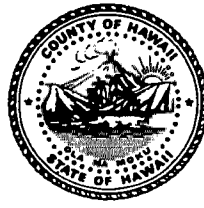


Harry Kim  
Mayor

Roy Takemoto  
Managing Director

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**County of Hawai'i**  
**PLANNING DEPARTMENT**

Michael Yee  
Director

Duane Kanuha  
Deputy Director

East Hawai'i Office  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720  
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February 18, 2020

Zendo Kern  
Planning Consultant, LLC  
194 Wiwoole Street  
Hilo, HI 96720

Dear Mr. Kern:

**SUBJECT: Application: VARIANCE - VAR-20-000567**  
**Applicant: ZENDO KERN, PLANNING CONSULTANT, LLC**  
**Owners: ALBERT K. DUARTE TRUST, et al.**  
**Request: Variance from Chapter 23, Subdivisions, Article 6, Division 2, Improvements Required, Section 23-84, Water Supply; and Article 3, Division 4, Street Design, Section 23-41, Minimum Right-Of-Way and Pavement Widths; Section 23-86, Requirements for Dedicable Streets; Section 23-95, Right-of-Way Improvement**  
**Tax Map Key: (3) 7-6-002:007 (SUB-18-001868)**

Upon review of your variance application, the Planning Director certifies the **approval** of Variance VAR-20-000567 subject to variance conditions. The variance grants relief for SUB-18-001868 from constructing minimum County dedicable water supply system and roadway 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); Article 6, Division 2, Improvements Required, Section 23-41, Minimum Right-Of-Way and Pavement Widths; Section 23-86, Requirements for Dedicable Streets; Section 23-95, Right-of-Way Improvement.

**BACKGROUND**

1. **Location.** The referenced TMK property, Allotment 91, Hōlualoa 1<sup>st</sup> & 2<sup>nd</sup> Partition (Mauka Section), Being a portion of Land Commission Award 7713, Apana 43, containing 19.17 acres, is situated at Hōlualoa 1<sup>st</sup> & 2<sup>nd</sup>, North Kona, Hawai'i.

2. **County Zoning.** Agricultural- 5 acres (A-5a)
3. **State Land Use.** Agricultural (A).
4. **General Plan.** Important Agricultural Lands (ial).
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.

The subdivision code further requires, in the A-5a zoning district, roadways with nondedicable paving of 20-foot width with 15-foot wide paved shoulders and swales on each side within a 50-foot wide right-of-way conforming to Section 23-41 and Department of Public Works (DPW) Standard Detail (Std. Det.) R-25 (2017 Edition).

6. **Subdivision Request/PPM.** Subdivision application SUB-18-001868 was submitted to subdivide the subject TMK property into 3 lots in keeping with the A-5a zoning. Further action on the subdivision application has been deferred pursuant to letter dated May 14, 2019, in the subdivision file.
7. **Variance Application.** The variance request from water supply and roadway improvements was acknowledged by Planning Department letter dated January 10, 2020. This variance application includes background history and circumstances and information regarding the pending subdivision application. The subject property is not within the service limits of the DWS's existing water system facilities. The applicant proposes to access the subject properties over existing roadways within 50-foot and 12-foot plus wide right-of-ways. This access is approximately a 10-foot wide paved and/or graveled travel way with existing drainage-conductive shoulders. These roads have been adequately servicing this area for many years.
8. **Variance Application (VAR-20-000567)-Agency Comments and Requirements.**
  - a. The State of Hawai'i-Department of Health (DOH): See attached memorandum dated January 16, 2020. **(Exhibit A)**
  - b. The County of Hawai'i Fire Department (HFD): HFD did not comment on this application as of this date. However, we have attached their typical response to this type of application. **(Exhibit B)**
  - c. The Department of Water Supply (DWS): See attached memorandum dated January 28, 2020. **(Exhibit C)** We have also attached their comments in response to the subdivision application. **(Exhibit D)**

- d. The Department of Public Works (DPW): DPW generally does not generate road improvement requirements for private non-dedicable roads as evidenced by their response to the subdivision application. **(Exhibit E)**
  - e. No other agency comments were solicited, and none were received.
9. **Notice to Surrounding Owners/Posted Sign.** The applicant submitted evidence, on January 7, 2020, regarding the posting of a public notification sign on the subject property pursuant to Section 23-17(c) of the Hawai'i County Code (HCC). A picture of the posted sign was also submitted. Evidence received January 16, 2020, indicate that a notice of the application was sent to the surrounding property owners as required by Section 23-17(a).
10. **Comments from Surrounding Property Owners or Public.** There were no written comments on this application received from the surrounding property owners or the public.
11. **Water Supply.** The Subdivision Code requires that all new subdivisions have a dedicable water system meeting with the minimum requirements of the DWS.

The intent and purpose of requiring a dedicable water system for and within the proposed subdivision is to assure that adequate water is available for human consumption and fire protection.

12. **Lot Access/Roadways.** The Subdivision Code requires a minimum of 20-foot wide nondedicable pavement within a minimum 50-foot wide right-of-way in the A-5a zoning district. These improvements would conform to Department of Public Works (DPW) Standard Detail (Std. Det.) R-25 (2017 Edition).

The intent and purpose of access improvement requirements to a proposed subdivision is to ensure legal and physical access to the proposed lots that is clearly defined and accessible from a public road by domestic vehicles, police, fire, and other service vehicles under various weather conditions without constant maintenance.

### **ANALYSIS OF GROUNDS FOR WATER VARIANCE**

No water 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 Water Variance application meets criterion (a) for the following reasons(s):

The subdivision request is for three (3) lots well within the existing A-5a zoning.

Although a dedicable water system is a requirement of the code, the subject property is not within the service limits of the present service facilities of the existing DWS system, and it would be unreasonable to expect the owners to construct the required water system service improvements and additions, which may include, but not be limited to, source, storage, booster pumps, transmission, and distribution facilities, that would be required. 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 3-lots in the pending subdivision, a more reasonable alternative can be allowed pursuant to Planning Department Rule No. 22, Water Variance.

The above special and unusual circumstances would deprive the applicant from developing these properties and interferes with the best use of these properties. Therefore, for this rural residential subdivision, the best use and manner of the development allows for individual rainwater catchment system in keeping with the rural, sparsely populated character of the area.

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

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

The DWS has indicated that the property is not within the service limits of its existing water system facilities. Constructing water system improvements to extend/upgrade the DWS facilities or provide a private water system to DWS standards for the 3 lots of the pending subdivision would be placing excessive demands upon the applicant because of the extensive improvements and additions required to the existing DWS water system facilities. At an elevation of approximately 2,000 feet above sea level, the drilling of wells and construction of other water system improvements (pumps, storage and distribution facilities) to DWS standards would also be unreasonable for a three (3) lot subdivision.

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

Considering that there is adequate rainfall (minimum 60 inches to 80 inches of rainfall annually) to support individual water catchment and this is a rural, sparsely populated 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 in that it will further agricultural/residential opportunities. Water catchment will not be materially detrimental to the public welfare as it serves only private parties.

Subject to conditions, granting of the variance will not cause substantial, adverse impact to the area's character or to adjoining properties. The collection of rainwater could help to reduce runoff and may be a benefit to the surrounding area.

Given that the subject area receives sufficient annual rainfall, 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, Rule 22 and the Hawai'i County General Plan.

### **ANALYSIS OF GROUNDS FOR ROADWAY VARIANCE**

No roadway 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 Roadway Variance application meets criterion (a) for the following reasons(s):

It is reasonable to grant this variance for an A-5a zoning subdivision of three (3) lots to have an existing paved/graveled travel way within existing 50-foot wide and 12-foot wide right-of-ways with various width paved/graveled travel way and shoulders/swales on both sides. The evidence presented within the variance application indicates that the roadway has been adequate, and long in use for this rural, agricultural area. Upkeep of the roads has historically been done by the applicant and adjoining property owner(s).

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

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

It is unreasonable for the applicant alone to improve to full county standards the approximately 4,000 linear feet of roadway for this lightly used access. The County Standard requirements would unduly burden the applicant as it would require acquisition of much additional right-of-way from other landowners. There is also the possibility of the removal/relocation of long-standing improvements such as rock walls, fences and mailboxes, etc.

The roadway of existing approximately 10 to 12-foot wide, paved/graveled travel ways and drainage-conducive shoulders within the 50 and 12-foot plus wide right-of-ways is more than sufficient for the sparsely populated, agricultural area. The alternative roadway should be beneficial to the area as it reduces impervious surface area and, thus, rainwater runoff. Additionally, the narrower roadway serves as a "traffic calming" measure, a measure that is consistent with the principles of "skinny" streets and "smart growth."

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

A reduced impervious surface roadway to serve the 3 lots would be consistent with the residential nature of the subdivision. The requested variance would not be detrimental, nor have an adverse impact on this rural, sparsely populated agricultural area. The reduced paved roadway may be beneficial in that it greatly reduces rainwater runoff. This is not a through street and the narrowed driving surface will likely reduce vehicular speeds and, therefore, promote pedestrian safety.

#### **DETERMINATION-VARIANCE CONDITIONS**

The variance requested to permit the proposed 3-lot subdivision of the subject TMK property without providing a dedicable water system meeting DWS standards and to allow the proposed privately-owned roadway designated on the plat map, 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 affecting the lots created by the proposed subdivision which are not serviced by a County dedicable public water system and the lots that are serviced by the privately-owned alternative roadway. The agreement shall be duly recorded at the Bureau of Conveyances of the State of Hawai'i by the owners at their cost and expense. A copy of the recorded document shall be forwarded to the Planning Department for its files.

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 variance from the normal subdivision requirements of Hawai‘i County, and that there are no special or unusual circumstances applying to the property which deprive the owners of substantial property rights or to a degree which obviously interferes with the best use or manner of development of the properties, and hence, no grounds exist or will exist for another variance from the Subdivision Code to permit further subdivision of the properties, and that changes in the owners’ personal or financial situation after acquiring the properties also will not constitute grounds for a variance from the Subdivision Code to permit further subdivision of the properties.

5. **WATER VARIANCE.**

- a. The owners, grantees, successors, and assigns agree and accept the fact that a County dedicable public water system will not be extended to three (3) of the lots within proposed subdivision SUB-18-001868.
- b. The owners, grantees, successors, and assigns agree and accept the fact that the County will not bear the responsibility of supplying additional public water 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.
- c. No condominium property regime will be allowed on any lots created nor will an ‘Ohana dwelling be allowed or permitted.
- d. Any dwelling constructed on the created lots not served by DWS 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.
- e. Each permitted dwelling not served by DWS shall be provided with an additional **minimum** 3,000-gallon water storage capacity for firefighting and emergency purposes. The location and capacity of the emergency water supply system, including the necessary compatible connector system, shall be as specified by the HFD. The HFD also advises, as a precautionary measure for other uninhabited accessory structures, that consideration be given to the provision of a similar water storage system for firefighting and emergency purposes.

- f. In the event that the County notifies the owner(s) of the lots created that the County water system has been upgraded or an improvement district initiated to enable water service to these lots, the owner(s) of lots 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.
6. **ROAD VARIANCE.** The subdivider, owners, their assigns, or successors understand that the roadway within the 50-foot and 12-foot wide privately-owned roadway system will use and maintain the roadway on their own without any expectation of governmental assistance to maintain the improvements. Furthermore, dedication to the County may not take place until the road is improved to County dedicable standards.
  - a. The owners, grantees, successors, and assigns shall indemnify and defend the State of Hawai'i or County of Hawai'i from any and all liability arising out of vehicular access to and from the subject properties utilizing this private right-of-way.
  - b. Upon written demand of the County of Hawai'i, the applicant and/or owners, their assigns, or successors shall agree to participate and pay their fair share percentage of any improvement district adopted for the purpose of roadway improvements serving the proposed lots arising out of SUB-18-001868. Should the improvement district require acquisition of any privately-owned rights-of-way fronting the lots, such rights-of-way shall be dedicated to the County without cost and the value of the dedication credited to the fair share contribution of the respective lot owner(s).
  - c. The lot owners, grantees, successors, and assigns agree to participate in any existing homeowners' association or road maintenance agreement and/or pay their fair share to maintain the roadway within the private rights-of-way.
  - d. The owners, grantees, successors, and assigns agree and accept the fact that the County will not bear the responsibility of maintaining the private roadway. No further subdivision of the lots created will be permitted unless minimum roadway requirements of HCC Chapter 23, Subdivisions, are met.
7. The pending subdivision application's final plat map shall meet all the requirements of the Hawai'i County Zoning Code and Subdivision Code not covered by this variance. No further variances from Chapter 23, Subdivisions, shall be granted to permit subdivision application SUB-18-001868.
8. 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 and the public's health, safety and welfare.



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

Sincerely,



MICHAEL YEE  
Planning Director

JRH:jaa

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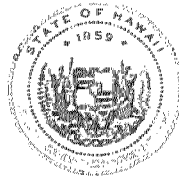
Enclosures: Agency Comments (Exhibits A-E)

xc: DPW-Engineering  
DWS-Engineering  
SUB-18-001868  
R. Whitmore, KCPD-PPM

Chrystal Thomas Yamasaki, LPLS, Wes Thomas Associates  
Wes Thomas & Associates  
75-5749 Kalawa Street  
Kailua-Kona, HI 96740

xc w/encls: G. Bailado, GIS Section (via e-mail)

Albert K. Duarte and Sandra S. Duarte, et. al.  
P.O. Box 133  
Hōlualoa, HI 96725



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P O BOX 916  
HILO HAWAII 96721-0916

2020 JAN 23 AM 11 16  
DEPARTMENT OF HEALTH  
STATE OF HAWAII

MEMORANDUM

DATE: January 16, 2020

TO: Mr. Michael Yee  
Planning Director, County of Hawaii

FROM: Eric Honda *EH*  
District Environmental Health Program Chief

SUBJECT: Application: VARIANCE VAR-20-000567  
 Applicant: ZENDO KERN, PLANNING CONSULTANT, LLC  
 Owners: ALBERT K. DUARTE TRUST, et al.  
 Request: Variance from Chapter 23, Subdivisions, Article 6, Division  
 2, Improvements Required, Section 23-84, Water Supply: Article 3  
 Division 4, Street Design, Section 23-41; Section 23-86;  
 Section 23-95  
 TMK: 7-6-002:007 (SUB-18-001868)

**Public Water Systems:** The Department of Health’s Safe Drinking Water Branch authority on drinking water quality is based on the definition of 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, Chapter 11-20 (HAR 11-20), and titled “Rules Relating to Public Water Systems”. All public water systems are regulated by the Department of Health and shall be in compliance with the Hawaii Administrative Rules, Title 11, Chapter 20. Recommend the subdivision lots be connected to an existing public water system.

Concerns on water quality for lead, copper, algae and microbiological and chemical contaminations in private water systems have identified the need for self monitoring. The Department of Health does not support the use of these private rain catchment systems for drinking purposes since the quality may not meet potable water standards. All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment, per HAR 11-20-29.5, titled “Capacity Demonstration and Evaluation.” This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.

Michael Yee  
January 16, 2020  
Page 2 of 3

Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of HAR 11-20-29. This section requires that all new public water system sources be approved by the Director of Health (Director) prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements specified in HAR 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 treatment of the water source. In addition, 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 system sources must undergo a source water assessment which will delineate 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 construction plans approval by the Director prior to construction of the proposed system or modification in accordance with HAR 11-20-30, titled "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 or Department of Water or Water Supply has been delegated to them.

All public water systems must be operated by certified distribution system and water treatment plant operators as defined by HAR 11-25 titled, "Rules Pertaining 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 potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two (2) systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable 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 on non-potable water. Compliance with HAR Chapter 11-21, titled Cross-Connection and Backflow Control is also required.

All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai'i Source Water Assessment Plan) within the source water 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.

Michael Yee  
January 16, 2020  
Page 3 of 3

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 SDWB at 586-4258.

**William P. Kenoi**  
Mayor



PLANNING DEPARTMENT  
099203

**Darren J. Rosario**  
Fire Chief

**Renwick J. Victorino**  
Deputy Fire Chief

**County of Hawai'i**  
**HAWAI'I FIRE DEPARTMENT**  
25 Aupuni Street • Suite 2501 • Hilo, Hawai'i 96720  
(808) 932-2900 • Fax (808) 932-2928

June 8, 2015

TO : DUANE KANUHA, PLANNING DIRECTOR

FROM : DARREN J. ROSARIO, FIRE CHIEF

SUBJECT : Variance – VAR- [REDACTED]  
Applicant: Sydney Fuke, Planning Consultant  
Owners: [REDACTED]  
Request: Variance from Chapter 23, Subdivisions, Article 6, Division 2,  
Improvements Required, Section 23-84, Water Supply  
Tax Map Key: [REDACTED]

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

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

*Note: Hawai'i State Fire Code, National Fire Protection Association 2006 version, with County of Hawai'i 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.

EXHIBIT  
B

099203



### **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.

**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.

**18.2.3.1.4** 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 in 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 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 then 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.

**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.

**18.2.3.4.6.3** 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.

**18.2.4.2.3** 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.

**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;
- 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:**

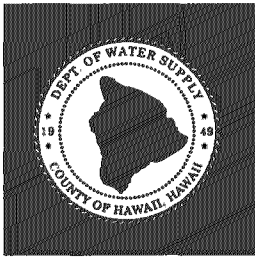
- 1) Agricultural buildings, storage sheds, and shade houses with no combustible or equipment storage.
- 2) Buildings less than 800 square feet in size that meets the minimum Fire Department Access Road requirements.
- 3) For one and two family dwellings, agricultural buildings, storage sheds, and detached 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 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:nac



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

January 28, 2020

2020 JAN 30 PM 2:24  
COUNTY OF HAWAII

**TO:** Mr. Michael Yee, Director  
Planning Department

**FROM:** Keith K. Okamoto, Manager–Chief Engineer

**SUBJECT:** **Variance VAR 20-000567**  
**Subdivider – Duarte, Albert, et al.**  
**Tax Map Key 7-6-002:007 (SUB 18-001868)**

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

Our comments from our memorandum to your department and copied to Wes Thomas Associates, dated May 7, 2019, regarding the subject subdivision, still stand.

Should there be any questions, please contact Mr. Troy Samura of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Keith K. Okamoto, P.E.  
Manager–Chief Engineer

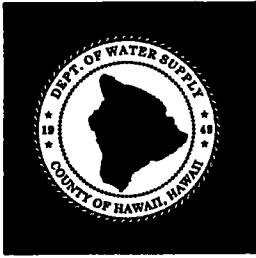
TS:dfg

copy – Wes Thomas Associates  
Albert Duarte, et al.

EXHIBIT  
C

... *Water, Our Most Precious Resource* ... *Ka Wai A Kāne* ...

130983



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

May 7, 2019

2019 MAY 8 PM 3 14  
PLANNING DEPARTMENT  
COUNTY OF HAWAII

**TO:** Mr. Michael Yee, Director  
Planning Department

**FROM:** Keith K. Okamoto, Manager–Chief Engineer

**SUBJECT:** Preliminary Plat Map and Defer Action  
Subdivider – Duarte, Albert, et al.  
Tax Map Key 7-6-002:007 (SUB 18-001868)

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

Please be informed that the subject property is not within the service limits of the Department's existing water system facilities.

Therefore, the Department's existing water system facilities cannot support the proposed subdivision at this time. Extensive improvements and additions, which may include, but not limited to source, storage, booster pumps, transmission, and distribution facilities, would be required.

Should there be any questions, please contact Mr. Troy Samura of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Keith K. Okamoto, P.E.  
Manager–Chief Engineer

TS:dfg

copy – Wes Thomas Associates  
Albert Duarte et al.

EXHIBIT  
D

DEPARTMENT OF PUBLIC WORKS  
COUNTY OF HAWAII  
HILO, HAWAII

DATE: May 23, 2019

Memorandum

TO: Planning Department

FROM: Department of Public Works *MD*

SUBJECT: SUBDIVISION: SUB 18-001868  
Subdivider: DUARTE, Albert, et. al.  
Location: Holualoa 1<sup>st</sup> and 2<sup>nd</sup>, North Kona, Hawaii  
TMK: 7-6-002:007  
Folder No.: 76137-A

2019 MAY 23 PM 3 00  
PLANNING DEPARTMENT  
COUNTY OF HAWAII

We have reviewed the preliminary plat map and have the following comments:

1. §23-64. Identify all watercourses and drainageways and designate areas within as "approximate areas of flood inundation."

Questions may be referred to Melanie DeMello at 961-8927.

MD

c: ENG-KON