) of lot(s) shall participate in such improvement district or shall pay their pro-rata share of the upgrade and installation of laterals, as determined by the DWS.
11. The pending subdivision application's (SUB-13-001274) final plat map shall meet all the requirements of the Hawai'i County Zoning Code and the Subdivision Code that are not covered by this variance.
12. The subdivider, owner(s), their assigns or successors shall pay any outstanding real property taxes and comply with all other applicable State statutes and County ordinances pertaining to building improvements and land use.

David S. DeLuz, Jr.  
Kūka'iau Ranch LLC  
Page 6  
February 19, 2014

Should any of the foregoing conditions not be complied with, the Planning Director may proceed to declare this Variance Permit null and void.

Sincerely,



DUANE KANUHA  
Planning Director

JRH:nci

P:\Admin Permits Division\Variance\2013\VAR-13-000184KukaiauRanch Water\APVL.doc

Encls: Agency Comments

xc: DWS-Engineering Branch  
SUB-13-001274

xc w/encls: Gordon Inaba  
Inaba Engineering, Inc.  
273 Waiānuenu Avenue  
Hilo, HI 96720

Gilbert Bailado, GIS (via email)  
C. Kay, HCDP Planner (via email)

Duane Kahanu  
January 7, 2014  
Page 2 of 5

- Projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of HAR Section 11-20-29, "Use of new sources of raw water for public water systems." This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements of HAR Section 11-20-29.
- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.
- All sources of public water systems must undergo a source water assessment which delineates a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.
- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification in accordance with HAR Section 11-20-30, "New and modified public water systems." These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board of Water Supply has been delegated to them.
- All public water systems must be operated by certified distribution and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 25, "Rules Relating to Certification of Public Water system Operators."
- All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing drinking water system to meet irrigation or other needs must be carefully designed and operated to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the drinking water system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principal backflow prevention devices to avoid contaminating the drinking water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 21, "Cross-Connection and Backflow Control" is also required.
- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawaii's Source Water Assessment Plan) within the source water

NEIL ABERCROMBIE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 916  
HILLO, HAWAII 96721-0916

PLANNING DEPARTMENT  
COUNTY OF HAWAII  
GARY L. GILL  
DIRECTOR OF HEALTH

2014 JAN -8 AM 9:35

MEMORANDUM

DATE: January 7, 2014  
TO: Duane Kahanu  
Planning Director, County of Hawaii  
FROM: Newton Inouye  
District Environmental Health Program Chief  
SUBJECT: Application: VARIANCE (VAR-13-000184)  
Applicant: KUKA'IAU RANCH, LLC  
Owner: KUKA'IAU RANCH, LLC  
Request: Variance from Chapter 23, Subdivisions, Article 6, Division 2,  
Improvements Required, Section 23-84, Water Supply  
Tax Map Key: 4-2-008:007 (SUB-13-001274)

The Department of Health, Safe Drinking Water Branch (SDWB) administers programs in the area of: 1) public water systems. The SDWB has reviewed the subject document requesting a variance from Chapter 23, Subdivisions, Article 6, Division 2, Improvements Required Section 23-84, Water Supply, to allow the use of a private water catchment system for human consumption and has the following general comments:

Drinking Water

- This project may qualify as a public water system. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, "Rules Relating to Public Water Systems."
- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the systems will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements in accordance with HAR Section 11-20-29.5, "Capacity demonstration and evaluation."

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- ii. 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. [HAR, Chapter 11-55, Appendix C]
  - iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]
  - iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]
  - v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]
  - vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]
  - vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]
  - viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]
  - ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]
  - x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]
  - xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]
3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required 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. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.
  4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

- For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at (808) 586-5258, or write to: Ms. Joanna Seto, P.E., Chief, 919 Ala Moana Blvd., Rm 308, Honolulu, HI 96814.

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of the subject document January 7, 2014. The CWB has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA)), Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) 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...". The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations, Section 122.2, and Hawaii Administrative Rules (HAR), Chapter 11-54.
2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).
  - a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activity. The NPDES application forms may also be picked up at our office or downloaded from our website at:  
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/individual-index.html>.
  - b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at:  
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/general-index.html>.
  - i. 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). [HAR, Chapter 11-55, Appendix B]



William P. Keofo  
Mayor



**County of Hawai'i**  
**HAWAII FIRE DEPARTMENT**  
25 Arapaa Street • Room 2501 • Hilo, Hawaii 96720  
(808) 932-2900 • Fax (808) 932-2929

Darren J. Rosario  
Fire Chief  
Renwick J. Victorino  
Deputy Fire Chief

January 7, 2014

**TO:** DUANE KANUHA, PLANNING DIRECTOR  
**FROM:** DARREN J. ROSARIO, FIRE CHIEF  
**SUBJECT:** VARIANCE APPLICATION (VAR 13-000184)  
APPLICANT/OWNER: KUKAIAU RANCH, LLC  
REQUEST: VARIANCE FROM CHAPTER 23, SUBDIVISIONS,  
ARTICLE 6, DIVISION 2, IMPROVEMENTS REQUIRED, SECTION 23-  
84, WATER SUPPLY  
TAX MAP KEY: 4-2-008-007 (SUB 13-001274)

In regards to the above-mentioned Variance application, the following shall be in accordance:

**NFPA 1, UNIFORM FIRE CODE, 2006 EDITION**

Note: NFPA 1, Hawaii's State Fire Code with County amendments. County amendments are identified with a preceding "C~" of the reference code.

Chapter 18 Fire Department Access and Water Supply

18.1 General. Fire department access and water supplies shall comply with this chapter.

For occupancies of an especially hazardous nature, or where special hazards exist in addition to the normal hazard of the occupancy, or where access for fire apparatus is unduly difficult, or areas where there is an inadequate fire flow, or inadequate fire hydrant spacing, and the AHJ may require additional safeguards including, but not limited to, additional fire appliance units, more than one type of appliance, or special systems suitable for the protection of the hazard involved.

18.1.1 Plans.

18.1.1.1 Fire Apparatus Access. Plans for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.

18.1.1.2 Fire Hydrant Systems. Plans and specifications for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.



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Hawaii's County is an Equal Opportunity Provider and Employer.

Duane Kanuha  
January 7, 2014  
Page 5 of 5

Hawaii Revised Statutes, Subsection 342D-50(a) requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at (808) 586-4309.

We recommend that you review all of the Standard Comments on our website: <http://hawaii.gov/health/environmental/cwv-planning/landuse/landuse.html>. Any comments specifically applicable to this project should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist) created by Built Environment Working Group (BEWG) of the Hawaii State Department of Health. The BEWG recommends that state and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopment projects. We also ask you to share this list with others to increase community awareness on healthy community design.

Lands formerly used for sugarcane production are now being developed into communities where residential homes, schools and commercial businesses are being constructed. Chemicals associated with the sugarcane industry persist in soil today and may be a threat to public health and the environment. Elevated arsenic levels were discovered in soil at former sugarcane production areas on the islands. The HEER Office has identified former sugarcane production areas for assessment throughout the state and plans to work with property owners to conduct environmental assessments to identify and address elevated soil arsenic levels prior to finalizing development plans for the properties.

WORD: VAR-13-000184 se

18.2.3.1.4 When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ shall be authorized to require additional fire protection features.

#### 18.2.3.2 Access to Building.

18.2.3.2.1 A fire department access road shall extend to within 50 ft (15 m) of at least one exterior door that can be opened from the outside that provides access to the interior of the building. Exception: 1 and 2 single-family dwellings.

18.2.3.2.1.1 When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R, the distance in 18.2.3.2.1 shall be permitted to be increased to 300 feet.

18.2.3.2.2 Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 ft (46 m) from fire department access roads as measured by an approved route around the exterior of the building or facility.

18.2.3.2.2.1 When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R, the distance in 18.2.3.2.2 shall be permitted to be increased to 450 ft (137 m).

18.2.3.3 Multiple Access Roads. More than one fire department access road shall be provided when it is determined by the AHJ that access by a single road could be impaired by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access.

#### 18.2.3.4 Specifications.

##### 18.2.3.4.1 Dimensions.

C- 18.2.3.4.1.1 FDAR shall have an unobstructed width of not less than 20ft with an approved turn around area if the FDAR exceeds 150 feet. Exception: FDAR for one and two family dwellings shall have an unobstructed width of not less than 15 feet, with an area of not less than 20 feet wide within 150 feet of the structure being protected. An approved turn around area shall be provided if the FDAR exceeds 250 feet.

C- 18.2.3.4.1.2 FDAR shall have an unobstructed vertical clearance of not less than 13ft 6 in.

C- 18.2.3.4.1.2.1 Vertical clearances may be increased or reduced by the AHJ, provided such increase or reduction does not impair access by the fire apparatus, and approved signs are installed and maintained indicating such approved changes.

C- 18.1.1.2.1 Fire Hydrant use and Restrictions. No unauthorized person shall use or operate any Fire hydrant unless such person first secures permission or a permit from the owner or representative of the department, or company that owns or governs that water supply or system. Exception: Fire Department personnel conducting firefighting operations, hydrant testing, and/or maintenance, and the flushing and acceptance of hydrants witnessed by Fire Prevention Bureau personnel.

#### 18.2 Fire Department Access.

18.2.1 Fire department access and fire department access roads shall be provided and maintained in accordance with Section 18.2.

##### 18.2.2\* Access to Structures or Areas.

18.2.2.1 Access Box(es). The AHJ shall have the authority to require an access box(es) to be installed in an accessible location where access to or within a structure or area is difficult because of security.

18.2.2.2 Access to Gated Subdivisions or Developments. The AHJ shall have the authority to require fire department access be provided to gated subdivisions or developments through the use of an approved device or system.

18.2.2.3 Access Maintenance. The owner or occupant of a structure or area, with required fire department access as specified in 18.2.2.1 or 18.2.2.2, shall notify the AHJ when the access is modified in a manner that could prevent fire department access.

##### 18.2.3 Fire Department Access Roads. (\*may be referred as FDAR)

###### 18.2.3.1 Required Access.

18.2.3.1.1 Approved fire department access roads shall be provided for every facility, building, or portion of a building hereafter constructed or relocated.

18.2.3.1.2 Fire Department access roads shall consist of roadways, fire lanes, parking lots lanes, or a combination thereof.

18.2.3.1.3\* When not more than two one- and two-family dwellings or private garages, carports, sheds, agricultural buildings, and detached buildings or structures 400ft<sup>2</sup> (37 m<sup>2</sup>) or less are present, the requirements of 18.2.3.1 through 18.2.3.2.1 shall be permitted to be modified by the AHJ.

18.2.3.4.6.3 Fire department access roads connecting to roadways shall be provided with curb cuts extending at least 2 ft (0.61 m) beyond each edge of the fire lane.

18.2.3.4.7 Traffic Calming Devices. The design and use of traffic calming devices shall be approved the AHJ.

**18.2.3.5 Marking of Fire Apparatus Access Road.**

18.2.3.5.1 Where required by the AHJ, approved signs or other approved notices shall be provided and maintained to identify fire department access roads or to prohibit the obstruction thereof of both.

18.2.3.5.2 A marked fire apparatus access road shall also be known as a fire lane.

**18.2.4\* Obstruction and Control of Fire Department Access Road.**

**18.2.4.1 General.**

18.2.4.1.1 The required width of a fire department access road shall not be obstructed in any manner, including by the parking of vehicles.

18.2.4.1.2 Minimum required widths and clearances established under 18.2.3.4 shall be maintained at all times.

18.2.4.1.3\* Facilities and structures shall be maintained in a manner that does not impair or impede accessibility for fire department operations.

18.2.4.1.4 Entrances to fire departments access roads that have been closed with gates and barriers in accordance with 18.2.4.2.1 shall not be obstructed by parked vehicles.

**18.2.4.2 Closure of Accessways.**

18.2.4.2.1 The AHJ shall be authorized to require the installation and maintenance of gates or other approved barricades across roads, trails, or other accessways not including public streets, alleys, or highways.

18.2.4.2.2 Where required, gates and barricades shall be secured in an approved manner.

18.2.3.4.1.2.2 Vertical clearances shall be increased when vertical clearances or widths are not adequate to accommodate fire apparatus.

C- 18.2.3.4.2 Surface. Fire department access roads and bridges shall be designed and maintained to support the imposed loads (25 Tons) of the fire apparatus. Such FDAR and shall be comprised of an all-weather driving surface.

**18.2.3.4.3 Turning Radius.**

C- 18.2.3.4.3.1 Fire department access roads shall have a minimum inside turning radius of 30 feet, and a minimum outside turning radius of 60 feet.

18.2.3.4.3.2 Turns in fire department access road shall maintain the minimum road width.

18.2.3.4.4 Dead Ends. Dead-end fire department access roads in excess of 150 ft (46 m) in length shall be provided with approved provisions for the fire apparatus to turn around.

**18.2.3.4.5 Bridges.**

18.2.3.4.5.1 When a bridge is required to be used as part of a fire department access road, it shall be constructed and maintained in accordance with county requirements.

18.2.3.4.5.2 The bridge shall be designed for a live load sufficient to carry the imposed loads of fire apparatus.

18.2.3.4.5.3 Vehicle load limits shall be posted at both entrances to bridges where required by the AHJ.

**18.2.3.4.6 Grade.**

C- 18.2.3.4.6.1 The maximum gradient of a Fire department access road shall not exceed 12 percent for unpaved surfaces and 15 percent for paved surfaces. In areas of the FDAR where a Fire apparatus would connect to a Fire hydrant or Fire Department Connection, the maximum gradient of such area(s) shall not exceed 10 percent.

18.2.3.4.6.2\* The angle of approach and departure for any means of fire department access road shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m) or the design limitations of the fire apparatus of the fire department, and shall be subject to approval by the AHJ.

18.3.5 Private water supply systems shall be tested and maintained in accordance with NFPA 25 or county requirements as determined by the AHJ.

18.3.6 Where required by the AHJ, fire hydrants subject to vehicular damage shall be protected unless located within a public right of way.

18.3.7 The AHJ shall be notified whenever any fire hydrant is placed out of service or returned to service. Owners of private property required to have hydrants shall maintain hydrant records of approval, testing, and maintenance, in accordance with the respective county water requirements. Records shall be made available for review by the AHJ upon request.

C- 18.3.8 Minimum water supply for buildings that do not meet the minimum County water standards:

Buildings up to 2000 square feet, shall have a minimum of 3,000 gallons of water available for firefighting.

Buildings 2001- 3000 square feet, shall have a minimum of 6,000 gallons of water available for firefighting.

Buildings, 3001- 6000 square feet, shall have a minimum of 12,000 gallons of water available for firefighting.

Buildings, greater than 6000 square feet, shall meet the minimum County water and fire flow requirements.

Multiple story buildings shall multiply the square feet by the amount of stories when determining the minimum water supply.

Commercial buildings requiring a minimum fire flow of 2000gpm per the Department of Water standards shall double the minimum water supply reserved for firefighting.

Fire Department Connections (FDC) to alternative water supplies shall comply with 18.3.8 (1)-(6) of this code.

**NOTE:** In that water catchment systems are being used as a means of water supply for firefighting, such systems shall meet the following requirements:

(1) In that a single water tank is used for both domestic and firefighting water, the water for domestic use shall not be capable of being drawn from the water reserved for firefighting;

18.2.4.2.3 Roads, trails, and other accessways that have been closed and obstructed in the manner prescribed by 18.2.4.2.1 shall not be trespassed upon or used unless authorized by the owner and the AHJ.

18.2.4.2.4 Public officers acting within their scope of duty shall be permitted to access restricted property identified in 18.2.4.2.1.

18.2.4.2.5 Locks, gates, doors, barricades, chains, enclosures, signs, tags, or seals that have been installed by the fire department or by its order or under its control shall not be removed, unlocked, destroyed, tampered with, or otherwise vandalized in any manner.

### 18.3 Water Supplies and Fire Hydrants

18.3.1\* A water supply approved by the county, capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ. For on-site fire hydrant requirements see section 18.3.3.

#### EXCEPTIONS:

1. When facilities or buildings, or portions thereof, are completely protected with an approved automatic fire sprinkler system the provisions of section 18.3.1 may be modified by the AHJ.
2. When water supply requirements cannot be installed due to topography or other conditions, the AHJ may require additional fire protection as specified in section 18.3.2 as amended in the code.
3. When there are not more than two dwellings, or two private garage, carports, sheds and agricultural Occupancies, the requirements of section 18.3.1 may be modified by AHJ.

18.3.2\* Where no adequate or reliable water distribution system exists, approved reservoirs, pressure tanks, elevated tanks, fire department tanker shuttles, or other approved systems capable of providing the required fire flow shall be permitted.

18.3.3\* The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be provided on a fire apparatus access road on the site of the premises or both, in accordance with the appropriate county water requirements.

18.3.4 Fire Hydrants and connections to other approved water supplies shall be accessible to the fire department.

greater than 2000 square feet, but less than 3000 square feet and meets the minimum Fire Department Access Road requirements, the distance to the Fire Department Connection may be increased to 500 feet.

- (5) For buildings with an approved automatic sprinkler system, the minimum water supply required may be modified.

If there are any questions regarding these requirements, please contact the Fire Prevention Bureau at (808) 932-2911.



DARREN J. ROSARIO  
Fire Chief

RP/ac

- (2) Minimum pipe diameter sizes from the water supply to the Fire Department Connection (FDC) shall be as follows:
- (a) 4" for C900 PVC pipe;
  - (b) 4" for C906 PE pipe;
  - (c) 3" for ductile iron;
  - (d) 3" for galvanized steel.
- (3) The Fire Department Connection (FDC) shall:
- (a) be made of galvanized steel;
  - (b) have a gated valve with 2-1/2 inch, National Standard Thread male fitting and cap;
  - (c) be located between 8 ft and 16 ft from the Fire department access. The location shall be approved by the AHJ;
  - (d) not be located less than 24 inches, and no higher than 36 inches from finish grade, as measured from the center of the FDC orifice;
  - (e) be secure and capable of withstanding drafting operations. Engineered stamped plans may be required;
  - (f) not be located more than 150 feet of the most remote part, but not less than 20 feet of the structure being protected;
  - (g) also comply with section 13.1.3 and 18.2.3.4.6.1 of this code;
- (4) Commercial buildings requiring a fire flow of 2000gpm shall be provided with a second FDC. Each FDC shall be independent of each other, with each FDC being capable of flowing 500gpm by engineered design standards. The second FDC shall be located in an area approved by the AHJ with the idea of multiple Fire apparatus' conducting drafting operations at once, in mind.
- (5) Inspection and maintenance shall be in accordance to NFPA 25.
- (6) The owner or lessee of the property shall be responsible for maintaining the water level, quality, and appurtenances of the system.

**EXCEPTIONS TO SECTION 18.3.8:**

- (1) Agricultural buildings, storage sheds, and shade houses with no combustible or equipment storage.
- (2) Buildings less than 800 square feet in size that meets the minimum Fire Department Access Road requirements.
- (3) For one and two family dwellings, agricultural buildings, storage sheds, and detached garages 800 to 2000 square feet in size, and meets the minimum Fire Department Access Road requirements, the distance to the Fire Department Connection may be increased to 1000 feet.
- (4) For one and two family dwellings, agricultural buildings, and storage sheds



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII  
345 KEKUAHOA STREET, SUITE 20 • HILO, HAWAII 96720  
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

January 10, 2014

TO: Duane Kanaha, Director  
Planning Department

FROM: Quirino Antonio, Jr., Manager-Chief Engineer

SUBJECT: VARIANCE (VAR 13-000184)  
SUBDIVISION APPLICATION NO. 13-001274  
SUBDIVIDER - KUKAIAU RANCH, LLC  
TAX MAP KEY 4-2-008:007

We have reviewed the subject application and have the following comments.

As stated in our previous letter of October 4, 2013, the Department's existing water system facilities cannot support the proposed subdivision at this time. Extensive improvements and additions, including source, storage, transmission, booster pumps, and distribution facilities, must be constructed. DWS has no objections to the variance.

Should there be any questions, please contact Mr. Larry Beck of our Water Resources and Planning Branch at 961-8070, extension 260.

Sincerely yours,

  
Quirino Antonio, Jr., P.E.  
Manager-Chief Engineer

LB dfg

copy - Kukaiau Ranch, LLC  
Inaba Engineering, Inc.

089397

... Water, Our Most Precious Resource ... Ka Wai A Kāne ...  
The Department of Water Supply is an Equal Opportunity provider and employer