

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
Honolulu, Hawai'i**

File No: HA-3868  
180-Day Exp. Date: November 18, 2020

October 9, 2020

**Board of Land and  
Natural Resources  
State of Hawai'i  
Honolulu, Hawai'i**

**REGARDING:** Conservation District Use Application (CDUA) HA-3868 for the Garrett Single Family Residence, Agricultural Use/Farm with Associated Farm/Utility Shed, Landscaping, and Related Improvements

**APPLICANT/  
LANDOWNER:** Robert Garrett representing Kamahele Farms LLC

**AGENT:** James M. Leonard of JM Leonard Planning, LLC

**LOCATION:** 15-2145 Government Beach Road, Maku'u, Puna, Hawai'i

**TAX MAP KEYS  
(TMKs):** (3) 1-5-010:009

**AREA OF PARCEL:** 13.436 acres

**USE:** Single-family residence (SFR) (4,695 sq. ft.); Agricultural use/farm with associated farm/utility shed (680 square foot); Landscaping & Associated Improvements

**SUBZONE:** Resource

**DESCRIPTION OF AREA/CURRENT USE**

The property is bordered by the shoreline to the northeast, by the Government Beach Road to the southwest. Across and along the Government Beach Road are various farms, cattle pastures, and single-family residences. The surrounding properties consist of a number of single-family residences and small-scale farms in a rural residential area of Hilo.

This coastal lot is located makai of the Government Beach Road between the Hawaiian Paradise Park and Hawaiian Shores subdivisions, in the ahupua'a of Maku'u, in the Lower Puna area of the Island of Hawai'i. (see **Exhibit 1**).

The property is located in the Resource Subzone of the State Land Use Conservation District. The property is commonly referred to as the Kamahale Homestead Property (Kamahale Farm) because of its original ownership and homesteading by Ulrich” “Sonny” Kamahale. Sonny maintained livestock and crops on this property. The property is roughly divided into mauka and makai portions. The mauka portion has been used for residence, farming and grazing for centuries with vegetation consisting of non-native pasture grasses, crops such as taro, melon and squash, herbs, shrubs and individual trees (see **Exhibit 2**). The makai portion consists of a dense coconut and hala forest (see **Exhibit 3**).

The property’s terrain rises from its mauka boundary along Government Beach Road to a broad and distinctive hill side (formed by a littoral cone and cinder deposits). The hill’s crest is part of a ridge that is parallel to the sea and is the approximate dividing line between the historically farmed mauka portion and the vegetated makai portion.

As mentioned above, the mauka portion has been used and is currently used for farming and animal grazing; therefore, this portion consists of woody pasture lands, with numerous fruit trees and weedy trees, shrubs, and remnant crops such as taro and squash. The makai portion consists of hala and coconut trees that are interspersed with common invasive trees and an understory that includes a mix of ferns, sedges, and grasses. Ohi’a is no longer present on the property and aside from hala no other native trees are found on the property. Along the shoreline there is a strand of native shoreline vegetation that consists primarily of naupaka, coconut, and mau’u ‘aki ‘aki. The area also contains the endangered grass *Ischaemum byrson* (see **Exhibit 4**).

Elevations over the property range from the mean sea level (AMS) along the coast at its makai boundary, to about 50 feet at the hill-top near the midpoint in the southeastern portion, to approximately 30 feet AMS at the mauka boundary with the Government Beach Road. This area receives an average annual rainfall of about 120 inches and experiences an approximate average temperature of 75 degrees Fahrenheit. No streams are present within approximately 5 miles of the property.

The approximately 1,000-foot shoreline can be described as rocky and “hard.” There are no sandy beaches abutting this property and historical property imagery (air photos and digital aerial imagery) from 1954, 1965, and 2014 do not show measurable change in position of the overall coastal sea cliff, tidepools, vegetation line or other features since 1954. The property’s shoreline can be characterized as having five bands: tidepools; a line of large, rounded boulders; a low, stepped cliff; a fairly level pahoe-hoe shelf; and then another ridge of boulders.

The property is located on the flank of the active volcano Kilauea. Several lava and cinder formations make up the property. The coastal shelf extending makai of the shoreline is the oldest exposed lava on the property and it is part of a lava flow that emerged from Kilauea’s summit between 750 and 1,500 years ago. Where the lava reached the sea, the interaction of molten lava and seawater created widespread cinder deposits and formed the littoral cone that remains today as the prominent hill or pu’u. These deposits and hill make up almost the entire property. Between 450 and 750 years ago another lava flow surrounded but did not inundate the hill. This lava flow is present on the southeast and southwest margins of the property.

The soils found on the property are classified as Opihikao highly decomposed plant material. This well-drained, thin organic soil develops over pahoe-hoe bedrock and is rapidly permeable, with slow run-off and a slight erosion hazard. This soil is within the subclass VIIc, which means it has

limitations that generally make it unsuitable for cultivation and restrict its use to pasture, range, woodland or wildlife.

### Hazards

The volcanic hazard mapping produced by the U.S. Geological Survey places the property in Lava Flow Hazard Zone 3 on a scale of ascending risk from 9 (low) to 1 (high). The relatively high hazard risk is because Kilauea is an active volcano. One to 5 percent of zone 3 has been covered since 1800, and 15 to 75 percent has been covered within the past 750 years. The property is approximately 1.5 miles from the loosely defined boundary of zone 2, which is adjacent to the summit and East Rift Zone (ERZ).

The island of Hawai'i experiences high seismic activity. The proposed residence is cited mauka of the hill, near its top and on moderately sloped land. The proposed residence citing, and setbacks are to reduce its risk from subsidence, landslides or other forms of mass wasting.

A Flood Zone Map obtained from the State's Flood Hazard Assessment Tool website shows that a portion of the subject property is in Flood Zone X and a portion in Flood Zone VE (**see Exhibit 5**). The proposed home and all improvements are to be located in Flood Zone X; this flood zone defines areas that are outside of the 500-year floodplain, with minimal risk of tsunami inundation. The more coastal property portion is in Flood Zone VE.

This coastal property contains approximately 1,000 feet of rocky shoreline. The coast of this part of the Puna District faces the open ocean with no barriers of offshore reefs or bars. Erosion along this shoreline is attributed to wave energy and the drag of moving water. The proposed residence and improvements are located outside of the sea level rise exposure area of 3.2 feet, as projected by the Sea Level Rise Exposure Area, SLR-XA (**see Exhibit 6**). Coastal erosion was examined via a geo-historic method and the examination of historical aerial photos. Geo-historic rate calculations were based on physical coastal characteristics and lava flow age; this calculation came to an erosion range between 1.68 and 3.48 inches/year, with a mean rate of 2.58 inches/year. Historical aerial photos were compared to recent satellite imagery and calculated an erosion range between 2.2 to 3.8 inches/year. The Coastal Erosion Study, conducted by tesARCH, estimated from these studies that the average annual to be 2.58 inches or 0.215 feet per year.

### Flora and Fauna

Prior to commercial agriculture, ranching, and lot subdivision, the natural vegetation of this part of the Puna shoreline was mostly coastal forest and strand vegetation; it was dominated by naupaka (*Scaevola taccada*), hala (*Pandanus tectorius*), 'ohi'a (*Metrosideros polymorpha*), nanea (*Vigna marina*), and various ferns, sedges, and grasses. Today, the project site is dominated by alien vegetation. 'Ohi'a is no longer present and, aside from hala, no native trees are found. Vegetative cover differs between the mauka and makai property portions. The mauka portion, after decades of farming and grazing, is now woody pasture with numerous fruit and weedy trees, shrubs, herbs, and grasses, and crops such as taro and squash. The makai portion of the property consists of coconut and hala forest with an understory of ferns, sedges, and grasses. There is a narrow band of shoreline vegetation that consists of naupaka and mau'u 'aki'aki.

Additionally found on the makai half of the property is *Ischaemum byrhone*, a State and federally listed endangered grass known to grow on pahoe-hoe close to the edge of sea cliffs. The grass is found in an area roughly 50 feet long and 10 feet wide on the northeastern shoreline. The applicant

proposes to encircle the *Ischaemum byrhone* clumps with rock curbs (one or two courses or dry-stack rock high) in order to encourage people walking along the shoreline to walk around the rock curbed grasses.

Observed fauna on the property include the Japanese white-eyes (*Zosterops japonicus*), cattle egrets (*Bubulcus ibis*), domestic chickens (*Gallus gallus domesticus*), common mynas (*Acridotheres tristis*), northern cardinals (*Cardinalis cardinalis*), spotted doves (*Streptopelia chinensis*), striped doves (*Geopelia striata*) and house finches (*Carpodacus mexicanus*). The only native bird seen was the kolea or Pacific golden-plover (*Pluvialis fulva*), a migratory bird common on both shorelines and pastures from late August to late April.

Other migratory shorebirds such as ruddy turnstone (*Arenaria interpres*) and wandering tattler (*Heteroscelus incanus*) often seen feeding on the Puna coastline are likely to be present makai of the property. The seabird black noddy (*Anous minutus melanogenys*) flies near cliffs over nearshore waters. No black noddy nests were observed on the low cliffs in front of the property. The Hawaiian Goose or nēnē (*Branta sandvicensis*) is an endemic, federally listed endangered species that has been observed in many locations in Puna. No nēnē were observed on the property but the grass there may attract birds to rest or even nest.

Native forest birds would not be expected at the project site due to its low elevation, alien vegetation and lack of adequate forest resources. However, it is not inconceivable that a few Hawai'i 'amakihi (*Hemignathus virens*) are sometimes present. Nevertheless, the 'ōhi'a trees with which these birds are commonly associated are not present on or near the property.

As with all of East Hawai'i, several endangered native terrestrial vertebrates may be present in the general area and may overfly, roost, or utilize resources of the property. These include the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered band-rumped storm petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*). In addition, the formerly endangered Hawaiian hawk (*Buteo solitarius*) hunts in all portions of Puna, including the coastal areas, although no suitable nesting trees are present.

Aside from the bat, other mammals in the project area are all introduced species, including the horses (*Equus ferus caballus*) and sheep (*Ovis aries*) that graze the property, and feral cats (*Felis catus*), feral pigs (*Sus scrofa*), small Indian mongooses (*Herpestes a. auropunctatus*) and various species of rats (*Rattus spp.*) that wander in and out. Several species of non-native reptiles and amphibians may also be present. A green anole (*Anolis carolinensis*) was seen during the survey, and the highly invasive coqui frog (*Eleutherodactylus coqui*) is nearly universal in lowland Puna. None of the feral animals are of conservation concern and all are deleterious to native flora and fauna.

The coastal and marine fauna and flora are typical of the high-energy coasts of Puna, which are young ecosystems with limited coral growth but a variety of algae, fish and invertebrates. Marine mammals and reptiles, some of them endangered, also visit the Puna coastal waters.



Historic/Cultural

An archeological inventory survey (AIS) and a cultural impact assessment (CIA) were prepared for the property. Based on previous archaeological studies, historical research and family interviews it was expected that pre-Western Contact to early Historic era agricultural and habitation features would be located on the property.

The AIS identified five archaeological sites in the project area. Three of the sites (Sites 50-10-45-7476, 18980 and 18987) were previously recorded in Ewart and Luscomb (1974) and two were previously undocumented sites. The three previously identified sites include a cement foundation at the Kamahele House (Site 7476), an agricultural complex (Site 18980) and the family burial plot (Site 18987). The two newly recorded sites include the rock wall along the southeast, southwest and northwest property boundaries (Site TS1) and a short rock wall segment (Site TS2) in the southwest corner of the property.

The research determined that the sites are primarily Historic era in age, though Site 18980, an agricultural complex, could possibly have a pre-Western Contact era component. The Site 18980 features are constructed in the manner of, and have characteristics common to, Historic era features. The AIS report notes that all the sites identified on the Project Site were constructed by the Kamahele and Kamoe families as part of a working farm and home. The sites were used through the modern era.

The five archaeological sites identified during the AIS study were assessed for significance as outlined in Hawai'i Administrative Rules §13-284-6. Preservation will occur for two sites. These sites are the agricultural complex (Site 18980) and burial plot (Site 18987), and preservation will consist of avoidance and protection (conservation) pursuant to HAR §13-277-3(1) (**see Exhibit 7**). The agricultural complex will be preserved in accordance with an Archaeological Preservation Plan; this complex is located in the eastern coastal portion of the property. The burial plot will be preserved in accordance with a Burial Site Component of a Preservation Plan; the proposed home site will be located at least 46 feet away from this burial. Neither of these sites will be impacted by the proposed SFR and improvements. The overall proposed project determination is effect with agreed upon mitigation.

As part of the CIA study, consultation was sought from Office of Hawaiian Affairs (OHA); State Historic Preservation District (SHPD) Burial Sites Specialist; SHPD Hawaii Island Archaeologist; and a Hawaii Island Burial Council (HIBC) Member. Additionally consulted were members of the Kamahele/Kamoe and Lui families, which have direct ties to the property. The Kamahele/Kamoe family members are related to "Sonny" Kamahele who first purchased the parcel as a homestead property; the Lui family members are descendants of the Kea family which was awarded the original Land Grant (Grant 1014), that included the current property. The Kamahele/Kamoe and Lui families are both said to have descendants buried at the burial plot found on the property.

The CIA's analysis of impacts found that the only cultural practices associated with the property are the family burial plot and fishing. The applicant understands and supports the right to traverse and utilize the shoreline area, and the shoreline access and the cultural activities this affords will

not be affected. The burial plot will be preserved by measures developed in coordination with the families; the families will be granted access for visitation.

The Office of Hawaiian Affairs (OHA) was consulted as part of this application. OHA originally reviewed the Draft Environmental Assessment (DEA) for this project in June 2020 and noted the presence of a burial plot within the project area, State Inventory of Historic Places (SIHP) Site No. 50-10-45-18987. As this is a previously identified burial site, OHA notes that the Hawai'i Administrative Rules (HAR) §13-300-38 requires that appropriate treatment of the previously identified burial site go to Hawai'i Island Burial Council (HIBC) for review and that there be a good faith effort to reach out to descendants. OHA recommends a condition of the CDUA to require that the applicant conduct consultation with the HIBC and develop an appropriate burial treatment plan in consultation with the descendants for the previously identified burial plot.

Part of the CDUA process requires that the applicant submit a Hawai'i Revised Statutes (HRS), 6E form developed by the State Historic Preservation Division (SHPD). The OCCL initially consulted, sending the 6E form, with the SHPD on May 12, 2020; the SHPD acknowledged receipt and assigned the project log number 202.01083. The OCCL subsequently reached out to the SHPD on 6/16/20, 8/4/20, and 8/20/20, but received no response. The OCCL has determined "effect, with agreed upon mitigation commitments," and sought the SHPD's concurrence with this determination.

As previously mentioned, the applicant proposes preservation of the Native Hawaiian family burial plot and family members were consulted for preservation. Pursuant to HAR §13-300-33 (a) *The council (island burial council) shall have jurisdiction over all requests to preserve or relocate previously identified Native Hawaiian burial sites.* Additionally, HAR §13-300-33 (c) *The applicant shall consult with the department (SHPD) in the development of the burial treatment plan. Once approved by the department, the applicant shall submit requisite copies of the completed burial treatment plan for distribution to the council, accompanied by a simple written request to be placed on the council agenda for a determination of burial site treatment.* The applicant's archaeologist is prepared to finalize a draft burial treatment plan for presentation to the Hawaii Island Burial Council (HIBC). Therefore, a condition shall be applied to this permit requiring the applicant to get SHPD determination on the burial treatment plan for the Native Hawaiian family burial and the HIBC determination prior to construction plan approval.

## PROPOSED USE

The applicant proposes to construct a 4,695 sq. ft two-story residence with related utilities; replacement of the existing entry gate and fencing along Government Beach Road; landscaping; well, pump house, and potable water storage tank; and a farm shed for agricultural use. The proposed two-story residence consists of three bedrooms, three- and one-half baths, a kitchen, dining and living area, lanai and garage. The interior second floor living area is 2,560 sq. ft; the covered lanai is 1,239 sq. ft (second floor); and the first-floor basement/garage area is 896 sq. ft. The maximum height above existing grade will be under 25 feet. The proposed residence is setback from the shoreline 212 feet. The only access to the project site is via an existing driveway from the Government Beach Road (**see Exhibit 8**).

Associated structures to support the residence include a 113 sq. ft water storage tank and a 16 sq. ft well/pump shed. The water storage tank and well/pump shed will be located near the proposed farm/utility shed. The farm/utility shed will be approximately 680 sq. ft and will be constructed on the existing concrete foundation of the former home (**see Exhibit 9**). The shed would support the agriculture use/farm and would include an area for tractor and tool storage as well as a small room at the side for a pump, pressure tank and equipment storage. There is an existing 15-foot wide gravel driveway to the former home; this driveway will be realigned to approach the proposed residence from the south and will remain 15 feet wide. Landscaping for this realigned driveway approach and for the residence site will include relocating 2 smaller hala trees, removal of a portion of the cluster of existing Cook pines and as many as 6 coconut trees (**see Exhibit 10**). The coastal area, which includes the native coastal vegetation, would remain unaffected by the planned improvements. Additional proposed landscaping will include re-grassing over disturbed areas surrounding the residence and the planting of ti trees in the area surrounding the burial site.

For the burial site, the applicant has coordinated with Mr. Kamahale's 'ohana. The proposed house site will be located at least 46 feet from the historical burial site. The burial plot will be preserved by measures developed in coordination with the family and they will be granted access for visitation. Consultation was with Office of Hawaiian Affairs (OHA), State Historic Preservation District (SHPD), and the Hawai'i Island Burial Council (HIBC).

The residence is designed as a single structure to support efficient use of energy and materials and facilitate natural ventilation and lighting. The roof will be insulated with roof-mounted photovoltaic and solar water heating panels. Utility improvements include electrical power and tele-communications that will be provided to the residence via underground lines that would be extended from the existing HELCO and Hawaiian Telephone utility lines that run along the Government Beach Road. A wastewater system is proposed and an underground waste line to the residence will be trenched. The wastewater would be treated by an individual septic system located adjacent to the residence; the system design and installation would conform to all State Department of Health requirements. The system would have a tank capacity of 250 gallons and a 270-sq ft. absorption field. The total area affected by excavation for the septic tank, absorption field, and pipes is 370-sq ft.

The water storage tank and well/pump will include a water line that will be trenched to connect the tank to the residence. The well will be located near the house and will be about 240 feet makai of the Government Beach Road. The well will have a 1.5-HP pump capable of delivering up to 50 gallons per minute. The water well, pump and water filtration system will be housed in a 6-foot tall, 16-sq. ft. well/pump shed. A 10,000-gallon storage tank about 113-sq. ft. in area set on a pad of crushed rock will be located next to the well site.

Trenching for the under-grounding of water, power, telephone and cable lines will be aligned along or through the existing driveway and parking area. Land clearing and construction activities will occur over less than a quarter of an acre, including the approximately 1,088 sq. ft. of shallow trenching for utility lines and connections.

In addition to the residence, the applicant proposes agriculture use/farm (farming and grazing) on this property. The property is commonly referred to as the Kamahele Homestead Property or the Kamahele Farm and has been continuously farmed. It was originally owned and homesteaded by Ulrich “Sonny” Kamahele who kept a wide range of livestock and crops. Since Sonny’s death in 2002, farming of some sort has never ceased on the property; the tree crops on the property—mango, banana, coconuts, mountain apple, and breadfruit—have continued to be cared for, to fruit, and to be harvested. Crops such as taro, herbs, melon, and squash are still present and cared for. Traditional Hawaiian plants utilized for fabric, medicine or other products, including hala, ti and noni, are also growing here. Sheep and horses have been pastured on the property almost continuously. The owner does not intend to conduct any commercial agriculture.

The proposed farm utility shed, approximately 680 sq. ft, will use the existing concrete foundation of the old Kamahele house. This house was destroyed in a fire several years ago during Tropical Storm Iselle. The farm utility shed will support the agriculture use/farm and will include an area for tractor and tool storage as well as a small room at the side for a pump, pressure tank and equipment storage. Additional improvements include replacement of the existing entry gate and fencing at the property frontage. A total area of approximately 8,150 square feet or about 0.20 acres will be used for the construction of the home and its related improvements.

**OTHER ALTERNATIVES CONSIDERED:**

Alternative 1: No Action. Under the No Action Alternative, the residence would not be built. The lot would remain unused except for temporary camping and picnicking by the owners. The Environmental Assessment considers the No Action Alternative as the baseline by which to compare environmental effects from the project.

Alternative 2: Proposed Project, Alternative House Sites, and Alternative Uses. The proposed project and its location are described above. The location of the home site was chosen on the mauka side of a littoral cone (prominent hill on the property) and 212 feet from the shoreline shelf. The home site’s configuration and siting permit coastal breezes and views on the property while avoiding shoreline hazards and interfering with shoreline recreation.

No other alternative uses for the property that are identified in the Conservation District Rules (HAR 13-5) as allowable uses in the Conservation District, such as a commercial farm, are desired by the applicant, and thus not addressed in the Environmental Assessment.

**SUMMARY OF COMMENTS**

The Office of Conservation and Coastal Lands referred the application, as well as the Draft Environmental Assessment (EA) to the following agencies and organizations for review and comment:

**State Agencies:**

DLNR, Division of Conservation and Resource Enforcement  
DLNR, Division of Aquatic Resources  
DLNR, Division of Forestry and Wildlife

DLNR, Na Ala Hele  
DLNR, Historic Preservation  
Office of Hawaiian Affairs

County Agencies:

County of Hawai‘i, Department of Planning  
County of Hawai‘i, Fire Department  
County of Hawai‘i, Police Department  
County of Hawai‘i, Public Works Department

Federal Agency:

U.S. Fish and Wildlife

In addition, this application was also sent to the nearest public library, the Pahoa Public Library, to make this information readily available to those who may wish to review it.

Comments were received by the following agencies and individuals and summarized by Staff as follows:

THE STATE

DEPARTMENT OF LAND AND NATURAL RESOURCES

*Division of Conservation and Resource Enforcement:*

Comments: No Comments.

*Division of Forestry and Wildlife:*

Comments:

1. Hawaiian Hawk is known to occur in the project vicinity.
  - Response: As stated in Section 3.1.4 of the EA, although it is highly unlikely that Hawaiian hawks nest on the property, if any tree cutting occurs between the months of March and September, inclusive, a pre-construction hawk nest search by a qualified ornithologist using standard methods will be conducted. If Hawaiian hawk nests are present, no land clearing will be allowed until October, when hawk nestlings will have fledged.
2. Hawaiian hoary bat has the potential to occur in the vicinity/roost in the trees.
  - Response: As stated in Section 3.1.4 of the EA, construction will refrain from activities that disturb or remove shrubs or trees taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance. No barbed wire fencing will be constructed.
3. Rapid ‘Ohi‘a Death (ROD).
  - Response: As stated in Section 3.1.4 of the EA, no ‘ōhi‘a trees are present on the site or would in any way be affected by project activities.
4. Invasive animals, including Little Fire Ants and Coconut Rhinoceros Beetles, invasive plant parts; using native plants for landscaping.

- Response: No fill would be required, and all excavated material will just remain on site. No importation of plant material is expected other than that acquired as part of normal farm activities, which have been occurring uninterruptedly for centuries on this site. As stated above, no ‘ōhi‘a trees are present. All planned plants, as shown in the Landscape Plan included as part of Figure 3 in the EA, are known to be non-invasive. The main planned elements are ti and hala, which are Polynesian/native plants. However, as suggested in your comment, Mr. Garrett agrees that it would be a good idea to consult with the Big Island Invasive Species Committee as he finalizes acquisition of farm and landscaping materials.
5. Artificial lighting that can adversely impact seabirds
- Response: As stated in Section 3.1.4 of the EA, although no exterior lighting is planned other than a low light emitting security light, the applicant agrees to shield any exterior lighting from shining upward, in conformance with Hawai‘i County Code § 14 – 50 et seq., to minimize the potential for disorientation of seabirds.

*Nā Ala Hele:*

Comments: No Comments.

*Office of Conservation and Coastal Lands (OCCL):*

Comments:

1. DEA and CDUA discrepancy: the DEA states, "average daily use of 300 gallons per day," and the CDUA states, "average daily use of 200 gallons per day."
  - Response: Both of these figures were estimates. The higher figure in the DEA was based on a typical use for a single family home of this size and the lower estimate found in the CDUA was based on the projected use for the owner's small family. For planning purposes, given that the home may be sold at some time and used by a larger family, the larger figure of 300 gallons per day can be used, which the proposed well and potable water tank are amply sized to provide.
2. DEA and CDUA discrepancy: the DEA states, "an absorption field that extends over an area of approximately 390 square feet," and the CDUA states, "an area of approximately 370 square feet."
  - Response: Thank you for pointing out the discrepancy here. This was worded somewhat unclearly in the Project Description portion of the CDUA, which may have led to confusion. The area of the absorption field would in fact be about 270 square feet. The total area to be affected through the installation of the septic system, which is summarized in Table 1 of the CDUA and includes the affected areas for the tank, absorption field and sewer line, would be about 370 square feet. This correction to the area for the absorption field is reflected in the Final EA.
3. The CDUA states, "The Total Development Area (TDA) for the residence, per the Conservation District Rules, is 4,824," this is oddly worded. Please note that Exhibit 4 of Chapter 13-5 uses Maximum Developable Area (MDA) and for lots greater than one acre, the maximum area is 5,000 sq. ft., not 4,824.
  - Response: The quoted wording is meant to convey that the actual TDA for the lot is 4,824 sf, which is correct. This figure was not meant to represent MDA

4. The violation that you resolved involved the planting of 16 hala trees, please note where these hala trees were planted on the landscaping plan.
  - Response: The 16 hala trees are illustrated in the revised Landscape Plan that has been submitted as part of the Final EA.
5. The DEA does not have the SFR Garage/Basement floor plan. Please include in the EA.
  - Response: The SFR Garage/Basement plan is now included as the last sheet of Figure 3, Site Plans, in the Final EA.
6. In the CDUA, pg. 53 states, "land clearing and construction activities would occur on less than 0.2 acres of the project site and is expected to take less than three days." Is three days correct?
  - Response: Thank you for pointing that out. Landscaping, grading and site preparation will be relatively minor and will take less than 3 days. Construction of the home may take up to six to nine months.
7. Please explain how "ongoing" ag/farm use is occurring. Is the property owner currently farming the land? What is the proposed continuation of agricultural use on the property for, personal or commercial use?
  - Response: As discussed extensively in the CIA, and summarized in the EA, the property is celebrated for its fertility in family lore in Puna. Although the property passed through several hands after Sonny Kamahele's death in 2002, farming of some sort never ceased. The abundant tree crops on the property—mango, banana, coconuts, mountain apple and breadfruit—have continued to be carted for, to fruit, and to be harvested. Crops such as taro, herbs, melon, and squash are still present and cared for. Traditional Hawaiian plants utilized for fabric, medicine or other produces, including hala, ti and noni, are also growing here. Sheep and horses have been pastured on the property almost continuously. The owner does not conduct any commercial agriculture, nor does he intend to. He will engage in personal use, but probably more significant is the ongoing use by the Kamahele 'Ohana and community.

*Division of Aquatic Resources*

Comments: No response

*Historic Preservation*

Comments: Assigned project log number 202.01083. No additional responses to date.

OFFICE OF HAWAIIAN AFFAIRS

Comments:

1. OHA would like to know if consultation with the Hawai'i Island Burial Council (HIBC) is currently being sought and if there are any outreach efforts to find descendants as the archaeological inventory survey (AIS) for this project identified a previously identified family burial plot, State Inventory of Historic Places (SIHP) site # 50-10-45-18987. The DEA indicates that a preservation plan is being developed with a burial site

component. While the DEA mentions that HIBC representative Kalena Blakemore was contacted during consultation, OHA notes that Hawai'i Administrative Rules (HAR) 13-300-38 requires that appropriate treatment of previously identified Native Hawaiian burial sites go to the HLIBC for consideration. HAR 13-300-34 further requires that there be evidence of a good faith effort to search for lineal or cultural descendants for previously identified burials.

- *Response:* Thanks for your review and this comment. I will make sure our planner and archaeologist see it and provide the appropriate response or actions. I will say that because the property was occupied by an elder family member until maybe 15 years ago, and the burial area is fairly recent and within family memory, the lineal descendants are known and have been extensively involved in planning the house site, the preservation and other matters. But I will make sure that your comment gets proper attention

### COUNTY OF HAWAI'I

#### COUNTY OF HAWAI'I PLANNING DEPARTMENT

##### Comments:

1. The applicant will be required to obtain all necessary County permits, including SMA, although the project may be considered exempt from the definition of development.
  - Project planner James Leonard has prepared an SMA Assessment and expects to provide it with the FONSI when it is issued by DLNR. We look forward to the County's review.
2. We note the shoreline setback is 212 feet, the Director will not be requiring a shoreline certification based on the plan in the DEA.
  - Thank you for providing this information

#### COUNTY OF HAWAI'I FIRE DEPARTMENT

##### Comments:

1. Portions of the Hawaii State Fire Code pertaining to Fire Department Access and Water. For comments see **Exhibit 11**.
  - *Response:* The owner's architect for the proposed single-family residence and associated facilities will be coordinating through the design process with appropriate Fire Department personnel to ensure that the plans to be submitted for building permit approval meet all applicable County Fire Code requirements.

#### COUNTY OF HAWAI'I PUBLIC WORKS DEPARTMENT

##### Comments: No Comment

#### COUNTY OF HAWAI'I POLICE DEPARTMENT



Comments: Staff does not anticipate any significant impact to traffic and/or public safety concerns.

## FEDERAL AGENCIES

### U.S. FISH AND WILDLIFE

#### Comments:

#### 1. Hawaiian Hawk

- Response: As stated in Section 3.1.4 of the EA, although it is highly unlikely that Hawaiian hawks nest on the property, if any tree cutting occurs between the months of March and September, inclusive, a pre-construction hawk nest search by a qualified ornithologist using standard methods will be conducted. If Hawaiian hawk nests are present, no land clearing will be allowed until October, when hawk nestlings will have fledged. No trees that are identified to support a hawk nest will be cut, regardless of season.

#### 2. Hawaiian hoary bat

- Response: As stated in Section 3.1.4 of the EA, construction will refrain from activities that disturb or remove shrubs or trees taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance. No barbed wire fencing will be constructed.

#### 3. Nene

- Response: The area has been surveyed a number of times in various seasons throughout the last two years. No nēnē or nests have been observed, although they have been seen flying over the property. The applicant will ensure that no nēnē will be harassed during construction or occupation of the residence. If nēnē nests are found, DLNR-DOFAW will be contacted.

#### 4. Artificial lighting that can adversely impact seabirds.

- Response: As stated in Section 3.1.4 of the EA, although no exterior lighting is planned other than a low light emitting security light, the applicant agrees to shield any exterior lighting from shining upward, in conformance with Hawai'i County Code § 14 – 50 et seq., to minimize the potential for disorientation of seabirds. No nighttime construction will occur.

#### 5. *Ischaemum byrone*

- Response: Aside from *Ischaemum byrone*, all native plants found on the property are very common in the region, on the island, and throughout the Hawaiian Islands. As stated in Section 3.1.4, due to our botanical survey efforts, a small patch (roughly 50 feet by 10 feet) area on the northeastern shoreline was found to contain a number of clumps of *Ischaemum byrone*. The grass is found in an area that is frequently trodden by fishermen traveling up and down the coast; despite the trampling it receives, the tough, clumpy grass has survived and even thrived. Nevertheless, it is important to take steps to ensure the conservation of this population. Mr. Garrett proposes to encircle the grass patches with rock curbs (one or two courses or dry-stack rock high). This simple and unobtrusive measure has been found highly successful in other lots of the Puna shoreline in encouraging those walking along the shoreline to utilize a path around rather than on top of the grass. Please note that no project activities are occurring within about 150 feet of the endangered grass patch, as the entire coastal area will be 100% preserved as-is.

This area is not possible to access with vehicles of any type. The area mauka of this 150-foot distance has been used for a home and farming for many centuries, with no adverse impact to coastal vegetation, including the endangered grass. There is no need to survey in the patch. Obtrusive flagging would be inappropriate on this remote, wild shoreline and might attract unwanted attention to the plants. The subtle avoidance measures will be much more effective in preventing impacts.

6. Biosecurity, including pests and invasive plant species, using native plants for landscaping.
  - *Response:* No fill would be required, and all excavated material will just remain on site. No importation of plant material is expected other than that acquired as part of normal farm activities, which have been occurring uninterruptedly for centuries on this site. As stated above, no ‘ōhi‘a trees are present and no issues with *Rapid ‘Ōhi‘a Death (ROD)* would be expected. All planned plants, as shown in the Landscape Plan included as part of Figure 3 in the EA, are known to be non-invasive. The main planned elements are ti and hala, which are Polynesian/native plants that are not invasive. Mr. Garrett will review native landscaping guides and consult with the Big Island Invasive Species Committee as he finalizes acquisition of farm and landscaping materials.

#### COMMENTS FROM THE PUBLIC

Comments: No Comment

#### **ANALYSIS**

Following review and acceptance for processing, the Applicant was notified, by correspondence dated May 22, 2020 that:

1. The proposed uses are identified land uses in the Resource subzone of the Conservation District, pursuant to the Hawai‘i Administrative Rules (HAR) §13-5-24, R-7, **SINGLE FAMILY RESIDENCE (D-1)** A single family residence that conforms to design standards as outlined in HAR Chapter 13-5; HAR §13-5-23, L-2, **LANDSCAPING (C-1)** Landscaping (including clearing, grubbing, grading, and tree removal), including chemical and mechanical control methods, in accordance with state and federal laws and regulations, in an area of less than 10,000 square feet. Any replanting shall be appropriate to the site location and shall give preference to plant materials that are endemic or indigenous to Hawaii. The introduction of invasive plant species is prohibited; HAR §13-5-22, P-9, **STRUCTURES, ACCESSORY (B-1)** Construction or placement of structures accessory to existing facilities or uses. Please be advised that these findings do not constitute approval of the proposal;
2. Pursuant to HAR §13-5-40 HEARINGS, a Public Hearing will not be required;
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200.1, HAR, a finding of no significant impact to the environment (FONSI) is anticipated for the proposed project; and

4. The subject property is in the Special Management Area (SMA). The applicant's responsibility includes complying with the provisions of Hawaii's Coastal Zone Management law (Chapter 205A, HRS) that pertain to the SMA requirements administered by the various counties. Staff notes a SMA Use Permit Assessment Application was submitted by the applicant and Hawaii county found proposed improvements will not have a cumulative impact, or significant adverse environmental or ecological effect on the SMA. Additionally, Hawaii County waived the requirement to submit a current certified shoreline because of the applicant's shoreline setback.

The Final EA/Finding of No Significant Impact (FONSI) was issued by the DLNR Chairperson and published in the August 8, 2020 edition of the Office of Environmental Quality Control's *The Environmental Notice*. Located at URL: [http://oeqc2.doh.hawaii.gov/Doc\\_Library/2020-08-08-HA-FEA-Garrett-Single-Family-Residence-and-Farm-at-Makuu.pdf](http://oeqc2.doh.hawaii.gov/Doc_Library/2020-08-08-HA-FEA-Garrett-Single-Family-Residence-and-Farm-at-Makuu.pdf).

## CONSERVATION CRITERIA

The following discussion evaluates the merits of the proposed land use by applying the criteria established in §13-5-30, HAR.

- 1) *The proposed use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect, and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. The owner is committed to management of the site in a manner that will help to conserve, protect and preserve the natural resources and areas of remaining native vegetation on the property.

The primary natural and cultural resources associated with the area of the property are the coastal related resources and native vegetation found primarily in the coastal property portion. The shoreline along the property's makai boundary is defined by a low, stepped cliff backed by a rocky and bolder laden coastline, and while there are no beaches present or safe areas to enter the ocean, the coastal area is known to be used by those walking along the shoreline to fish. The proposed uses will be sufficiently set back from the shoreline so as to have no impact to the coastal related resources or on the public's ability to access or utilize the coastal resources that front this property.

Those trees and plants that are common to the area and of potential cultural significance include primarily hala and coconut, which are concentrated primarily in the coastal portion of the property. While two younger hala trees, which were planted by a prior owner in the area of the proposed house site, will need to be removed in the course of preparing the house site and its realigned driveway approach, these trees will be relocated nearby in the area along the realigned gravel driveway. Part of the Landscape Plan for the property includes the removal of up to six coconut trees located at the proposed house site, which should not have any measurable impact to this resource as coconuts are abundant throughout the property, especially in the coastal area and near the shoreline. In terms of additional landscaping, very few new plantings are planned in association with the proposed residence. Additional landscaping would be limited to plantings of ti in the area

of the existing burial site, as recommended by the lineal descendants of the property, to serve as a vegetative buffer, and re-grassing of the areas of the realigned gravel driveway and disturbed areas around the residence. Overall, the improvements and uses planned for the property have been planned in areas of prior disturbance and in a manner so as to minimize the potential impact of the natural character, as well as to the natural and cultural resources of the site.

Five archaeological sites were identified on the property and preservation will occur for two sites. The sites to be preserved are the agricultural complex (Site 18980) and burial plot (Site 18987) and preservation will consist of avoidance and protection (conservation) per HAR §13-277-3(1). The agricultural complex will be preserved in accordance with an Archaeological Preservation Plan. A condition of this CDUA permit shall require the applicant to obtain SHPD determination on this Archaeological Preservation Plan prior to construction approval. The burial plot will be preserved in accordance with a Burial Site Component of a Preservation Plan. A condition shall be applied to this CDUA permit that shall require the applicant to obtain a SHPD determination and HIBC review prior to construction plan approval.

- 2) *The proposed land use is consistent with the objectives of the Subzone of the land on which the use will occur.*

The objective of the Resource Subzone is to ensure, with proper management, the sustainable use of the natural resources of those areas. A Single Family Residence is an identified land use pursuant to HAR, §13-5-24, R-7, **SINGLE FAMILY RESIDENCE (D-1)** A single family residence that conforms to design standard as outlined in Chapter 13-5. Landscaping is an identified land use pursuant to HAR §13-5-23, L-2, **LANDSCAPING (C-1)** Landscaping (including clearing, grubbing, grading, and tree removal), including chemical and mechanical control methods, in accordance with state and federal laws and regulations, in an area of less than 10,000 square feet. Any replanting shall be appropriate to the site location and shall give preference to plant materials that are endemic or indigenous to Hawaii. The introduction of invasive plant species is prohibited. Accessory structures are an identified land use pursuant to HAR §13-5-22, P-9, **STRUCTURES, ACCESSORY (B-1)** Construction or placement of structures accessory to existing facilities or uses. Please be advised that these findings do not constitute approval of the proposal.

The proposed dwelling will be built to comply with all Federal, State and County regulations and is designed to ensure that the structure will be safe and in a manner that minimizes the potential risks from natural hazards to the inhabitants. The design and construction of the single-family residence conforms to the design standards set forth in HAR §13-5.

- 3) *The proposed land use complies with the provisions and guidelines contained in Chapter 205A, HRS entitled "Coastal Zone Management", where applicable.*

The objectives, policies, and guidelines of the Coastal Zone Management (CZM) program contained in Chapter 205A, Hawai'i Revised Statutes (HRS), are focused on the preservation, protection, and where possible, the restoration of the natural resources of the coastal zone in Hawai'i. The subject property is in the SMA and a SMA Use Permit Assessment Application was submitted by the applicant. Hawaii county found proposed improvements will not have a cumulative impact, or significant adverse environmental or ecological effect on the SMA. Additionally, Hawaii County waived the requirement to submit a current certified shoreline because of the applicant's shoreline setback of 212 feet.

- 4) *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

The planning for the proposed uses on this property takes into account existing native species and potentially threatened or endangered species. The applicant has identified a number of mitigation measures that will be implemented during the construction and duration of the proposed land uses that should minimize or eliminate the interference, nuisance, harm, or hazard that the project may cause. No effect on any coastal ecosystem will occur because of the physical and topographic separation from the ocean, the broad vegetated area fronting the proposed home site that will be left undisturbed, and the special precautions planned for preventing soil runoff during construction of the home and its related facilities. As such, the proposed construction of the single-family home and its related improvements, together with the owner's commitment to management of the site will serve to conserve, protect and preserve the natural resources on the subject property.

- 5) *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

The subject parcel is a portion of a grouping of coastal lots of various sizes located along the Government Beach Road in the area directly southeast of the Hawaiian Paradise Park Subdivision, in the area of the historic Maku'u Village. The property, often referred to as the Kamahale Homestead or Kamahale Farm, was originally part of the homestead lots that were created in the early 1900s. While there is a long history of subsistence farming in the area, today one only finds the occasional use of properties for grazing animals, such as sheep, goats, and horses, which occurs on the subject property. Most of the properties along this portion on the makai side of the Government Beach Road show signs of prior use and have single family homes, including the adjacent properties to the northwest and those further to the north along Kamahale Place. The adjacent property along the southeast boundary, which is also in the State Conservation District, has been developed with single family residence and farm. The properties to the southwest, which are mauka of the Government Beach Road and outside the Conservation District, are typically larger parcels that are generally unused and overgrown or are partially cleared and used for ranching.

The construction activities associated with this single-family residence, farm shed, and related improvements will be confined solely to the owner's lot and will not pose any

adverse impact to the natural resources of the area, community or region. The required setbacks and buffers have been integrated as part of the site planning. The planned use of the property as a homesite with the continuation of the existing agricultural uses, would be consistent with the existing and planned uses of adjacent properties and will not negatively affect how these properties are utilized. The proposed residence and farm shed are planned towards the interior of the property and are located so as to be far removed from the adjoining properties and are of a scale that is appropriate to the physical conditions and capabilities of the site.

- 6) *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

The proposed use of the subject property for a single-family residence and commitment to management of the site will conserve, protect and preserve the natural features on the subject property. A distinguishing property characteristic is the mauka and makai split; the mauka portion is characterized by open pasture and supports horses and sheep and the makai portion supports the palm and hala forest as well as other coastal vegetation. The proposed residence would replace (in a nearby location) the prior house structure that had been on the property for decades and had been destroyed by a fire. The farm and utility shed would be built on the site of the prior home to help minimize the amount of site modification needed for this structure. By locating both structures and their associate improvements (well and pump house and water storage tank) in the previously disturbed area at the end of the existing drive and the site of the prior home, by continuing the existing agricultural use over much of the property, and by leaving the coastal portion of the property undisturbed, staff believes the open space characteristics of the area will be preserved.

- 7) *Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.*

No subdivision of land is proposed for this project.

- 8) *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

Staff believes the proposed land use will not be materially detrimental to the public health, safety, and welfare as mitigated. The proposed residence's setback from the shoreline (212 feet) will have minimal, if no, impact to the public use of the shoreline. With the incorporation of an appropriately designed and operated individual wastewater system, combined with other BMPs identified, the proposed residential land use will not result in materially detrimental impacts to public health, safety, and welfare.

**CULTURAL IMPACT ANALYSIS:**

The subject property does not contain any springs, land features, or caves that might be of cultural importance, and no gathering of plant material is noted from the property. A Cultural Impact Assessment was completed for the parcel. The CIA's analysis found the only cultural practice associated with the Project Area is fishing. The applicant has stated that the Kamahele and Lui families are welcome on the property on a managed basis and that he will not prevent or impede access along the property shoreline for fishing. Based on the results of the Archaeological Inventory Survey (AIS) and the Cultural Impact Assessment (CIA), the CIA Study concludes that no traditional cultural practices will be affected by the proposed project and there will be no direct adverse effect upon cultural practices in the broader project area and region. Additionally, in specifically addressing the Project's potential effects on Hawai'i's culture, and traditional and customary rights, the CIA Study finds that the proposed Project will not affect the exercise of native Hawaiian rights or any ethnic group, related to gathering, access or other customary activities

**DISCUSSION**

The proposed project entails a single-family residence, agricultural use/farm with associated farm/utility shed, landscaping, and related improvements. The single-family residence is proposed to be two stories, with the main living area on the second story/floor. The residence's second floor will consist of three bedrooms, three- and one-half baths, a kitchen, dining and living area and lanai; the second floor living area will be 2,560 sq. ft. and the lanai will be 1,239 sq. ft. The first floor consists of the basement and garage area; the first floor area will be 896 sq. ft. The total proposed residence's area is 4,695 sq. ft. The proposed residence is consistent with Chapter 13-5, Hawaii Administrative Rules, Exhibit 4, Single Family Residential Standards.

The existing 15-foot wide gravel driveway will be realigned to approach the proposed residence from the south and will remain 15 feet wide. Landscaping for this realigned driveway and for the proposed residence will include relocating 2 smaller hala trees, removal of a portion of the cluster of existing Cook pines and as many as 6 coconut trees. Additional proposed landscaping will include re-grassing over disturbed areas surrounding the residence and the planting of ti trees in the area surrounding the burial site.

In addition to the residence and associated improvements, an accessory farm shed is proposed and will be approximately 680 sq. ft. This shed will be constructed on the existing foundation of the former homes. The shed would support the agriculture use/farm and would include an area for tractor and tool storage as well as a small room at the side for a pump, pressure tank and equipment storage. The water storage tank (113 sq. ft.) and the well/pump (16 sq. ft.) will be located near this shed.

The utilities will include electrical power and tele-communications that will be provided to the residence via underground lines that will extend from the existing HELCO and Hawaiian Telephone utility lines that run along Government Beach Road. A wastewater system is proposed and an underground waste line to the residence will be trenched. The water storage tank and well/pump will include a water line that would be trenched to connect the tank to the residence.

Trenching for the under-grounding of water, power, telephone, and cable lines will be aligned along or through the existing driveway and parking.

Grubbing and grading will occur in the areas of the realigned driveway and parking area; the areas of the potable water tank and pump house; house foundation; construction staging area and areas of the trenching required for the septic system and water transmission lines. The total area to be grubbed and graded is approximately 8,150 square feet or just under 0.20 acres. Additionally, underground lines conveying power, telecommunications and CATV to the home will be aligned with the existing driveway and parking area to provide the shortest and most direct route to the home and to minimize new area disturbance. Extracted material from trenching will be used to refill trenched areas and to blend the areas with the surrounding topography so as to avoid the need for any off-site material disposal. All construction activities will follow Best Management Practices to minimize the potential for sedimentation, erosion, and pollution of any nearby stream waters.

The proposed residence and improvements will be setback 212 feet from the shoreline and will be located outside of the SLR-XA of 3.2 feet. The vegetated coastal property portion will remain unaffected by all proposed improvements; the applicant will not prevent or impede access along the property shoreline for fishing. The proposed residence will be located at least 46 feet from the historical burial site. The burial plot will be preserved and protected by measures developed in coordination with the lineal descendants and they will be granted access for visitation. The applicant will be required to follow-up both with the SHPD and the HIBC for preservation of the burial site. The applicant will be required to follow-up with the SHPD for the agricultural complex (Site 18980) and its preservation plan.

Based on the information provided, staff believes that the project will have negligible adverse environmental or ecological effects provided that best management practices and mitigation measures as described in the application and environmental assessment, and as required by rule or laws, are fully implemented.

## **RECOMMENDATION**

Based on the preceding analysis, staff recommends that the Board of Land and Natural Resources APPROVE Conservation District Use Application HA-3868 for a Single Family Residence, Agricultural Use/Farm with Associated Farm/Utility Shed, Landscaping and Related Improvements located at 15-2145 Government Beach Road, Maku'u, Puna, Hawai'i, TMK (3) 1-5-010:009 subject to the following conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawai'i harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;



3. The permittee shall comply with all applicable Department of Health administrative rules;
4. The single family residence shall not be used for rental or any other commercial purposes unless approved by the board. Transient rentals are prohibited, with the exception of wilderness camps approved by the board;
5. The permittee shall provide documentation (e.g., book and page or document number) that the permit approval has been placed in recordable form as a part of the deed instrument, prior to submission for approval of subsequent construction plans;
6. Before proceeding with any work authorized by the department or the board, the permittee shall submit four copies of the construction plans and specifications to the chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the permittee. Plan approval by the chairperson does not constitute approval required from other agencies;
7. Unless otherwise authorized, any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and shall be completed within three years of the approval of such use. The permittee shall notify the department in writing when construction activity is initiated and when it is completed;
8. All representations relative to mitigation set forth in the accepted application and environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;
9. The permittee shall plan to minimize the amount of dust generating materials and activities. Material transfer points and on-site vehicular traffic routes shall be centralized. Dusty equipment shall be located in areas of least impact. Dust control measures shall be provided during weekends, after hours and prior to daily start-up of project activities. Dust from debris being hauled away from the project site shall be controlled. Landscaping and dust control of cleared areas will be initiated promptly;
10. The permittee shall notify the Office of Conservation and Coastal Lands (OCCL) in writing prior to the initiation and upon completion of the project;
11. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact SHPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;

12. The applicant shall develop an appropriate burial treatment plan in consultation with the lineal descendants for the identified burial plot on the property and shall obtain a SHPD determination and shall consult with the HIBC prior to construction plan approval;
13. The applicant shall develop an archaeological preservation plan for the agricultural complex (Site 18980) and shall obtain a SHPD determination prior to construction plan approval;
14. The permittee shall utilize Best Management Practices for the proposed project;
15. During construction, appropriate mitigation measures shall be implemented to minimize impacts to the aquatic environment, off-site roadways, utilities, and public facilities;
16. The single-family residence shall conform to the single-family residential standards included as Exhibit 4 of the Hawai'i Administrative Rules, Chapter 13-5;
17. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
18. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;
19. When provided or required, potable water supply and sanitation facilities shall have the approval of the department of health and the county department of water supply;
20. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
21. Obstruction of public roads, trails, and pathways shall be avoided or minimized. If obstruction is unavoidable, the permittee shall provide alternative roads, trails, or pathways acceptable to the department;
22. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;
23. The permittee shall obtain a county building or grading permit or both for the use prior to final construction plan approval by the department;
24. Artificial light from exterior lighting fixtures, including but not limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is directed to project across property boundaries toward

the shoreline and ocean waters, except as may be permitted pursuant to section 205A-71, HRS. All exterior lighting shall be shielded to protect the night sky;

25. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawai'i, and by Hawai'i statutory and case law;
26. Any landscaping shall be appropriate to the site location and shall give preference to plant materials that are endemic or indigenous to Hawai'i. The introduction of invasive plant species is prohibited;
27. Trees taller than 15 feet shall not be removed or trimmed during the Hawai'i Hoary bat birthing and pup rearing season from June 1st to September 15<sup>th</sup> and no barbed wire shall be constructed;
28. The applicant shall encircle the Ischaemum byrne clumps with rock curbs to protect the endangered grass by encouraging people to walk around it;
29. If land clearing occurs between March 1 and September 30, a pre-construction hawk nest search by a qualified ornithologist using standard methods will be conducted. If Hawaiian Hawks are present, no land clearing will be allowed until October, when hawk nestlings will have fledged;
30. Other terms and conditions as may be prescribed by the Chairperson; and
31. Failure to comply with any of these conditions shall render this Conservation District Use Permit void under Chapter 13-5, as determined by the chairperson or board.

Respectfully submitted,

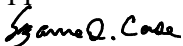


Rachel Beasley, Staff Planner  
Office of Conservation and Coastal Lands

Approved Sam Lemmo:

Administrator *SAM LEMMO*

Approved for submittal:



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SUZANNE D. CASE., Chairperson  
Board of Land and Natural Resources

**GARRETT SINGLE FAMILY RESIDENCE - CONSERVATION DISTRICT USE PERMIT**  
**APPLICATION**



### Figure 1 Island/Regional Location Maps

## Conservation District Use Permit Application

## APPLICATION

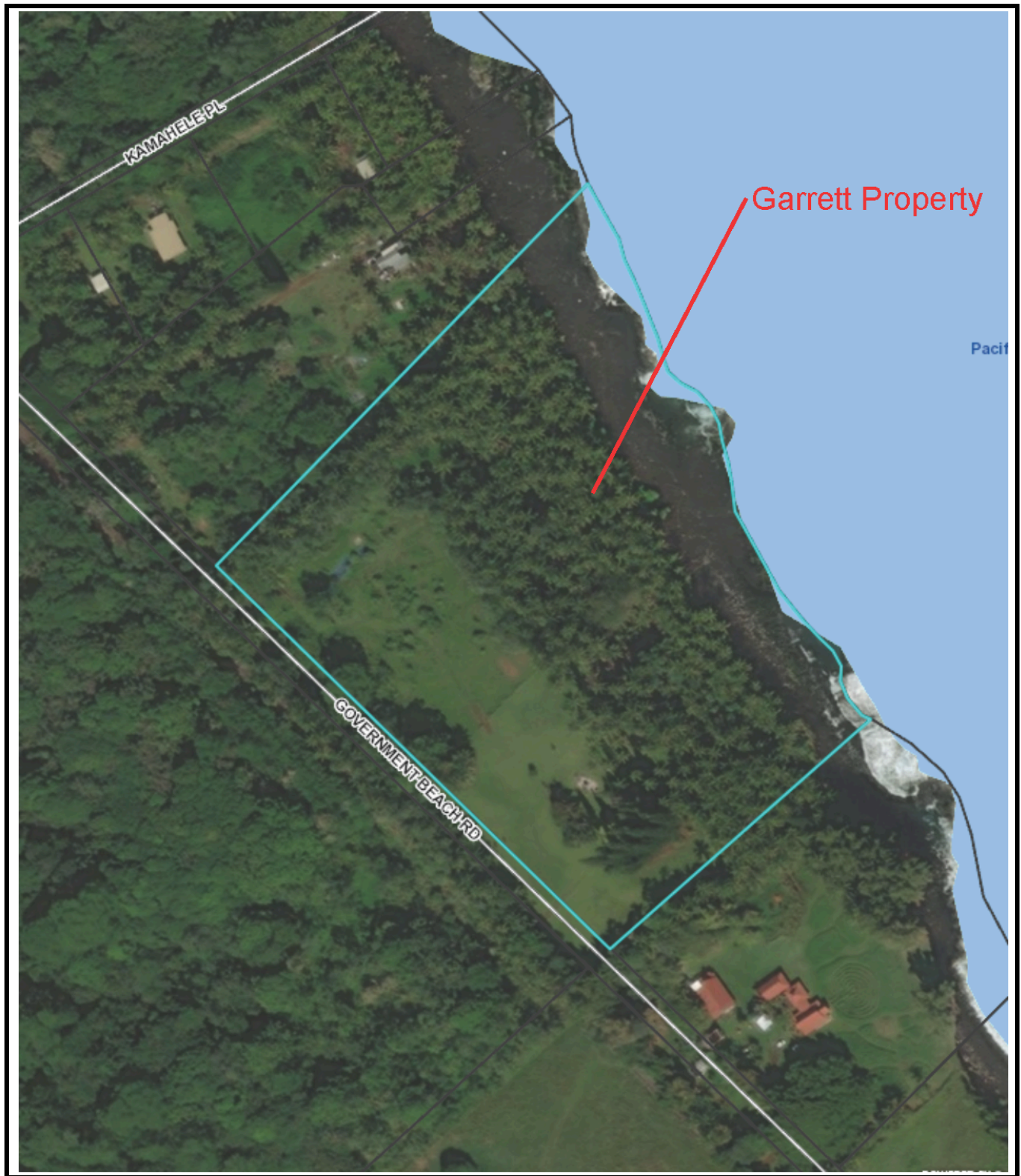


# Conservation District Use Use Permit Application

# Exhibit 1



GARRETT SINGLE FAMILY RESIDENCE - CONSERVATION DISTRICT USE PERMIT APPLICATION



**Figure 3 Aerial Vicinity Map**  
**Garrett Single-Family Residence**

Conservation District Use  
Use Permit Application



**Figure 2. Site Photos**



2c, Above: Pasture on western, *mauka* half of property

2d, Below: Current gate and driveway into property





**Figure 12 Site Photos**



*View east from the entry gate showing the existing Cook pines and variegated pandanus (hala) planted along the existing gravel driveway into the property.*



*View west from near the crest of the hill across the pasture area in the mauka farm portion of the property.*



**Figure 11 Site Photos**



*View of the family burial plot at the top of the hill, near the prior Kamahele house site.*



*View east towards the proposed house site near the makai edge of the farm portion of the property.*



GARRETT SINGLE FAMILY RESIDENCE - CONSERVATION DISTRICT USE PERMIT  
APPLICATION



*View east across the coconut and hala forested area within the makai coastal portion of the property.*



*View northwest along the coast showing the rocky coastal conditions backed by the common shoreline vegetation consisting of primarily coconut and the native naupaka.*

**Figure 12 SITE PHOTOS**  
**Garrett Single Family Residence**

Conservation District  
Use Permit Application



**FIGURE 10. Native Species in the Coastal Area**



*View of the native hala found within the hala and coconut forest in the coastal portion. The topographic change from the farm portion is also most evident in this section on the makai side of the pu'u.*



*View of the typical native vegetation found along the shoreline fronting the coastal portion, including primarily coconut and the native naupaka and mau'u 'aki'aki .*



**FIGURE 10 (Continued) Native Species in the Coastal Area**



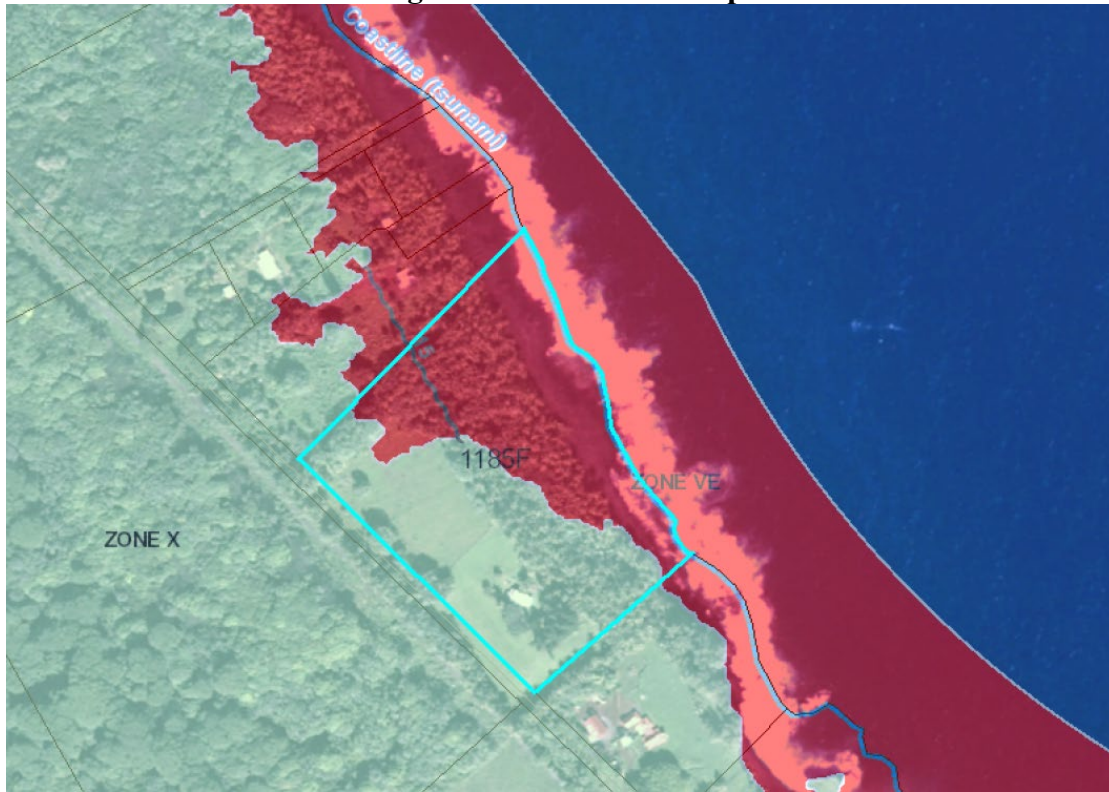
*View of the shoreline grass that includes clusters of the endangered Hilo Ischaemum (Ischaemum byrnone) grass found near the pahoehoe cliff- edge in the eastern portion, along the coast.*


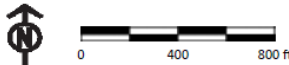


*Clusters of the endangered Hilo Ischaemum grass found near the cliff-edge among other shoreline, which will be further protected from trampling with curbs of dry stacked rocks.*

# Garrett Single-Family Residence and Farm at Maku'u Environmental Assessment

**Figure 4. Flood Zone Map**

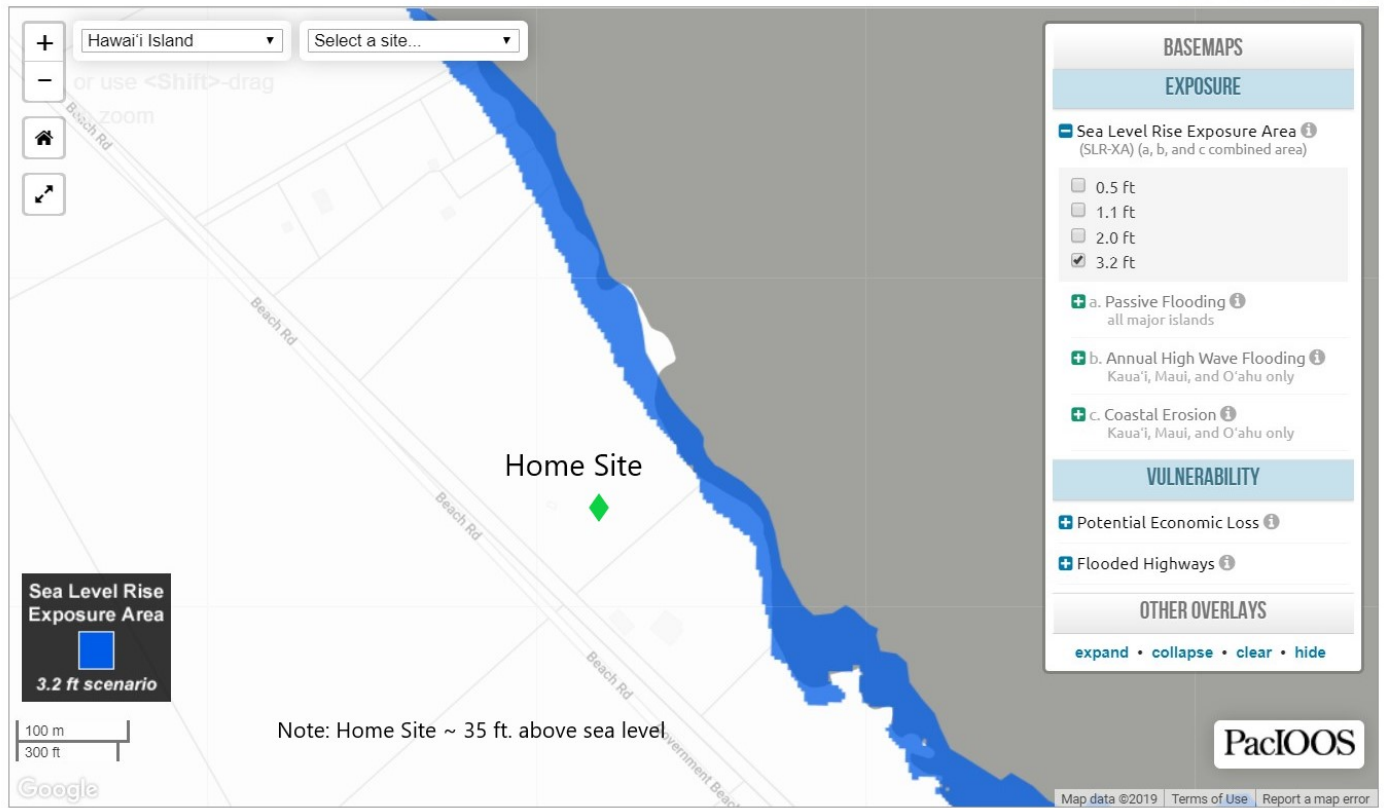


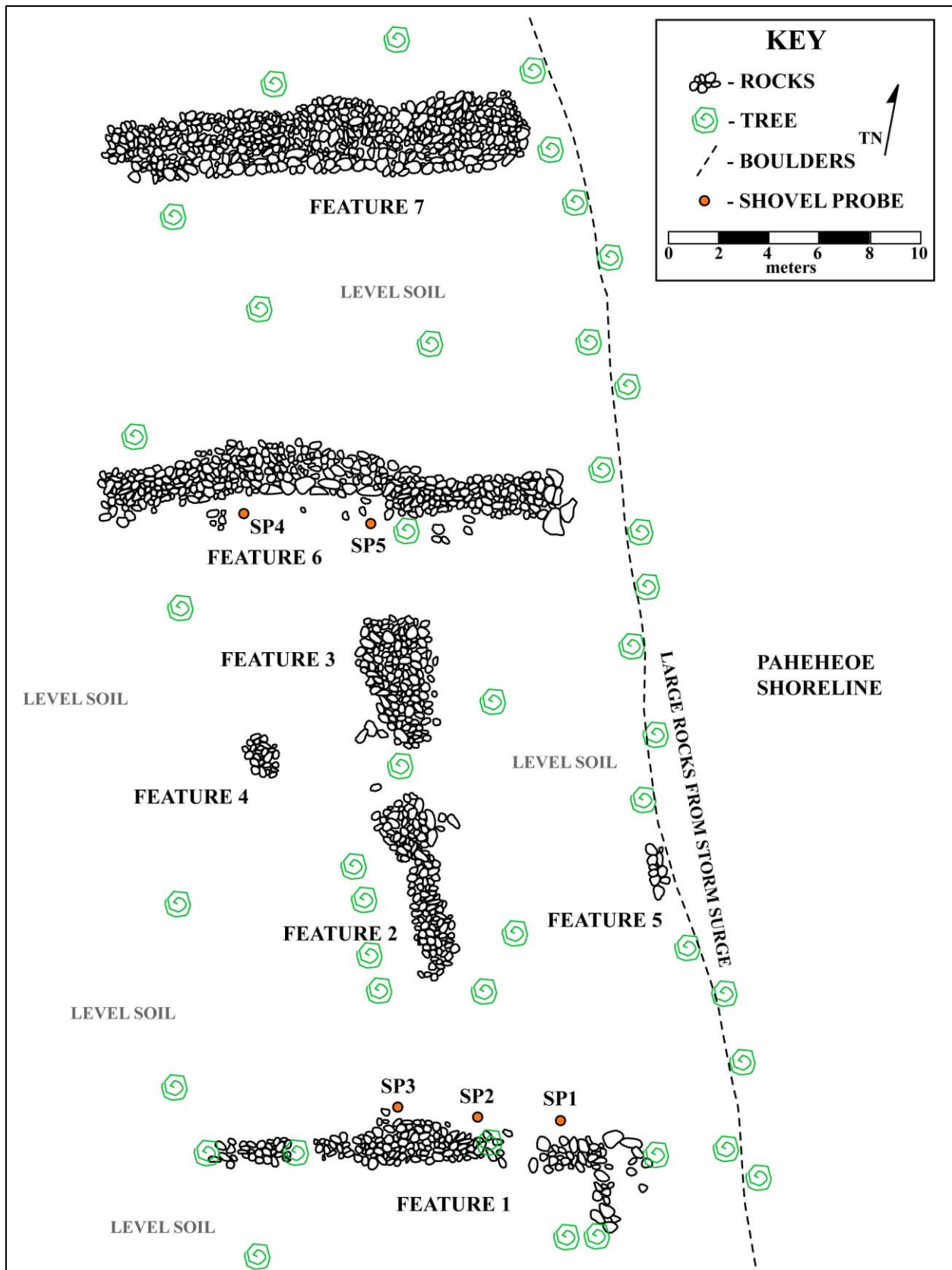
 <b>Flood Hazard Assessment Report</b> <a href="http://www.hawaiiifip.org">www.hawaiiifip.org</a>		<b>FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND</b> <small>(Note: legend does not correspond with NFHL)</small>															
<b>Property Information</b> COUNTY: HAWAII TMK NO: (3) 1-5-010-009 WATERSHED: KAAHAKINI PARCEL ADDRESS: 15-2145 GOVERNMENT BEACH ROAD KEAAU, HI 96749		<b>Notes:</b>															
<b>Flood Hazard Information</b> FIRM INDEX DATE: SEPTEMBER 29, 2017 LETTER OF MAP CHANGE(S): NONE FEMA FIRM PANEL: 155166118SF PANEL EFFECTIVE DATE: SEPTEMBER 29, 2017		<b>SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD</b> - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones: <table border="1"> <tr><td></td><td>Zone A: No BFE determined.</td></tr> <tr><td></td><td>Zone AE: BFE determined.</td></tr> <tr><td></td><td>Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.</td></tr> <tr><td></td><td>Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.</td></tr> <tr><td></td><td>Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.</td></tr> <tr><td></td><td>Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.</td></tr> <tr><td></td><td>Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.</td></tr> </table>			Zone A: No BFE determined.		Zone AE: BFE determined.		Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.		Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.		Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.		Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.		Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.
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THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: YES FOR MORE INFO, VISIT: <a href="http://www.scd.hawaii.gov/">http://www.scd.hawaii.gov/</a> THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO FOR MORE INFO, VISIT: <a href="http://dlnr.hawaii.gov/dam/">http://dlnr.hawaii.gov/dam/</a>		<b>NON-SPECIAL FLOOD HAZARD AREA</b> - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities. <table border="1"> <tr><td></td><td>Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.</td></tr> <tr><td></td><td>Zone X: Areas determined to be outside the 0.2% annual chance floodplain.</td></tr> </table>			Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.		Zone X: Areas determined to be outside the 0.2% annual chance floodplain.										
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	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.																
 <small>Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.</small> <small>If this map has been identified as "PRELIMINARY", please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.</small>		<b>OTHER FLOOD AREAS</b> <table border="1"> <tr><td></td><td>Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.</td></tr> </table>			Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.												
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Source: Hawai'i DLNR: <http://gis.hawaiiifip.org/fhat/>



**Figure 5. Sea Level Rise Exposure Area**





**Figure 21:** Site 18980 Plan View Map.





**Figure 22:** Photograph of Site 18980 Feature 1 Linear Rock Mound Looking South.





**Figure 23:** Photograph of Site 18980 Feature 2 Rock Mound Looking West.





**Figure 24:** Photograph of Site 18980 Feature 3 Rock Mound Looking South.





**Figure 25:** Photograph of Site 18980 Feature 6 Rock Wall, Overview Looking Southwest.





**Figure 26:** Photograph of Site 18980 Feature 6 Rock Wall Showing Partial Collapse, Looking West.





**Figure 27:** Photograph of Site 18980 Feature 7 Rock Wall, Overview Looking Northeast.





**Figure 28:** Photograph of Site 18980 Feature 7 Rock Wall, South Edge, Looking Southwest.





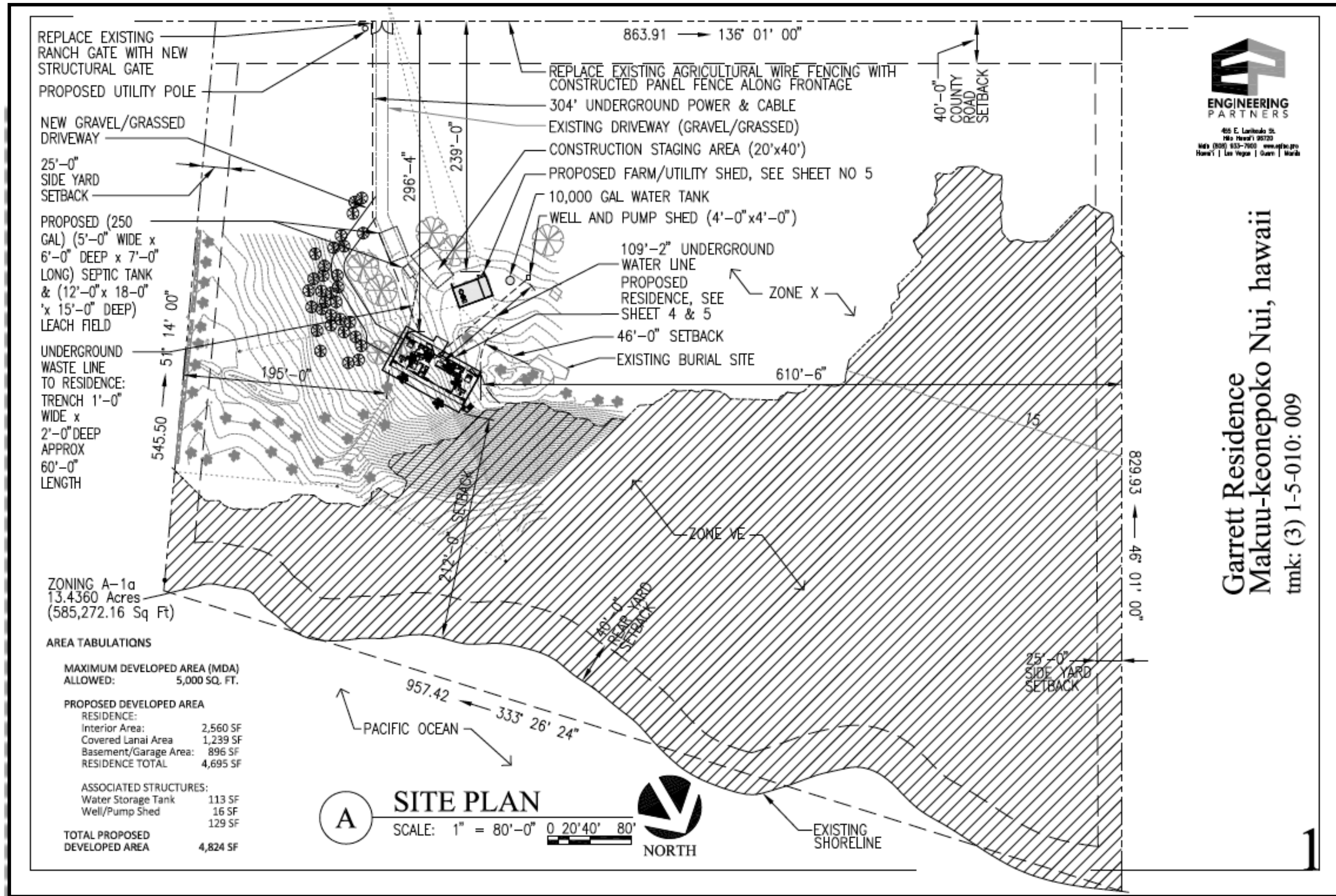
**Figure 30:** Photograph of Site 18987 Family Burial Plot Looking North.





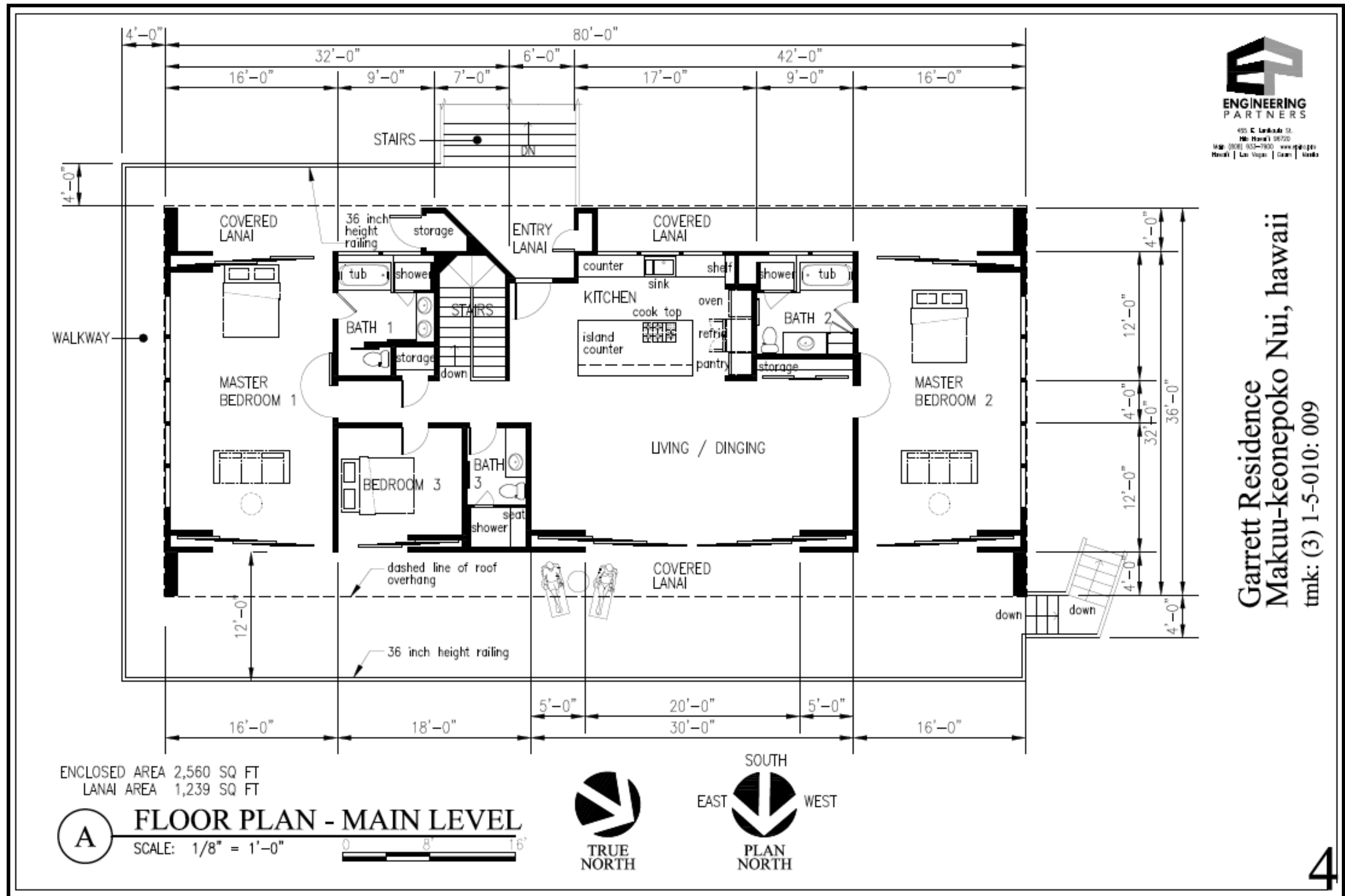
**Figure 31:** Photograph of Site 18987 Family Burial Plot Looking Southeast.





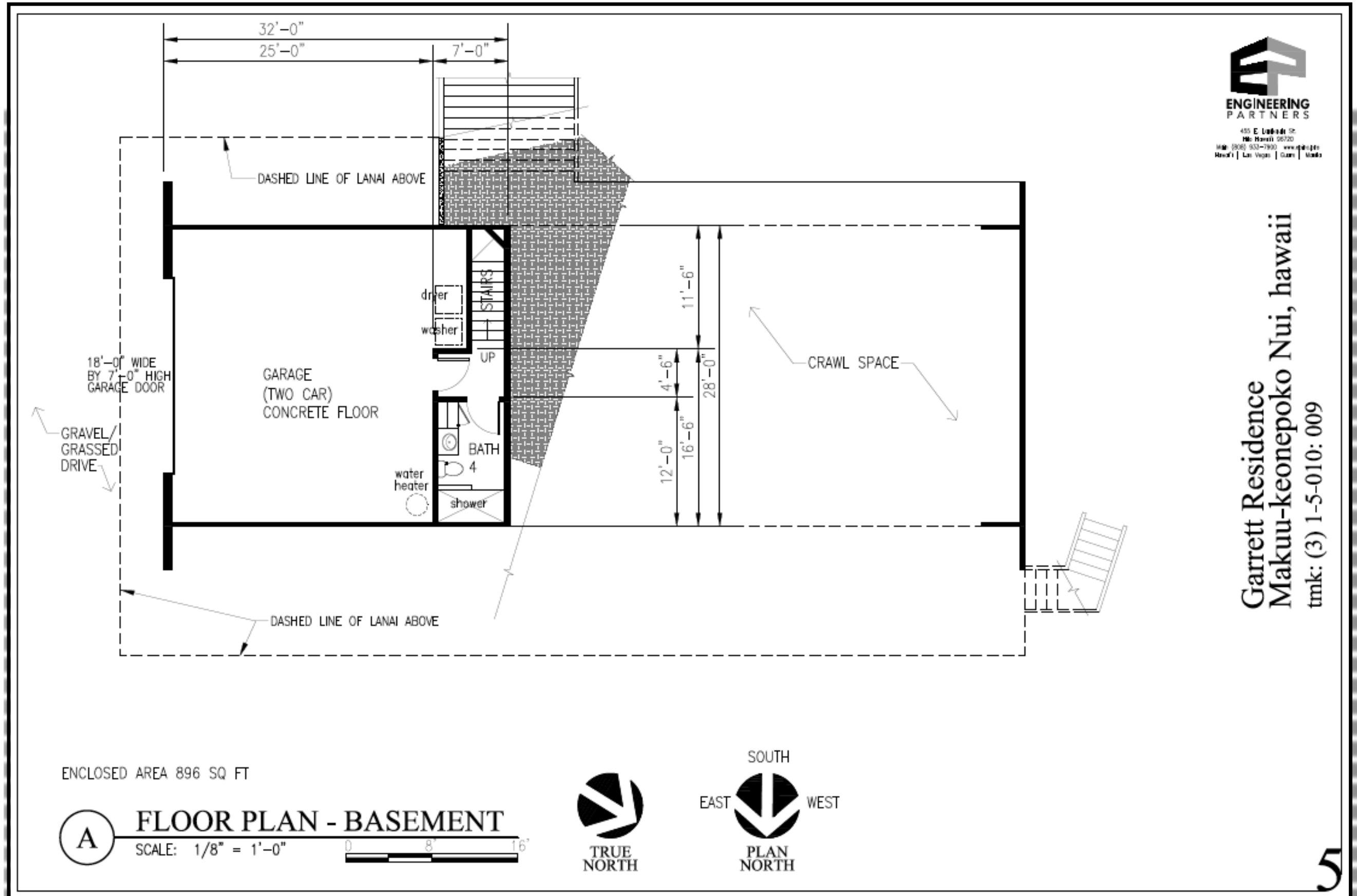
**FIGURE 4 Site Plan**  
Garrett Single-Family Residence and Farm

Conservation District  
Use Permit Application



**FIGURE 5 Residence Floor Plan - Main Level**  
 Garrett Single-Family Residence

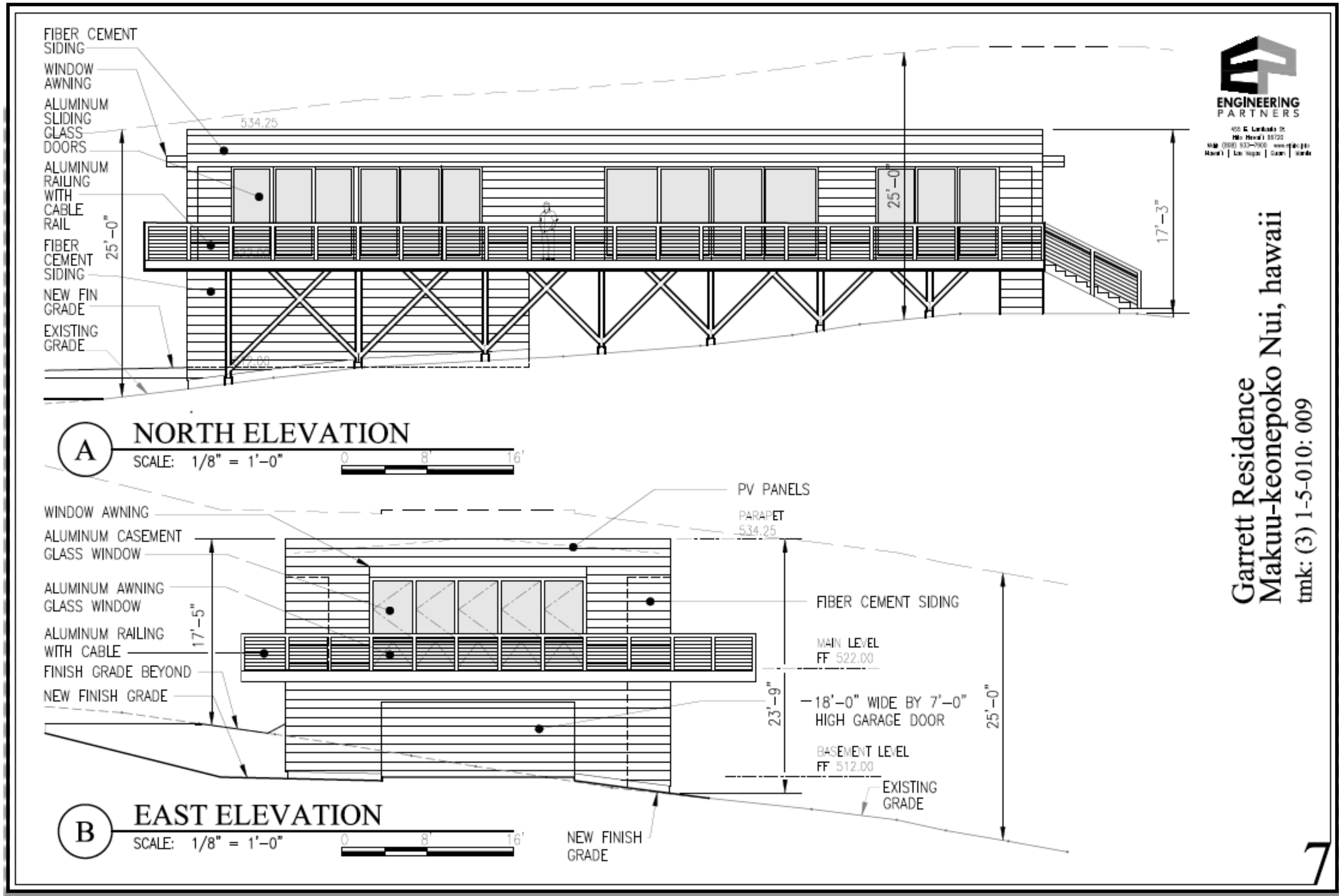
Conservation District  
 Use Permit Application



**FIGURE 6 Residence Floor Plan – Garage/Basement**  
 Garrett Single-Family Residence

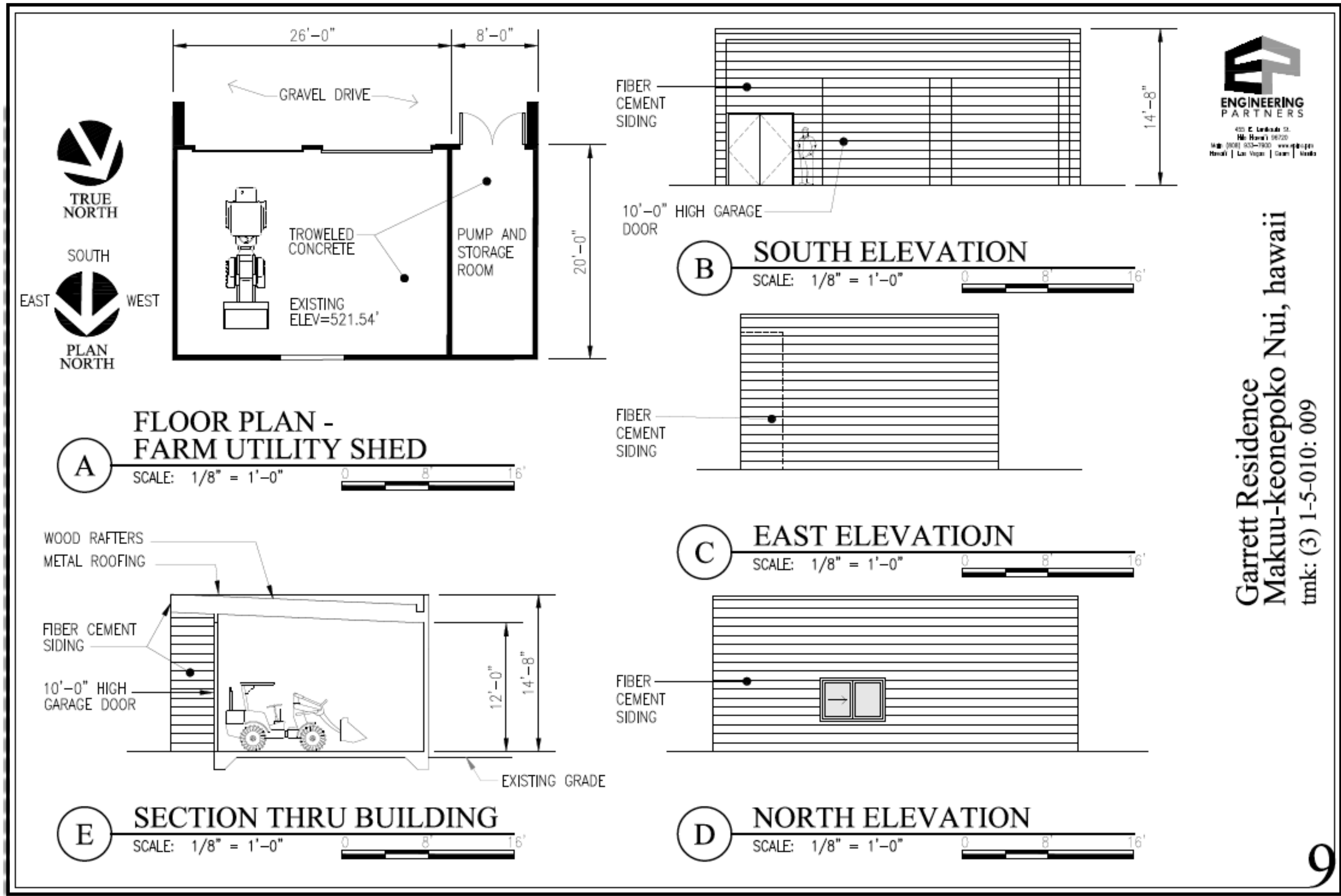
Conservation District  
 Use Permit Application





**Figure 7 Residence Elevations**  
**Garrett Single-Family Residence**

Conservation District  
Use Permit Application



**Figure 8 Farm/Utility Shed – Floor Plan and Elevations**  
Garrett Single-Family Residence

Conservation District  
Use Permit Application

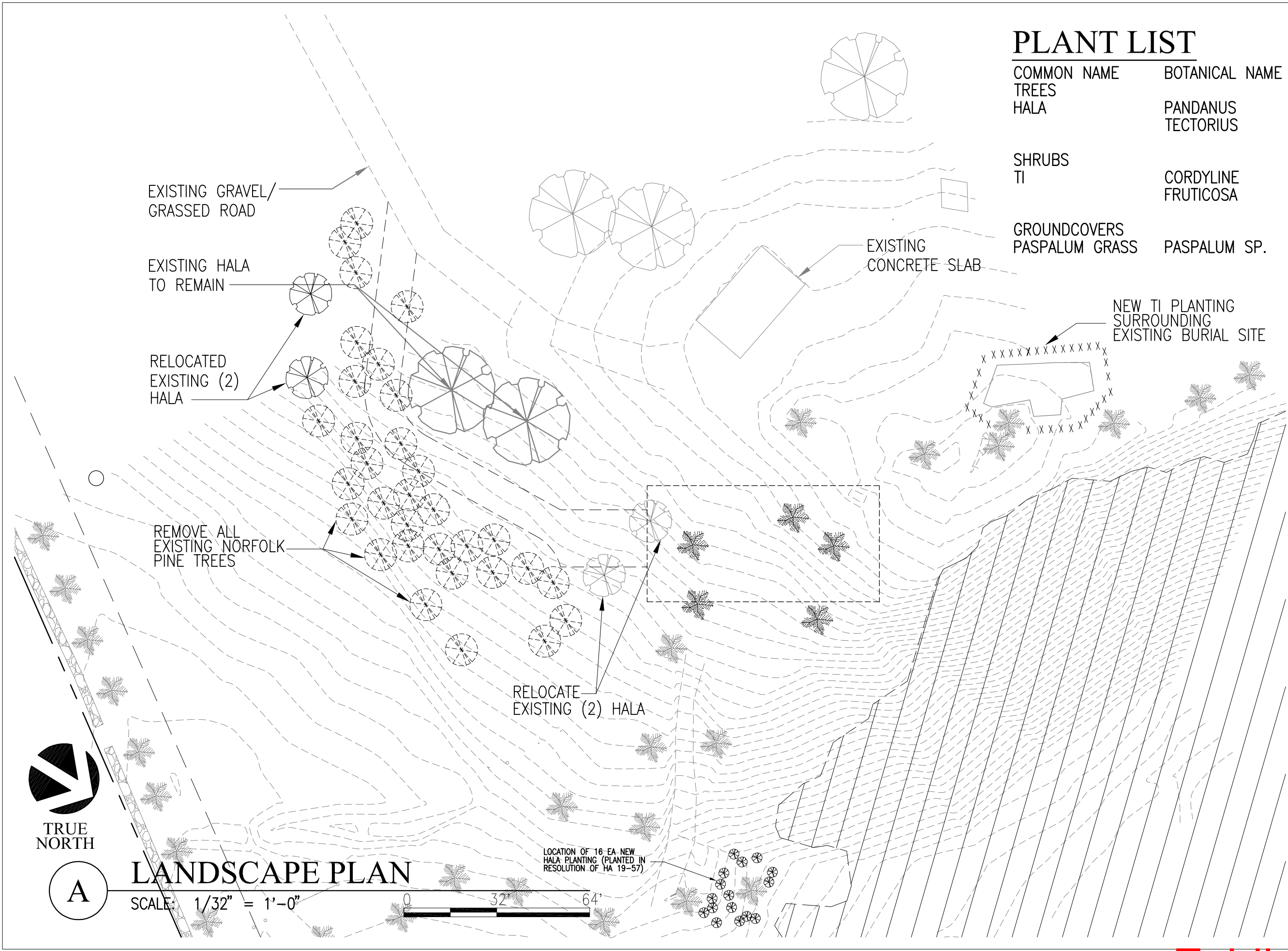


F o r m e r   H o m e   F o u n d a t i o n



**Figure 20:** Photograph of Site 7476 Foundation Looking North.





PLANT LIST

COMMON NAME	BOTANICAL NAME
TREES	
HALA	PANDANUS TECTORIUS
SHRUBS	
TI	CORDYLINE FRUTICOSA
GROUNDCOVERS	
PASPALUM GRASS	PASPALUM SP.



ENGINEERING  
PARTNERS

455 E. Lanikaula St.  
Hilo Hawai'i 96720  
Main (808) 933-7900 www.epinc.pro  
Hawai'i | Los Vegas | Guam | Manila

Garrett Residence  
Makuu-keonepoko Nui, hawaii  
tmk: (3) 1-5-010: 009

LANDSCAPE PLAN

SCALE: 1/32" = 1'-0"



REVISED 7/15/20

**Harry Kim**  
Mayor



**Darren J. Rosario**  
Fire Chief

**Lance S. Uchida**  
Deputy Fire Chief

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

June 16, 2020

Samuel J. Lemmo, Administrator  
Department of Land and Natural Resources  
Office of Conservation and Coastal Lands  
P.O. Box 621  
Honolulu, Hawai'i 96809

Dear Mr. Lemmo,

**SUBJECT:** Request for Comments  
Conservation District Use Application (CDUA) HA-3868  
Single Family Residence and Farm  
**LOCATION:** Maku'u, Puna, County of Hawai'i  
**APPLICANT:** Bob Garrett  
**Tax Map Key:** (3) 1-5-010:009

In regards to the above-referenced subject, the following shall be in accordance:

**NEPA 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.

**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 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 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 access ways 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 2000square 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.



Samuel J. Lemmo  
June 16, 2020  
Page 9

- 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 Assistant Fire Chief Robert Perreira at (808) 932-2907.



DARREN J. ROSARIO  
Fire Chief

RP:nac