

COUNTY OF HAWAI'I PLANNING DEPARTMENT
BACKGROUND REPORT

AB MAUI QUARRIES, LLC
SPECIAL PERMIT APPLICATION NO. PL-SPP-2026-000121

AB MAUI QUARRIES, LLC are requesting a Special Permit to construct and operate a concrete and asphalt batch plant and maintenance shop, office building, and warehouse for mechanical repair and storage and related accessory uses on a 14.9-acre portion of a 934.7-acre property within the State Land Use Agriculture District. The subject property is located on the south side of Waikoloa Road, approximately 3.2 miles east of its intersection with Queen Ka'ahumanu Highway, Waikoloa, South Kohala, Hawai'i, TMK: (3) 6-8-001:067 por.

APPLICANTS' REQUEST

1. **Request:** The applicant is requesting a Special Permit to construct and operate a concrete and asphalt batch plant on the proposed site, with supporting facilities including a maintenance shop, warehouse, and main office building, as well as dedicated areas for an equipment staging yard, a stormwater basin, and fuel farm, on approximately 14.9 acres of a larger 934.7-acre parcel located in State Land Use Agricultural District. The proposed development, referred to as the Waikoloa Industrial Yard, consists of two (2) primary production areas, an approximately 5-acre asphalt batch plant and an approximately 5-acre concrete batch plant, together comprises the core of the operation. The concrete and asphalt batch plant will be supported by related uses that are necessary to ensure proper and efficient operation. These may include recycling and wash plants, quality control laboratories, scale house functions, stockpile and staging areas for materials and equipment, fuel farms, and hazardous materials storage. Additional supporting facilities may consist of a maintenance shop and warehouse, vehicle and equipment wash stations, stormwater management features, dust control systems, erosion and sediment controls, designated

firebreaks and landscaping zones, access road improvements, water well and water recycling systems. Spill prevention measures and security fencing will also be incorporated to maintain safe, orderly, and compliant operations. The supporting facilities and developed areas necessary for full industrial functionality include an office and parking area covering approximately 30,000 square feet (about 0.69 acres), a maintenance shop of approximately 16,500 square feet (about 0.38 acres), a warehouse area of approximately 9,000 square feet (about 0.21 acres), and a fuel farm of approximately 5,100 square feet (about 0.12 acres). Additional developed components include a stormwater detention basin (approximately 4,900 square feet, or 0.11 acres), equipment and material staging areas, aggregate stockpiles, recycling and wash plant areas, and internal circulation and access improvements. Staff notes that aggregate materials for the Project may be transported via the intersection of Queen Ka'ahumanu Highway and Waikoloa Road. The Applicant will consult with the Hawaii Department of Transportation (HDOT), Highways Division, Hawaii District regarding the transport of aggregate materials and the potential impacts to State roadways. Pursuant to HRS §291C-131(a), vehicles operating on public highways must be constructed, covered, or loaded in a manner that prevents any materials from dropping, sifting, leaking, blowing, spilling, or otherwise escaping onto the roadway, except as otherwise allowed by statute. All aggregate transport associated with the Project will comply with this requirement to avoid debris impacts to State roadways.

The proposed facility is designed to support continuous industrial operations, including 24-hour activity for both the asphalt and concrete plants and related support facilities, with administrative functions occurring during daytime hours.

2. **Reasons for Request:** The applicant, AB Maui Quarries, LLC (ABMQ), is affiliated with Nan, Inc., one of the state of Hawai'i's leading general contractors; Grace Pacific, a premier paving contractor; Kahala Concrete, a ready-mix supplier; and the developer of the 725-acre mixed-use Palamanui development

project in North Kona, Hawai'i. It was stated in the application that this request is driven by increasing demand for construction materials in the Waikoloa area and throughout West Hawai'i, associated with ongoing residential, commercial, and infrastructure development. The proposed batch plant is intended to provide a local and reliable source of asphalt and concrete, reducing reliance on off-island or distant facilities, lowering transportation costs, and improving efficiency in delivering materials for public and private projects. The applicant further asserts that the project would support regional economic development, infrastructure improvements, and long-term growth objectives.

3. **Hours of Operation:** Both the concrete and asphalt batch plants, as well as certain support facilities (e.g., maintenance operations), are intended to operate 24 hours per day. In contrast, administrative and office functions are proposed to operate during standard daytime hours from 7:00 a.m. to 5:00 p.m.
4. **Staff:** The applicant estimates that the asphalt plant would employ approximately 5 workers and the concrete plant about 14 workers. An additional 6 employees are anticipated for the maintenance shop, and the office is designed to accommodate approximately 30 employees. In total, the project is expected to involve roughly 55 employees across all operations, depending on demand and shift scheduling.
5. **Cost and Construction Timeframe:** For a three hundred (300) tons per hour (TPH) six (6) pack asphalt plant, the projected cost would be twelve million nine hundred fifty thousand dollars (\$12,950,000). A two hundred fifty (250) cubic yard concrete wet batch plant would approximately amount to five million one hundred fifteen thousand dollars (\$5,115,000). The time to build both plants purchased brand new and to permit two (2) new plants would be approximately eighteen (18) months. Other related uses such as Office & Admin Buildings, Employee Facilities, Wash Plants, Labs, Scale House, fuel farm, general storage, warehouses, maintenance shops, and more will also be constructed during this timeframe. This project is estimated to be constructed by 2028 with an overall projected construction cost of fifty million dollars (\$50,000,000).

6. **Landowners:** AB Maui Quarries, LLC
7. **Supportive Information:** The applicant has submitted the attached in support of the request: **(Planning Department Exhibit 1 – Special Permit Application dated February 26, 2026).**

DESCRIPTION OF STATE & COUNTY PLANS

8. **State Land Use District:** Agricultural.
9. **General Plan Land Use Pattern Allocation Guide (LUPAG) Map:** Urban Expansion (ue), which allows for a mix of high density, medium density, low density, industrial, industrial-commercial and/or open designations in areas where new settlements may be desirable, but where the specific settlement pattern and mix of uses have not yet been determined.
10. **County Zoning:** Agricultural-5 acres (A-5a).
11. **Community Development Plan (CDP):** The South Kohala CDP was adopted by Ordinance No. 08-159, which became effective on December 1, 2008. The subject property is designated Urban Expansion in the *Waikoloa Village and Surrounding Area* map.
12. **Special Management Area (SMA):** The subject property is located approximately 3.8 miles from the nearest coastline; thus, it is not located within the SMA.

DESCRIPTION OF SUBJECT PROPERTY AND SURROUNDING AREA

13. **Subject Property:** The 14.9-acre permit area sits at elevations ranging roughly from 700 to 1,100 feet above sea level. The site is characterized by relatively undeveloped land consisting primarily of ‘a‘ā lava terrain with sparse vegetation and limited existing infrastructure (unpaved access roads). Staff notes that the subject parcel (Lot 3-B-3) was created via subdivision under SUB-07-000696 which also established an easement in favor of all of the newly created parcels. Easement 3 is described as for “*access and utility purposes affecting Lot 3-B-2, in favor of Lots 3-B-1 and 3-B-3*”. Additionally, according to the US Army Corps of Engineers (USACOE) Formerly Used Defense Sites (FUDS) Viewer, the project area is located within the Waikoloa Maneuver Area FUDS property polygon, and

as such, the applicant shall provide documentation from the U.S. Army Corps of Engineers identifying whether the proposed Special Permit area overlaps any Waikoloa Maneuver Area Military Munitions Response Site (MRS), and if so, provide documentation demonstrating the site has achieved Response Complete (RC) status or identify applicable Land Use Controls, construction protocols, and required coordination.

14. Surrounding Zoning and Land Uses:

The Project Site is located within TMK: (3) 6-8-001:067 (portion) and is surrounded primarily by lands zoned A-5a (Agricultural District), with General Plan Land Use designations that include Urban Expansion, Natural, Productive Agriculture, and adjacent Heavy Industrial uses. Although the surrounding area remains largely agricultural in zoning, existing land uses reflect an established concentration of quarrying, construction materials production, and related industrial support activities. The adjoining parcel to the south, TMK: (3) 6-8-001:066, has received prior County and State approvals for industrial uses substantially similar to those proposed. State Special Permit No. 833 (LUC Docket No. SP92-381) authorized establishment and operation of a quarry and allied uses on approximately 220 acres, including blasting, rock crushing and screening, concrete ready-mix batching, asphalt product manufacturing, equipment storage, repair activities, and related operations supporting aggregate production. Quarry operations have been active in the area since approximately 1995, and the permit was subsequently amended to extend operations and authorize additional recycling-related activities. In addition, Special Permit No. SPP 08-000064 authorized a construction base yard and was later amended to allow operation of a concrete and asphalt batching plant within a 14.77-acre area adjacent to the quarry. Prior findings identified the broader area as supporting sensitive natural resources, including habitat and observations in the vicinity of the endangered Blackburn's sphinx moth, and incorporated avoidance and resource protection measures as conditions of approval.

15. USDA Soil Survey Report: The soil of the permit area is listed as a'ā lava flows

with 2 to 20 percent slopes. This soil type is excessively drained, has a very low runoff class and is not considered prime farmland.

16. **Flood Insurance Rate Map (FIRM):** The subject property is located within FEMA Flood Zone X, indicating an area of minimal flood hazard.
17. **Land Study Bureau's Overall Productivity Rating:** "E" or Very Poor.
18. **Agricultural Lands of Importance to the State of Hawai'i (ALISH):** Undesignated by ALISH.
19. **Flora and Fauna Resources:** No professional floral or faunal survey was conducted for the permit area. Floral and faunal resources on the project site are limited due to sparse vegetation and lava terrain, with low likelihood of native species occurring within the immediate development area. Some native species, including wiliwili trees, are present on the larger parcel, but are not within the proposed permit area and as such will not be impacted.
20. **Archaeological Resources:** An Archaeological Reconnaissance Survey (ARS) was conducted by ASM Affiliates for the entire 934.7-acre parcel. The survey identified a complex of previously documented archaeological sites (including features such as mounds, platforms, terraces, and rock shelters) located in the southwestern portion of the parcel, outside of the proposed 14.9-acre permit area. According to a letter dated November 6, 2025, the State Historic Preservation Division (SHPD) reviewed the project site and surrounding parcel and made the determination that "No historic properties affected" by the proposed project. SHPD also noted that while previously identified archaeological sites are located outside of the permit area, the 50-foot preservation buffers surrounding these sites should be installed prior to development.
21. **Valued Cultural Resources:** Valued cultural resources, including archaeological sites and culturally significant features, are present within the larger parcel but are located well outside the permit area. No such resources were identified within the permit area, and the project has been designed to avoid impacts to nearby cultural resources.
22. **Public Access:** There is no known public access to the mountains or the

shoreline that runs through the property.

PUBLIC SERVICES AND FACILITIES

23. **Access/Traffic:** Primary access to the project site is proposed via a new driveway connection from the County-managed Waikoloa Road into the project parcel, which will serve as the main ingress and egress for both employees and truck traffic. The applicant submitted a transportation assessment indicating that the project is expected to generate approximately 43 inbound trips during the morning peak hour and 43 outbound trips during the afternoon peak hour, along with a limited number of truck trips (up to 3 inbound and 3 outbound during the morning peak hour).

The Hawai'i Police Department reviewed the proposal and expressed concerns regarding the location of the proposed access connection to Waikoloa Road. Specifically, the Department noted that the proposed intersection is located on a curve within a 45-mile-per-hour zone, which may limit line-of-sight visibility for motorists. The Police Department recommended that the access point be relocated to a straight section of roadway to improve visibility for vehicles entering and exiting the site and to reduce the potential for traffic collisions. The Applicant is currently working on options with the Police Dept., DPW, and the Planning Department to alleviate their concerns and ensure safe ingress/egress to the parcel, and for motorists along Waikoloa Road. One option is to utilize the existing Easement No. 3 which runs from Waikoloa Road into the existing quarry and batch plant area. Staff notes that Easement No. 3, created via subdivision No. SUB-07-0000696, is an access and utility easement in favor of the proposed project parcel. The applicant is currently working to determine if this easement can be used as access to the project site.

24. **Water:** Potable water service will be provided by the Hawai'i Water Service (HWS), which operates an existing water system in the vicinity along Waikoloa Road. The applicant has received a *Will Serve letter* confirming the availability of potable water at an estimated demand of approximately 5,550 gallons per day. A connection to the existing HWS transmission line along Waikoloa Road is

anticipated, with final design and alignment to be coordinated with the provider. In addition to potable water, the project will also develop an on-site well and storage system to supply non-potable water for operational needs such as dust control and plant processes.

25. **Wastewater:** Wastewater for the project site will be managed by an on-site Individual Wastewater System (IWS), as there is no existing sewer infrastructure in the vicinity. The proposed system will consist of a septic tank and leach field designed to treat and dispose of wastewater generated by the facility. The system is intended to accommodate wastewater flows from the office, maintenance shop, and other employee-related uses, and will be designed in accordance with applicable State and County regulations.
26. **Other Essential Utilities and Services:** Electrical and telecommunications service are available in the vicinity of Waikoloa Road and are expected to be extended to the site. Fire protection will be provided through a combination of on-site measures, including water storage and fire flow provisions integrated into the project's water system design, as well as coordination with the County Fire Department for emergency response; staff notes that the closest fire department facility is within Waikoloa Village, approximately 6 miles from the project site.

AGENCY COMMENTS

27. **Police Department: (Planning Department Exhibit 2 – April 2, 2026, memo)**
28. **Hawaii Water Service (Will Serve Letter): (Planning Department Exhibit 3 – January 27, 2026, letter)**
29. **State Historic Preservation Division (SHPD): (Planning Department Exhibit 4 – November 6, 2025, letter)**
30. **State Dept of Health – Solid and Hazardous Waste Branch: (Planning Department Exhibit 5 – March 27, 2026, email)**
31. **State Dept. of Health – Environmental Health Branch: (Planning Department Exhibit 6 – March 27, 2026, memo)**

AGENCIES – NO COMMENT OR CONCERN

32. Department of Water Supply.

AGENCIES/ASSOCIATIONS – NO RESPONSE

33. Department of Public Works-Engineering Division; Civil Defense; Fire Department; South Kohala Traffic; State Land Use Commission; State Office of Planning and Sustainable Development; State Department of Agriculture; State Dept. of Land and Natural Resources – DOFAW, Land, ENG; HELCO; and Waikoloa Village Homeowners Assoc.

PUBLIC COMMENTS

34. As of the time of this writing, the Planning Department has received no public comments regarding this request.

APPLICANT RESPONSE TO COMMENTS:

35. **Applicant Response to OPSD: (Planning Department Exhibit 7 – June 1, 2026 Letter)**

SPECIAL PERMIT APPLICATION

COUNTY OF HAWAII PLANNING COMMISSION (Type or legibly print the requested information)

APPLICANT(S): AB Maui Quarries, LLC

APPLICANT'S SIGNATURE:  DATE: February 26, 2026

ADDRESS: 636 Laumaka Street
Honolulu, HI 96819

LIST APPLICANT'S INTEREST (if not owner): _____

PHONE: (Bus.) (808) 842-4929 (Res.) _____ (Email) [REDACTED]

REQUEST: To construct and operate a concrete and asphalt batch plant, along with supporting facilities, on a 14.9-acre site in South Kohala, a portion of TMK: 6-8-001:067

TAX MAP KEY: (3) 6-8-001:067 portion ZONING: A-5a: Agricultural

SIZE OF PROPERTY / AREA OF REQUESTED USE: 934.66 ac / 14.9 ac

LANDOWNER(S): AB Maui Quarries, LLC

FEE SIMPLE LANDOWNER(S) WRITTEN AUTHORIZATION

(may be provided by letter with the below statement included):

DATE: _____

DATE: _____

Note: The above written authorization of the landowner(s) gives permission for the applicant/petitioner to file the application/petition and acknowledges that the landowner(s) and their successors are bound by the Special Permit and its conditions.

AGENT: Wyeth M. Matsubara

AGENT ADDRESS: 636 Laumaka Street
Honolulu, HI 96819

PHONE: (Bus.) (808) 842-4929 (Res.) (808) 222-9400 (Email) [REDACTED]

Please indicate to whom original correspondence and copies should be sent.

ORIGINAL: Wyeth M. Matsubara COPIES: Min Zhong

Planning Dept.
Exhibit 1

TO WHOM IT MAY CONCERN:

As landowner and applicant, I hereby authorize the Agent, Wyeth M. Matsubara, Vice President at Nan, Inc., to submit and process a Special Permit Application and its conditions and, if needed, other related amendments relating to the development and operation of a 14.9-acre concrete and asphalt batch plant, along with supporting facilities, on a portion of the property identified by TMK: 6-8-001:067. This written authorization of the landowner and applicant gives permission for the Agent to file the application/petition and acknowledges that the landowner and successors are bound by the Special Permit and its conditions.



February 26, 2026

AB MAUI QUARRIES, LLC

SPECIAL PERMIT APPLICATION

PROPOSED BATCH PLANT:

Waikoloa Industrial Yard

APPLICANT: AB Maui Quarries, LLC

Tax Map Key: (3) 6-8-001:067 (portion)

Waikoloa Road, South Kohala, Hawai'i

Prepared by: Nan, Inc.

February 2026

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**SPECIAL PERMIT APPLICATION
PROPOSED BATCH PLANT: WAIKOLOA INDUSTRIAL YARD
AB MAUI QUARRIES, LLC
TAX MAP KEY: (3) 6-8-001:067 (PORTION)**

I. INTRODUCTION

The Waikoloa region and the broader Island of Hawai‘i are experiencing unprecedented growth, with ongoing commercial and residential development, infrastructure upgrades, and an expanding visitor industry driving increased demand for construction materials and supporting facilities.

AB Maui Quarries, LLC (“ABMQ”) is affiliated with Nan, Inc., one of the state of Hawai‘i’s leading general contractors; Grace Pacific, a premier paving contractor; Kahala Concrete, a ready-mix supplier; and the developer of the 725-acre mixed-use Palamanui development project in North Kona, Hawai‘i. As the new landowner of TMK: 6-8-001:067 (the “Property”), ABMQ has a vested and long-term interest in the land use policies that will guide future growth and development in this region.

To meet these needs, ABMQ is seeking a Special Use Permit (“SUP”) to construct and operate a concrete and asphalt batch plant, along with supporting facilities, on a 14.9-acre site in South Kohala, a portion of TMK: 6-8-001:067.

II. PROJECT LOCATION

The subject property is located within in TMK: (3) 6-8-001:067, Parcel 67, at an elevation approximately 900 feet above sea level. The subject parcel is situated on the northwestern flank of Mauna Loa where it joins the southwestern flank of Mauna Kea at elevations ranging from 650 to 1,840 feet above mean sea level, roughly 4 to 6 miles inland of the coast. This parcel is designated Zone A-5a, Agricultural (AG) district (**see Exhibit 04 for map of County of Hawaii Zoning**) and is located south of Waikoloa Road with an elevation from approximately 700 feet above sea level at its western boundary, to approximately 1,100 feet above sea level at its eastern boundary.

Approximately 83 acres of Parcel 67 is an Archaeological Preserve and unusable, immediately north of Parcel 66, TMK: (3) 6-8-001:066. The topography consists mostly of ‘a‘ā lava from an 1895 lava flow. The project site is clear from the minimum 50 feet preservation buffer and archaeological recommended avoidance area (**see Exhibit 05 for map of ABMQ Property with SUP Waikoloa Industrial Yard**).

III. PROJECT DESCRIPTION

A. Project Concept

Over the past year, new commercial and residential construction has been ongoing in the Waikoloa Village area. Alternative energy land use and additional construction activity has increased in the area, including the County of Hawai‘i, Waikoloa Road Rehabilitation project. Continued growth in the Waikoloa area is generating a sustained and increasing need for materials, such as asphalt and concrete to support housing, infrastructure, and economic development. A local asphalt and concrete batch plant will enable the timely and efficient supply of these essential materials, reduce reliance on distant sources, and support smart, cost-effective development that aligns with the region’s long-term planning and infrastructure goals.

The 14.9-acre project site, known as Waikoloa Industrial Yard (the “Project Site”), is located in Waikoloa, South Kohala, Hawai‘i, Tax Map Key (TMK) (3) 6-8-001:067 as shown in **Exhibit 01 Map of ABMQ Property and Project Site**. AB Maui Quarries, LLC (the “Applicant”) would like to construct and operate a concrete and asphalt batch plant on the proposed site, with supporting facilities including a maintenance shop, warehouse, and main office building, as well as dedicated areas for an equipment staging yard, a stormwater basin, and fuel farm (see **Exhibit 07 and Exhibit 08 for the concept program and layout**). The design intent is to produce material for future developments, such as infrastructure and roads, in Waikoloa as construction activity continues to grow.

Approximately 5 acres will be dedicated to the concrete plant, and another 5 acres will be for the asphalt plant. Each plant should have the ability to operate twenty-four (24) hours daily.

B. Project Components

The asphalt plant will have five (5) employees consisting of an operator, service person, loader operator, and dispatcher. The plant will include stockpile for aggregates and a 10,000-gallon double walled fuel tank.

The concrete plant will have fourteen (14) employees consisting of an operator, loader operator, service person, dispatcher, and ten (10) mixer truck drivers. This plant will include aggregate bins and storage, portable rock crushers, and a 10,000-gallon double walled fuel tank.

The concrete and asphalt batch plant will be supported by related uses that are necessary to ensure proper and efficient operation. These may include recycling and wash plants, quality control laboratories, scale house functions, stockpile and staging areas for materials and equipment, fuel farms, and hazardous materials storage. Additional supporting facilities may consist of a maintenance shop and

warehouse, vehicle and equipment wash stations, stormwater management features, dust control systems, erosion and sediment controls, designated firebreaks and landscaping zones, access road improvements, a water well and water recycling systems. Spill prevention measures and security fencing will also be incorporated to maintain safe, orderly, and compliant operations.

For the supporting facilities, the conceptual floor plans and elevations can be found in **Exhibit 09**.

The maintenance shop will be approximately 16,500 square feet and should have the ability to operate twenty-four (24) hours daily with six (6) employees. The team will consist of three (3) mechanics, a fueler, service person, and an administrator who will be responsible for purchase orders and inventory. For all 24-hour facilities, the crew would likely run either the day or the night shift depending on the demand.

The overall plant operations will consist of a manager, accountant, and administrator, located in the main office building. The lot coverage for the office and parking combined will be approximately 30,000 square feet. The main office building will be approximately 11,250 square feet, with parking stalls for more than twenty (20) vehicles. The office will be designed for approximately thirty (30) employees with private offices, open workstations, conference rooms, kitchens, restrooms, laundry room, storage, and a potential PV (photovoltaic) grid above. Hours of operation will be from 7 a.m. to 5 p.m.

The warehouse will consist of four bays on a lot covering approximately 9,000 square feet within the project site. Two of the bays will be designated for mechanic work place, one of which will have a vehicle lift and the other bay with a bridge crane. The remaining two bays will be for storage (parts, materials, equipment, etc.). The warehouse structure itself is approximately 4,960 square feet. Both the warehouse and the maintenance shop may also have a potential PV grid above.

C. Project Timetable and Cost

For a three hundred (300) tons per hour (TPH) six (6) pack asphalt plant, the projected cost would be twelve million nine hundred fifty thousand dollars (\$12,950,000). A two hundred fifty (250) cubic yard concrete wet batch plant would approximately amount to five million one hundred fifteen thousand dollars (\$5,115,000). The time to build both plants purchased brand new and to permit two (2) new plants would be approximately eighteen (18) months. Other related uses such as Office & Admin Buildings, Employee Facilities, Wash Plants, Labs, Scale House, fuel farm, general storage, warehouses, maintenance shops, and more will also be constructed during this timeframe. This project is estimated to

be constructed by 2028 with an overall projected construction cost of fifty million dollars (\$50,000,000).

IV. ENVIRONMENTAL CONSIDERATIONS

A. Soils

The proposed use is situated on land that is classified as “E”, representing the lowest productivity class of soil for agricultural productivity by the Land Study Bureau. The soil has significant limitations and restricts its use. Although the likelihood of using the land for agricultural resources, the land could be made usable for non-soil based agricultural purposes, such as a batch plant that should not have any significant adverse effect on the State and County’s agricultural land inventory.

The Project Site is situated within Formerly Used Defense Sites (FUDS), Waikoloa Maneuver Area. The US Army Corps of Engineers FUDS Program indicates that the DOD is responsible for the environmental restoration (cleanup) of properties by investigating and cleaning up potential contamination or munitions that remain on site, which can be found on their website: <https://www.usace.army.mil/Missions/Environmental/Formerly-Used-Defense-Sites/>.

B. Water and Coastal Resources

According to the Flood Insurance Rate Map (FIRM), the Project Site is within Zone X. Per FEMA, Zone X are areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. This area indicates minimal flood hazard.

C. Archaeological and Historic Resources

ASM Affiliates (ASM) provided a Final ARS of TMK: (3) 6-8-001:067, 934.66-acre parcel located in Waikoloa Ahupua’a, South Kohala District, Island of Hawai‘i in September 2025 (**Exhibit 12**) and a Ka Pa‘akai O Ka ‘Āina Analysis (**Exhibit 15**).

In earlier archaeological studies by Jensen and Burgett in 1991, there were nineteen (19) archaeological sites documented outside of the project site, around the margins of two ‘a‘ā ridges. No midden, artifacts, or other portable cultural material were detected on the surface of any of the features or in the subsurface testing of a rock shelter feature. These sites were mostly interpreted to be burials and appeared to be interconnected by a poorly defined trail system, which was likely only minimally used at the time the features were constructed and for limited access thereafter.

These sites are preserved “as is” through avoidance by construction activities. To protect the nineteen (19) archaeological sites, there is a 50 feet-wide buffer flagged in the field around the margins of the ridge line containing the site. The proposed lot is more than 80 feet away from the archaeological recommended avoidance area and more than 370 feet away from the preservation buffer.

No archaeological resources were discovered during the Gotay and Rechtman 2015 survey, however, the requirement to avoid impacts to the nineteen (19) archaeological sites documented in 1991 was reiterated.

ASM conducted a pedestrian survey in 2025, resulting in fourteen (14) of the nineteen (19) sites re-identified and correlated to their existing Statewide Inventory of Historic Places (SIHP) site designations, but no other sites, features, or potential historic properties were identified. “Two modern features were noted along the boundaries of the subject parcel including a stacked cobble cairn adjacent to Waikoloa Road, and a bedrock overhand with modern trash in it adjacent to the powerline maintenance road along the southern boundary of the parcel.” ASM recommended, “As long as any planned future development activities do not encroach into the recommended avoidance area (totaling roughly 83 acres), the sites should be protected, and no additional documentation or preservation planning should be required by the DLNR-SHPD.” Additionally, any future projects proposed outside of the recommended avoidance area “will have no effect on historic properties, and should result in a project effect determination by the DLNR-SHPD of ‘no historic properties affected’ pursuant to HAR §13-284.”

State Historic Preservation Division (SHPD) determined “No historic properties affected” pursuant to HAR §13-284-7(a)(1) for the current project with the understanding that the 50 feet preservation buffer be avoided in a letter that provided review of the subject grading permit.

The Project Site shall not adversely affect the archaeological preservation area. The Project Site is more than fifty (50) feet away from the archaeological recommended avoidance area within Parcel 67.

D. Valued Cultural Resources

No traditional or customary Native Hawaiian rights were identified within the Project Site. Nineteen previously identified cultural sites are present within the parcel and will be preserved in place. While no culturally significant resources were identified within the Project Site, native plant species, including wiliwili (*Erythrina sandwicensis*), are known to occur in the general vicinity. Project design and construction activities will incorporate avoidance measures, where practicable, to minimize disturbance or removal of native plant species.

As no known cultural resources are located within the Project Site, project-related impacts to cultural resources are anticipated to be negligible. Should future development activities be proposed outside the current Project Site, a Cultural Impact Assessment (CIA) may be required in accordance with applicable statutes to ensure the identification and protection of potential cultural resources.

As documented in the Ka Pa‘akai O Ka ‘Āina Analysis, the Project Site exhibits limited potential to adversely affect or impair valued cultural, historical, or natural resources, including traditional and customary Native Hawaiian rights.

E. Floral and Faunal Resources

Vegetation within the parcel is mostly limited to sparse fountain grass (*Pennisetum setaceum*), allowing for excellent ground visibility (**as shown in the Archaeological Reconnaissance Survey, Exhibit 12, Figure 6**). However, along the northern portions of the subject parcel and within the kīpuka of the older Mauna Kea lava flows, the fountain grass becomes much thicker (**see Exhibit 12, Figure 7**). ASM’s 2025 ARS indicates the parcel, covered by rough ‘a‘ā terrain with very little vegetation, was infrequently used in the past. As noted in ASM’s Ka Pa‘akai O Ka ‘Āina Analysis, limited vegetation is present within the Project Site; therefore, the likelihood of encountering native species is low.

Stands of the endemic wiliwili tree (*Erythrina sandwicensis*) are present near the eastern boundary of the parcel. Historically, wiliwili trees were a dominant canopy species within the region’s dryland forest ecosystem and have significant cultural value, including the use of their bright red seeds for lei-making and their wood for traditional Native Hawaiian implements and surfboards.

Project development activities will be carefully planned to avoid the removal or disturbance of these trees to the extent practicable. A botanical survey of the project area may be conducted, as recommended, to identify any rare or native plant species requiring protection. Should such species be identified within areas of potential impact, appropriate avoidance measures or transplantation to a suitable location will be implemented.

In addition, fire safety protocols will be strictly followed throughout project operations, including the establishment and maintenance of firebreaks to reduce the risk and spread of wildfires.

V. INFRASTRUCTURE CONSIDERATIONS

A. Water

This development will include a well site with water storage tank that will supply non-potable water for site operations as mentioned in the Waikoloa Development

Preliminary Engineering Report (PER) (**Exhibit 11**). Water for fire protection will be supplied from the new well water system.

An existing potable water system owned and operated by Hawai'i Water Service (HWS) is located in the vicinity of the property. Further coordination with HWS will be required as the design of the proposed water line connection is developed.

HWS issued a Will Serve letter dated January 27, 2026, confirming the availability of potable water service in the amount of 5,550 gallons per day (gpd) for the property identified as TMK (3) 6-8-001:067.

B. Wastewater

Currently, there are no existing sewage and wastewater collection system within the vicinity. An Individual Wastewater System (IWS), including a septic tank and leach field, are proposed for the industrial site as mentioned in the PER.

C. Drainage

Surface water is minimal due to highly permeable volcanic substrates, particularly in lower elevations closer to the coast. During wetter months, limited intermittent flow may occur within defined drainage paths; however, the majority of runoff infiltrates into the underlying lava or, during infrequent storm events, flows downslope toward the ocean. Two unnamed, non-perennial streams traverse the parcel from east to west and convey drainage toward the coastline.

At present, there are no existing engineered drainage systems within the Project Site.

Proposed drainage improvements will be designed in compliance with Hawai'i County Code Chapter 10, Erosion and Sedimentation Control, and the Storm Drainage Standards identified in the PER. In accordance with County criteria outlined in the PER (Exhibit 11), drainage design will utilize the following recurrence intervals:

For drainage areas of 100 acres or less, a 10-year recurrence interval (T_m) will apply, unless otherwise specified;

For drainage areas of 100 acres or less with sumps or tailwater effects, and for roadway culverts and bridges utilizing static head at the entrance, a 50-year recurrence interval will apply;

For drainage areas greater than 100 acres and for all stream systems, design curves will be based on maximum recorded flood peak data.

Where downstream drainage capacities are inadequate to accommodate post-development runoff quantities, runoff will be limited to pre-development

conditions or otherwise managed in accordance with applicable General Conditions as mentioned in the PER.

The Project Site parcel contains two unnamed, non-perennial streams that will remain unaffected by the proposed development. Stormwater will be conveyed via drainage swales and managed through a detention basin to maintain pre-development discharge conditions.

D. Roadway and Traffic Impacts

The plan is to create roadway access to the proposed lot from Waikoloa Road.

Per Fehr & Peers transportation assessment (**Exhibit 14**) for the Project Site near Waikoloa Village, “The proposed project is expected to generate a maximum of 43 inbound employee trips in the AM peak hour and 43 outbound employee trips in the PM peak hour. Additionally, a maximum of three (3) inbound and three (3) outbound truck trips are expected during the morning (AM) peak hour, and zero (0) inbound and outbound truck trips in the evening (PM) peak hour.” Also mentioned in the assessment, “Per Section 25-2-46 Concurrency Requirements of the Hawai‘i County Code, a full Traffic Impact Analysis Report (TIAR) is not required since the project does not generate more than 50 peak hour trips. Delays at the project driveway are considered reasonable, and no changes are needed to the existing Waikoloa Road geometry.”

E. Electricity and Telecommunications

Based on preliminary coordination with Hawaiian Electric Company (HELCO), potential electrical points of connection have been identified along Waikoloa Road, including an existing utility pole near the Waikoloa Road and Quarry Road intersection and an alternative location approximately 1,500 feet south of the Project Site. Electrical service would involve extension of existing overhead distribution lines in accordance with HELCO standards. Final infrastructure design, load requirements, and utility easements will be determined during final engineering and subject to HELCO approval. See **Exhibit 10 for map of existing power and telecommunication.**

The Project Site’s estimated electrical demand reflects planning-level assumptions and may be refined during design. Any pad-mounted equipment, underground conduits, or transformers required to serve the Project Site will be located and designed in coordination with HELCO.

Preliminary coordination with Hawaiian Telcom (HTCO) and Spectrum identified existing telecommunications infrastructure along Waikoloa Road, including overhead facilities on joint-use utility poles. Telecommunications services may be extended to the Project Site via overhead or underground infrastructure, as

required by the service providers. Final routing, equipment, and easements will be coordinated and confirmed during design.

All utility improvements will be incidental to the approved use, constructed in accordance with applicable utility provider requirements, and subject to applicable permits and approvals.

Estimated Electrical Load by Facility:

1. Asphalt plant (217,800 sf): 1,525kVA
2. Concrete plant (217,800 sf): 1,525kVA
3. Maintenance shop (16,500 sf): 115kVA
4. Office & parking (30,000 sf): 300kVA
5. Warehouse (9,000 sf): 45kVA
6. Fuel farm (5,100 sf): 25kVA

Limited on-site standby generators and potential future renewable energy systems with battery storage may be incorporated to support emergency or resilience functions and will not replace utility service or export power to the grid, subject to final design considerations.

VI. LAND USE AND OTHER REGULATORY CONSIDERATIONS

A. State Land Use

The Project Site is located within the State Land Use Agricultural District pursuant to HRS Chapter 205 and is zoned Agricultural under Hawai‘i County Code Chapter 25, Section 25-5-72, which identifies the permitted uses within this zoning classification. Per the Hawai‘i County General Plan 2045 Final Draft 2 (June 2025), Table 17 lists land use challenges and regulations including, “The State Land Use Commission must preside over boundary amendments that exceed 15 acres, which limits the efficiency of ensuring consist in the land use pattern.” The Project Site will not exceed 15 acres.

B. County General Plan

In the Hawai‘i County Adopted 2005 Land Use Pattern Allocation Guide (“LUPAG”) shown on **Exhibit 02**, Parcel 67 was designated Urban Expansion and Open Area. The Hawai‘i County General Plan Land Use (GPLU) Final Recommended Draft updated the entire parcel designation to Urban Expansion as show on **Exhibit 03**. This designation “allows for a mix of high-density, medium-density, low-density, industrial-commercial mix, and/or natural designations in areas where growth may be desirable, but where specific

settlement and infrastructure have not yet been determined. Compatible Zoning may include RS (single-family residential district), RD (double-family residential district), RM (multiple-family residential district), RCX (residential-commercial mixed-use district), CN (neighborhood commercial district), CG (general commercial district), CV (village commercial district), MCX (industrial-commercial mixed district), PD (project district), CDH (downtown Hilo commercial district), Open” per the General Plan. While the Project Site is already being designated within the Urban Expansion in the current Draft County General Plan 2045, we are also in the process of requesting that our Project Site be changed from its current land use designation from Urban Expansion to Heavy Industrial. This request to change the land use to Heavy Industrial will also be consistent with the current Draft County General Plan 2045, LUPAG map land use designation of Heavy Industrial for the property adjacent to our Project Site TMK: 6-8-001: 066. Our representative Council Member James Hustace and the Planning Director Jeff Darrow and Deputy Director Michelle Ahn are in support of this effort to have our Project Site be identified as Heavy Industrial.

Although the Project Site will not result in cultivated land, the use should have no adverse impacts on the area’s agricultural industry because there are no active agricultural activities surrounding the site.

The proposed use will not be contrary to the goals, policies and standards of the General Plan and other applicable documents such as community development plans and design plans. Although the proposed site is not designated Heavy Industrial, they share compatible zone MCX. Heavy Industrial land use “includes but are not limited to landfills, quarries, chemical plants, heavy equipment base yards, towing yards, and other uses with the potential to create public nuisance conditions (e.g., noise, environmental impacts). Compatible Zoning may include MG, ML, MCX.” The existing land condition lacks agricultural activities surrounding the Project Site proposed site and should have no adverse impacts on the agricultural region.

In the General Plan, key themes and goals include cultural and natural resource protection; sustainable growth and development; infrastructure; public health and safety; recreation and open spaces; housing; and economic development. There are Land Use Challenges that lists lack of existing infrastructure and aging facilities, state land use designations within or adjacent to Urban Growth Areas (UGA) limit the ability to increase densities, incurred costs of construction and operating private systems, County roadway standards not modernized or flexible and remain a major cost to development, and more. The Land Use Opportunities lists, “County departments are encouraged to develop a collaborative infrastructure capacity plan with prioritization of projects in their respective functional plans and based on desired growth areas and preferred density as identified by the General Plan.” The proposed use would satisfy this opportunity.

Also in the General Plan, “To integrate land use planning and infrastructure planning, the urban centers have been designated based on Smart Growth principles. This ensures that land use patterns and infrastructure availability help us achieve our intentional sustainable development goals.” In order to increase the use of Smart Growth principles, prioritize increase in density, rehabilitation, and redevelopment within existing zoned urban areas already served by basic infrastructure, or close to such areas. It is important to encourage the concentration of commercial uses within and surrounding a central core area adequately served by transportation, utilities, and other essential infrastructure.

The proposed use will ultimately be consistent with the goals and policies of the General plan. Any productive agricultural land would not be removed, instead this project will provide service to the communities and the visitor industry by advocating the expansion of Waikoloa.

Per the General Plan, the Community Development Plans (CDP) “translate broad General Plan statements to specific actions, as they apply to specific geographical areas. They serve to provide a forum for community input to reflect the character of each community.” Should there be direct conflict between the CDP and the General Plan, “the General Plan shall be controlling. The Planning Director or County Council may initiate a CDP.” The Project Site is within South Kohala. The South Kohala CDP in 2008 was developed and adopted by the County Council as Ordinance No. 2008 159.

C. South Kohala Community Development Plan

The Community Development Plan (CDP) is a regional community plan for a specific planning area, typically comprising, but not necessarily bounded by, one or more of the County’s judicial districts as defined in the General Plan.

In the 2008 South Kohala Community Development Plan, the Waikoloa Village Plan listed three (3) action programs for CDP implementation:

1. Finance and construct a second access road to Queen Ka’ahumanu;
2. Finance and construct a community center and community park;
3. New elementary school, middle school, and high school

The South Kohala Community Development Plan Action Committee (AC) met on October 28, 2024 to discuss the Final Recommended Draft General Plan 2025 per South Kohala Community Development Plan Action Committee Testimony Regarding Final Recommended Draft General Plan 2045, dated November 6, 2024, **see Exhibit 13**. The AC strongly recommended prioritizing the completion of the Daniel K. Inouye Highway between Mamalahoa Highway and Queen

Ka'ahumanu Highway (below Parcel 67), in addition to the implementation of the second access road to Queen Ka'ahumanu for Waikoloa Village.

In the 2008 South Kohala CDP, the Waikoloa Village Plan included an action program to construct a second access road to Queen Ka'ahumanu Highway to accommodate increasing traffic volumes and provide a second emergency egress route for Waikoloa residents. Currently, the access to Waikoloa Village is provided by Waikoloa Road that connects the Village to the Queen Ka'ahumanu Highway.

The South Kohala CDP suggested four (4) overall policies for land use and environmental management in Waikoloa Village, and their important related strategies as listed below:

Policy 1: Provide infrastructure and facilities for a growing community

The seven (7) strategies provided are:

- 1.1 Plan, fund, and construct a community center and community park;
- 1.2 Plan, fund and construct needed public schools: Elementary, Middle, and High;
- 1.3 Plan, fund, and construct a community library;
- 1.4 Develop a major commercial center for Waikoloa Village with shops, stores, and small business opportunities;
- 1.5 Manage and expand the potable water system;
- 1.6 Manage and upgrade the wastewater treatment and disposal systems; and
- 1.7 Provide more emergency facilities.

As there are no direct correlations to these strategies with the proposed special use, indirectly, providing industrial related uses would be beneficial for the for the overall planning. There is only one industrial zone adjacent to the special uses parcel and one in Waikoloa Village area that has not been developed. There are no industrial zoned properties within the resort areas of South Kohala either. Thus, the Project Site would indirectly enhance the implementations of this policy and strategies.

Policy 2: Environmental stewardship, sense of place, open space

The two (2) strategies provided are:

- 2.1 Support projects and programs for environmental restoration and alternative energy; and

2.2 Preserve Waikoloa's scenic views, landscapes, and pu'u.

These do not directly apply to Project Site.

Policy 3: Provide transportation and circulation improvements in a timely manner

The six (6) strategies provided include:

- 3.1 Plan, fund, and construct a second access road to Queen Ka'ahumanu Highway;
- 3.2 Fund and construct the Paniolo Avenue extension;
- 3.3 Upgrade the emergency access road from Hulu Street to Queen Ka'ahumanu Highway;
- 3.4 Plan, fund, and construct walkways and bikeways;
- 3.5 Develop a Master Circulation Plan for Waikoloa Village; and 3.6 Implement traffic safety improvements along Waikoloa Road.

These are not directly applied to the Project Site.

Policy 4: Encourage affordable housing and smart growth

Four (4) strategies include:

- 4.1 Implement the County's "Kamakoa" workforce housing project;
- 4.2 Plan and eventually develop some of the "Industrial" land near Waikoloa Village;
- 4.3 The visually and environmentally important open grasslands in the Waikoloa area should be protected from development that would have negative environmental impacts;
- 4.4 Revise the County Subdivision Code and Planning Department policies and enforcement procedures to ensure that agricultural subdivisions are created for agricultural purposes and are not used for rural residential purposes without rezoning; and
- 4.5 "Ag-zones" lands west and south of Waikoloa Village that are designated as "Alternate Urban Expansion" lands in the County General Plan and "Ag-zoned" lands north of the Village shall remain in "A-5a" and "A-20a" zoning until already RS-zones lands at Waikoloa Village have been substantially developed.

The Project Site is not a residential development and would not compromise that objective.

D. County Zoning

The County zoning designation for the Project Site is Zone A-5a: Agricultural District (minimum building site of 5 acres).

The Project Site includes a batch plant and heavy equipment base yards that are generally not allowed in agricultural zones as they fall under heavy industrial land use.

F. Surrounding Zoning and Land Uses

The surrounding parcels within TMK: 6-8-001 are agricultural districts, zone A-5a, as shown in **Exhibit 04**, with GPLU designation urban expansion, natural, and only one heavy industrial parcel, as shown in **Exhibit 03**. South of the property is TMK: 7-1-003, agricultural and natural land use designation. Northeast of the property is TMK: 6-8-002, which has a land use designation of productive agriculture. The Project Site is within Parcel 67 which is designated as urban expansion. There are plans for a nursery of approximately 300 acres adjacent to the subject area.

TMK: (3) 6-8-001, Parcel 66 is south of Parcel 67 and was designated as urban expansion in the Adopted 2005 LUPAG (**see Exhibit 02**). Currently, the parcel is heavy industrial per the Hawai'i County GPLU designation. As noted above, the current Draft County General Plan 2045 already designates our Project Site within the Urban Expansion and we are seeking, which will be consistent with the current Draft County General Plan 2045, LUPAG map land use designation of Heavy Industrial for the property adjacent to our Property TMK: 6-8-001: 066.

In the General Plan, "The County of Hawai'i currently manages the West Hawai'i Sanitary Landfill (WHSL) located southwest of Waikoloa at Pu'uana'hulu in the North Kona District. The WHSL is operated by Waste Management of Hawai'i under a contract with the County. The County Department of Environmental Management (DEM), the WHSL has an estimated lifespan of 20 to 25 years with current recycling rates, as determined by the County in 2023. Higher rates of waste reduction, reuse, and recycling in the community may extend life expectancy beyond 25 years"

The Project Site desired use shall not adversely affect the surrounding properties. There is no activity surrounding the desired use. Additionally, there are no residential subdivisions adjacent to the area.

F. Public Protective and Other Services

The Project Site proposed use will not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage, school improvements, and police and fire protection.

Waikoloa Fire Station on Pua Melia Street is approximately two (2) miles from the project site and South Kohala Fire Station is roughly six (6) miles from the project site. Since South Kohala District is already being serviced by the Waimea Station, the Project Site desired use should not unreasonably burden the police and fire agencies.

E. Noise, Air Quality, Dust, and Visual Considerations

The community vision focuses on tourism, residential growth, and affordable housing. The Project Site may result in community feedback showing concern over noise, dust, and visual impact. However, the Project Site is located in an area with little to no activity and with respectable distance from the village, that this should have no adverse impact on the CDP.

The Project Site proposed use will not substantially alter or change the essential character of the land as it is currently not being used.

F. Socio-Economic Impacts

Over the past year, new commercial and residential construction has been ongoing in the Waikoloa Village area. Alternative energy land use has increased in the area and additional construction activity included the County of Hawai'i, 11-mile, Waikoloa Road Rehabilitation project. As Waikoloa Village expanded to meet demands of a growing visitor industry, an influx of new residents occurred, creating the need for additional construction materials, including gravel, which has been quarried from an area adjacent to the parcel for more than 25 years (Gotay and Rechtman 2015). This proposed use will contribute to the material needed to service major infrastructure work and road work in West Hawai'i.

The western portion of the parcel is bounded to the north by Waikoloa Road, to the south by an existing gravel quarry, and to the west by a paved access road leading from Waikoloa Road to the quarry in Parcel 66. The eastern portion of the parcel is bounded to the north and east by an undeveloped parcel owned by the Waikoloa Village Association, and to the south by an undeveloped State-owned parcel. A powerline maintenance road extends along the southern boundary of the parcel with the State-owned land.

The State Land Use Law and Regulations are intended to preserve, protect and encourage the development of lands in the State for those uses to which they are best suited in the interest of the public health and welfare of the people of the

State of Hawai‘i. The intent is to preserve or keep lands of high agricultural potential in agricultural use.

G. Agricultural Impacts

The proposed use would promote effectiveness and objectives of Chapter 205, HRS, for which the Agricultural and Rural Districts seek to preserve or keep lands of high agricultural potential in agricultural use, and is an unusual and reasonable use of the land. While the land is classified agricultural, it might not be best suited for agricultural activities and certain types of uses may not be strictly agricultural in nature, yet reasonable in such districts.

The State Land Use Law and Regulations are intended to preserve, protect and encourage the development of lands in the State for those uses to which they are best suited in the interest of the public health and welfare of the people of the State of Hawai‘i. The intent is to preserve or keep lands of high agricultural potential in agricultural use.

Although batch plants do not necessarily meet the urban expansion land use designation, they are essential to facilitate urban expansion and construction.

The site is suitable for the desired use. Currently, the existing base yard and quarrying activities in Parcel 66 has not created any public impacts, demonstrating its suitability. The proposed concrete and batch plant will operate on approximately five (5) acres each within the 14.9-acre desired special use area. The land is not suitable for agricultural activity from a land resource perspective.

VII. SPECIAL MANAGEMENT AREA

In the General Plan, Special Management Area (SMA) “is the area that extends inland from the shoreline and is designated for special protections. The State of Hawai‘i Office of Planning administers Hawai‘i Revised Statutes (HRS) Chapter 205A, the Coastal Zone Management (CZM) law, and the purpose of HRS Chapter 205A is to ‘provide for the effective management, beneficial use, protection, and development of the Coastal Zone.’ The SMA permitting system is part of the CZM Program approved by Federal and State agencies.”

The Project Site is not within Hawai‘i County’s SMA. However, the CMZ area encompasses the entire state of Hawai‘i, extending seaward from the shoreline to the limit of the State’s police power and management authority, including the United States territorial sea.

VIII. JUSTIFICATION FOR SPECIAL PERMIT REQUEST

A. Supporting Regional and Island-Wide Growth

The Waikoloa region continues to experience steady residential, resort, commercial, and infrastructure development. However, the demand for construction materials such as concrete and asphalt is not limited to Waikoloa alone and extends throughout West Hawai‘i and across the Island of Hawai‘i. Major transportation improvements, public facilities, housing projects, and utility upgrades throughout the island require a reliable and consistent supply of construction materials to support timely delivery.

The proposed asphalt and concrete batch plant is strategically located to serve both regional and island-wide needs, reducing reliance on distant production facilities and helping ensure uninterrupted material availability for critical public and private projects. By providing locally produced materials, the project will directly support County and State infrastructure goals, including roadway maintenance, public safety facilities, water and utility improvements, and housing development.

Nan, Inc., one of the largest general contractors in the State of Hawai‘i, together with Grace Pacific’s extensive paving and materials production capacity, will ensure that West Hawai‘i and the greater island maintain dependable access to asphalt and concrete products essential to sustaining economic growth and community development.

B. Appropriate Land Use

Although the Project Site is classified as Agricultural, the parcel is characterized by low soil productivity, limited water availability, and physical constraints that substantially limit its suitability for traditional or diversified agricultural use. The area has a documented history of quarrying and industrial-related activities, and existing site conditions do not support viable long-term agricultural production.

Given these characteristics, the Project Site is well suited to accommodate a batch plant and associated facilities that support regional construction and infrastructure needs. The site’s location, physical attributes, and surrounding land uses allow the proposed operation to function effectively while avoiding unnecessary encroachment into more productive agricultural lands elsewhere within the district.

The proposed use is consistent with the intent of the Special Use Permit process, which allows for appropriate non-agricultural uses on lands where sustained agricultural activity is not reasonably feasible, provided that impacts are properly managed and minimized.

C. Alignment with Planning Objectives

The proposed use of the Project Site is consistent with the Hawai‘i County General Plan, which identifies the surrounding area as Urban Expansion. This designation reflects areas anticipated to accommodate future growth through a mix of industrial, commercial, and supporting uses necessary to serve expanding communities.

The project has been designed to align with County planning objectives by:

1. Minimizing impacts on surrounding properties through appropriate site layout, operational controls, and buffering measures;
2. Protecting archaeological resources and valued cultural sites through preservation and avoidance measures; and
3. Avoiding undue burden on public infrastructure or services, as the facility will operate without significant public investment or expansion of County services.

By supporting essential infrastructure development while remaining consistent with adopted land use policies, the proposed project advances the County’s long-term planning goals in a manner that is logical, efficient, and context-sensitive.

D. Economic and Community Benefits

The proposed batch plant will provide substantial economic and community benefits by supplying locally sourced construction materials necessary to support ongoing and future development throughout the island of Hawai‘i. Specifically, the project will:

1. Support public and private construction projects across the island through a dependable materials supply;
2. Reduce transportation distances and hauling costs associated with importing asphalt and concrete from remote facilities, thereby lowering project costs and reducing vehicle miles traveled; and
3. Contribute to the economic vitality of Waikoloa, West Hawai‘i, and the greater island economy.

In addition to supporting construction activity, the facility will create employment opportunities and stimulate economic activity through ongoing operations, maintenance, and supply chain support. These benefits align with the County’s objectives to promote local employment, enhance regional self-sufficiency, and support sustainable economic growth.

LIST OF SURROUNDING PROPERTY OWNERS

(Within 500 feet of the property boundary perimeter)

TMK	Owner Name	Mailing Address
	STATE OF HAWAII	STATE OF HAWAII
7-1-003: 001	AT&T WIRELESS SERVICES OF HI LLC	500 KAHÉLU AVE, MILILANI HI 96789 3938
6-8-001: 005	WAIKOLOA MAUKA LAND CORP	WAIKOLOA MAUKA LAND CORP C/O TDA INC 2025 PIONEER CT SAN MATEO CA 94403 1719
6-8-001: 027	WAIKOLOA MAUKA LAND CORP	WAIKOLOA MAUKA LAND CORP C/O TDA INC 2025 PIONEER CT SAN MATEO CA 94403 1719
6-8-001: 072	WAIKOLOA RESORT UTILITIES INC	WAIKOLOA RESORT UTILITIES INC PO BOX 384809 WAIKOLOA HI 96738 4809
6-8-002: 015	WAIKOLOA VILLAGE ASSN	WAIKOLOA VILLAGE ASSN PO BOX 383910 WAIKOLOA HI 96738 3910
6-8-002: 019	WAIKOLOA VILLAGE ASSN	WAIKOLOA VILLAGE ASSN PO BOX 383910 WAIKOLOA HI 96738 3910
6-8-001: 066	WQJ2008 INVESTMENT LLC UKUMEHAME QUARRY COMPANY LIMITED PARTNER	WQJ2008 INVESTMENT LLC C/O WAIKOLOA QUARRY CO-TENANCY PO BOX 220 KIHEI HI 96753 0220

EXHIBITS

- Exhibit 01 Site Map - Waikoloa showing Special Use Permit (“SUP”) Waikoloa Industrial Yard within AB Maui Quarries, LLC (“ABMQ”) Property Boundary
- Exhibit 02 County of Hawai‘i Adopted 2005 Land Use Pattern Allocation Guide (LUPAG) Map with ABMQ Property Boundary and SUP Waikoloa Industrial Yard
- Exhibit 03 County of Hawai‘i General Plan Land Use (GPLU) Final Recommended Draft Map with ABMQ Property Boundary and SUP Waikoloa Industrial Yard
- Exhibit 04 County of Hawai‘i Zoning Map with ABMQ Property Boundary and SUP Waikoloa Industrial Yard
- Exhibit 05 ABMQ Property Map with SUP - Waikoloa Industrial Yard
- Exhibit 06 ABMQ Property Map with SUP - Waikoloa Industrial Yard Proposed Well Site
- Exhibit 07 SUP - Waikoloa Industrial Yard: Concept Program
- Exhibit 08 SUP - Waikoloa Industrial Yard: Concept Layout
- Exhibit 09 SUP - Waikoloa Industrial Yard: Concept Plans and Elevations
- Exhibit 10 Site Map of Existing Power and Telecom showing ABMQ Property Boundary and SUP Waikoloa Industrial Yard and LNG Engineering Design – Electrical Planning Memorandum
- Exhibit 11 Wai‘olu Group’s Waikoloa Development Preliminary Engineering Report
- Exhibit 12 ASM Affiliates FINAL: Archaeological Reconnaissance Survey of TMK: (3) 6-8-001:067, Waikōloa Ahupua‘a, South Kohala, Island of Hawai‘i
- Exhibit 13 County of Hawai‘i South Kohala Community Development Plan Action Committee Testimony Regarding Final Recommended Draft General Plan 2045
- Exhibit 14 Fehr & Peers Transportation Assessment Memo
- Exhibit 15 ASM Affiliates AB Maui Quarries, LLC Waikōloa Industrial Yard Project Ka Pa‘akai O Ka ‘Āina Analysis



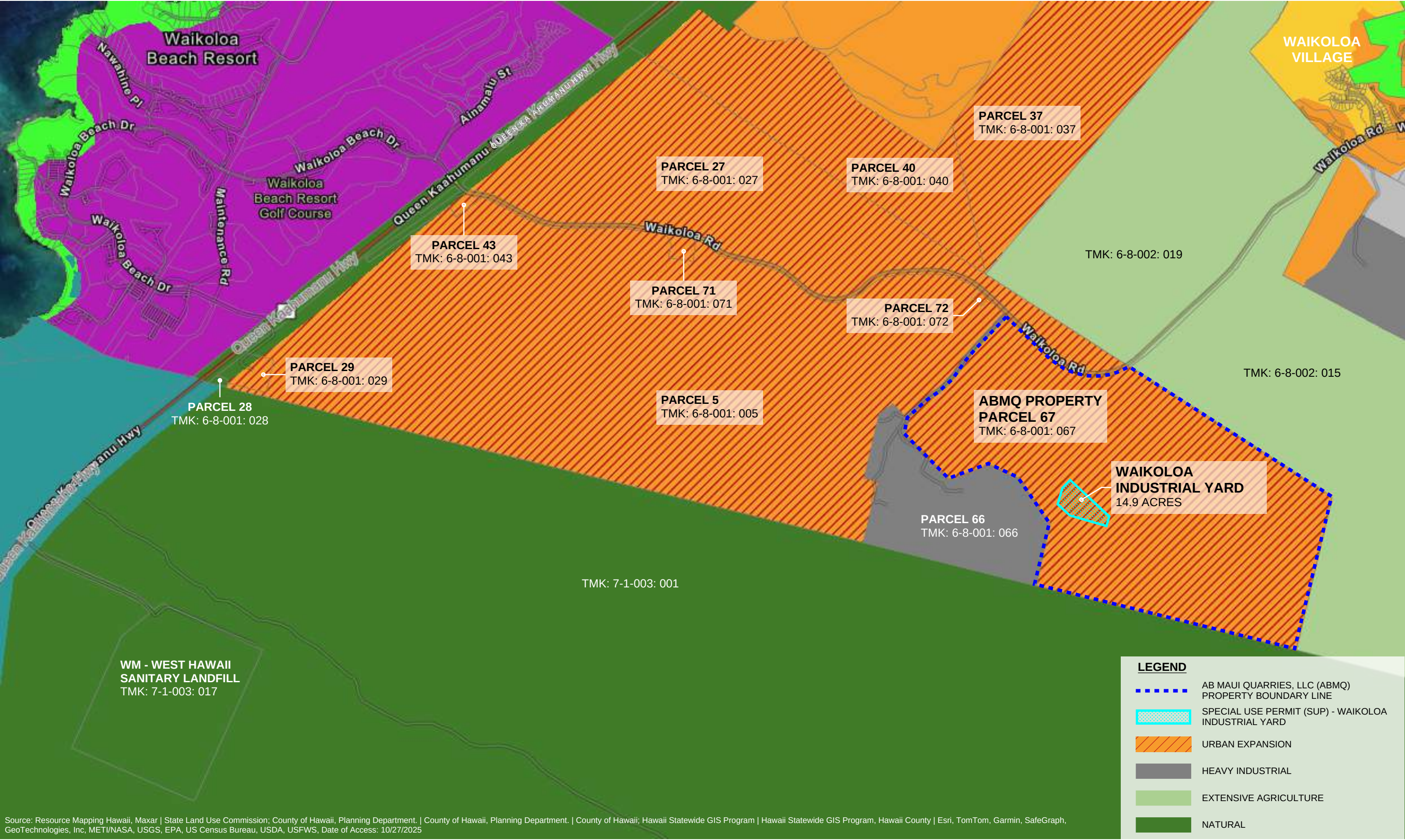


SITE MAP: COUNTY OF HAWAII' I ADOPTED 2005 LAND USE PATTERN ALLOCATION GUIDE (LUPAG)

SCALE: 1" = 2000'

2000'

EXHIBIT 02



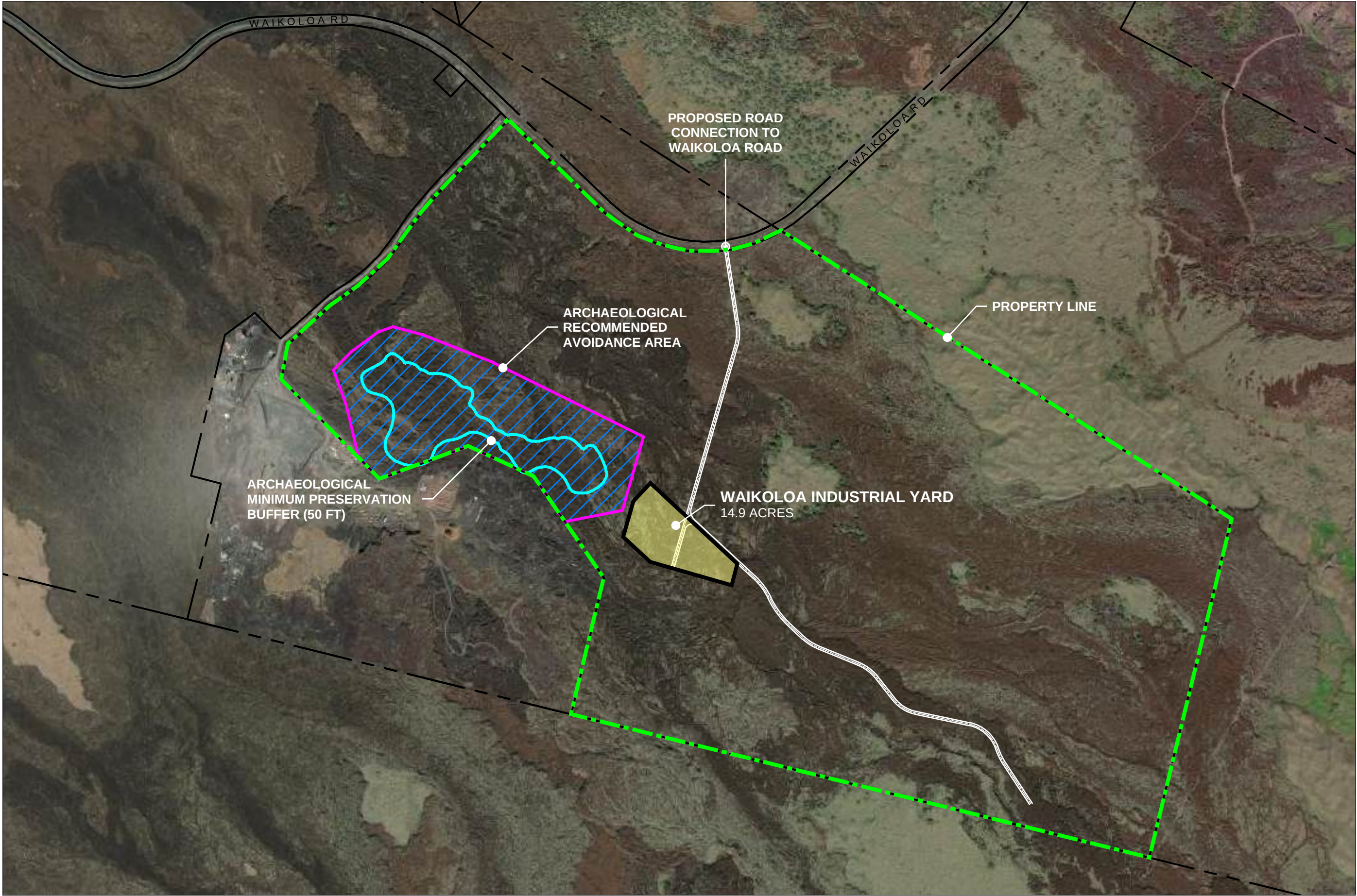
SITE MAP: COUNTY OF HAWAI'I GENERAL PLAN LAND USE (GPLU) FINAL RECOMMENDED DRAFT

SCALE: 1" = 2000'

2000'

EXHIBIT 03

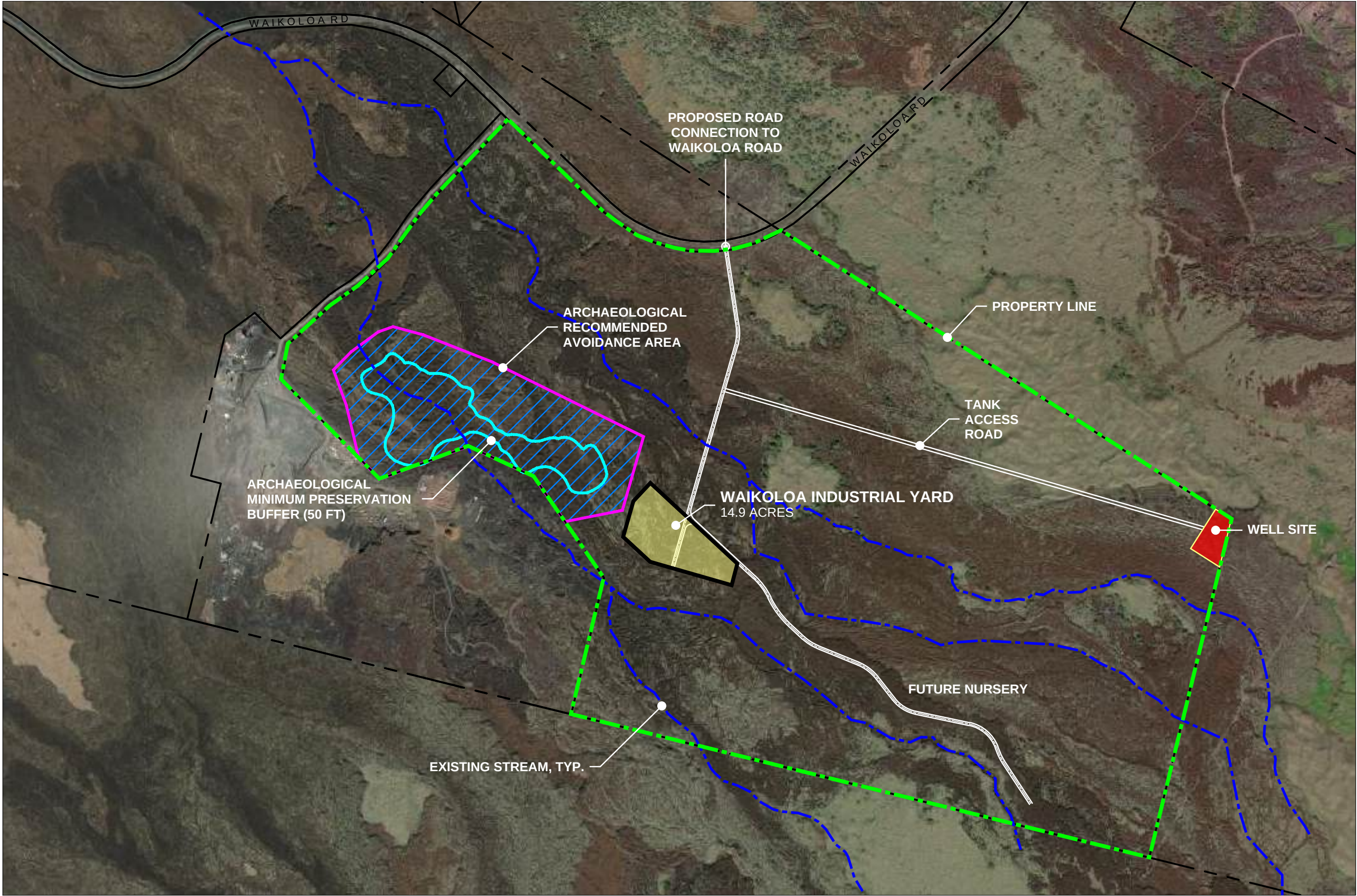




LEGEND

- ABMQ PROPERTY LINE
- SUP - WAIKOLOA INDUSTRIAL YARD
- ARCHAEOLOGICAL RECOMMENDED AVOIDANCE AREA
- ARCHAEOLOGICAL MINIMUM PRESERVATION BUFFER (50 FT)

Aerial Imagery Source: Esri, Maxar, GeoEyem Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Powered by Esri, Date of Access: 10/27/2025



- LEGEND**
- ABMQ PROPERTY LINE
 - SUP - WAIKOLOA INDUSTRIAL YARD
 - ARCHAEOLOGICAL RECOMMENDED AVOIDANCE AREA
 - ARCHAEOLOGICAL MINIMUM PRESERVATION BUFFER (50 FT)
 - PROPOSED WELL SITE
 - EXISTING STREAM

Aerial Imagery Source: Esri, Maxar, GeoEyem Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Powered by Esri, Date of Access: 10/27/2025



SUP WAIKOLOA INDUSTRIAL YARD - PROPOSED WELL SITE

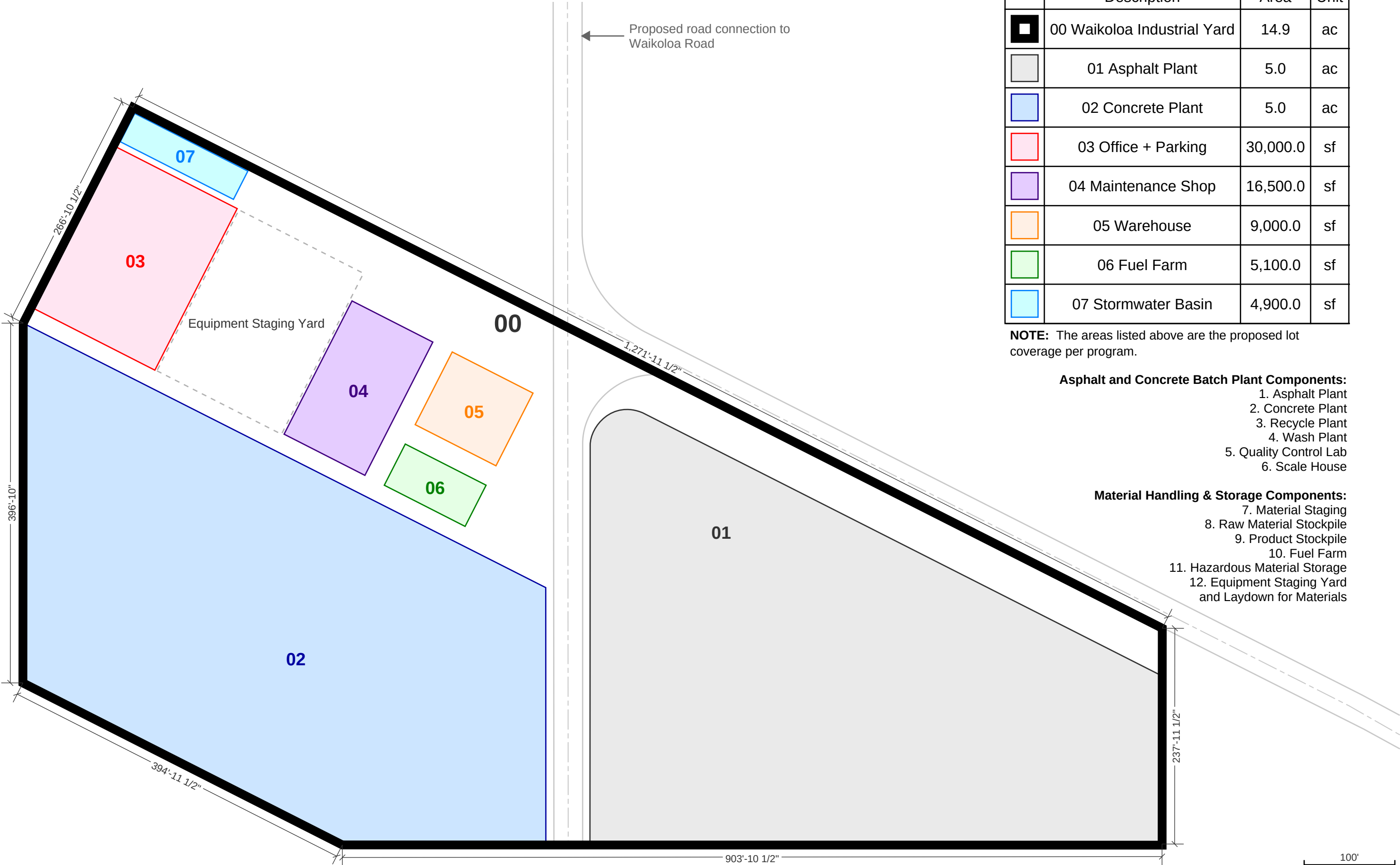
SCALE: 1" = 2000'

1000'



SPECIAL USE PERMIT - WAIKOLOA INDUSTRIAL YARD: CONCEPT PROGRAM

SCALE: 1" = 100'



	Description	Area	Unit
■	00 Waikoloa Industrial Yard	14.9	ac
■	01 Asphalt Plant	5.0	ac
■	02 Concrete Plant	5.0	ac
■	03 Office + Parking	30,000.0	sf
■	04 Maintenance Shop	16,500.0	sf
■	05 Warehouse	9,000.0	sf
■	06 Fuel Farm	5,100.0	sf
■	07 Stormwater Basin	4,900.0	sf

NOTE: The areas listed above are the proposed lot coverage per program.

Asphalt and Concrete Batch Plant Components:

- 1. Asphalt Plant
- 2. Concrete Plant
- 3. Recycle Plant
- 4. Wash Plant
- 5. Quality Control Lab
- 6. Scale House

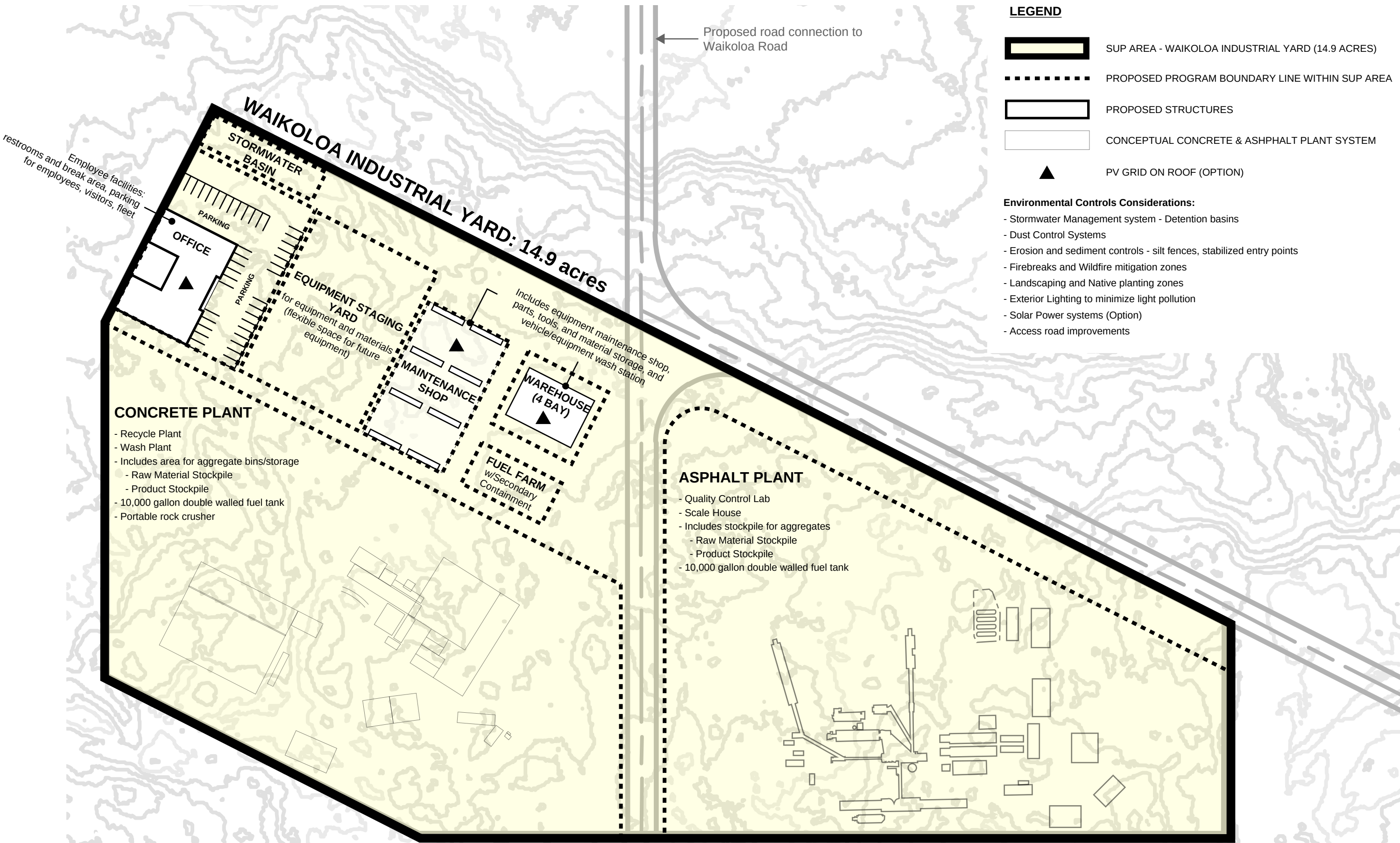
Material Handling & Storage Components:

- 7. Material Staging
- 8. Raw Material Stockpile
- 9. Product Stockpile
- 10. Fuel Farm
- 11. Hazardous Material Storage
- 12. Equipment Staging Yard and Laydown for Materials

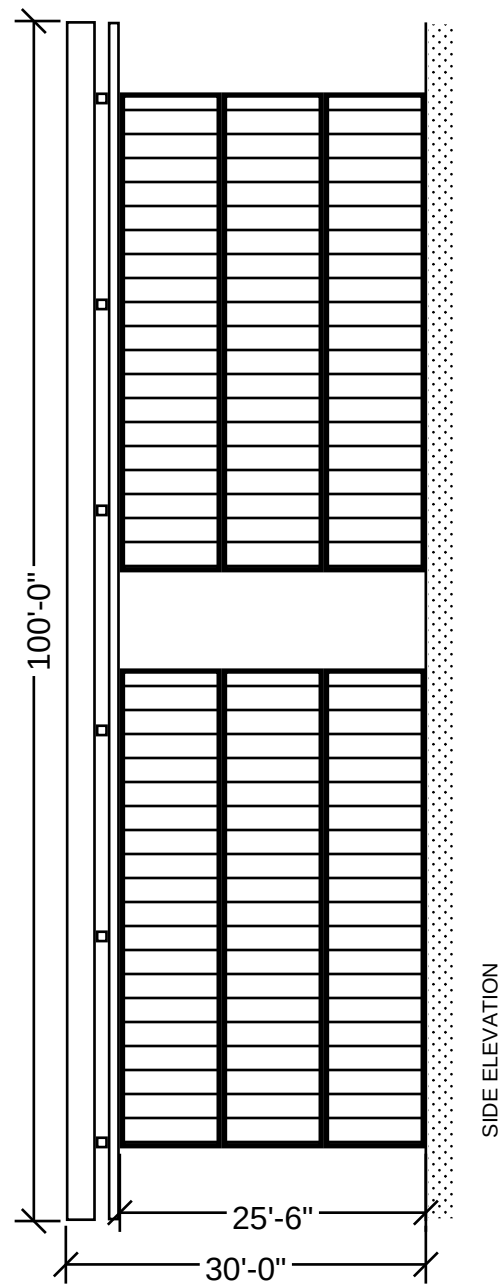
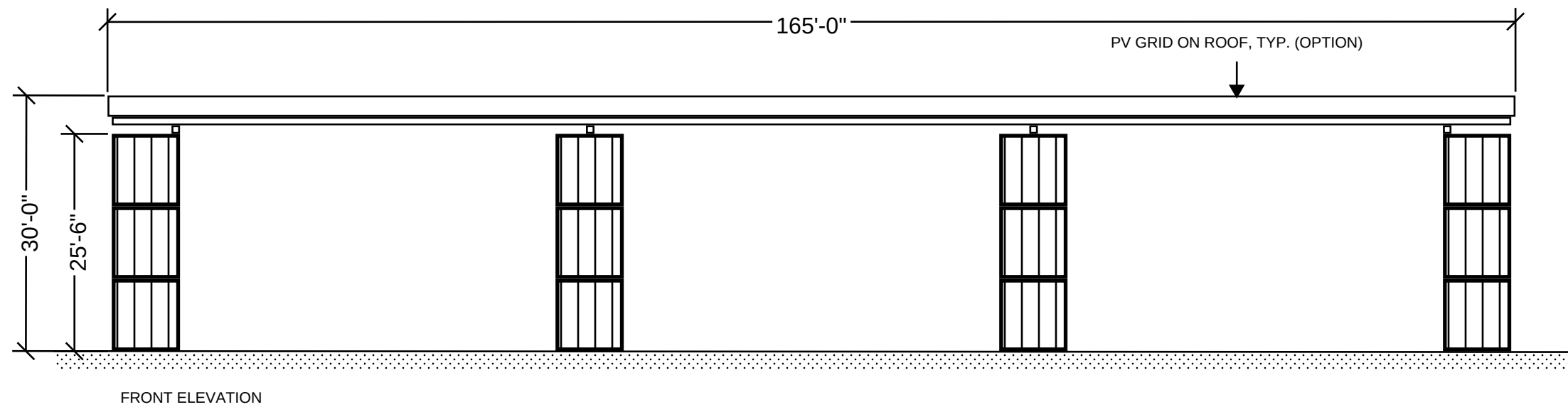
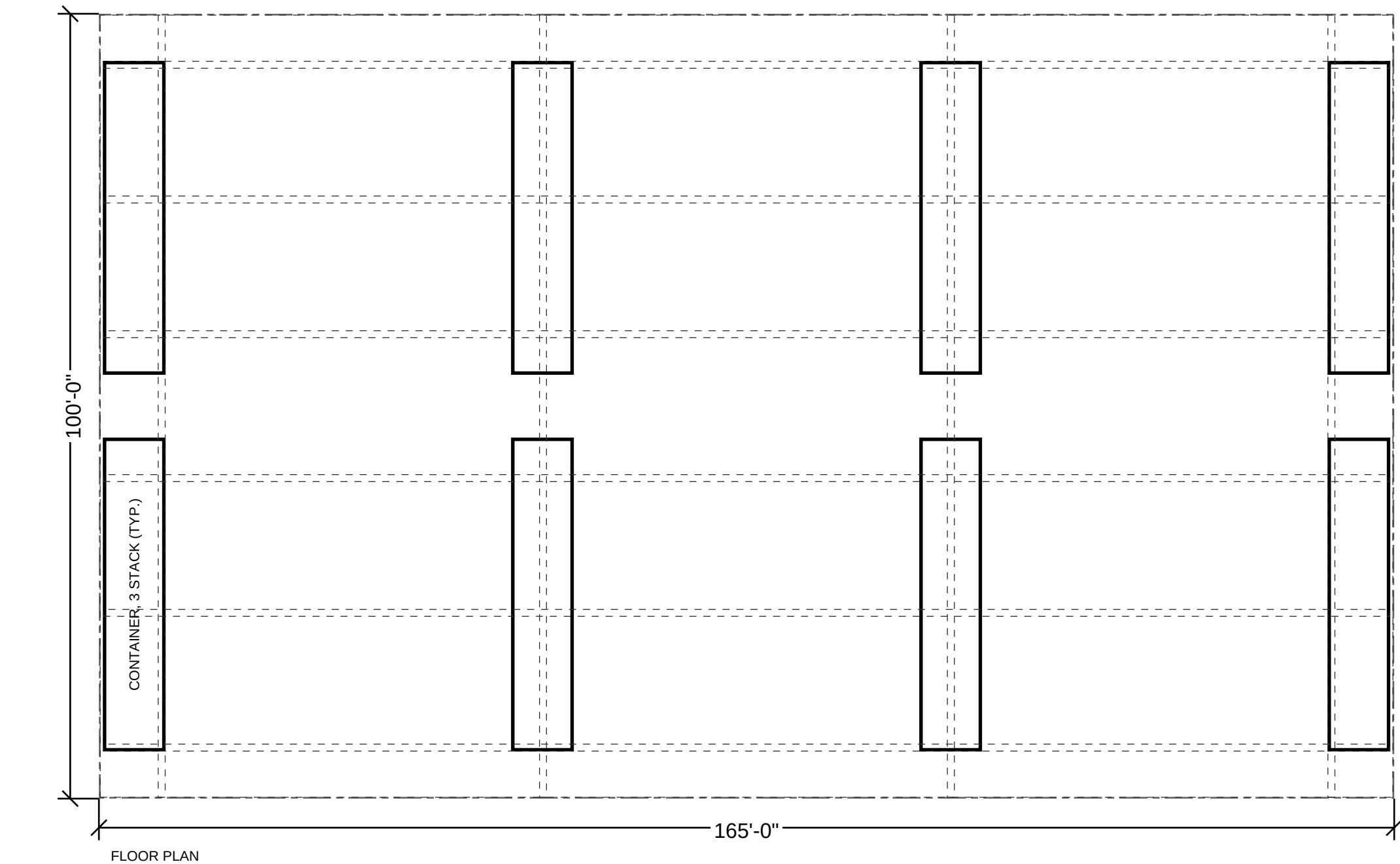


SPECIAL USE PERMIT - WAIKOLOA INDUSTRIAL YARD: CONCEPT LAYOUT

SCALE: 1" = 100'



100'



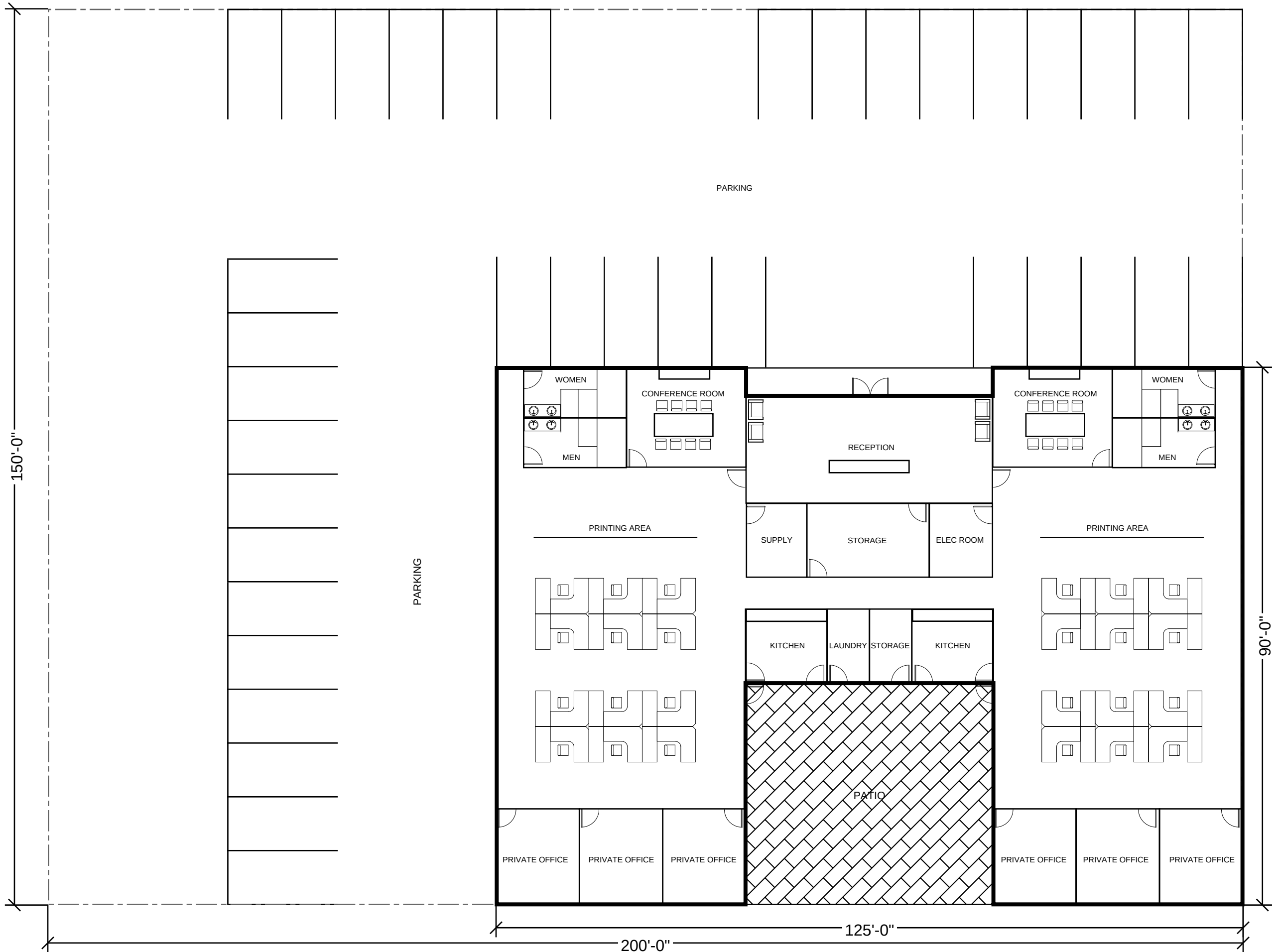
SUP - WAIKOLOA INDUSTRIAL YARD: CONCEPT MAINTENANCE SHOP

SCALE: 1/16" = 1'-0"

----- PROPOSED PROGRAM BOUNDARY LINE
APPROXIMATE AREA: 16,500 SF

10'

EXHIBIT 09

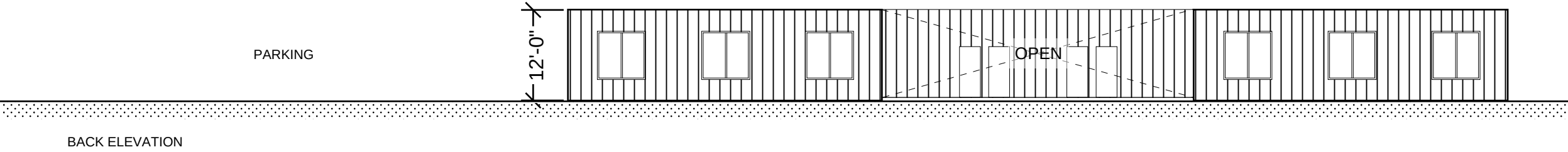
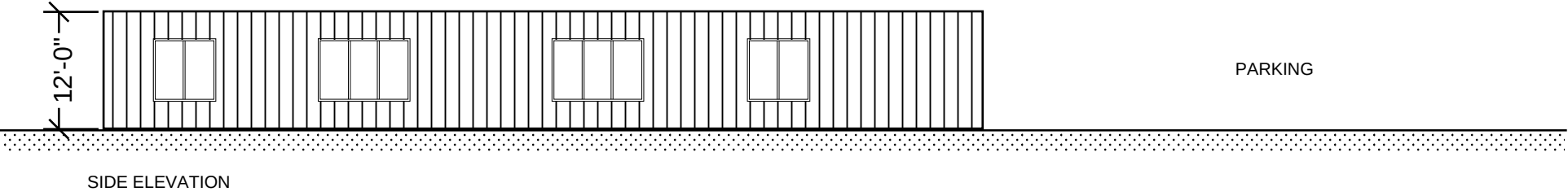
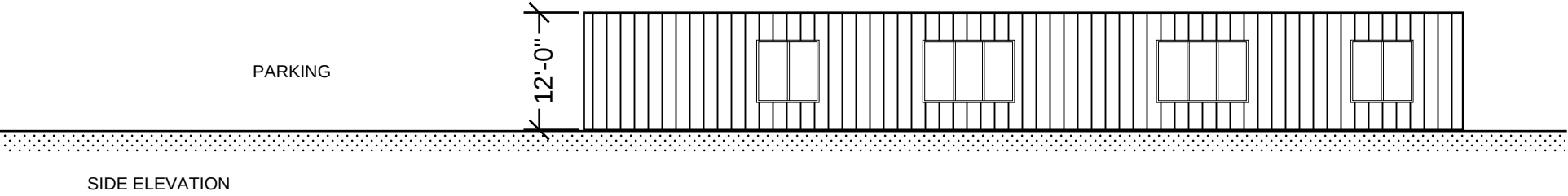
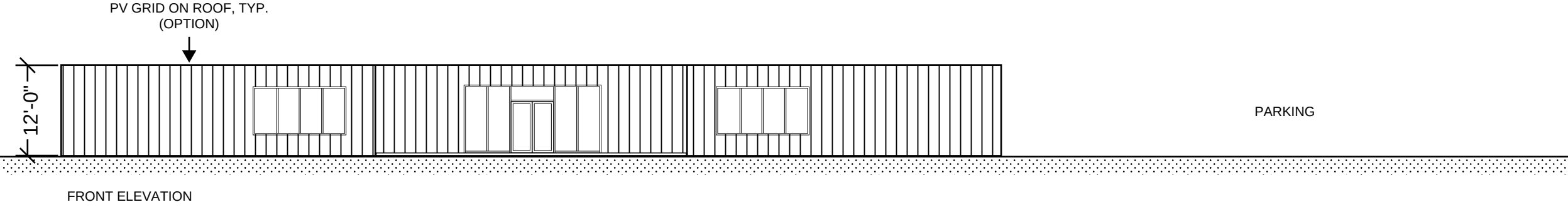


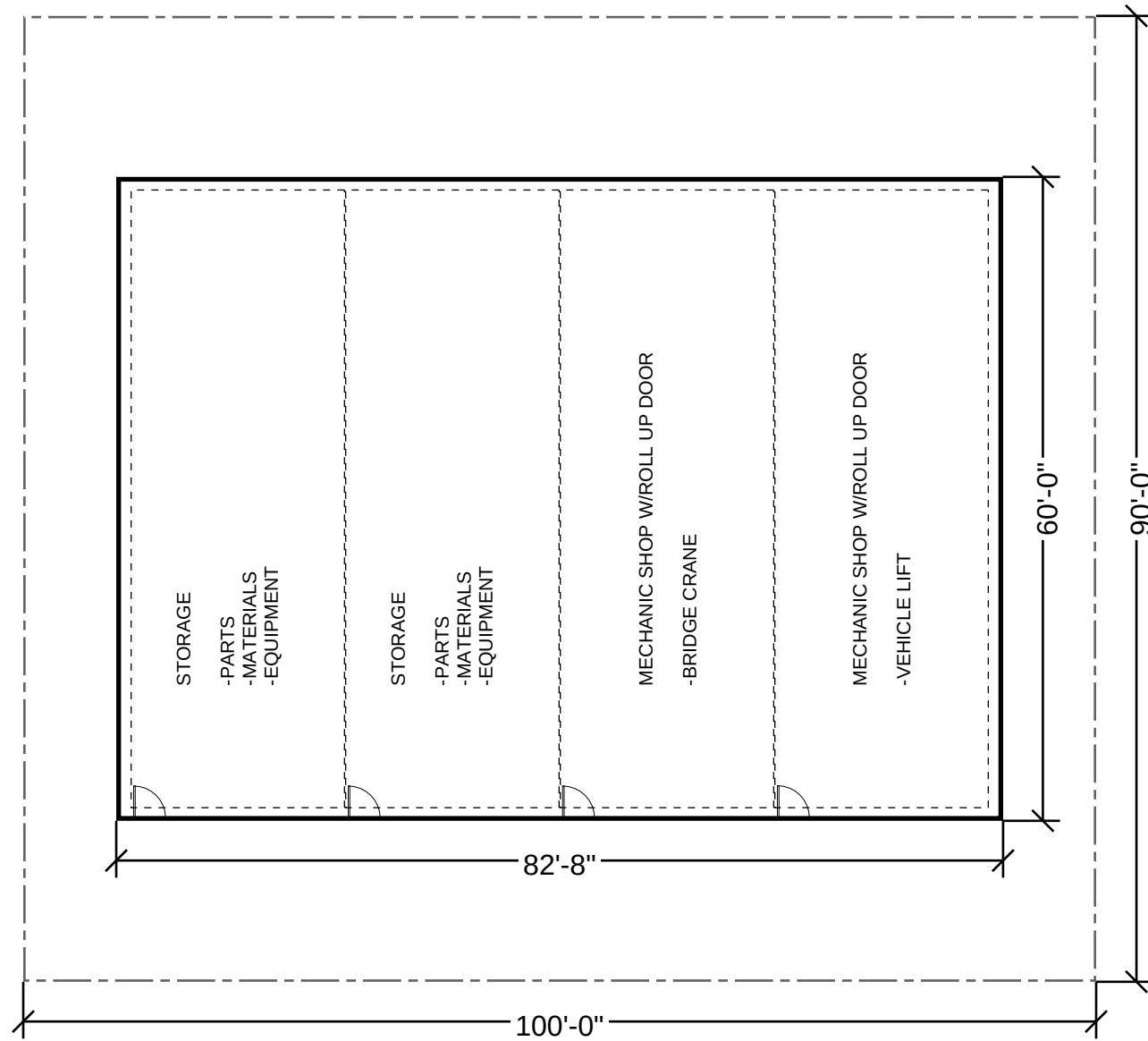
SUP - WAIKOLOA INDUSTRIAL YARD: CONCEPT OFFICE FLOOR PLAN

SCALE: 1/16" = 1'-0"

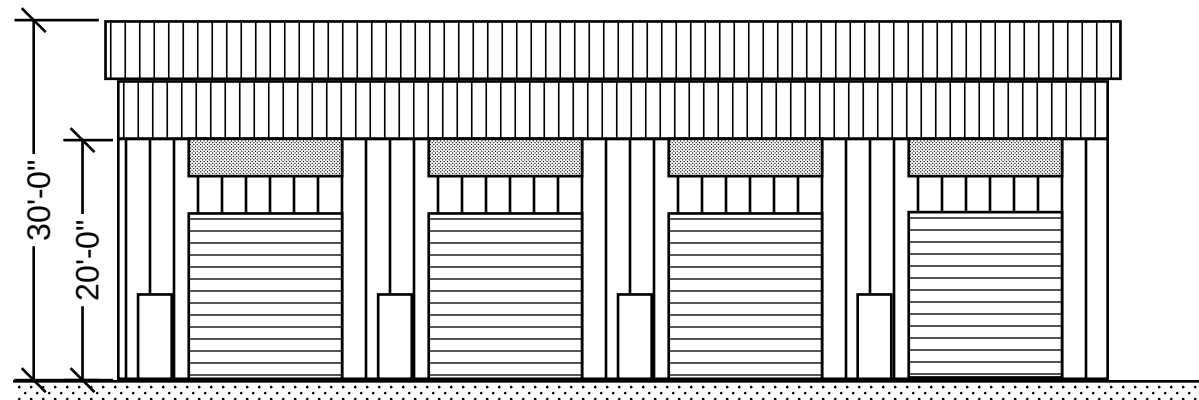
----- PROPOSED PROGRAM BOUNDARY LINE
APPROXIMATE BLDG AREA: 11,250 SF

10'

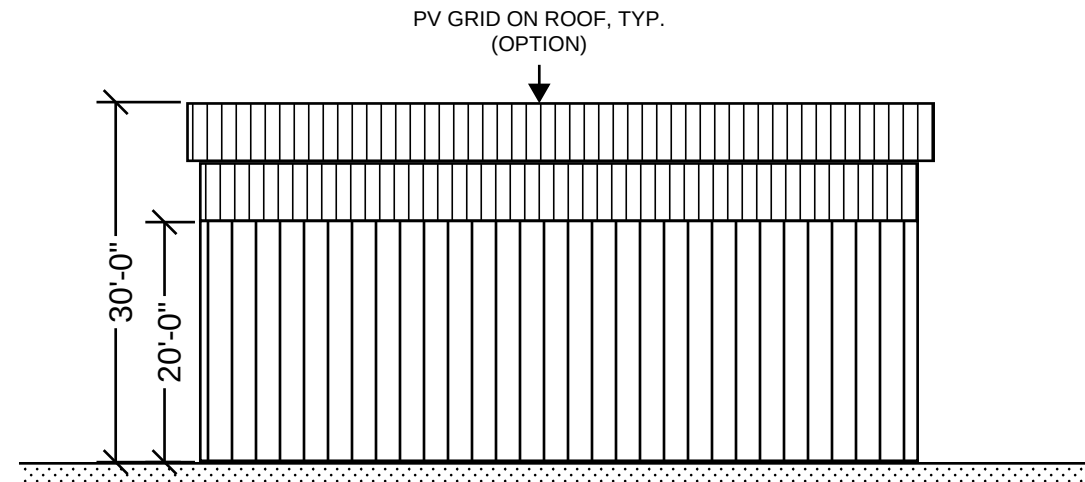




FLOOR PLAN



FRONT ELEVATION



SIDE ELEVATION

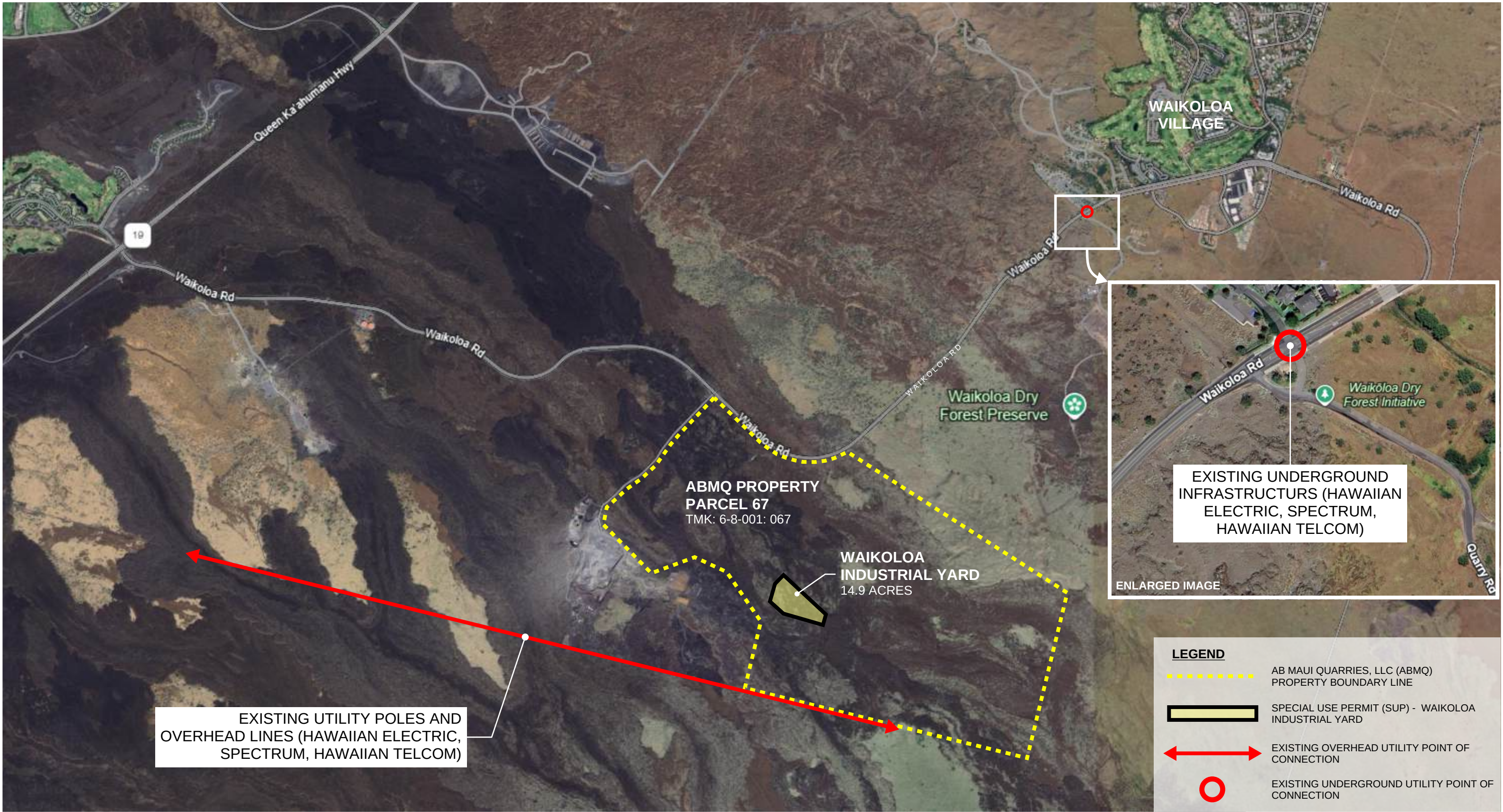
PV GRID ON ROOF, TYP.
(OPTION)

----- PROPOSED PROGRAM BOUNDARY LINE

APPROXIMATE BLDG AREA: 4,960 SF

10'

EXHIBIT 09



EXISTING UTILITY POLES AND
OVERHEAD LINES (HAWAIIAN ELECTRIC,
SPECTRUM, HAWAIIAN TELCOM)

EXISTING UNDERGROUND
INFRASTRUCTURE (HAWAIIAN
ELECTRIC, SPECTRUM,
HAWAIIAN TELCOM)

- LEGEND**
- AB MAUI QUARRIES, LLC (ABMQ) PROPERTY BOUNDARY LINE
 - SPECIAL USE PERMIT (SUP) - WAIKOLOA INDUSTRIAL YARD
 - EXISTING OVERHEAD UTILITY POINT OF CONNECTION
 - EXISTING UNDERGROUND UTILITY POINT OF CONNECTION

Source: https://earth.google.com/web/search/waikoloa/@19.90978462,-155.81532402,236.39493274a,10348.3456874d,35y,0h,3.57814734t,0r/data=CiwiJgokCf_YZQ7DNAEbmaJu3i4zNAGR-MlftEeWPAIReCcOyDe2PAQgIIAToDCgEwQgIIAEoNCP_____wEQAA,
Date of Access: 10/27/2025

MEMORANDUM

February 07, 2026

Nan, Inc.
636 Laumaka Street
Honolulu, Hawaii 96819

Attention: Ms. Min Zhong

Project: Electrical Planning for Concrete Plant SUP at Waikoloa

LNG Engineering Design has prepared a utility assessment for electrical and communication feasibility at Waikoloa Industrial Yard. The assessment includes proposed utility point of connection and preliminary electrical load study based on the proposed program and layout.

Executive Summary:

HELCO point of connection.

- Per initial coordination with HELCO, the HELCO point of connection is at existing pole P16X on Waikoloa Road and Quarry Road intersection. The proposed point of connection is approximately 2 miles away from the project location. Existing overhead high voltage primary distribution lines will need to be extended to the project location via new utility poles along Waikoloa Road. HELCO shall have ownership of the utility pole and have extra space to accommodate other overhead utility lines.
- Alternative HELCO point of connection was observed 1,500' South of the project location. Existing HELCO infrastructure includes overhead high voltage primary distribution lines via joint utility poles. Existing utility poles also contain Spectrum and Hawaiian Telcom overhead infrastructure, which can support future internet and cable television service.
- Project is anticipating an electrical load of approximately 3,535kVA. Proposed HELCO infrastructure includes (2) 5" conduits with 6'x13' manholes spaced 300' from the last utility pole to the pad mounted primary switch. Secondary distribution to each facility will be determined during design phase. A new pad mounted primary switch (21'-7"x 16'-10") and pad mounted transformers (10'-6"x9'-6") are anticipated at the project location.
- Utility easement shall be coordinated and confirmed by the service provider.
- Estimated electrical load per building area.
 - Asphalt plant, 1,525kVA based on 217,800sf
 - Concrete plant, 1,525kVA based on 217,800sf
 - Maintenance shop, 115kVA based on 16,500sf
 - Office & parking, 300kVA based on 30,000sf
 - Warehouse, 45kVA based on 9,000sf
 - Fuel farm, 25kVA based on 5,100sf

Hawaiian Telcom point of connection.

- Per initial coordination with Hawaiian Telcom, the HTCO point of connection is at existing HTCO manhole across the Makana Kai at Wehilani Development intersection of Waikoloa Rd. Existing underground telecom outside plant cables will be transitioned to overhead and extend to the project location via new utility poles (owned by HELCO) along Waikoloa Road.
- Alternative HTCO point of connection was observed 1,500' South of the project location. Existing HTCO infrastructure includes overhead outside plant cables via joint utility poles. HTCO confirmed the alternative HTCO point of connection is acceptable and can be extended to the project site via new overhead or underground infrastructures.

- Proposed HT infrastructure includes (2) 4" conduit with 2x4 pull boxes spaced 250' or 4x6 handhole spaced 350' from the last utility pole to the designated facility.
- Utility easement shall be coordinated and confirmed by the service provider.

Spectrum point of connection.

- Per initial coordination with Spectrum, the Spectrum point of connection is 1,500' South of the project location. Existing Spectrum infrastructure includes overhead outside plant cables via joint utility poles.
- Proposed Spectrum infrastructure includes (2) 4" conduit with 2x4 pull boxes spaced 300' from the last utility pole to the designated facility. At the site will require a 3'x5' box and a concrete pad to mount power supply.
- Utility easement shall be coordinated and confirmed by the service provider.

WAIKOLOA INDUSTRIAL YARD PRELIMINARY ENGINEERING REPORT

South Kohala, Hawaii, Hawaii
TMK: (3) 6-8-001:067

November 2025

PREPARED FOR:

SMC Kona, LLC
636 Laumaka Street
Honolulu, Hawaii, 96819

PREPARED BY:



615 Piikoi Street, Suite 2003
Honolulu, Hawaii 96813
(808) 582-0478

Preliminary Engineering Report

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I. INTRODUCTION

A. Project Description

Waikoloa Industrial Yard is proposed by the developer SMC Kona, LLC. The Waikoloa Industrial Yard is in South Kohala, Hawaii, along Waikoloa Road between Waikoloa Village and Waikoloa Beach Resort on Tax Map Key 6-8-001:067 (Figure 1).

Waikoloa Industrial Yard includes a 100-acre nursery site and access road, a 14.9-acre industrial site which includes a concrete plant, asphalt plant, warehouse, maintenance shop, office building and fuel farm. The development also includes a well site with water storage tank that will supply non-potable water for site operations (Figure 2). A domestic water line and an Individual Wastewater System (IWS) is proposed for the industrial site.

Table 1 – State Land Use (Waikoloa Industrial Yard)

Land Use	Area
Agricultural	934.66 Acres
TOTAL	934.66 Acres

Within the property, an Archaeological Reconnaissance Survey (ARS) identified archaeological sites located in the southwestern corner of the parcel (Reference 1). The ARS recommended a 300-foot “recommended avoidance area” that surrounds all sites including a 50-foot preservation area. The Waikoloa Industrial Yard will not encroach into the recommended avoidance area.

B. Scope

The purpose of this report is to develop a preliminary engineering report for the proposed Waikoloa Industrial Yard. This report identifies and describes the major components required to support the proposed development and demonstrates compliance with the regulations and design criteria of the County of Hawaii and State of Hawaii. The Preliminary Engineering Report will form the basis for the subsequent design of the site's facilities.

II. EXISTING CONDITIONS

A. Climate

South Kohala is on the western side of the Island of Hawaii. It spans coastal areas like Waikoloa and Puako, mid-elevation zones like Waimea, and higher slopes toward Mauna Kea. The region is generally drier than the island's windward side with average temperatures of 85 ° F to 65 ° F. The annual rainfall in South Kohala varies significantly due to its unique geographical location. On the west side, where the Waikoloa Industrial Yard is located, rainfall can be less than 10 inches annually, while on the east side, it can reach up to 80 inches.

The Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) 1551660315F and 1551660320F indicates that the site is in Zone X, area of minimal flood hazard.

B. Topography and Drainage

The elevation of the site ranges from approximately 625 feet to 1200 feet above sea level. The project site consists of rolling hills and shallow gulches formed by erosion of older lava flows. Sparse tree cover and increasing grass cover as elevation rises. Minimal surface water due to porous volcanic rock, especially near the coast. Small intermittent flow forms in wetter months, but most runoff infiltrates or flow to the ocean during rare storm events. Two unnamed, non-perennial streams traverse the parcel from east to west, flowing toward the coast.

C. Regional Potable Water System

The existing potable water system in the vicinity of the property is owned by Hawaii Water Service (HWS). The HWS waterline in Waikoloa Road is the main transmission line from Waikoloa Village to the Waikoloa Resort and is a 16-inch Asbestos-Cement pipe. Initial communication has been made with HWS, but additional coordination is needed as the design of the proposed water line connection is developed.

D. Existing Sewerage Collection System

No wastewater collection systems exist in the vicinity of the Waikoloa Industrial Yard. As the site remains undeveloped, there is no sewage generation for the existing property.

E. Existing Drainage System

No drainage systems exist in the vicinity of the Waikoloa Industrial Yard.

III. PROPOSED WATER SYSTEM

A. Design Criteria

The potable and non-potable water system (“Water System”) will be designed in accordance with the Department of Water Supply (DWS) Water System Standards (WSS) (Reference 2). For design criteria see Table 2 and Table 3.

B. Design Parameters

The water system comprises of a waterline, generally 1.5 inches in diameter, that delivers water from Waikoloa Road to the industrial site for domestic water use. An in-line booster pump is proposed due to the pressure change from the roadway connection to the industrial site. A separate 16-inch water line transports non-potable water from a proposed on-site storage tank and well.

Preliminary Engineering Report

Table 2 - Water System Demand Criteria

(Table 100-18 WSS)

Land Use	Average Daily Demand (gals/unit)	Average Daily Demand (gals/acre)
Commercial/Industrial Mix	100 (gal/1000 sq. ft.)*	-
Light Industry	-	4000

*gals/unit for commercial/industrial mix land use assumed based on Oahu rates.

Table 3 - Potable Water System Design Criteria

(Table 100-19 WSS)

DEMAND FACTORS:

- Maximum daily demand = 1.5 x Average Day
- Peak Hour Demand = 5.0 x Average Day

FIRE FLOW REQUIREMENTS:

Fire flow requirements are based on Table 100-19 of the WSS

For Light Industry land use: Fire flow shall be 2,000 gpm, duration of 2 hrs, and fire hydrant spacing of 300 ft.

PIPELINE SIZING:

Pipeline shall be sized to meet the following requirements:

1. Maximum daily flow plus fire flow with a residual pressure of 20 psi at critical fire hydrant. See Appendix A for Pressure Loss Calculations.
2. Peak hour flow with a minimum residual pressure of 40 psi.
3. "C" values applied in accordance with Table 100-21 of the WSS.
4. Maximum velocity in distribution main (without fire flow) is 6 feet per second. (10 feet per second with fire flow)
5. In addition, the maximum velocity in mains shall apply as follows:
 - a. Distribution mains – 10 feet per second with fire flow at max day domestic flow.
 - b. Transmission mains without water services or fire flow – 20 feet per second
 - c. Fire lines – 13 feet per second.
6. Unless specified otherwise, maximum static or pumping pressure, whichever is greater, shall not exceed 125 psi.

C. Water Allocations

No water fixtures exist onsite, so water allocations are not applicable.

D. Water Demand

The Waikoloa Industrial Yard will generate total average daily potable water demand of approximately 5,550 gallons per day (gpd). Fire flow will have a demand of 2,000 gpm. See Appendix A for the Water Demand Calculations. The proposed facilities contributing to the potable water demand are a maintenance shop, warehouse, and office building.

The project has an average daily non-potable water demand of 169,750 gpd with a fire flow requirement of 2,000 gpm.

The proposed facilities contributing to the non-potable water demand are the concrete plant, asphalt plant, nursery, dust control and fire flow.

Table 4 - Estimated Water Demands

	Average Daily Demand (gpd)	Max. Daily Demand (gpd)	Peak Hourly Demand (gpm)
Potable	5,550	8,325	19.27
Non-Potable	169,750	254,625	589.4

E. Backbone Water System

A connection to the existing 16-inch ACP transmission line on Waikoloa Road is proposed. Due to the difference in elevation between the roadway and the industrial site, an in-line booster pump is proposed for the new domestic waterline. Sizing for the domestic waterline will be 1.5 inches. A 16-inch non-potable water line is proposed to provide the industrial facilities from the proposed onsite well-supplied storage tank. See Appendix A for Pressure Loss Calculations.

The proposed backbone water system is shown in Figure 3.

The water system will meet the BWS criteria outlined in Section III.A.

IV. PROPOSED SEWERAGE SYSTEM

A. Design Criteria

The IWS will be designed in accordance with Hawaii Administrative Rules 11-62 (Reference 3).

B. Design Parameters

An IWS septic tank and leach field is proposed for the Waikoloa Industrial Yard. The wastewater contribution design criteria used in this report are shown in Table 5.

Table 5 - Wastewater System Design Criteria

The minimum depth of the soil profile observation shall be at least five feet.

Septic Tank Design Criteria

When a septic tank is installed under a driveway, parking lot, in a heavy saturated soil, or other areas subject to heavy loads, the tank shall be capable of withstanding an H-20 wheel load as defined by the American Association of State Highway Officials.

For wastewater flows greater than 1,000 gallons per day (gpd),

Minimum capacity gallon = $1000 + (Q - 800) \times 1.25$

Where,

Q = design flow, gpd

Absorption Trenches

Absorption trenches shall not be constructed in soil with a percolation rate slower than sixty minutes per inch or where rapid percolation may result in contamination of water-bearing formations or surface waters.

The minimum absorption area for any absorption trench system shall be based upon a flow of 200 gallons per bedroom per day. (HAR 11-62, Table III Appendix D)

Preliminary Engineering Report

C. Wastewater Contributions

Waikoloa Industrial Yard is planned to be constructed in phases. The industrial area will be the primary source of wastewater contribution for development. The personnel estimate for each facility is detailed in Table 6. The entire project will generate an average design flow rate of approximately 1040 gallons per day.

Table 6 – Personnel Estimate by Facility

Facility	Gallons per Person Per Day (gal/capita/shift)	Personnel Estimate (capita)
Office Building	20	30
Warehouse	20	4
Maintenance Shop	20	6
Asphalt Plant	20	5
Concrete Plant	20	5
Fuel Farm	20	2
	Total Gallons per Shift	1,040

D. Individual Wastewater System

The collected wastewater flows will be directed to an Individual Wastewater System (IWS) permitted for treating and disposing of wastewater. A septic tank system will be used to settle solids, and effluent will be discharged to a leach field or soil absorption system for further treatment. Based on the average design flow rate in section C above, the proposed septic tank system will need an estimated 1,300 gallons of capacity to service the site. A location for the system's leach field or soil absorption system will need to be determined as the design of the site progresses.

V. Proposed Drainage Improvements

A. Design Criteria

The proposed drainage improvements will be designed in accordance with the Hawaii County Code 10, Erosion and Sedimentation Control and the Storm Drainage Standard (Reference 5 & 6).

B. Design Parameters

Recurrence Interval

For drainage areas of 100 acres or less, T_m (recurrence interval) = 10 years, unless otherwise specified.

For drainage areas of 100 acres or less with sump, or tailwater effect and for the design of roadway culverts and bridges utilizing static head at entrance, T_m (recurrence interval) = 50 years.

For drainage areas greater than 100 acres and all streams, design curves based upon maximum recorded flood peaks.

Determination of Runoff Quantities

For drainage areas 100 acres or less, the Rational Method is used.

$$Q = CIA$$

where,

$$Q = \text{flow rate in cubic feet per second (cfs)}$$

$$C = \text{runoff coefficient}$$

$$I = \text{rainfall intensity in inches per hour (in / hr) for a duration equal to the time of concentration}$$

$$A = \text{drainage area in acres (ac)}$$

1. Runoff Coefficient, C , shall be 0.90 for paved areas and 0.30 for landscaped, bare ground, or porous pavement. For volcanic soils with high permeability, C shall be 0.15. The runoff coefficient shall be weighted based on the amount of area of each surface.
2. Time of Concentration, T_c , determined from Plate 3 generally for paved, bare soil and grassed areas.

3. Rainfall Intensity, I , determined by the intensity of a 1-hr rainfall (given as “1.50”, Plate 1) multiplied by a correction factor from Plate 4 that converts 1-hr rainfall to rainfall intensities of various durations.

Requirements

For drainage areas where downstream capacities are inadequate to accommodate runoff quantity identified above, runoff shall be limited to pre-development conditions or as specified in the General Conditions.

C. Stormwater Design

The Waikoloa Industrial Yard parcel has two unnamed non-perennial streams that divide the site. The flow of existing drainage paths will not be impeded or changed in the design. Two drainage swales will be constructed to convey stormwater around the development. A stormwater basin will be constructed to maintain pre-development runoff conditions.

Preliminary Engineering Report

REFERENCES

1. "Archaeological Reconnaissance Survey of TMK: (3) 6-8-001:067, Waikoloa Ahupua'a, South Kohala, Island of Hawaii" ASM Affiliates, May 22, 2025.
2. "Water System Standards," Department of Water Supply, County of Hawaii, Hawaii, 2002 as amended.
3. "Hawaii Administrative Rules, Title 11, Chapter 62: Wastewater Systems." Hawaii State Department of Health, Wastewater Branch, March 2016, health.hawaii.gov/opppd/files/2015/06/11-62-Wastewater-Systems.pdf.
4. "Hawaii County Code 1983 (2016 Edition), County of Hawaii, Hawaii.
5. "Storm Drainage Standard" Department of Public Works, County of Hawaii, Hawaii, October 1970.



ISLAND OF HAWAII



VICINITY MAP

NOT TO SCALE

WAIKOLOA
BEACH RESORT

WAIKOLOA VILLAGE



PROJECT LOCATION

WAIKOLOA PROPERTY

TMK: (3) 6-8-001:067



LOCATION MAP

NOT TO SCALE

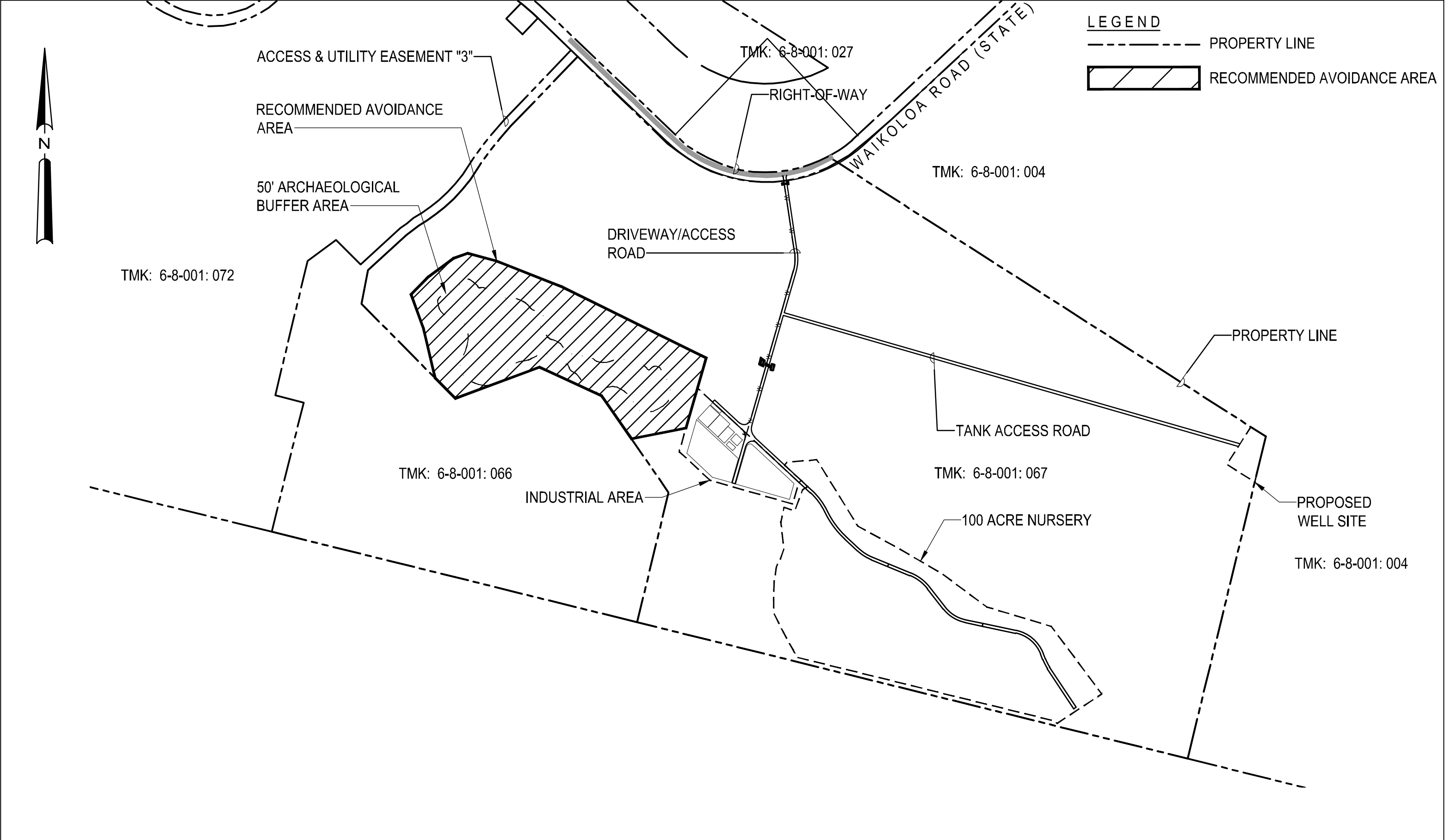
FIGURE 1 - LOCATION & VICINITY MAP
SCALE: NOT TO SCALE

WAIKOLOA INDUSTRIAL YARD

TMK: (3) 6-8-001:067



WAI'OLU GROUP



OVERALL SITE PLAN

WAIKOLOA INDUSTRIAL YARD

GRAPHIC SCALE

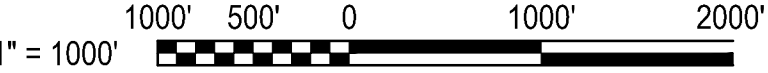
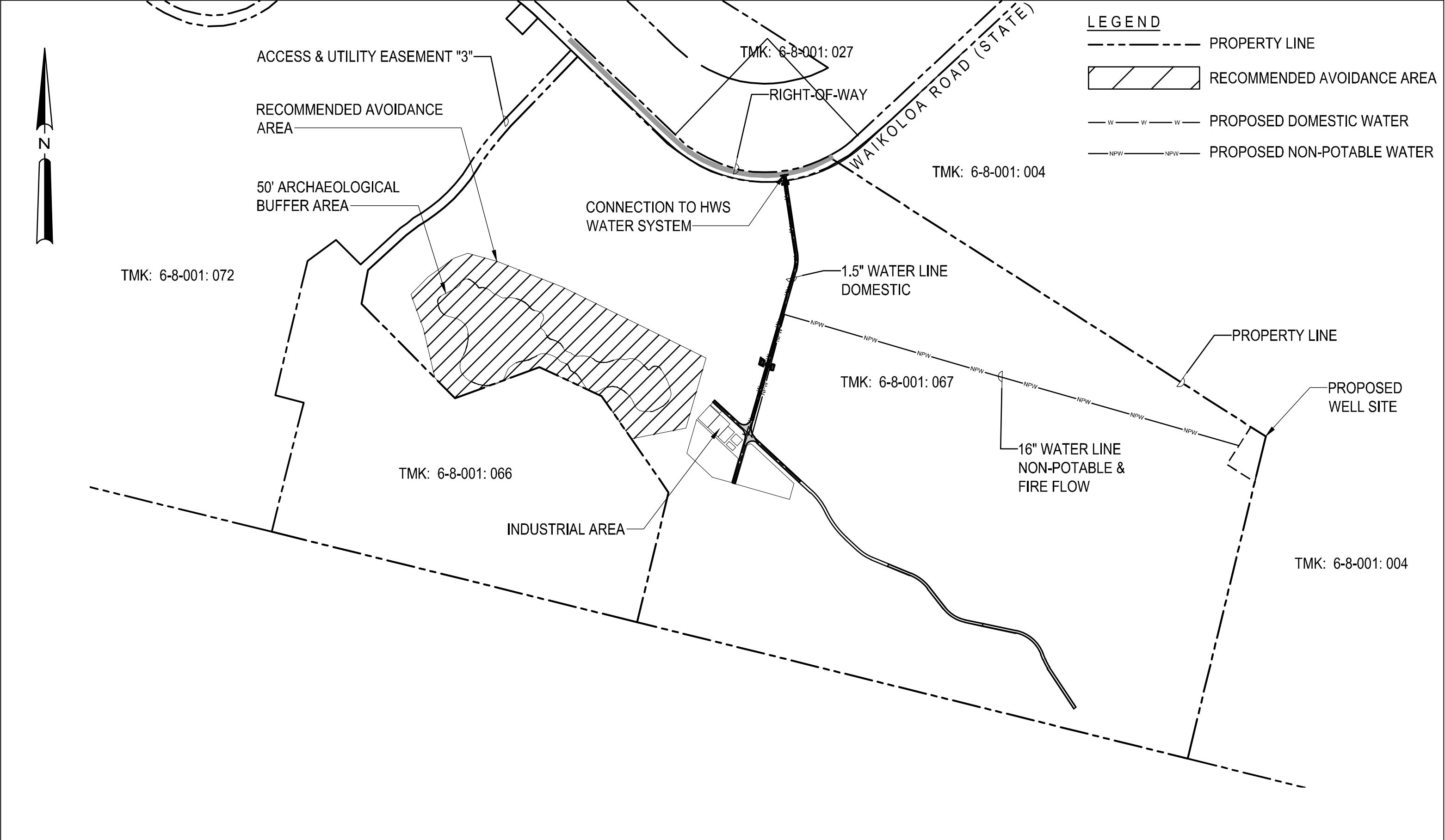


FIGURE 2



BACKBONE WATER SYSTEM

WAIKOLOA INDUSTRIAL YARD

GRAPHIC SCALE

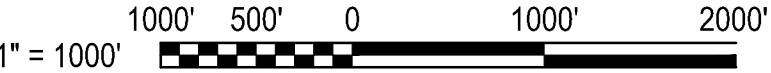


FIGURE 3

APPENDIX A – PRESSURE LOSS AND WATER DEMAND CALCULATIONS

WAIKOLOA INDUSTRIAL YARD

WATER SYSTEM DEMAND

Reference: "Water System Standards", County of Hawaii, Department of Water Supply, 2002

		Potable	Non-Potable
A	Area (acres)		
B	Building Area (sq ft.)	55500	
C	Commercial/Industrial Mix (100 gal/ 1000 sq ft.)	0.1	
D=BxC	Average Daily Demand: by Building Area (gpd)	5,550	0

E	Light Industry Rate Per Area (gal/acre)	4,000	
F=AxE	Average Daily Demand: by Area (gpd)	0	169,750

G	Maximum Daily Demand Factor (Table 100-20)	1.5	1.5
H=FxG	Maximum Daily Demand (gpd)	8,325	254,625

I	Peak Hour Demand Factor (Table 100-20)	5	5
J=DxI	Peak Hour Demand (gpd)	27,750	848,750

K	Fire Flow Requirement Flow (Table 100-19, Single Family/Light Industry) (gpm)	2,000	2,000
L	Fire Flow Requirement Duration (Table 100-19, Light Industry) (hrs)	2	2
M= K x L x (60min/1hr)	Total Fire Flow (gallons)	240,000	240,000

Proved required fire flow at a minimum of 20 psi residual pressure at fire hydrants.

Fire Hydrant Spacing: 300 ft

Capacity of distribution system shall deliver the Maximum Daily Demand simultaneously with the Required Fire Flow.

Waikoloa Industrial Yard - Pressure Loss Calculation											
Domestic Water Pressure Loss Calc											
Total Flow =	6	gpm	Size	C Factor	Flow Rate	Velocity	Velocity Head	Length	Elevation	Pressure Loss	Residual Pressure
Pressure Head =	65	psi	(in)		(gpm)	(ft/s)	(ft)	(ft)	(ft)	(psi)	(psi)
Waikoloa Road Connection STA. 0+00			1.5	100	6	1.09	0.02	3100.00	770	0.11	-13.10
Industrial Area STA. 31+00									950		

Waikoloa Industrial Yard - Pressure Loss Calculation											
Non-Potable Water Pressure Loss Calc											
Total Flow =	2600	gpm	Size	C Factor	Flow Rate	Velocity	Velocity Head	Length	Elevation	Pressure Loss	Residual Pressure
Pressure Head =	0	psi	(in)		(gpm)	(ft/s)	(ft)	(ft)	(ft)	(psi)	(psi)
Waikoloa Well Tank STA. 0+00			14.85	120	2600	4.82	0.36	5500.00	1050	0.15	62.70
Industrial Area STA. 55+00									905		



September 18, 2025

Min Zhong, P.E.
 Sr. Director Land Use and Development
 Nan Inc.
 6363 Laumaka Street
 Honolulu, Hawaii, 96819
 Email: [REDACTED]

Subject: FINAL: Archaeological Reconnaissance Survey of TMK: (3) 6-8-001:067, Waikōloa Ahupua‘a, South Kohala, Island of Hawai‘i

Dear Min,

As requested, ASM Affiliates (ASM) conducted an Archaeological Reconnaissance Survey (ARS) of Tax Map Key (TMK): (3) 6-8-001:067, a 934.66-acre parcel located in Waikōloa Ahupua‘a, South Kohala District, Island of Hawai‘i (Figures 1, 2, and 3). The ARS was conducted to collect information on the type and distribution of historic properties present within the subject parcel to assist with development planning, and to provide recommendations regarding the Hawai‘i Revised Statutes (HRS) Chapter 6E-42 historic preservation review process of the Department of Land and Natural Resources – State Historic Preservation Division (DLNR-SHPD) as it relates to any future permit applications that may be submitted for proposed development activities. The results of the ARS indicate that, with the exception of a complex of 19 previously documented sites (Sites 50-10-11-15030 to -15032, and -15050 to -15065; see Attachment 1) located in the southwestern corner of the parcel (Jensen and Burgett 1991), the likelihood of encountering previously undocumented historic properties is very low. This letter report begins with a description of the subject parcel, provides a brief cultural-historical context for the area, discusses the results of prior archaeological studies conducted within and adjacent to the parcel, summarizes the results of the ARS, and presents recommendations regarding the HRS Chapter 6E-42 review of future development permitting by the DLNR-SHPD.

Description of the Subject Parcel

The subject parcel (TMK: [3] 6-8-001:067) consists of 934.66 acres located in Waikōloa Ahupua‘a, South Kohala District, Island of Hawai‘i (see Figures 1, 2, and 3). The western portion of the parcel is bounded to the north by Waikōloa Road, to the south by an existing gravel quarry, and to the west by a paved access road leading from Waikōloa Road to the quarry. The eastern portion of the parcel is bounded to the north and east by an undeveloped parcel owned by the Waikōloa Village Association, and to the south by an undeveloped State-owned parcel. A powerline maintenance road extends along the southern boundary of the subject parcel with the State-owned land, which is coterminous with the boundary between the Districts of South Kohala and North Kona, and the ahupua‘a of Waikōloa (in South Kohala) and Pu‘uanahulu (in North Kona).

Geologically, the subject parcel is situated on the northwestern flank of Mauna Loa where it joins the southwestern flank of Mauna Kea at elevations ranging from 650 to 1,840 feet (200 to 560 meters) above mean sea level (amsl), roughly 4 to 6 miles (6.5 to 9.7 kilometers) inland of the coast (see Figures 1 to 4). The terrain, which slopes consistently to the northwest, is comprised primarily of lava flow from two distinct eruptive episodes of Mauna Loa that occurred between 1,500 and 5,000 years before present (B.P.), and covered older lava flows of Mauna Kea that date to between 11,000 and 64,000 years B.P. (Sherrod et al. 2021; Trusdell and Lockwood 2024). The Mauna Loa flows are comprised almost entirely of jagged ‘a‘ā lava with very little vegetation cover. The older of these two flows (labeled Qk1y in Figure 4), dating to between 3,000-5,000 years B.P., is commonly referred to as the Kanikū flow, and is mentioned in the

boundary commission testimonies for the ahupua‘a of Waikōloa and Pu‘uanahulu as the marking the traditional boundary between the Districts of South Kohala and North Kona (Maly and Maly 2002). The younger of the flows (labeled Qk2 in Figure 4), which has been radiocarbon dated to roughly 1,500 years B.P. (Trusdell and Lockwood 2024), consists of a massive ‘a‘ā flow that originated from summit of Mauna Loa and covered portions of the Kanikū flow. Older pockets (kīpuka) of Mauna Kea lava flows dating to between 11,000 and 64,000 years B.P. (labeled Q1 in Figure 4) are also present in the northeastern portion of the subject parcel. The kīpuka of Mauna Kea flows contain much more weathered lava surfaces that are covered with thicker vegetation.

Soil classifications within the subject parcel vary by geological substrate (Soil Survey Staff 2025) (Figure 5). The youngest Mauna Loa lava flow has not developed any measurable soil covering and is classified as ‘a‘ā lava flows on 2 to 20 percent slopes (labeled “10” in Figure 5). Similarly, soils on the Kanikū flow are classified as Lava flow-Nanuku complex on 2 to 20 percent slopes (labeled as “352” in Figure 5). The Kīpuka of Mauna Kea lava flows contain soils classified as Nanuku extremely cobbly silt loam on 2 to 10 percent slopes (labeled “350” in Figure 5) and Auwaiakeakua extremely cobbly silt loam, 2 to 10 percent slopes (labeled “310” in Figure 5).

The climate in this area is generally warm with a mean annual temperature ranging between 68 to 75 degrees Fahrenheit (Giambelluca et al. 2014). Mean annual rainfall is around 12 inches a year, with the majority of the rainfall occurring during the winter months of December and January, and the least occurring in July and August (Giambelluca et al. 2013). Typical trade winds create prevailing winds out of the east that average between 7 and 14 miles per hour, but which can blow down the mountains at speeds of 20 to 30 miles per hour during the nighttime. Daytime sea breezes, which blow on-shore, are often of similar strength (Juvik and Juvik 1998).

As mentioned above, vegetation within the subject parcel is mostly limited to sparse fountain grass (*Pennisetum setaceum*), allowing for excellent ground visibility (Figure 6). However, along the northern portions of the subject parcel and within the kīpuka of the older Mauna Kea lava flows, the fountain grass becomes much thicker (Figure 7). Stands of the endemic wililwili tree (*Erythrina sandwicensis*) are also present near the eastern boundary of the subject parcel (Figure 8).

Prior land disturbance within the subject parcel is limited to a few isolated bulldozer cuts and some larger bulldozed swaths situated primarily in areas adjacent to Waikōloa Road and the existing gravel quarry. As previously mentioned, a bulldozed powerline maintenance road follows the southern boundary of the property. Another bulldozed 4WD road (a former access road) extends mauka-makai on the ‘a‘ā across the northern portion of the property. Additionally, owing to the former use of the property for military training during Worl War II, several impact craters were observed throughout the subject parcel (Figure 9) and metal shrapnel from the exploded munitions is common on the ground surface. One unexploded ordinance (UXO) was also identified.

A Brief Cultural-Historical Context for the Subject Parcel

One of the earliest specific references to the Waikōloa area appears in the work of Samuel Mānaiakalani Kamakau who recounted the chants and legendary traditions of Hawaiian prehistory in his writings. According to Kamakau (1976) the priest Pā‘ao arrived in the Hawaiian Islands during the 13th century from Kahiki, which has since been interpreted as Tahiti. Pā‘ao was the keeper of the god Kū‘kā‘ilimoku, who had fought bitterly with his older brother, the high priest Lonopele, who expelled him from his homeland (Kamakau 1991). Lonopele did not let Pā‘ao leave peacefully, but instead called on the cold north winds to sink his canoes; one of the winds was named “Waikōloa” (Kamakau 1991:5). Despite Lonopele’s best efforts, Pā‘ao’s canoe was not destroyed and he and his companions (thirty eight men, two stewards, his sister, chief Pili and his wife and the prophet Makuaka‘ūmana) arrived safely in Hawai‘i after their perilous journey. Kamakau (1991) recounts the following details of Pā‘ao and Pili’s arrival in Hawai‘i:

It is thought that Pā‘ao came to Hawai‘i in the time of the ali‘i La‘au because Pili ruled as mo‘i after La‘au. You will see Pili there in the line of succession, the mo‘o kū‘auhau, of

Hanala‘anui. It is said that Hawai‘i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai‘i Island had been without a chief for a long time, and the chiefs of Hawai‘i were ali‘i maka‘āinana or just commoners, maka‘āinana, during this time.

. . . There were seventeen generations during which Hawai‘i Island was without chiefs—some eight hundred years. . . . The lack of a high chief was the reason for seeking a chief in Kahiki, and that is perhaps how Pili became the chief of Hawai‘i. He was a chief from Kahiki and became the ancestor of chiefs and people of Hawai‘i Island. (1991:100–102)

The moku of Kohala appears in several versions of the Pili ruling line’s origin story; such as a version discussed by Beckwith (Beckwith 1976) in which Mo‘okini and Kaluawilinau, two kahunas of Moikeha, decide to stay on at Kohala. In addition, Kamakau (1964) recounts that

In the burial cave of Pu‘uwepa in Kohala, Hawaii are deposited the bones of Pa‘ao, the famous kahuna who built the heiau of Mo‘okini at Kohala, and who lived a span of 15 generations before he died. Its entrance is said to be beneath the sea (1964:41)

The Pili chiefs initial ruling center was likely in Kohala too, but Cartwright (1933) suggests that Pili later resided in and ruled from Waipi‘o Valley in the Hāmākua District.

According to Kirch and McCoy (2023), the concept of the ahupua‘a was established sometime during the A.D. 1400s. This land unit became the equivalent of a local community, with its own social, economic, and political significance. Ahupua‘a were ruled by ali‘i ‘ai ahupua‘a or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a konohiki. Ahupua‘a were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to early Hawaiian life, and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003). The ali‘i and the maka‘āinana (commoners) were not confined to the boundaries of their ahupua‘a; when there was a perceived need, they also shared with their neighbor ahupua‘a ‘ohana (Honoko-hau 1974). The ahupua‘a were further divided into smaller sections such as the ‘ili, mo‘o‘aina, pauku‘aina, kihapai, koele, hakuone, and kuakua (Hommon 1986). The chiefs of these land units gave their allegiance to a territorial chief or mō‘ī (king).

Traditionally, Waikōloa was an ‘ili of the kalana (or ‘okana) of Waimea, a land division that in ancient times was treated as a sub-district, smaller than a district (moku o loko), but comprised of several other land divisions that contributed to its wealth (Maly and Maly 2002). The lands within the kalana of Waimea were those that form the southern limits of present day South Kohala District including ‘Ōuli, Wai‘aka, Lālāmilo, Puakō, Kalāhuipua‘a, ‘Anaeho‘omalū, Kananaka, Ala‘ōhi‘a, Paulama, Pu‘ukalani, Pu‘ukapu, and Waikōloa, where the current study area is located. Bernice Judd, a former librarian at the Hawaiian Mission Children’s society, explains that:

In the early days Waimea meant all the plateau between the Kohala Mountains and Mauna Kea, inland from Kawaihae. This area is from eight to ten miles long and from three to five miles wide. There was no running water on Mauna Kea, so the inhabitants lived at the base of the Kohala Mountains, where three streams touched the plain on their way towards the sea. . . The middle stream, which was famous for wild ducks, was named Waikoloa, or Duckwater. This and the most westerly stream, called Kahakohau, went towards Kawaihae, but neither reached the sea, except in times of flood. (Judd 1932:14)

In some early accounts, Waikōloa Ahupua‘a was referred to as Waikōloa Nui, and the neighboring ahupua‘a of Lālāmilo as Waikōloa Iki (Maly 1999). Waikōloa was traditionally sat on the border of the moku of Kohala and Kona and was bordered by Pu‘uanahulu to the south. By the seventeenth century, large areas of Hawai‘i Island (moku āina – districts) were controlled by a few powerful ali‘i ‘ai moku. There is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through

warfare, culminating in a unified political structure at the district level. It has been suggested that the unification of the island resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980). 'Umi a Līloa, a renowned ali'i of the Pili line who ruled from Waipi'o Valley, is often credited with uniting the island of Hawai'i under one rule (Cordy 2000)). According to Kamakau (1992) 'Umi was a skilled fisherman, and fishing for aku, his favorite fish, often brought him to the beaches of South Kohala from Kalahuipua'a to Makaula, where he also fished for 'ahi and kala with many other famed fishermen and all the chiefs of the kingdom. 'Umi's reign lasted until around ca. A.D. 1620, and was followed by the rule of his son, Keawenui a 'Umi, and then his grandson, Lonoikamakahiki (Cordy 2000).

This period, beginning with the rule of Lonoikamakahiki in ca. A.D. 1650 and lasting until ca. A.D. 1795, was marked by both political intensification and continual conquest by the reigning ali'i (Kirch and McCoy 2023). Wars occurred regularly between intra-island and inter-island polities during this period, and included battles that transpired in the vicinity of the current study area. One such battle was fought between Lonoikamakahiki (Lono) and his older brother, Kanaloakua'ana, who rebelled against him. According to Fornander, Kanaloakua'ana and his rebel forces were situated at:

... the land called Anaehoomalu, near the boundaries of Kohala and Kona. The rebel chiefs were encamped seaward of this along the shore. The next day Lono marched down and met the rebels at the place called Wailea, not far from Wainanalii, where in those days a watercourse appears to have been flowing. Lono won the battle, and the rebel chiefs fled northward with their forces. At Kaunooa [Kauna'oa], between Puako and Kawaihae, they made another stand, but were again routed by Lono, and retreated to Nakikiaianihau, where they fell in with reinforcements from Kohala and Hamakua. Two other engagements were fought at Puupa [on the plain north of Waikōloa] and Puukohala, near the Heiau of that name, in both of which Lono was victorious. . . (Fornander 1996:120-121)

Later, Lonoikamakahiki battled the forces of Maui led by Kamālālawalu (Kama) on the plain of Waikōloa below Pu'u 'Ōā'oaka (Maly and Maly 2002). According to Kamakau:

After Kama-lala-walu's warriors reached the grassy plain, they looked seaward on the left and beheld the men of Kona advancing toward them. The lava bed of Kaniku and all the land up to Hu'ehu'e was covered with the men of Kona. Those of Ka'u and Puna were coming down from Mauna Kea, and those of Waimea and Kohala were on the level plain of Waimea [Waikōloa]. The men covered the whole of the grassy plain of Waimea like locusts. Kamalalawalu with his warriors dared to fight. The battlefield of Pu'oa'oaka was outside of the grassy plain of Waimea, but the men of Hawaii were afraid of being taken captive by Kama, so they led [Kamalalawalu's forces] to the waterless plain lest Maui's warriors find water and hard, waterworn pebbles. The men of Hawaii feared that the Maui warriors would find water to drink and become stronger for the slinging of stones that would fall like raindrops from the sky. The stones would fall about with a force like lightning, breaking the bones into pieces and causing sudden death as if by bullets . . .

... The Maui men who were used to slinging shiny, water-worn stones grabbed up the stones of Pu'oa'oaka. A cloud of dust rose to the sky and twisted about like smoke, but the lava rocks were light, and few of the Hawaii men were killed by them. This was one of the things that helped to destroy the warriors of Kama-lala-walu: They went away out on the plain where the strong fighters were unable to find water . . . The warriors of Maui were put to flight, and the retreat to Kawaihae was long. [Yet] there were many who did reach Kawaihae, but because of the lack of canoes, only a few escaped with their lives ... Kamalalawalu, ruler of Maui, was killed on the grassy plain of Puako, and some of his chiefs were also destroyed. (Kamakau 1991:58-60)

By the 1700s, the rule of Hawai'i Island was divided amongst the chiefs of Kona and Hilo (Kamakau 1992). Keawe, a Pili line ruler and the son of Kanaloakapulehu, was the chief of Kohala, Kona, and Ka'ū. When

Keawe died, he split the rule of his lands between two of his sons, further dividing the island's chiefdoms; Kalaninui'iāmao became the ruling chief of Ka'ū, and Ke'eaumoku became the ruling chief of Kona and Kohala (Kamakau 1992). Wars between the ali'i continued unabated through this transition, and culminated in the conquest of the islands by Kamehameha I.

The arrival of Western explorers in Hawai'i marked the end of the Precontact Period and the beginning of the early Historic Period. With the arrival of foreigners, Hawai'i's culture and economy began to drastically change (Kirch and McCoy 2023). Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little modification of material culture. There was a continued trend toward craft and status specialization, intensification of agriculture, ali'i controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, Hawai'i had seen the beginnings of a market system economy (Kent 1983). Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, potatoes, corn, beans, figs, oranges, guava, and grapes (Wilkes 1845). Later, as the Historic Period progressed, Kamehameha I died, the kapu system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic and political forces began to have a devastating impact on traditional Hawaiian lifeways.

It was during this time that Western visitors began recording their impressions of Hawai'i. One of the earliest to write of Kohala was Archibald Menzies, a surgeon and naturalist who arrived with Captain Vancouver in 1793. During one of his visits Vancouver anchored at Kawaihae and Menzies went ashore and walked inland towards Waimea. Menzies' journal records the journey and describes the land in the vicinity of the current study area as follows:

I travelled a few miles back...through the most barren, scorching country I have ever walked over, composed of scorious dregs and black porous rock, interspersed with dreary caverns and deep ravines...The herbs and grasses which the soil produced in the rainy seasons were now mostly in the shriveled state, thinly scattered and by no means sufficient to cover the surface from the sun's powerful heat, so that I met with few plants in flower in this excursion. (Menzies 1920:55)

During that same voyage, five cows, two ewes, and a ram brought by Vancouver in 1793 were set free to roam in the saddle area of Waimea between Mauna Kea, Mauna Loa, and Hualālai (Escott et al. 2008). Around the turn of the eighteenth century, Kamehameha gave control of present day Waikōloa, then Waikōloa Nui Ahupua'a (excluding the coastal 'ili of 'Anaeho'omalua and Kalāhuipua'a), to Isaac Davis, one of his early foreign advisors (Rosendahl 2000). Although the land of Waikōloa Nui gifted to Davis encompassed a large area, it lacked extensive resources, and was primarily a place for catching birds and gathering pili grass. When Davis died in 1810 without naming an heir, John Young, another of Kamehameha's early foreign advisors who settled at Kawaihae, took control of the land and protected it for Davis' children, who were at that time too young to take on the responsibility (Rosendahl 2000).

Waikōloa Nui eventually became a favored pasture for the cattle given by Vancouver to Kamehameha. By the early nineteenth century the kapu cattle had quickly multiplied in the region to the extent that they became a scourge for the native planters of the Waimea area. In order to protect the upland agricultural fields from the overwhelming number of grazing cattle, sometime between 1813 and 1819, Kamehameha ordered the construction of a wall extending from the northern boundary of Waikōloa Nui to near Pu'u Huluhulu (Barrère 1983). The wall was designed to keep wild cattle in Waikōloa Nui and out of the more agriculturally productive areas on the Waimea side. The wall was called Pā of Kauliokamoa after the konohiki who oversaw its construction (Wolforth 2000).

By the middle of the nineteenth century, the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership in the Hawaiian Islands, and the Māhele 'Āina of 1848 became the vehicle for determining ownership of

native lands. During this period, land interests of the King (Kamehameha III), the high-ranking chiefs, the ali'i, and the low-ranking chiefs, the konohiki, were defined. The chiefs and konohiki were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission (Chinen 1961:13). During the Māhele, all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. All three types of land were subject to the rights of the native tenants therein. In 1862, the Commission of Boundaries (Boundary Commission) was established in the Kingdom of Hawai'i to legally set the boundaries of all the ahupua'a that had been awarded as part of the Māhele. Subsequently, in 1874, the Boundary Commission was authorized to certify the boundaries for lands brought before them. The primary informants for the boundary descriptions were elderly native residents of the land. The boundary information was collected primarily between 1873 and 1885 and was usually given in Hawaiian, but transcribed in English.

As a result of the 1848 Māhele, Waikōloa (Nui) Ahupua'a was awarded to George Davis Hū'eu, son of Isaac Davis. As mentioned above, Kamehameha I had given Davis the land as a reward for his service, but after Davis died prematurely under suspicious circumstances in 1810, his friend John Young (another advisor to Kamehameha I) took it upon himself to make sure that Isaac Davis' children would receive their father's lands when they came of age (Wolforth et al. 2005). A portion of Young's Last Will and Testament reads as follows (Cahill 1996:196):

... I give and bequeath to be equally divided between my surviving children and the surviving children of my departed friend, the late Isaac Davis, of Milford in England, in such manner as it may please His Majesty the King and his Chiefs; Provided always that each and all of the said children receive a just and equal portion.

As a result, John Young's lands were designated 'ina ho'oilina or inherited lands, during the Māhele, a designation applied only to these lands that does not appear elsewhere in the Māhele records (Wolforth 2005). Royal Patent number 5671 was issued to Isaac Davis, consisting of a large area of dry, non-arable terrain on grassy slopes known as pili lands (after the pili grass that grew in abundance there), which extended to the 'a'ā on the Kona District boundary; and did not include any portion of the fertile uplands or shoreline access (Wolforth 2005). In 1865, George Hū'eu, Davis's only surviving heir, received Waikōloa as an unsurveyed Land Commission Award. According to later boundary commission testimony for Waikōloa:

...the King intended to give, and did give to Isaac Davis, a tract of land of very great extent, although not of proportionate value. There were no cattle or sheep in this country when the grant was made, and the land given to Isaac Davis only yielded what revenue could be derived from wild birds and pili grass (Boundary Commission 1867 in Wolforth et al 2005:13)

The coastal areas of Waikōloa, 'Anaeho'omalū and Kalāhuipua'a had been passed from Kamehameha I to Kamehameha II and then to Kamehameha III who retained them as Crown Lands until he passed them on to his wife Queen Kalama (LCA 4452; Wolforth 2005). Only nine small residential kuleana were awarded in the uplands of Waikōloa near the town of Waimea and none were awarded within or in close proximity to the current study area (Maly 1999). Coastal residents in South Kohala, relied primarily on the ocean for sustenance, and they augmented their diet with produce procured through trade with the upland areas. In addition, according to testimony from 1865 Boundary Commission hearings, Waikōloa Ahupua'a was known as a place for bird catching; Ehu testified, "Waikōloa was the land that had the birds" (Maly 1999:88). Oral histories indicate that a dry land planting area referred to as Makahonu was present in Waikōloa near the intersection of Waikōloa Road and Queen Ka'ahumanu Highway, mauka of the current study area. There is no information in the oral histories of what was specifically cultivated in the planting area although 'Anaeho'omalū and other proximal locations were favorable areas for growing sweet potatoes (Handy et al. 1991). According to Maly, Makahonu "was still used through the turn of the [twentieth]

century” (1999:153). Other testimony collected between 1865 and 1867 regarding the boundary between the ahupua‘a of Waikoloa and Pu‘uanahulu indicates that the subject parcel is along a portion of the boundary that corresponds to the Kanikū lava flow between Hanamauloa, a “pili land” and Kauakahialaa, a hill (Maly and Maly 2002).

In 1868, George Hū‘eu leased his remaining lands in Waikōloa to the Waimea Grazing and Agricultural Company, which made them the largest ranching operation on the island at that time (Escott 2008a). Under the terms of the lease, the Hū‘eu family was allowed to continue grazing their 1,000 head of cattle, 1,000 head of sheep, and 100 horses there (Escott 2008a). By the late-1870s, however, largely due to persistent drought conditions within its grazing lands, the Waimea Grazing and Agricultural Company went out of business and Parker Ranch purchased their herd and acquired their lease for roughly 95,000 acres of Waikōloa.

At the turn of the 20th century, the landholdings of Parker Ranch continued to grow as then manager Alfred W. Carter acquired thousands of acres in Waikōloa and neighboring ahupua‘a that included the Pu‘uloa Sheep and Stock Company, which encompassed over 3,700 acres and the Ke‘amuku Sheep Station in Waikōloa. Over the next decade these lands were converted to cattle ranching. By 1932, Parker Ranch had grown to include over 325,000 acres of fee lands (Bergin 2004). With the expansion of ranching operations, population also expanded in Waimea. At this time, little to no development had occurred in the general vicinity of the subject parcel (Figure 10).

In December of 1943, nearly 123,000 acres of land in the Waimea-Waikōloa area were leased by the U. S. War Department for use as a troop training area (Escott 2008b). The U.S. Military’s 91,000-acre Waikōloa Maneuver Area was the site of an artillery firing range on which live ammunition and other explosives were employed, with the remaining acreage utilized for troop maneuvers. The Waikōloa Maneuver Area extended from the coast to present-day Pohakuloa Training Area, and from the Waimea-Kawaihae Road to south of Waikoloa Road, where the current study area is located. According to Escott:

The military utilized portions of this property for troop maneuvers and weapons practice, while other areas served as artillery, aerial bombing and naval gun fire ranges. Troop exercises were conducted using 30 caliber rifles, 50 caliber machine guns, hand grenades, bazookas, flame throwers, and mortars. Larger ordnance and explosive (OE) or unexploded ordnance (UXO) items used included 37 millimeter (mm), 75 mm, 105 mm, and 155 mm high explosive (HE) shells, 4.2 inch mortar rounds, and barrage rockets. From 1943 through 1945 nearly the entire Waikoloa Maneuver Area was in constant use, as the Marine infantry reviewed every phase of training from individual fighting to combat team exercises. (Escott 2008b:35)

In September of 1946, the Waikōloa Maneuver Area, with the exception of the 9,141 acre Lālāmilo Firing Range, was returned to Parker Ranch (Haun et al. 2010). Following World War II, the lands in the vicinity of the current study area were once again used for cattle ranching and bird hunting; however, clean-up of unexploded ordnance within the Waikōloa Maneuver Area is still ongoing.

Substantial changes on the Parker Ranch lands began to occur in the mid-twentieth century with the transfer to its sixth-generation heir, Richard Palmer Smart (Ketner et al. 2021). Seeking to diversify the ranch’s business interests, Smart initiated a \$300,000,000 resort and residential development on 10,000 acres of land in ‘Anaeho‘omalū and along the South Kohala coastline *makai* of the project area, which the press referred to as the “Gold Coast” (Honolulu Star-Bulletin 1968; The Honolulu Advertiser 1959). Newspaper commentary at the time noted that the supposedly barren land, capable of supporting “only brush, scrubby trees, cactus and rocks,” made it “difficult to envision. . . as a future resort or city,” but Smart’s plans drew the interest of several resort developers (Honolulu Star-Bulletin 1969). Smart initially intended to offer ‘Anaeho‘omalū’s 31,000-acres for lease, but in 1963 decided to sell the *ahupua‘a* for roughly \$11 million. In May of 1968, the Boise Cascade Home and Land Corporation purchased 25,500 acres of land above ‘Anaeho‘omalū Bay (including the current subject parcel) with visions of creating an amenity-rich resort dreamscape. Although the development of the resort was aimed at attracting tourists to the famed coast, the

ultimate success of the resort was at least partially reliant on the creation of Waikōloa Village, a residential subdivision *mauka* of ‘Anaeho‘omalū Bay to the northeast of the subject parcel. In order to facilitate the imminent urbanization of ‘Anaeho‘omalū, a main thoroughfare leading *makai* from Māmalahoa Highway (currently the Waikōloa junction) to ‘Anaeho‘omalū, known as Waikōloa Road, was developed (Figure 11). This road, which forms a portion of the northern boundary of the subject parcel, was not only beneficial for mere transportation purposes, but the newfound accessibility afforded commercial promise to the barren region (Ketner et al. 2021).

By the late 1960s, the groundwork for the Waikōloa Village community was underway and on June 27, 1970, Boise Cascade held their first open house to welcome the public and, as their promotional material boasted, to “celebrate the advances made by Boise Cascade and Morrison-Knudsen in reclaiming the Ahupua‘a of Waikoloa for Man” (Boise Cascade 1970:1). The road leading *makai* from Māmalahoa Highway to the newly created Waikōloa Village community was paved just in time for the gathering and this new road was “the pathway that, in a sense, tangibly opens Waikoloa to its rebirth” (Boise Cascade 1970:1). Plans for this new community included the construction of a vast water system to furnish future residents and businesses, the creation of a golf course, a residential subdivision, an equestrian center, condominiums, and a shopping center. By August of 1972, the Waikōloa Village saw its first permanent resident (Boise Cascade 1972) and on July 7th, 1974, the road leading *makai* from Waikōloa Village to ‘Anaeho‘omalū was formally dedicated (Waikoloa Office of Public Affairs 1974), thus drastically reducing travel time from the newly created village to other important centers along the Kona-Kohala coast. By the mid to late-1970s, Waikōloa Village had been mostly built out which effectively transformed this once barren lava landscape into a budding community. With the opening of the coastal resorts in the mid-1980s, Waikōloa Village continued to expand to meet the demands of a growing visitor industry and saw an influx of new residents.

While most of the early development of Waikōloa Village was centered around the area northeast of the subject parcel, since the mid-1980s to the present-day, development of the Waikōloa Village has since expanded into the area south of Waikōloa Road (Ketner et al. 2021). The influx of residents has also created the need for additional construction materials, including gravel, which has been quarried from an area adjacent to the subject parcel for more than 25 years (Gotay and Rechtman 2015). A review of aerial photographs indicates that the access road to the existing quarry (along the western boundary of the subject parcel) was cut during the mid-1990s, and that use of the quarry itself, and subsequent expansion began during the late 1990s (Rechtman 1999). Dozing and clearing activities associated with the use of the quarry appear to have expanded into the current subject parcel sometime between 2006 and 2008. The planning for the use of the quarry and subsequent expansion were accompanied by archaeological studies that include portions of the subject parcel.

Prior Archaeological Studies

Three archaeological studies associated with the adjacent quarry have been conducted within, or in the vicinity of, the southwestern corner of the current subject parcel. Jensen and Burgett (1991) conducted an archaeological inventory survey of a roughly 300-acre area for a proposed quarry site on the Waikōloa Beach Resort Reserve Lands (now portions of TMKs: [3] 6-8-001:066 and 067) that documented several archaeological sites within the subject parcel (Figure 12). The survey consisted of a 100% aerial survey at 30-50 feet altitude via helicopter, augmented by a pedestrian survey of 15-20% of the property in areas identified as high probability with respect to the presence of historic properties. This survey area encompassed the southwestern corner of the current subject parcel and documented 19 archaeological sites (Table 1) along the top and around the margins of two ‘a‘ā ridges located within the northern third of their study area (see Figure 12). The sites included 23 features component features (platforms, terraces, filled blisters, pavements, modified outcrops, and bedrock overhangs) that appeared to have been created primarily for burial/ceremonial purposes with associated short-term habitation activities also occurring. The sites appeared to be interconnected by a poorly defined trail system, which was likely only minimally used at the time the features were constructed and for limited access thereafter. No midden, artifacts, or other portable cultural material were detected on the surface of any of the features or in the subsurface testing of

a rock shelter feature. The full descriptions of these sites, reproduced from Jensen and Burgett (1991: Appendix A), are presented as Attachment 1 to this letter report.

Table 1. Sites included in the archaeological preserve.

<i>SIHP Site No.</i>	<i># of Features</i>	<i>Feature Type</i>	<i>Function</i>
50-10-11-15030	2	(A) Mound (B) Paving	Possible burial
50-10-11-15031	1	Rock shelter	Temporary habitation
50-10-11-15032	1	Platform	Possible burial/ceremonial
50-10-11-15050	1	Platform	Possible burial/ceremonial
50-10-11-15051	4	(A) Platform (B) Rock shelter (C) Modified sink (D) Terrace	Temporary habitation with possible burial(s)
50-10-11-15052	4	(A-D) Platforms	Possible burial/ceremonial
50-10-11-15053	1	Platform	Possible burial
50-10-11-15054	1	Platform	Possible burial
50-10-11-15055	1	Platform	Possible burial
50-10-11-15056	1	Platform	Possible burial/ceremonial
50-10-11-15057	2	(A and B) Platforms	Possible burial/ceremonial
50-10-11-15058	1	Modified outcrop	Indeterminate
50-10-11-15059	1	Trail	Transportation
50-10-11-15060	1	Platform	Possible burial
50-10-11-15061	1	Platform	Possible burial
50-10-11-15062	1	Rock shelter	Temporary habitation
50-10-11-15063	1	Filled blister	Possible burial
50-10-11-15064	1	Terrace	Possible burial
50-10-11-15065	1	Rock shelter	Temporary habitation

*Data source is Jensen and Burgett (1991).

As a result of the investigation it was decided, in consultation with the landowner, that all 19 sites would be preserved “as is” through avoidance by construction activities. To protect the sites, Jensen and Burgett (1991:20) recommended that “[1] a 50 ft-wide buffer should be flagged in the field around the margins of the ridge line containing the 19 sites;” and that “[2] Construction workers and appropriate Waikoloa personnel should then be informed of the significance of the flagged preservation boundary, which should also be clearly identified on project area maps and aerial photographs.” It was further recommended that if work was proposed in the vicinity of the 19 documented sites, that additional survey should occur to the north and east of the identified sites (in the areas identified in Figure 12) prior to allowing that work to occur.

In May of 1999, archaeological monitoring for the development of the quarry site and associated access road was conducted by Paul H. Rosendahl, Inc. (PHRI). In a letter report prepared of that monitoring (Rechtman 1999), PHRI confirmed that the established buffer zone was maintained and that the access road was well makai of the buffer boundary. Rechtman (1999) also indicated that the northern boundary of the quarry was situated an additional 50 meters south of the buffer zone surrounding the 19 sites.

In 2015, ASM conducted an Archaeological Assessment (Gotay and Rechtman 2015) of a roughly 220-acre portion of TMK: (3) 6-8-001:066, located immediately adjacent to the southwestern boundary of the current subject parcel for the expansion of the quarry (see Figure 12). The Gotay and Rechtman (2015) survey area included a portion of the already-existing quarry property within the 300 acres that was previously surveyed by Jensen and Burgett (1991). No archaeological resources were discovered as a result of the 2015 survey, but the 19 archaeological sites documented by Jensen and Burgett (1991) were discussed, and the requirement for avoiding impacts to those sites was reiterated.

Results of the Archaeological Reconnaissance Survey

Fieldwork for the current ARS was conducted during the week of April 21 to 25, 2025, by ASM archaeologists David King, MSc., Johnny Dudoit, B.A., Andrew Curley, B.A., and Colsen Balai, B.A., and Steele Jaques, M.A., under the supervision of Matthew R. Clark, M.A. (ASM Principal Investigator). A total of 180 hours of person time were required to complete the fieldwork.

During the ARS, the ground surface of the entire 934.66-acre subject parcel was visually inspected utilizing northeast/southwest pedestrian transects (oriented at 41.5/221.5 degrees), with fieldworkers maintaining 40-meter spacing intervals. Tighter transect spacing (20-meter intervals) was employed in areas where cultural features were identified, including in the vicinity of the 19 sites previously documented by Jensen and Burgett (1991), where they had indicated that additional survey needed to occur. Handheld tablet computers running ESRI's Field Maps application connected to an EOS Arrow 100 GNSS receivers with sub-meter accuracy were used to guide the pedestrian survey and to document the locations of the identified cultural features, as well as to record and photograph those features. No subsurface testing was conducted as part of the current fieldwork.

As a result of the pedestrian survey, 14 of the 19 sites previously documented by Jensen and Burgett (1991) in the southwestern corner of the subject parcel were positively re-identified and correlated to their existing Statewide Inventory of Historic Places (SIHP) site designations, but no other sites, features, or potential historic properties were identified (Figure 13). With the exception of the area in the vicinity of the Jensen and Burgett (1991) site complex, it does not appear that the subject parcel was widely accessed in the past for any purpose. Two modern features were noted along the boundaries of the subject parcel including a stacked cobble cairn adjacent to Waikōloa Road, and a bedrock overhang with modern trash in it adjacent to the powerline maintenance road along the southern boundary of the parcel. No other modifications to the landscape, except those caused by aerial bombing and off-shore shelling of the subject parcel during World War II training excises within the Waikōloa Maneuver Area (including impact craters and shrapnel), were noted.

With the exception of the sites previously documented by Jensen and Burgett (1991), the results of the ARS indicate that the subject parcel, which is covered by rough 'a'ā terrain with very little vegetation, was infrequently used in the past, and that the only tangible evidence of past use is confined to the southwestern corner of the property near the existing quarry site. This area, covering roughly 30 acres on the youngest lava flow that is bounded by higher ridges of the Kanikū lava flow to the north and south, is unique within the landscape and contains 19 previously documented sites related to burial/ceremonial use of the subject parcel, likely during the Precontact Period (Jensen and Burgett 1991). As a result of the ARS, 11 of the 19 sites documented by Jensen and Burgett (1991) including Sites 50-10-11-15030 (Figure 16), -15032 (Figure 17), all features of 15051 (Figure 18) and 15052 (Figure 19), 15053 (Figure 20), 15054 (Figure 21), -15055 (Figure 22), -15056 (Figure 23), -15057 (Figure 24), -15058 (Figure 25), and -15060 (Figure 26), were conclusively re-identified and found to be in the same condition as previously described (see Table 1 and Figure 13). Two other sites, Sites 50-10-11-15031 and -15062, both rock shelters, appear to have partially collapsed since they were previously documented and are now in worse condition. The trails documented by Jensen and Burgett (1991:A-5) as Site 50-10-11-15059, which were originally described as "discontinuous" and difficult to follow, were barely discernable during the ARS fieldwork, and their originally documented routes could not be identified with any certainty. While the relative locations of the sites shown on the Jensen and Burgett (1991) field map were generally correct (see Figure 12), the GIS locations for several of the sites re-located during the ARS place them between 20 and 65 meters away from where they were originally mapped (see Figure 13).

Five sites recorded by Jensen and Burgett (1991), Sites 50-10-11-15050, -15061, -15063, -15064, and -15065, were not positively re-identified during the fieldwork for the current ARS. Sites 50-10-11-15050 and -15061, are both platforms that were interpreted as possible burials or ceremonial structures. These sites are likely still present, but due to the brief descriptive notes on the sites prepared by Jensen and Burgett (1991) (see Attachment 1), the lack of plan maps for those sites, and the inaccuracies in the Jensen and

Burgett (1991) site location map (see Figure 12) could not be positively re-identified. The other three sites, Sites 50-10-11-15063, -15064, and -15065, are situated at the eastern end of the site complex in an area that was extensively bulldozed in ca. 2006 to 2008 (based on a review of Google Earth aerial images), and it is possible that those sites were destroyed. Site 50-10-11-15062, which was documented near those sites, was found in a collapsed state completely surrounded by bulldozer-flattened ‘a‘ā.

The interpretations of site function provided by Jensen and Burgett (1991) appear accurate based on the limited site documentation conducted during the ARS. This roughly 30-acre area in the southwestern corner of the subject parcel, appears to have been used primarily for burial purposes during the Precontact Period, with associated ceremonial and short-term habitation activities also occurring in the area. It is possible that the platforms and terraces at this location are associated with the battle between Lonoikamakahiki, an ali‘i of Hawai‘i Island, and Kamālālawalu, an ali‘i of Maui Island, that occurred in the area during the mid-seventeenth century. These burial features are very similar to the ones constructed at Lekeleke in Keauhou Ahupua‘a on Hawai‘i Island following the battle of Kuamo‘o. It is possible that the sites previously documented by Jensen and Burgett (1991) represent the final resting places of warriors (from one side or the other) that were slain during that battle. If these features are related to that event, it would help explain why no other similar features were found anywhere else within the subject parcel despite similar terrain and access opportunities.

Recommendations

Based on the findings of the ARS, it is recommended that the sites documented in the southwest corner of the subject parcel by Jensen and Burgett (1991) continue to be avoided and protected from development activities. Figure 13 shows the locations of these sites, as well as the 50-foot buffer surrounding them (encompassing roughly 30 acres) that was previously recommended by Jensen and Burgett (1991). Also shown on that figure is a roughly 300-foot “recommended avoidance area” that surrounds all of the sites and includes the 50-foot preservation buffer. As long as any planned future development activities do not encroach into the recommended avoidance area (totalling roughly 83 acres), the sites should be protected, and no additional documentation or preservation planning should be required by the DLNR-SHPD.

If development activities are proposed within the recommended avoidance area shown in Figure 13, it is likely that the DLNR-SHPD will require that a supplemental Archaeological Inventory Survey (SAIS) be prepared for that area in compliance with Hawai‘i Administrative Rules (HAR) §13-276 followed by a preservation plan in compliance with HAR §13-277, and perhaps an Archaeological Monitoring Plan (AMP) in compliance with HAR §13-279. If human skeletal remains are identified at any of the previously identified sites, then the preparation of a Burial Treatment Plan in compliance with HAR §13-300 may also be required. All of this work would need to be completed before the ground disturbing permits are issued.

Permitting for any future ground disturbing activities proposed within the subject parcel will trigger HRS Chapter 6E-42 review by the DLNR-SHPD. The results of this ARS, which did not identify any archaeological sites beyond those previously documented by Jensen and Burgett (1991), demonstrate that any future projects proposed outside of the recommended avoidance area shown in Figure 13 will have no effect on historic properties, and should result in a project effect determination by the DLNR-SHPD of “no historic properties affected” pursuant to HAR §13-284.

While the transect spacing for the current ARS (40-meters) was wider than generally used for an AIS prepared in compliance with HAR §13-276, the excellent ground visibility and difficult terrain within the 934.66-acre subject parcel, combined with the lack of any identified historic properties beyond those previously documented by Jensen and Burgett (1991), suggests that the spacing was adequate in this case, and that narrower transect spacing would be unlikely to result in any additional findings. It is recommended that this ARS report accompany any permit applications that are submitted to DLNR-SHPD to assist with the historic preservation review of those permits.

If other types of permits are sought for activities within the subject parcel that do not comply with the agricultural zoning, such as a Special Use Permit (SUP), that permitting will trigger the preparation of a

cultural analysis report, commonly referred to as a Ka Pa‘akai Analysis (KPA). The KPA will need to assess (1) the identity and scope of valued cultural and historical or natural resources in the project area and reasonable vicinity, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area; (2) the extent to which those resources including traditional and customary Native rights will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken by the state to reasonably protect Native Hawaiian rights if they are found to exist. While this ARS does not include an analysis of potential cultural impacts, it can be used to inform such a study, and to guide future development planning so that it avoids impacts to cultural features and lessens the chances of effecting Native Hawaiian rights.

Should you have any questions, or if you would like further information, please feel free to contact me directly.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Matthew R. Clark', with a stylized, flowing script.

Matthew R. Clark, M.A.
Principal Investigator-ASM Affiliates Hilo

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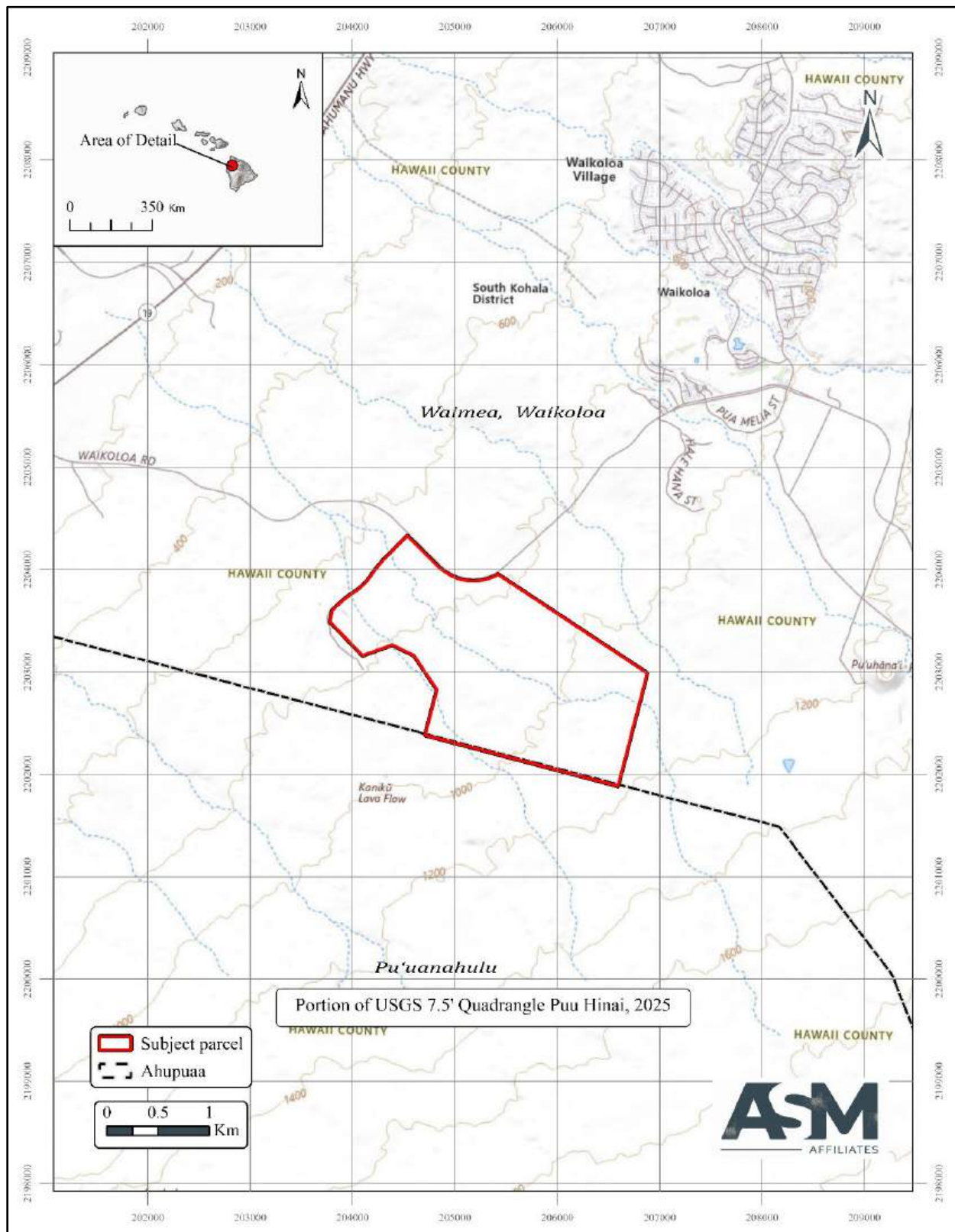


Figure 1. Subject parcel location.

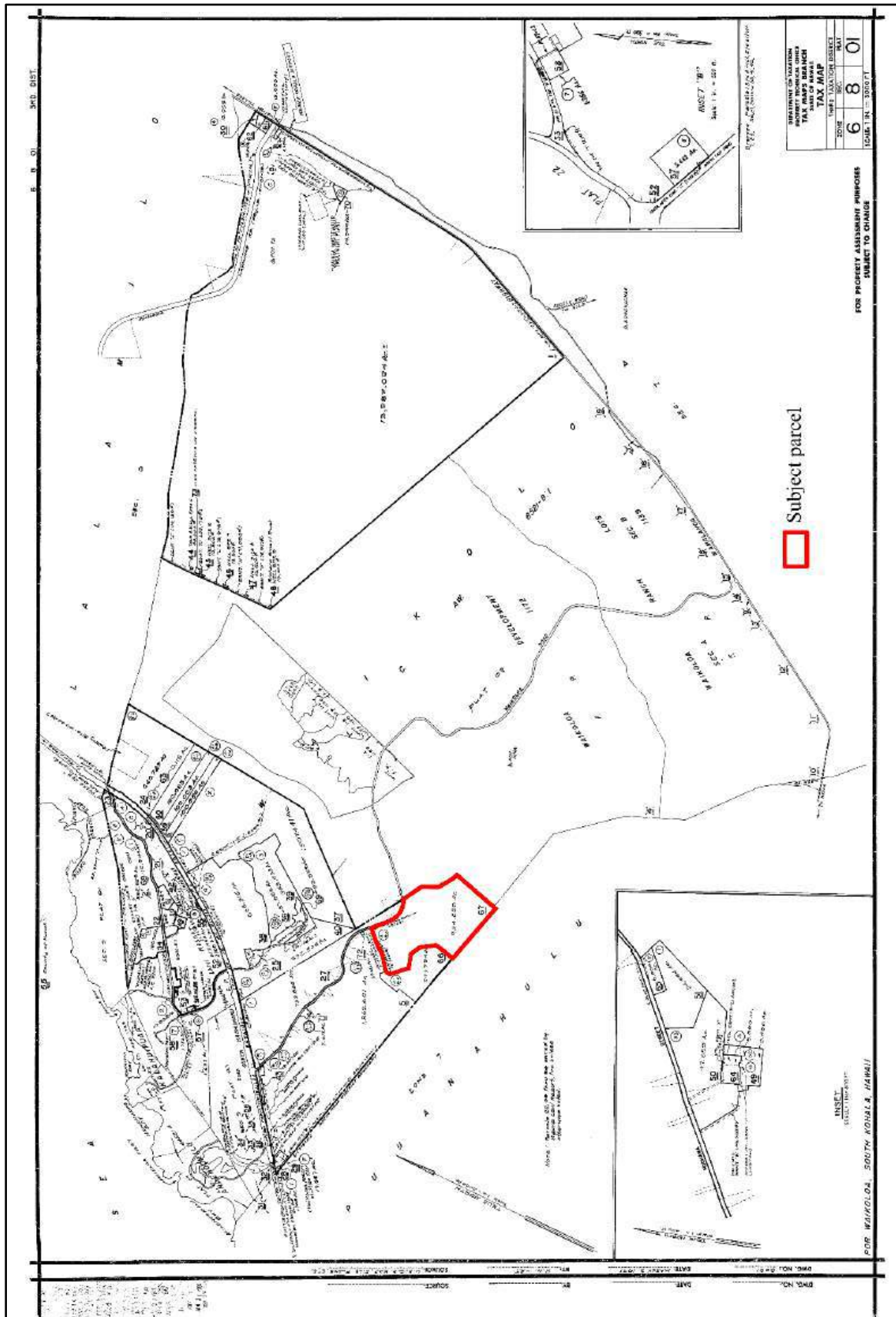


Figure 2. TMK Plat map (3) 6-9-001 showing the location of the subject parcel (067).

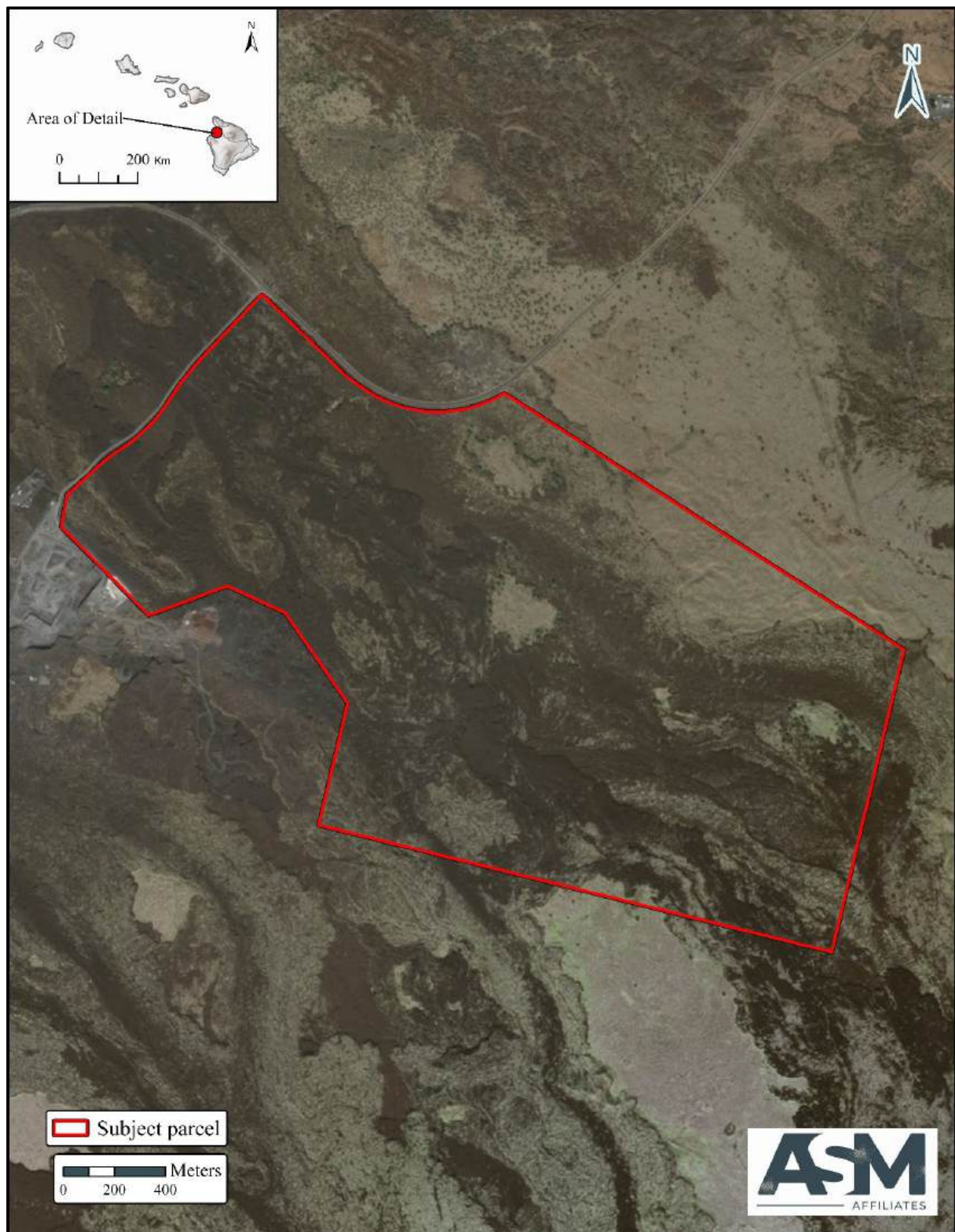


Figure 3. Aerial image of subject parcel.

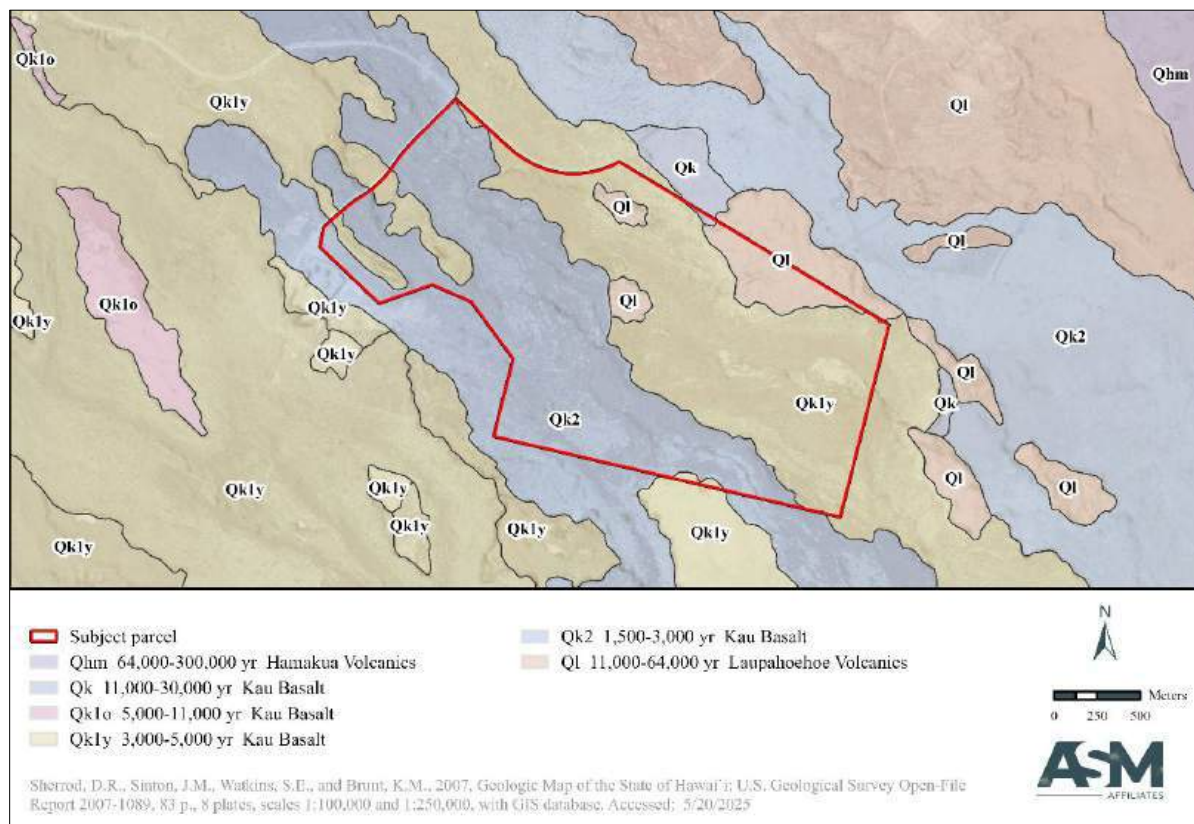


Figure 4. Age of lava flows in the vicinity of the subject parcel.

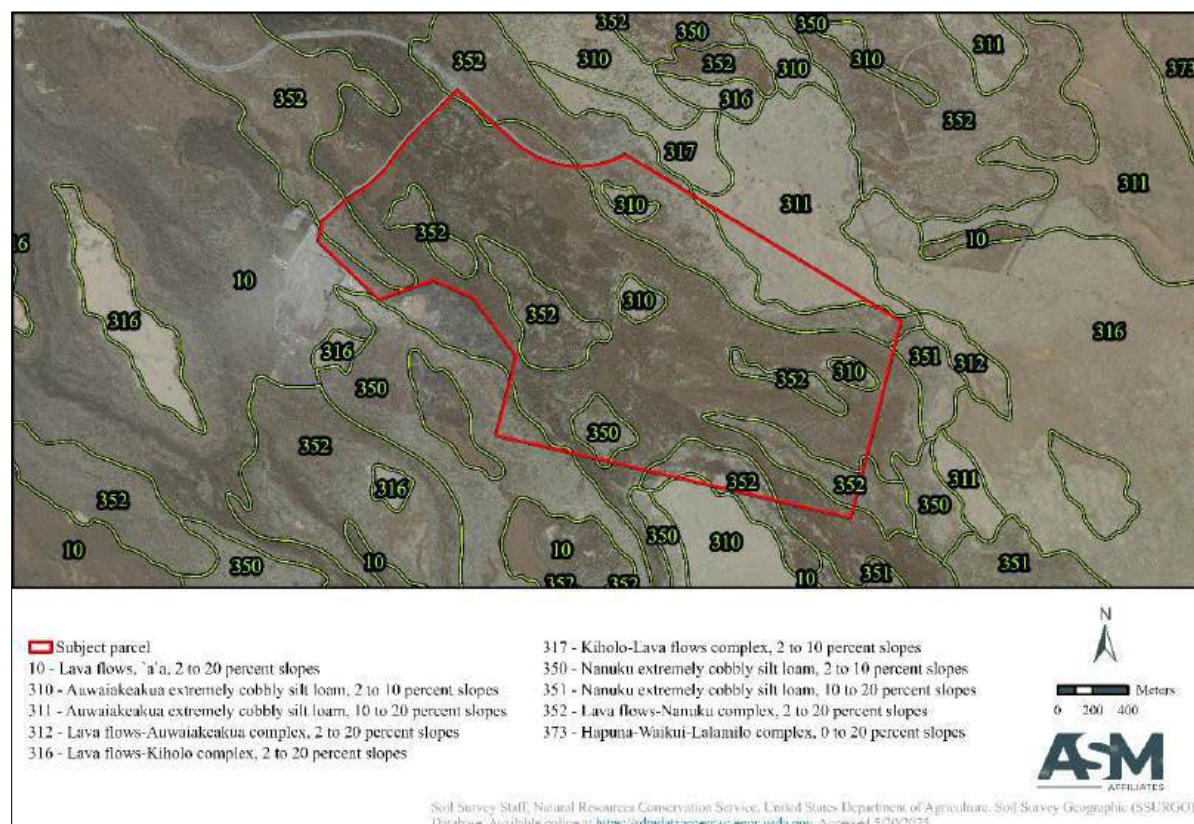


Figure 5. Soil classifications in the vicinity of the subject parcel.



Figure 6. 'A'ā terrain with little to no vegetation that is present across most of subject parcel, view to the south.



Figure 7. Thicker fountain grass in northern portions of subject parcel on the older Mauna Kea lavas, view to the north.



Figure 8. Wiliwili tree on eastern edge of subject parcel, view to the south.



Figure 9. Artillery impact crater in the 'a'ā, view to the southeast.

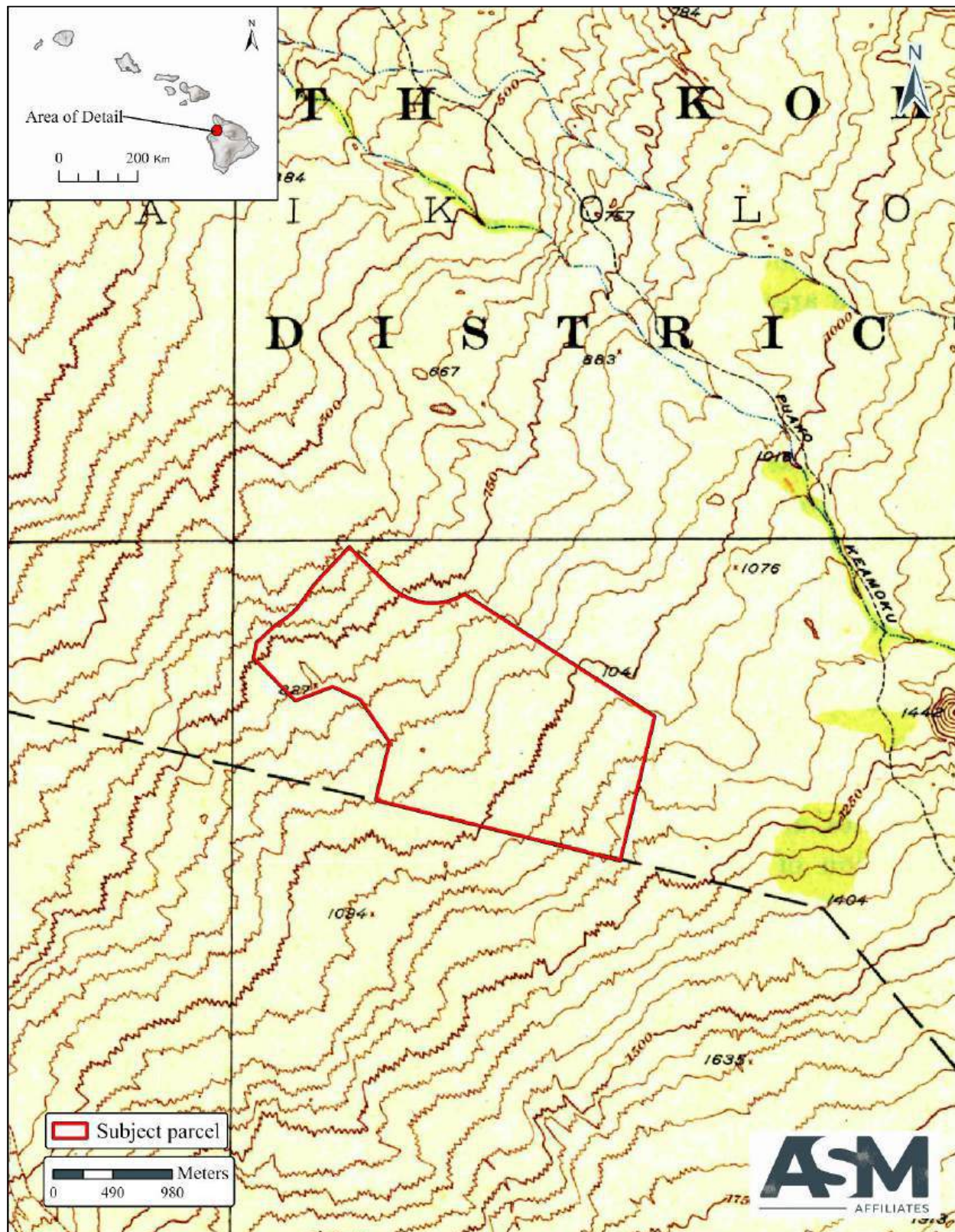


Figure 10. Subject parcel set onto 1928 USGS map.



Figure 11. Unpaved Waikōloa Road in the 1970s (Boise Cascade 1970:1).

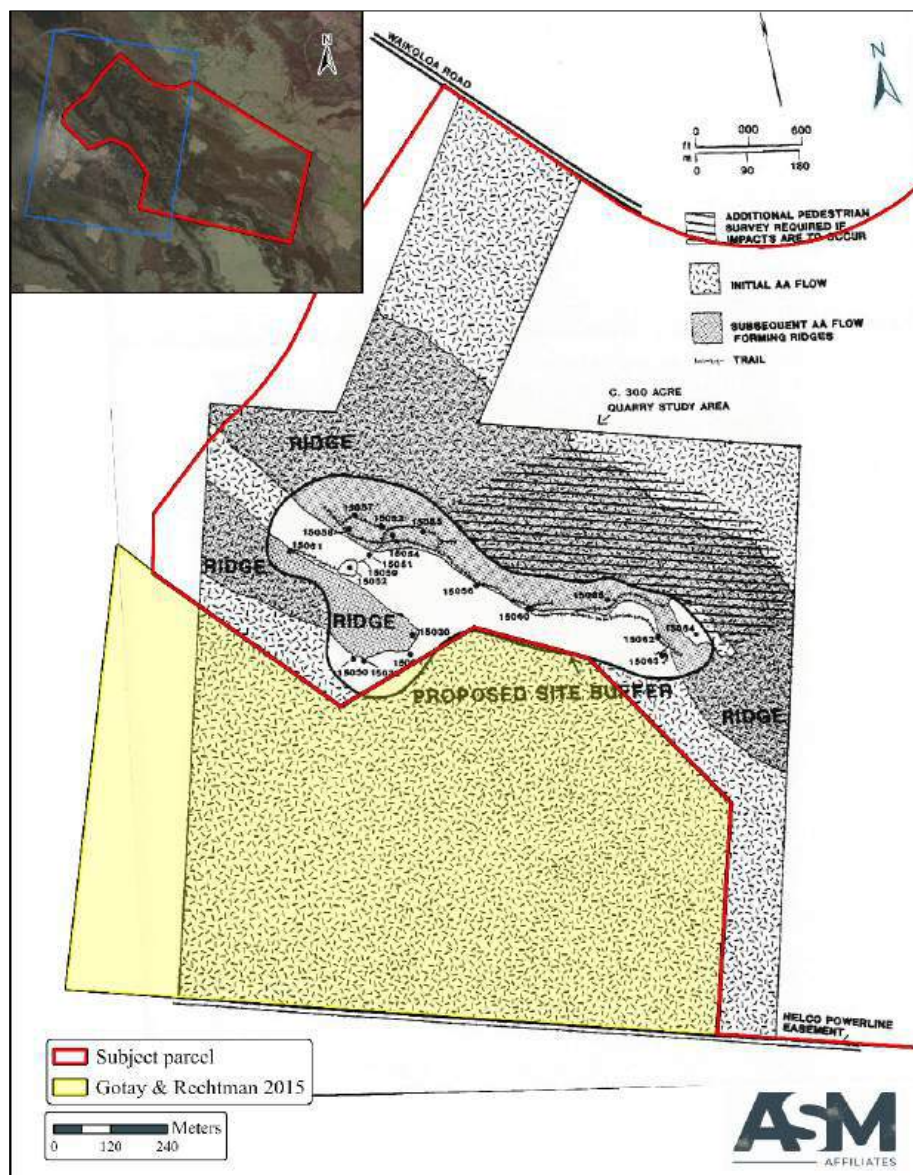


Figure 12. Jensen and Burgett (1991) site location map on the subject parcel with the location of the Gotay and Rechtman (2015) study indicated.

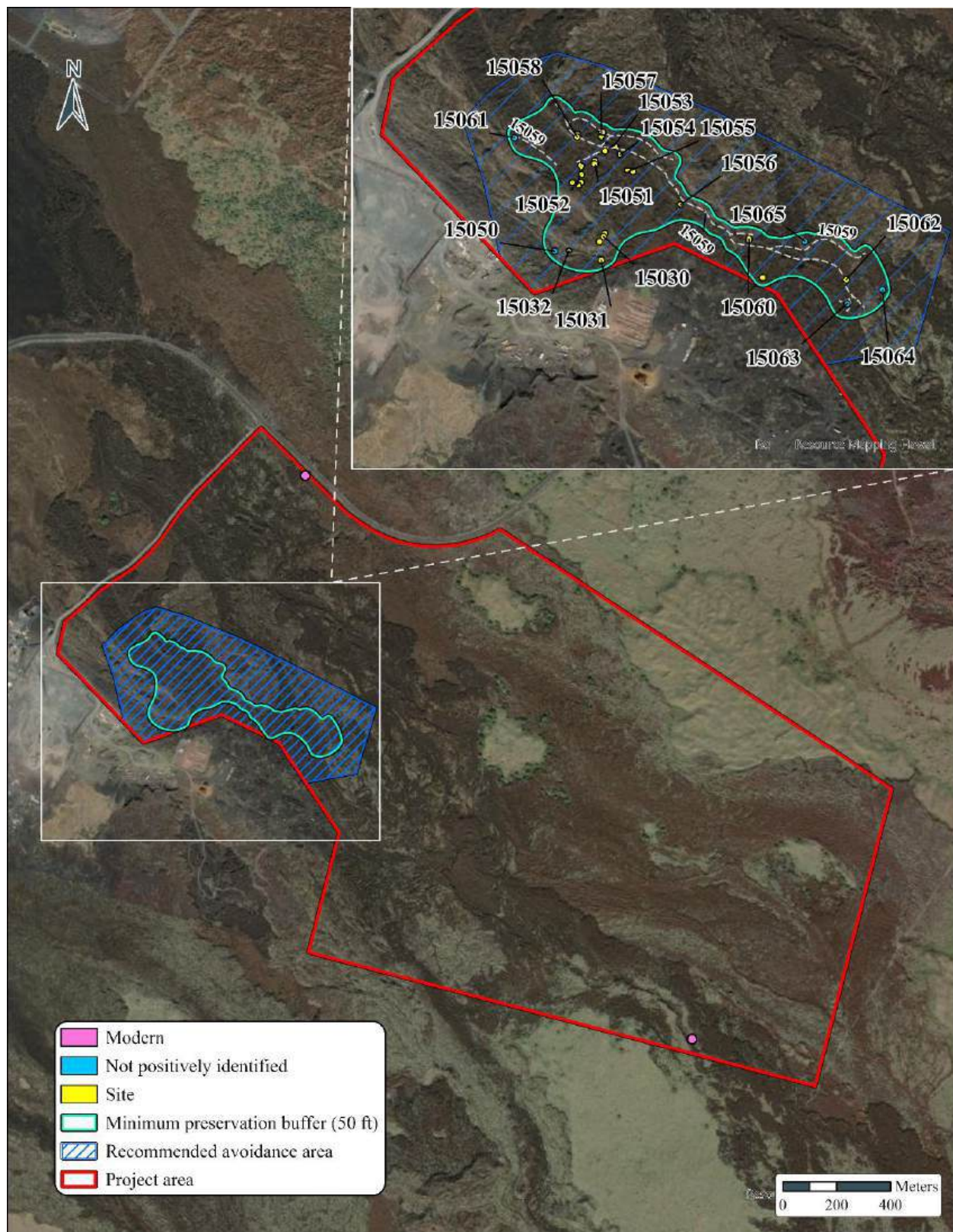


Figure 13. Site location map.



Figure 14. Modern cairn along Waikōloa Road, view to southwest.



Figure 15. Overhang with modern trash near the southern boundary of the subject parcel, view to northeast.



Figure 16. Site 15030, Feat. A, view to east.



Figure 17. Site 15032, view to east.



Figure 18. Site 15051, Feat. A, view to northeast.



Figure 19. Site 15052, Feat B, view to east.



Figure 20. Site 15053, view to east.



Figure 21. Site 15054, view to northeast.



Figure 22. Site 15055, view to west.



Figure 23. Site 15056, view to east.



Figure 24. Site 15057, Feat. B, view to east.



Figure 25. Site 15058, view to northeast.



Figure 26. Site 15060, view to north.

Attachment 1 -Site Descriptions from Jensen and Burgett (1991) Appendix A

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APPENDIX A

SITE DESCRIPTIONS

SITE NO.: State: 15030 SITE TYPE: Complex (2 Features) TOPOGRAPHY: Aa flows, ridges gulches, depressions, and upthrusts. VEGETATION: Sparse fountain grass CONDITION: Good INTEGRITY: Unaltered PROBABLE AGE: Prehistoric FUNCTIONAL INTERPRETATION: Indeterminate/possible burial or marker DESCRIPTION: The site complex consists of a mound (Feature A) and a paving (Feature B). The overall dimensions are c. 10.75 m (28-208°) by 6.82 m east-west.	PHRI: T-1	VEGETATION: Limited amount of fountain grass CONDITION: Excellent INTEGRITY: Unaltered PROBABLE AGE: Prehistoric FUNCTIONAL INTERPRETATION: Possible burial/ceremonial DIMENSIONS: 6.00 m by 6.00 m by 1.00 m DESCRIPTION: This platform is constructed of chunks of aa ranging in size from c. 0.05-0.50 m in diameter. They are piled into a hollow which has a depression running east-west through it. The aa rocks form a paved relatively flat area among the aa outcrops.
FEATURE A : Mound FUNCTION: Possible burial DIMENSIONS: 4.00 m by 3.40 m by 1.12 m (approx.) DESCRIPTION: Feature A, mound is located north of Feature B, paving. It is constructed of piled angular and subangular pahoehoe and aa cobbles and boulders.		This site is located c. 80.0 m almost due south of bearing point on ridge top. From the center of the terrace to this point is c. 11°. The site is c. 20.0 m north-northeast of Site 15050. The site is in excellent condition.
FEATURE B : Paving FUNCTION: Indeterminate DIMENSIONS: 12.00 m by 7.00 m by 0.60 m (approx.) DESCRIPTION: This feature is located south of Feature A. Feature B is surrounded by bedrock on the north, east, south and the west.		
SITE NO.: State: 15031 SITE TYPE: Rock shelter TOPOGRAPHY: Aa field VEGETATION: Sparse fountain grass CONDITION: Good INTEGRITY: Unaltered PROBABLE AGE: Indeterminate FUNCTIONAL INTERPRETATION: Temporary habitation DIMENSIONS: 13.50 m by 8.50 m by 0.80 m (approx.) DESCRIPTION: There is a trail leading away southeast from the shelter. The floor has a lot of recent and decomposed goat dung. This shelter provides morning shade; its outside ledge is formed by boulders.	PHRI: T-2	SITE NO.: State: 15050 SITE TYPE: Platform TOPOGRAPHY: Aa flats, sinks, hollows, hills, ridges, and outcrops VEGETATION: Fountain grass CONDITION: Excellent INTEGRITY: Unaltered PROBABLE AGE: Prehistoric FUNCTIONAL INTERPRETATION: Possible burial/ceremonial DIMENSIONS: 5.50 m by 5.50 m by 0.55 m high DESCRIPTION: The platform consists of a small hollow filled and paved with aa rocks. No retaining walls evident, natural terrain used as borders.
SITE NO.: State: 15032 SITE TYPE: Platform TOPOGRAPHY: Aa flats, sinks, hills, ridges, and outcrops	PHRI: T-3	SITE NO.: State: 15051 SITE TYPE: Complex (4 Features) TOPOGRAPHY: Aa flows, ridges, ravines, upthrusts, and rubble VEGETATION: Sparse fountain grass along portions of the ridge crest. The area below the ridge is a field of barren aa. CONDITION: Good INTEGRITY: Unaltered PROBABLE AGE: Prehistoric FUNCTIONAL INTERPRETATION: Temporary habitation DESCRIPTION: The site complex consists of a platform (Feature A), a rock shelter (Feature B), a modified sink

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(Feature C), and a terrace (Feature D). The overall dimensions are c. 14.90 m (east-west) by 11.60 m (north-south).

FEATURE A : Platform

FUNCTION: Possible burial/ceremonial/possible habitation

DIMENSIONS: 8.40 m by 6.30 m by 1.35 m

DESCRIPTION: This platform is constructed of aa boulders and large cobbles that are stacked three-five courses high. The northwest half rests on an outcrop that extends c. 0.50-1.40 m west of the platform base. The east side has a five-seven course wall of aa boulders and cobbles atop a bedrock base. The platform surface is level and paved with aa pebbles and small cobbles. This rectangular platform is located near the west end of the site. Site 15059, a trail, leads to the southwest corner of the feature and exits near the northeast corner. A trail section leads from the southeast end of the platform to Feature C, modified sink, c. 5.50 m to the east.

FEATURE B : Rock shelter

FUNCTION: Temporary habitation

DIMENSIONS: 2.44 m by 2.20 m by 0.32 m

DESCRIPTION: This feature is constructed of cobbles, boulders, and aa pebbles. The shelter interior has been cleared of rubble and is paved with aa pebbles. The paving extends c. 1.20 m beyond the overhang and is confined by aligned cobbles and boulders. The rock shelter is located in the high outcrop at the south end of Feature A. The shelter opens to the southwest end of the platform at c. 284°. Boulders and cobbles formed a U-shaped alignment in front of the opening. The top of the outcrop is c. 2.30 m above the paved surface. The pebble paved area is raised c. 0.32 m above the surface of Feature A, a platform.

FEATURE C : Modified sink

FUNCTION: Possible water catchment

DIMENSIONS: 2.00 m by 2.00 m by 1.10 m

DESCRIPTION: Feature C is a modified sinkhole. The sink has been cleared of most rubble. The cleared sink has an overhang on the east side that appears to open into a small lava tube c. 0.30-0.40 m. A level patch of pebbles, under the east side overhang, is daub and mossy as are the larger stones immediately outside the tribune. A short trail section leads between the features. It is located at the bottom of the ravine c. 5.50 m east of Feature A.

FEATURE D : Terrace

FUNCTION: Indeterminate

DIMENSIONS: 2.65 m by 1.20 m by 0.73 m

DESCRIPTION: This is a small stepped terrace. It has been constructed on the west side of Feature A, platform. The upper section is c. 0.73 m below the surface of Feature A and abuts a bedrock shelf on the northwest and a bedrock boulder

on the southeast. The surface is roughly paved with small to medium cobbles. The lower terrace section lies c. 0.73 m below. The surface is paved with aa pebbles confined by large cobbles around the perimeter.

SITE NO.: State: 15052

PHRI: T-6

SITE TYPE: Complex (4 Features)

TOPOGRAPHY: Aa ridges hills, hollows, sinks, flats, and flows.

VEGETATION: Some fountain grass, more dense in some places.

CONDITION: Excellent

INTEGRITY: Unaltered

PROBABLE AGE: Prehistoric

FUNCTIONAL INTERPRETATION: Possible burial/ceremonial

DESCRIPTION: The site complex consists of four platforms (Feature A, B, C, and D).

FEATURE A : Platform

FUNCTION: Possible burial/ceremonial

DIMENSIONS: 7.00 m by 6.00 m by 0.60 m

DESCRIPTION: This is a large square and well constructed paved flat platform. This platform is constructed with large aa boulders and cobbles stacked and filling a depression in the flow. Surface of the platform is flat and aa paved (rocks up to c. 0.40 m diameter) with larger ones scattered about. There is a large (c. 1.50 m by 1.50 m) outcrop protruding from the platform floor near the southeast corner of the feature. The body of the platform is constructed of large cobbles/boulders stacked and filled in the area between the aa flow to the north and the ridge to the south. Feature A is located c. 400.00 m northwest of the main high knoll at east end of ridge (part of which is south of Feature A).

FEATURE B : Platform

FUNCTION: Possible burial/ceremonial

DIMENSIONS: 7.00 m by 5.00 m by 1.00 m

DESCRIPTION: This platform is a large, solidly constructed paved platform. It is stacked, faced and piled with aa cobbles filling a depression in the flow, using outcrops as bases and large aa boulders as anchor points in the construction of the walls of the feature. Its surface is flat and paved with aa rocks ranging from c. 0.05-0.50 m in diameter with larger ones thrown in. Feature B is one of four platforms within this site.

FEATURE C : Platform

FUNCTION: Possible burial/ceremonial

DIMENSIONS: 8.00 m by 8.00 m by 1.00 m

DESCRIPTION: Feature C, platform is a stacked paved platform wider across its southern base than its northern.

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The platform itself is well constructed, filling a depression among outcrops, as well as using the same outcrops as foundation bases. Walls face southeast and west-northwest.

FEATURE D : Platform

FUNCTION: Possible burial/ceremonial

DIMENSIONS: 9.00 m by 9.00 m by 1.00 m

DESCRIPTION: This is a well built platform. This platform is constructed with aa cobbles and boulders stacked out from an aa outcrop. Large aa boulders are used in the foundation with smaller rocks stacked atop them. Body is more than likely made up the same way. Platform is flat and paved. This platform is located on the north end of Site 15052 and north of Feature C by c. 10.00 m. The main knoll at the east end of the east-west running ridge is c. 400.00 m to the southwest.

SITE NO.: State: 15053

PHRI: T-7

SITE TYPE: Platform

TOPOGRAPHY: Aa flows ridges, sinks, fissures, and gullies.

VEGETATION: Sparse grass

CONDITION: Good

INTEGRITY: Unaltered

PROBABLE AGE: Prehistoric

FUNCTIONAL INTERPRETATION: Possible burial

DIMENSIONS: 4.50 m by 4.00 m by 0.32 m

DESCRIPTION: A rectangular platform located on the north side of a high, east-west ridge crest. Platform is constructed over a shallow gulch/depression using aa boulders and cobbles to form platform base and fill. Small cobbles and pebble paving create a level even surface. A natural bedrock wall rises above the north edge of the feature. The north side of the platform follows the top of a deep (c. 2.50 m) fissure. The west side is bordered by boulders and cobble rubble; the east and south sides rise slightly above the level surface of the ridge top. A trail (Site 15050) passes the southeast corner of the site and continues northeast along the base of the ridge. A cleared sink c. 7.0 m east of Site 15053, could be a catchment.

SITE NO.: State: 15054

PHRI: T-8

SITE TYPE: Platform

TOPOGRAPHY: Aa fields

VEGETATION: Sparse grass

CONDITION: Good

INTEGRITY: Unaltered

PROBABLE AGE: Prehistoric

FUNCTIONAL INTERPRETATION: Possible burial

DIMENSIONS: 7.00 m by 4.00 m by 1.18 m

DESCRIPTION: This is a low and square platform with area of pebble paving at the south-southeast side. This platform is constructed with aa cobbles and boulders stacked two-three courses high, with bedrock present at the southwest and southeast corners. The area immediately south of the site is level.

SITE NO.: State: 15055

PHRI: T-9

SITE TYPE: Platform

TOPOGRAPHY: Aa field, crevices, ravines, and ridges.

VEGETATION: Sparse clumps of grass

CONDITION: Good

INTEGRITY: Unaltered

PROBABLE AGE: Prehistoric

FUNCTIONAL INTERPRETATION: Possible burial

DIMENSIONS: 3.00 m by 2.00 m by 1.16 m

DESCRIPTION: A small and roughly square platform that incorporates bedrock at the southeast and northeast corners. This platform is constructed with aa and pahoehoe boulders and cobbles stacked on the east and south sides of a shallow depression/gully. The surface is roughly paved with small cobbles and pebbles and occasional small boulders. A bedrock outcrop is exposed on the paved surface.

SITE NO.: State: 15056

PHRI: T-10

SITE TYPE: Platform

TOPOGRAPHY: Ridges, gulches, aa rubble and sinks

VEGETATION: Sparse grass

CONDITION: Good

INTEGRITY: Unaltered

PROBABLE AGE: Prehistoric

FUNCTIONAL INTERPRETATION: Possible burial/ceremonial

DIMENSIONS: 3.50 m by 3.15 m by 1.74 m

DESCRIPTION: This roughly square platform is near the south base of a ridge. A sinkhole and a small unexplored cave are located at the northeast corner of the site. Site 15059, a trail, leads to the west side of the platform. At that point the trail branches, with one fork leading northeast to the ridge crest and the lower fork leading east along the lower south slope of the ridge.

This platform is stacked two-five courses high. Massive bedrock boulders are on the south side, and on the north side are three-four courses of stacked cobbles and boulders. There is exposed bedrock at all four corners. The platform surface is level, and is paved with aa pebbles confined by cobbles on all four sides. A c. 1.20 m by 1.00 m area of pebble paving is located adjacent to the west side of the feature, c. 0.58 m below the platform surface. A second

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pebble paved area is c. 1.74 m below the northwest corner of the platform in what appears to be a collapsed lava tube.

SITE NO.: State: 15057 **PHRI:** T-11
SITE TYPE: Complex (2 Features)
TOPOGRAPHY: Aa configurations hills, ridges, flats, flows, hollows and fountain grass.
VEGETATION: Fountain grass
CONDITION: Fair
INTEGRITY: Unaltered
PROBABLE AGE: Indeterminate
FUNCTIONAL INTERPRETATION: Possible burial/ceremonial
DESCRIPTION: The site complex consists of two platforms (Feature A and B).

FEATURE A : Platform
FUNCTION: Possible burial/ceremonial
DIMENSIONS: 8.50 m by 6.50 m by 1.00 m (approx.)
DESCRIPTION: This is a large area of rough terraces clustered around a relatively small aa outcrop. This platform is located at the main knoll and has a platform and a cairn at its peak. It is constructed of small aa rocks up to c. 0.3 m in diameter piled on natural benches.

FEATURE B : Platform
FUNCTION: Possible burial/ceremonial
DIMENSIONS: 9.00 m by 5.00 m by 0.70 m
DESCRIPTION: The platform is located in aa, in the bottom of a ravine. It consists of cobbles stacked three courses high. Feature B is located c. 100.00 m from Site 15051.

SITE NO.: State: 15058 **PHRI:** T-12
SITE TYPE: Modified outcrop
TOPOGRAPHY: Rolling aa fields on a ridge top
VEGETATION: No vegetation near the site.
CONDITION: Good
INTEGRITY: Indeterminate
PROBABLE AGE: Indeterminate
FUNCTIONAL INTERPRETATION: Indeterminate
DIMENSIONS: 1.15 m by 0.95 m by 0.80 m
DESCRIPTION: The modified outcrop is constructed of two aa outcrops which form a small overhang. Rubble has been cleared away inside the overhang. There are some thick rock slabs lying horizontally by the opening of the overhang. The opening faces due west. This gives a good view of the ocean and provides excellent shade in the morning. It also provides some shelter from the east winds.

SITE NO.: State: 15059 **PHRI:** T-13
SITE TYPE: Trail
TOPOGRAPHY: Aa fields with crevices, ridges, sinks, and upthrust
VEGETATION: Sparse grass
CONDITION: Poor-Fair
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Transportation
DESCRIPTION: This trail, discontinuous, leads roughly east-west across the project area. There are many branches connecting sites and features; some branches ultimately rejoin the main trail and others do not. At no point is the trail deeply worn, indicating heavy use.

Small cobbles are discernible at many places on the trail especially where goats have not been moving about. Branching goat trails usually lead to high points and often to small damp depressions and overhangs. The trail does not appear to be major, but a path between features and perhaps a path leading to and from the area.

SITE NO.: State: 15060 **PHRI:** T-14
SITE TYPE: Platform
TOPOGRAPHY: Aa ridges gullies, crevices, and rubble fields
VEGETATION: Sparse grass
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Possible burial
DIMENSIONS: 13.70 m by 13.25 m by 1.19 m
DESCRIPTION: The platform is built across a gully. It is rectangular in shape. The platform sides are irregular and follow the contour of the outcrops. The sides are constructed of aa cobbles and boulders stacked approximately seven courses high. The extreme north end of the platform rests on a bedrock outcrop that drops sharply at the northeast corner. Three small areas, behind bedrock boulders on the east side of the platform, have level aa paving. The platform surface is paved with cobbles but has several small areas of pebble paving and one concentration of large cobbles/boulders near the south end. Site 15059, a trail, enters from the west on the south end of the site. A bulldozer path lies c. 25.00 m north of the site.

SITE NO.: State: 15061 **PHRI:** T-15
SITE TYPE: Platform
TOPOGRAPHY: Aa flows with north-south running ridges to the east-west of the site.

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VEGETATION: Sparse fountain grass.
CONDITION: Fair
INTEGRITY: Unaltered
PROBABLE AGE: Indeterminate
FUNCTIONAL INTERPRETATION: Possible burial
DIMENSIONS: 7.50 m by 4.00 m by 0.70 m
DESCRIPTION: The platform is situated in a sink where rocks have been used to fill in the sink and create a platform. Rocks are predominately pea-size, golf ball size, and cobbles (c. 0.10 m in diameter). Some aa boulders are present along the periphery of the platform. The platform is generally level. A large upright aa boulder is present in the center of the platform. It is c. 1.9 m by 0.8 m in size and rises c. 0.65 m above the platform surface. A small circular area of pea-sized pebbles is present around the stone.

SITE NO.: State: 15062 **PHRI:** T-16
SITE TYPE: Rock shelter
TOPOGRAPHY: Aa fields with numerous crevices and gullies, high ridges, aa upthrust, and sinks.
VEGETATION: Sparse fountain grass
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Temporary habitation
DIMENSIONS: 4.50 m by 3.00 m by 0.66 m
DESCRIPTION: A shallow overhang near the bottom of the south slope of an east-west ridge; the overhang has been cleared of rubble and is paved with aa rubble. A half-moon shaped area in front of the overhang has been leveled with two-four courses of stacked cobbles (on the west side). The pebble paving is confined by aligned cobbles on top of the bedrock on the southeast. A branch of Site 15059 leads to the site from the west and continues east of the site. A small section of the southeast end of the paving has collapsed; pebbles and cobbles from the section are resting against two large bedrock boulders c. 2.0 m downslope. Goat traffic across the gully may have caused the collapse. No goat droppings were seen in the shelter or on the paving. The shelter is constructed with aa cobbles stacked two-four courses high on the ridge slope to create a flat pebble paved surface in front of the shelter opening.

SITE NO.: State: 15063 **PHRI:** T-17
SITE TYPE: Filled blister

TOPOGRAPHY: Ridges, crevices, sinks and rubble fields.
VEGETATION: Sparse grass
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Possible burial
DIMENSIONS: 2.02 m by 1.91 m by 0.70 m
DESCRIPTION: This is a collapsed blister from which large slabs have been removed; the blister has been filled with medium to large angular cobbles. A burial may be present below the piled cobbles. Site 15059, a trail, leads southeast from the area of the slabs.

SITE NO.: State: 15064 **PHRI:** T-18
SITE TYPE: Terrace
TOPOGRAPHY: Aa fields, depressions, ridges, and crevices
VEGETATION: Sparse grass
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Possible habitation
DIMENSIONS: 6.60 m by 4.65 m
DESCRIPTION: The terrace is constructed in a depression between outcrops. The terrace abuts a c. 0.66-1.66 m high bedrock outcrop on the north side. On the east and south sides is a low outcrop covered with pebbles, cobbles, and boulder rubble. On the west side is a large bedrock boulder; on the northwest end is a high bedrock outcrop. Extending from the south edge of the terrace to the base of an east-west high ridge is c. 12-14.0 m of fairly level pebbles, cobbles, and boulders.

SITE NO.: State: 15065 **PHRI:** T-19
SITE TYPE: Rock shelter
TOPOGRAPHY: Aa fields
VEGETATION: Sparse grass
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Temporary habitation
DESCRIPTION: Rock shelter on the north side of a short northeast-southwest ridge. A trail leading west from Site 15059 passes to the south of this site. The shelter consists of an overhang area cleared of rubble and paved with pebbles.

Mitchell D. Roth
Mayor



Tristie Licoan, Chair
William Sanborn
Ruth Smith
Vacant
Julia Alos
Kevin McLaughlin
Scott Nagata, Vice Chair
Peter Hendricks
Karen Anderson

County of Hawai'i

SOUTH KOHALA COMMUNITY DEVELOPMENT PLAN ACTION COMMITTEE

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720
(808) 961-8288 • Fax (808) 961-8742

November 6, 2024

Leeward Planning Commission
County of Hawai'i
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720

**Subject: South Kohala Community Development Plan Action Committee Testimony
Regarding Final Recommended Draft General Plan 2045**

Aloha Leeward Planning Commission:

The South Kohala Community Development Plan Action Committee (AC) met on Monday, October 28, 2024, at Kūhiō Hale in Waimea. Included on the agenda was a discussion regarding the Final Recommended Draft General Plan 2045. The AC voted unanimously to provide collective testimony to the Planning Commission, identified as Communication 2024-08 and 2019-10, attached.

Sincerely,

A handwritten signature in black ink, appearing to read "Tristie Licoan", is written over a blue horizontal line.

Tristie Licoan (Nov 6, 2024 14:42 HST)

Tristie Licoan, Chair
South Kohala Community Development Plan Action Committee

JL

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Attachment: Communication No. 2024-08 and Communication No. 2019-10

The South Kohala Community Development Plan (CDP) Action Committee (AC) submits the following comments on the Draft General Plan 2045. The compiled comments correspond to the South Kohala CDP, Table 8.1 Implementation Matrix. The table is broken down into the four towns and villages of South Kohala (Waimea Town Plan, Waikoloa Village Plan, Kawaihae Community Plan, and Puakō Community Plan). The AC encourages the implementation of the following SKCDP strategies as they align with the General Plan.

Waimea Town Plan

Prioritize preserving Ag Lands and Open Spaces based on viewplanes, cultural sites, and historical sites. Preserve hillsides and grading for these areas, and change zoning to protect these lands. The AC also supports the development of more affordable housing and pedestrian access for the Waimea Community.

- 1.1 Acquire conservation easements for critical Pu‘u parcels
- 1.2 Require a Use permit for grading on Steep Land
- 2.1 Acquisition of Fee Interest or of Conservation Easements of Open Space Areas in East Waimea
- 2.2 Internal Transfer of Development Rights
- 3.1 Self-help housing
- 3.2 Non-profit housing corporation(s)
- 4.1 Walkways and Bikeways for Waimea

Waikoloa Village Plan

In addition to the following action items, the AC strongly recommends prioritizing the completion of the Daniel K. Inouye Highway between Mamalahoa Hwy and Queen K. Hwy, from mauka to makai.

- 1.1 Finance and construct a second access road to Queen Ka‘ahumanu
- ~~2.1 Finance and construct a community center and community park~~
- ~~3.1 New elementary school, middle school, and high school~~

Kawaihae Community Plan

- 1.1 Complete the development of the Ouli Well Field and transmit the water from Ouli to the Kawaihae area in order to provide additional sources of potable water for the area
 - Revise 1.1 to focus on the area from Kawaihae to Kailapa Hawaiian Homes
 - Adding infrastructure for housing in Hawaiian homes
 - New action plan for an evacuation route for Kailapa subdivision

Puakō Community Plan

- 1.1 Establish a fuel break along Queen Ka‘ahumanu Highway and the northeastern section of Puakō Road
- 1.2 Upgrade existing emergency warning sirens to have a battery electrical power backup in case of power outages
- 1.3 Construct the Paniau Evacuation Route
- 2.1 Construct a sanitary sewer system for the Puakō Beach Lots

Waikoloa Subcommittee Report

to the

South Kohala Community Development Plan Action Committee

June 18, 2019

REPORT OVERVIEW

At the April 2018 meeting of the South Kohala Community Development Action Committee (SCKCP-AC), issues with traffic at the Waikoloa Road/Paniolo Avenue Intersection were raised both in public testimony and as an AC agenda item.

In the public testimony, David Tarnas updated the Action Committee with information from the March 13, 2018 South Kohala Traffic Safety Committee meeting. Hawai'i State DOT officials had announced that new weight limits were pending on the Waiaka Bridge. In response to the restriction, the Kawaihae trucking community reported they would have to drive through Waikoloa as a bypass route to and from the Harbor, significantly increasing traffic congestion in Waikoloa and slowing down traffic flow. Councilman Richards was present and had a new update that DOT would be modifying those limits, avoid immediate increases in truck traffic through Waikoloa.

Although the imminent problem was averted, the AC's further discussion made it clear that the traffic flow in Waikoloa remained an issue that needed further investigation.

AC members agreed to establish a Waikoloa Subcommittee. The Subcommittee was tasked to investigate and report back to the Action Committee on the reported issues with the intersection at Waikoloa Road and Paniolo Drive as well as the on-going concern with a single access road into and out of Waikoloa Village with ever-increasing traffic and especially in emergency situations. AC members Kevin McLaughlin, Julia Alos, and Ruth Smith volunteered to serve on the Waikoloa Subcommittee. These volunteers have been working regularly on this issue for over a year.

The report is structured so that information on either issue is a free-standing document. Thus, information on population, growth, housing, and developments is found in both subsections so each document is comprehensive and can be read independently.

Thank you for your interest in these issues and for your willingness to become informed. We welcome your help for the benefit of residents, visitors, and local commerce to remedy the infrastructure deficits affecting Waikoloa Village and South Kohala.

South Kohala Community Development Plan (SKCDP) Action Committee
Waikoloa Subcommittee Report:
Paniolo Avenue-Waikoloa Road Intersection



Waikoloa Road - Paniolo Avenue intersection as it is in 2019. Image from Apple Maps. Labels added.

Preface: June 2019 Update

As this report was being prepared by the Waikoloa Subcommittee, Council Member Tim Richards moved ahead with a CIP proposal at a special meeting of the County Council on June 5, 2019. The amendment was Communication 118.11 for Bill 31, the 2019-2020 budget bill, and specified, "... to add the Waikoloa Road/Paniolo Avenue/Pua Melia Street Intersection Improvement project in the amount of 4.5 million to the Department of Public Works." The amendment was passed unanimously by the Council and Bill 31 was "AMENDED TO DRAFT 4 AND PASSED 2ND AND FINAL READING."

As of this report date (June 18), the County budget process is not yet complete and the final budget has not been approved by the Mayor, but the addition of this CIP is an important and meaningful step forward towards addressing issues with this intersection.

The subcommittee recommends supporting the CIP with communications to the Department of Public Works, the Traffic and Engineering Divisions within the Department of Public Works, and the Mayor. If the SKCDP Action Committee can assist with public input or other activities with the scope of the Action Committee, the subcommittee recommends providing that assistance.

1. Executive Summary

Based on community feedback and observations, the intersection of Waikoloa Road, Paniolo Avenue, and Pua Melia Street at Waikoloa Village in South Kohala has become increasingly dangerous and is in need of safety improvements. The intersection is also steadily becoming busier and certain routes, such as left turns from Paniolo Avenue onto Waikoloa Road during morning commute hours, appear to be below the acceptable level of service for this type of intersection. Furthermore, the Waikoloa Village area is growing quickly, including new affordable housing development and new shopping center development, and any problems with the intersection are likely to become worse in the near future.

Options for developing improvements to the intersection have been considered in the past and developer obligations were added on some rezoning and subdivision approvals decades ago, but these have not resulted in producing the needed safety and capacity improvements. In fact, it appears that this path will not succeed, as there are no signs of progress from any of the developers, and it is time for the County to take action regarding the intersection.

The South Kohala Community Development Plan (SKCDP) includes multiple Policies and Strategies relating to improving safety and circulation of the South Kohala and Waikoloa Village roadways, and also references the 2005 Hawaii County General Plan which specifically lists *providing traffic signals to the Waikoloa Road-Paniolo Avenue intersection* as one of the “Courses of Action” for South Kohala.

The intersection could be improved in various ways, but this subcommittee suggests having the intersection studied by traffic professionals to recommend the necessary and best improvements and then proceeding on those recommendations.

The improvements could be funded by the County through a project initiated with the CIP process or through a project initiated at the Department of Public Works. In either case, the subcommittee recommends requesting the Traffic Division at DPW to perform a traffic count and analysis to begin the process.

2. Introduction

The large majority of Waikoloa Village (“Village”) is connected to the rest of Hawaii island by a single road, Paniolo Avenue. Paniolo Avenue intersects with Waikoloa Road about 6 miles mauka of the Queen Ka’ahumanu Highway and about 7 miles makai of the Mamalahoa Highway. Paniolo Avenue also continues across Waikoloa Road as Pua Melia Street. Commuters, students, tourists, and others travel in and out of the Village on Paniolo Avenue every day, passing through the intersection with commuters, tourists, trucks, military convoys, and other traffic traveling up and down Waikoloa Road.

The Paniolo Avenue-Waikoloa Road intersection has become a busy intersection in the last 15 years. There are stop signs on Paniolo Avenue and Pua Melia Street, and left turn lanes on Waikoloa Road in both directions. There are crosswalks across all roads. However, there are no other traffic control devices installed at the intersection.

For several years now, Village residents have raised concerns about vehicle and pedestrian safety at this intersection and various factors, such as increased trucking, have changed the composition of the traffic. Multiple landowners near the intersection were obligated by the County to making capacity and safety improvements to the intersection, but none of these improvements have started.

The Waikoloa Subcommittee was asked to investigate and report back to the Action Committee on the reported issues with the intersection, the status of various plans and commitments to improve the intersection, and recommendations on next steps or other actions that can be taken to move forward improvements for the intersection.

For brevity, the intersection will be referred to below as the Waikoloa-Paniolo intersection, or just “[the] intersection”.

3. Population/Housing/Growth

To understand the change in use of the intersection and the future trends, the subcommittee is providing the following analysis of Waikoloa Village population growth and various developments around the Waikoloa Village area.

There has been steady growth in population, housing, and commerce in Waikoloa, as anticipated in the SKCDP Pages 89. [*Appendix CDP 2.*]

3.1. Population Growth in Waikoloa & South Kohala

The 2020 US Census is less than one year away, so accurate data on Waikoloa Village’s population is not available; however, prior Census data shows that the Village’s population grew substantially over the past twenty years, and that the trend continues. July 2017 US Census estimates indicate an 8% increase in Hawaii County’s population to 200,381, up from 185,079 in the official 2010 Census. Conservative estimates are that the Village has grown into a town of over 7,000 people.

Year	Big Island Population	Waikoloa Population	% of Waikoloa Growth (actual or estimated)
1990		2,248	N/A
2000	148,677	4,806	113%
2010	185,079	6,362	32%
2020 estimated	200,381	7,000+	8%-10% or more

Source: July 2017 US Census estimates

Information from the State Data Book (updated November 2018, *Appendix D-1*) provides data on the Resident Population growth by State and Counties (*Appendix D-2, Populations by State & Counties, raw numbers*) shows that the Big Island's increases are consistently higher vs. the State as a whole and any other county.

ANNUAL GROWTH RATE by STATE & COUNTIES

Date	STATE total	City/Co. Oahu	Hawaii Co.	Kauai Co.	Maui Co.
2005-2010	1.1	0.8	2.0	1.3	1.6
2010-2017	0.7	0.5	1.1	1.0	1.0

Source: State Data Book 2018. Resident Population growth by State and Counties, Table 1.07. [Appendix D-3]

Additional information from the State Data Book (2018) data breaks down the **Resident Population of Hawaii County by District by decades from 1990-2010 and from to 2012-2016.** (See modified table below.)

CHANGE RATE BY Hawaii County DISTRICTS

	1990	2000	2010	2012-16	% Increase 1990-2016	% Change 2010-2016
Hawaii County	120,317	148,677	185,079	193,680	61%	5%
Puna	20,781	31,335	45,326	45,517	119%	0%
South Hilo	44,639	47,386	50,927	52,487	18%	3%
North Hilo	1,541	1,720	2,041	1,676	9%	-18%
Hamakua	5,545	6,108	6,513	7,463	35%	15%
North Kohala	4,291	6,038	6,322	6,441	50%	2%
South Kohala	9,140	13,131	17,627	18,751	105%	6%
North Kona	22,284	28,543	37,875	41,662	87%	10%
South Kona	7,658	8,589	9,997	11,277	47%	13%
Kau	4,438	5,827	8,451	8,406	89%	-1%

Source of information in WHITE columns: State Data Book 2018. on Percentage Change of Resident Populations by County: 2000-2017 (Table 1.12)

*Columns in YELLOW were added for this analysis. [Appendix D-4]

Between 1990-2016, every Hawaii County District grew, especially Puna and South Kohala; however, between 2010-2016, some Districts leveled off (i.e, Puna), others Districts declined (N. Hilo, Kau), and the remaining Districts continued to grow, especially in Kona and Hamakua. South Kohala also grew by 6% during that period.

“Population” in a locale that is popular world-wide with tourists must include the impact of those visitors on matters related to infrastructure. Valuable data on de facto population comes from *The 2017 State of Hawaii DATA BOOK, A Statistical Abstract*, updated in November 2018. **De facto population** is defined as the number of persons physically present in an area, of military status or usual place of residence. It includes visitor present but excludes residents temporarily absent, both calculated on an Avenuedaily census. *Table 1.04—Resident and De Facto Population, by Residence Status: 2000 to 2017 [Appendix D-5]*.

The significant take-away from this data is that in *every* year, the de facto population *exceeds* the resident population.

The *Waikoloa Plaza* developer Meridian Pacific presents related data in their prospectus regarding visitors/tourists, as follows:

- There are 1,191,470 tourists that visit the west side of Hawaii (Kohala Coast) each year.
- Average stay in Kohala/Kona resorts is 7 days.
- By dividing the number of tourists by the Average stay, the outcome should be the number of static tourists that are in the Kona/Kohala Coast per week on Avenuerage: 22,912 people/week.
- Number of tourists on an Average/week at 100% occupancy:
 - Mauna Lani or North: 7,102
 - Waikoloa Village or South: 8,248

Conclusion: Population growth has occurred as predicted and continues in Waikoloa. All indications are that growth will continue and exceed that of other parts of the State and Hawaii Island.

3.2. Housing growth and developments in Waikoloa

The number of Waikoloa housing units also increased, as did population density per square mile.

Year	Density/Sq. Mile	Density/House	Housing Units
2000	251	107	2057
2010	356	170	3042

Source, U.S. Census

A list of housing developments includes:

SUBDIVISION NAME	UNITS
Kaiaulu 'O Waikoloa (affordable)	63
Kamakoa Nui (HI Co. Workforce Housing)	1,200
Kilohana Kei Phase I	127
Kilohana Kei Phase II	50
Pua Malia (affordable, formerly Waikoloa Highlands land)	60
Sunset Ridge (Makai)	120
Sunset Ridge (Makai Vistas)	31
Waikoloa Mauka (Waikoloa Road/Mamalahoa Hwy.)	96
Wehilani (Castle & Cooke)	756
Subtotal of Active Housing Projects	2,503
<i>Aina Lea</i> See notes *A & *B	2,406
<i>Waikoloa Heights</i> See note *A	2,400
<i>Waikoloa Mauka (RA-1)</i> See note *A	398
Subtotal of Planned Build-out (from CDP)	5,204
TOTAL of Planned Build-out See note *1	7,707

*Note*1 This correlates with but is LARGER than SKCDP projections of-→ [7160]*

*Note A. These TMK parcels have received the necessary entitlements to develop, but have not progressed.

*Note B. These TMK parcels are designated by the County LUPAG for Urban Expansion, but have not progressed.

3.3. Commercial developments in Waikoloa

BioEnergy Hawaii LLC, a Kailua-Kona-based developer of waste-treatment and alternative-energy systems, plans to start construction on its \$50 million resource-recovery and energy-conversion facility on the Big Island. BioEnergy Hawaii plans to lease about 15 acres of land on a portion of the property now known as the Waikoloa West Hawaii Concrete Quarry and operate an integrated resource-recovery facility to divert municipal solid waste from the West Hawaii Sanitary Landfill and elsewhere.

It will be processing about 200 tons of incoming municipal solid waste per day, which is collected by local waste haulers, along with a variety of other waste materials. The facility could

expand to allow for a capacity of 400 tons per day of waste. Of this volume, about 70 percent would be suitable for energy-conversion operations and the remaining 30 percent would consist of waste material that would be disposed at West Hawaii Sanitary Landfill, which registers at more than 500 tons per day. In March, 2017, Hawaii County Planning Department gave its stamp of approval to the developer.



Conclusion: This project is likely to increase the amount of traffic on Waikoloa Road, and it will likely decrease the speed of traffic flowing through Waikoloa from the Mamalahoa Highway to near the Queen Ka'ahumana Highway.

WAIKOLOA PLAZA is being developed by Meridian Pacific, Ltd. in Waikoloa located in the southwest corner of the main Village intersection. Its promotional materials state that "Waikoloa Plaza will have a distinctive blend of tenants to provide [residents and] visitors needed daily services, speciality shopping, entertainment and eateries in the continuously growing Waikoloa Village community."

Access by motor vehicles to the Plaza will include two major entrances, one on Waikoloa Road and another on Pua Melia, about 1,000 feet makai of the post office. A third entrance would be across from the lower entrance to Waikoloa Highlands Shopping Center on Waikoloa Road.

The 130,000-square-foot \$40 million shopping center will encompass 19 square acres, with 35 retail stores filling spaces ranging from 800 to 35,000 square feet.

Eighty-five percent of Waikoloa Plaza has been leased with tenants including Aloha Petroleum, Ace Hardware, Foodland, Fitness Forever, Family Health and Wellness, CrossFit AllStar, and dining outlets such as Balimo's Pizza, Chef TK, L&L Hawaiian BBQ, Strato's New York

Pizzeria, SushHi and Bodhi Tree Juicery. The developer is also in talks with Nail Salon, Island Holistic Healing, Verizon, Longs Drugs, Maui Taco's, Dunkin' Donuts, Denny's, The UPS Store and McDonald's, among others.



The RED circle on the map above is at the intersection of Waikoloa Road and Paniolo Avenuenue. The VPO (Vehicle Per Day) is 16,600, accoRding to the Plaza's Prospectus.

A proposed 150-room hotel is another unique aspect that Meridian Pacific Owner Gary Pinkston hopes to add to the shopping center. The decision for a hotel was also based on the seat count into the Big Island being up from 600,000 five years ago to 1.3 million in 2018. At the same time, the Hilton and others have taken 700 guestrooms out of service for condos.

April 30, 2019, Meridian Pacific broke ground at the site. This site, zoned for commercial development has been a long-awaited improvement to the area, and is welcomed by most. This heightens the infrastructure needs in Waikoloa. Community members express concerns that the shopping center will exacerbate traffic issues on the only road and at the major intersection.

"This shopping center is what we were looking for in our county, and with economic development will come prosperity for the community," District 9 Councilman Tim RichaRoads said. RichaRoads is working to address the congestion at the intersection with a traffic signal or a round-about, depending on the findings of experts in the field.

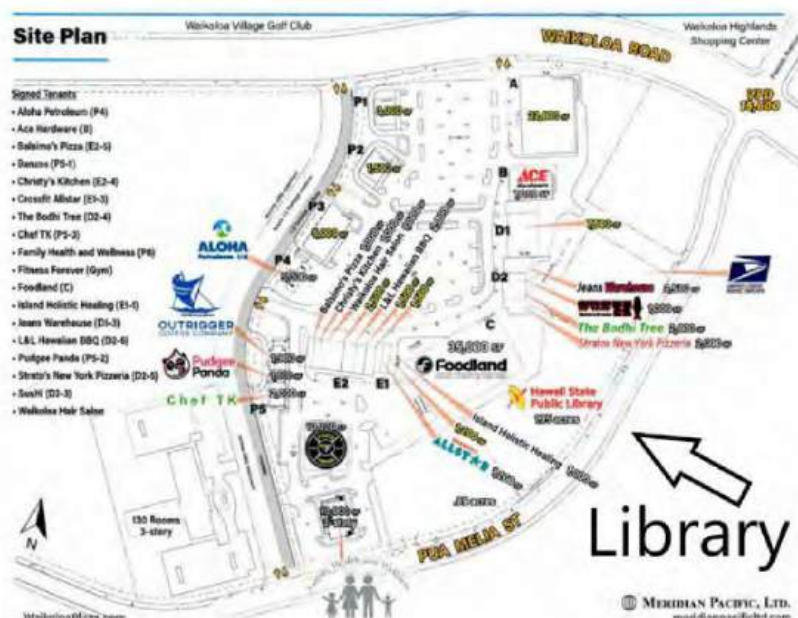
Conclusion: This project will certainly increase the amount of traffic on Waikoloa Road and congestion at the intersection at Paniolo Drive. It heightens the urgency to address safety issues at the intersection via a traffic light or a round-about, and provide another access road to the Village.

3.4. State development in Waikoloa: PUBLIC LIBRARY for WAIKOLOA REGION.

The 2018 legislature authorized the purchase of land in Waikoloa to build a public library. On April 25, 2019 Governor David Ige released \$1.9 million in Capital Improvement Project funds to buy a 1.750-acre parcel for the new Waikoloa Public Library. The library is to be located on one of the parcels in the future Waikoloa Plaza shopping center, near the intersection of Waikoloa Road and Paniolo Avenue. (See above.) The library site would be just past the existing Post Office building on Pua Melia Street.

Once the parcel is purchased by the state, the Department of Land and Natural Resources is required to prepare an Environmental Assessment for the project and the public will have the opportunity to submit comments. After that, the project will start its design phase during which the community can provide their advice about what should be included in the facility.

Friends of the Library of Waikoloa Region (FLWR) has worked diligently for over a decade to procure a Public Library for the Waikoloa Region residents and visitors. They are hopeful that the library will be completed and accessible in 2022.



3.5. State development in Waikoloa: Waikoloa School (K-8), Building J
 Waikoloa Elementary School opened in September of 1994 with 325 students (K-5). The Elementary school's population grew to @560. In 2007, the Board of Education authorized the expansion of the school to incorporate Middle School students. With that, Waikoloa School's student population has grown to @825 students and @130 staff members. Building J is a two-story 10 classroom building and is the final phase of the original school plan's build-out. It is currently under construction in 2019.

4. Traffic, Pedestrians, and Bicycles in the Intersection

The subcommittee investigated traffic, pedestrian, and bicycle usage of the intersection, as well as industry best practices for evaluating and addressing safety and capacity concerns with intersection.



The image above shows the Waikoloa Road - Paniolo Avenue intersection with traffic markings visible as it is in 2019. The image is from Apple Maps and includes vehicles lined up in the left-turn lane on Waikoloa Road, turning onto Paniolo Avenue, and a truck in the process of making a left turn. Labels have been added.

4.1. Traffic Review

Vehicular traffic at the Waikoloa-Paniolo intersection has the following traffic patterns, as indicated by past traffic surveys and observation (Highlands 2005, various traffic counts, casual observations).

The peak times are morning and afternoon, as is typical. In the morning, traffic leaves Waikoloa Village via Paniolo Avenue and turns right or left onto Waikoloa Road, e.g. for commuting to work or school in Waimea, Kona, Hilo, or down to the resorts, or tourists heading out for activities for the day. There is also traffic up and down Waikoloa Road passing through the intersection but not turning, e.g. trucking, commuters from Waimea or Hilo down to the resort areas, tourists coming up from the resort areas heading to other parts of the island.

In the afternoon, the flow is reversed as people return home. The through-traffic on Waikoloa Road also continues.

During the day, there is a moderate flow of trucks and other traffic traveling up and down Waikoloa Road and a lesser flow of traffic in and out of Waikoloa Village. There is an increase in traffic in and out of Waikoloa Village around lunchtime.

The traffic onto Pua Melia Street is significantly less than onto Paniolo Avenue, primarily driven by the U.S. Post Office located on Pua Melia Street.

Pedestrians using the intersection are primarily residents from Waikoloa Village walking to and from the Post Office, but also include people exercising along Waikoloa Road and Pua Melia Street. Cyclists are often observed riding up and down Waikoloa Road.

These patterns are likely to change significantly in the future, especially vehicular and pedestrian use of Pua Melia Street, due to the new shopping center and affordable housing that are being developed there. Vehicle traffic through the Waikoloa-Paniolo intersection is also going to change due to increased trucking activity, such as for trucking waste from the windward side of the island to the leeward landfill, but will likely be reduced if the DKI extension is constructed from the Mamalahoa Highway down to the Queen Ka'ahumanu Highway.

4.2. Intersection Safety

The primary risks at the Waikoloa-Paniolo intersection are vehicular accidents, particularly involving traffic turning into or out of Paniolo Avenue and Pua Melia Street, and vehicles hitting pedestrians crossing Waikoloa Road. These risks are likely exacerbated due to the lack of any traffic control at the intersection and the frequency of people misunderstanding the traffic rules at the intersection, especially non-residents, which results in unexpected behavior, such as stopping as if there were stop signs on Waikoloa Road.

4.3. Intersection Traffic Load and Capacity

Various U.S. state departments of transportation and highway design experts have developed guidelines for how to determine if an intersection needs to have signalization or other traffic controls added. This takes out the subjectivity that is common when soliciting feedback on whether an intersection needs traffic controls, e.g. due to safety concerns or long traffic delays at peak travel times.

In many states, the state department of transportation will conduct intersection traffic surveys when appropriate requests are made by individuals or organizations. These surveys will include traffic flow counts, pedestrian and bicycle counts, analysis of at least three years of accident or traffic violation data, sight lines and distances at the intersection, and other case-by-case data. The data is assembled into a traffic analysis report which compares the intersection data vs industry-standard metrics, to advise if traffic controls, such as traffic signals or stop signs, are justified. One of the more common metrics that is evaluated is the "Level of Service" of the intersection, defined in the *Highway Capacity Manual*, which evaluates the number of seconds a vehicle is delayed when traveling through or turning at the intersection.

A study of this nature was conducted for the Waikoloa-Paniolo intersection back in 2005 as part of an EIS for a nearby subdivision, the Waikoloa Highlands. This report includes projections for future traffic at the intersection, but it makes some assumptions about future developments at the time, such as the Auwaiakeakua Gulch in Waikoloa Village having a bridge and road to

Waikoloa Road built by 2010, which has not happened as of 2019. Nevertheless, the report recommended adding a traffic signal to the intersection based on the 2005 analysis and 2010 projections, primarily to address “Level of Service” issues with left turns from Paniolo Avenue onto Waikoloa Road. (*WHTIA*, p. 25)

Traffic on Paniolo Avenue and Waikoloa Road were counted in separate activities in 2016 and 2018, although the data was collected in different locations and not incorporated into a formal traffic analysis report. Traffic at the intersection has also been estimated currently at 16,600 vehicles per day by the Waikoloa Plaza development team, Meridian Pacific (per leasing brochure, 2018).

4.4. Near-term Pedestrian Usage Increases

Pedestrian and bicycle usage is very likely to increase in the future, within the next two years, due to the construction of a large shopping center on the south side of Waikoloa Road. This will drive pedestrian and bicycle traffic from Waikoloa Village (on the north side of Waikoloa Road) across the intersection to and from the shopping center.

There is also an affordable housing development planned on Pua Melia Street that will have around 60 units which will also increase pedestrian traffic at the Waikoloa-Paniolo intersection, as people from that development walk across the intersection to the existing shopping center on the northwest corner of Waikoloa Road and Paniolo Road, and possibly children walking or cycling to school at Waikoloa Elementary & Middle School.

4.5. Near-term Traffic Increases

Waikoloa Road is currently used as the main thoroughfare between the Mamalahoa Highway and the Queek Ka’ahumanu Highway. This results in many trucks traveling through the Waikoloa-Paniolo intersection. Military convoys also use this route and occasionally slow down traffic, but this is not typically a daily occurrence.

Industrial use and construction projects along Waikoloa Road, such as the West Hawaii Concrete quarry, the BioEnergy Hawaii plant, West Hawaii Concrete’s planned asphalt plant, AES Distributed Energy’s planned solar power plant, the planned trucking of waste from East Hawaii to the West Hawaii Sanitary Landfill in Puuanahulu, and others, add (or will soon add) to the daily heavy vehicle traffic.

4.6. Intersection Recommendation

After reviewing the available data, it seems to the members of the subcommittee preparing this report that the Waikoloa-Paniolo intersection needs to have traffic controls added, such as a traffic signal or a roundabout. However, it is difficult to draw a firm conclusion without having professionals review current traffic data for the intersection.

Fortunately, intersection traffic control is an extremely well-studied area with established standards and procedures for determining how to address intersection traffic and safety. This would typically consist of a traffic study (or traffic count) performed by the Hawaii County Traffic Division for the Waikoloa-Paniolo intersection.

The subcommittee therefore recommends requesting that the Traffic Division perform a traffic count at the intersection and then evaluate the results using their tools and expertise to determine what improvements, if any, are warranted at this time. The subcommittee also recommends requesting that the traffic count be repeated every three years to identify further improvements or changes necessary in the future as the Waikoloa Village area continues to grow.

In support of this recommendation, it is worth noting that the County of Hawaii has also recognized the need for improvements to the intersection by adding obligations for developers to improve the intersection if they proceed with developments on three lots near the intersection, however, as explained in *Section 7* below, this has not resulted in any improvements and does not appear to be a viable plan for improvements to the intersection in the timeframe they will be needed.

5. Community Input/Feedback

The members of the subcommittee live in Waikoloa Village and regularly speak with other residents of the Village. It is hard to produce statistics from these discussions, but it is notable that in every discussion about the Waikoloa-Paniolo intersection, residents always agree that the intersection is dangerous and needs improvement. Village residents have varying opinions about what kind of improvement should be made, generally preferring either a traffic signal or a roundabout, but none of the subcommittee members have experienced a Village resident arguing that safety improvements are not needed.

One informal survey was conducted on the website “Nextdoor” on their Waikoloa Village community page. This survey received 76 replies from about 25 Waikoloa Village residents. There were various opinions about how to improve the safety of the intersection, ranging from more informative signage and adding stop signs to traffic signals and roundabouts, but everyone agreed that the intersection needs safety improvements.

Safety of the intersection is also a frequent topic raised at Waikoloa Village Association (WVA) meetings. The WVA membership consists of over 3000 homes in Waikoloa Village, which the subcommittee estimates to include at least 2/3 of the Village population. The WVA is asked regularly, many times each year, if the WVA can improve the safety of the intersection. The WVA has provided feedback to the County in the past regarding safety improvements being needed at the intersection.

6. CDP support for Intersection Improvements

In the South Kohala Community Development Plan (SKCDP), a Second Access Road for ingress and egress for Waikoloa was the top priority, along with overall infrastructure improvements. In 2008 when the SKCDP was submitted, the Waikoloa-Paniolo intersection itself was not a “hot topic”. Since then, the population of Waikoloa Village has grown from 4,800 to 7,000 people, a 46% increase.

Below are the relevant sections of the SKCDP that relate to the intersection.

General Policy 2 of the SKCDP relates to transportation, with sub-policy 2.3 specifically being "Build safe roads." Kawaihae Road and Waikoloa Road are identified as being considered dangerous, with the example of not having truck runaway ramps.

In the Waikoloa Policies and Strategies in the SKCDP,

- Policy 3 addresses Transportation & Circulation (*Appendix CDP-5*)
- Strategy 3.5 recommends the Development of a Master Circulation Plan for Waikoloa Village. (*Appendix CDP-8*)
Had a Master Circulation Plan been developed, it would undoubtedly have addressed the Intersection issues with traffic congestion.
- Strategy 3.6 recommends implementing traffic safety improvements along Waikoloa Road. (*Appendix CDP-8*)
Improvements to the Waikoloa Road-Paniolo Avenue intersection are not specifically mentioned, but this Strategy was intended to address any safety issues related to travel on Waikoloa Road.

The SKCDP also established a Monitoring Plan for South Kohala:

- The Monitoring Plan is a way to track and assess the progress of Policies. (*Appendix CDP-10*)
- The specific Monitoring Plan for Waikoloa regarding infrastructure is 9.3.3 "Provide Transportation and Circulation Improvements in a Timely Manner" by looking at County and State CIP allocations for infrastructure and the number of public/private partnerships formed to provide for roadways. (*Appendix CDP-11*)
No Master Circulation Plan has been developed

The SKCDP also referenced the 2005 Hawaii County General Plan and County Codes:

- SKCDP Appendix D is from the County's General Plan (2005) "Courses of Action" for the District of South Kohala. (*Appendix CDP-12*).
Under the Transportation: Roadways section, item "j" is: (*Appendix CDP-13*):
 - **Provide traffic signals at the Waikoloa Road-Paniolo Drive intersection.**
 - In SKCDP Appendix E, Referenced County Codes were listed.
 - Concurrency Requirements: This section creates standards for road and water supply in change of zoning actions. Definitions are provided, including:
 - Acceptable levels of service
 - Approved development
 - Critical road area
 - Immediate vicinity of a project
 - Level of Service (LOS)
 - Local mitigation
 - Area mitigation
- (*Appendix CDP-14*)

7. Developer Obligations

The County recognized decades ago that the Waikoloa-Paniolo intersection would need safety and capacity improvements. To support this, the County and the LUC added requirements to three lots near the intersection when the respective owners of those lots, Waikoloa Highlands, Waikoloa Mauka, and Hawaiian Riverbend, applied for rezoning or subdivision, as early as 1990 (in Ordinance 1990-160, requiring signalization of the intersection, based on a Traffic Impact Analysis Report (TIAR) from 1989).

Unfortunately, none of the owners have engaged in any substantial development of those properties and their various requirements to build intersection improvements remain unfulfilled. In fact, one of the owners, Waikoloa Highlands, has recently had their rezoning revoked due to inactivity. The owners of the other lots do not show any signs of engaging in development of their respective properties, resulting in the intersection being unimproved for far longer than the County envisioned when the requirements were added. For example, Ordinance 1995-051 amended the earlier 1990-160 to require the signalization of the intersection by June 30, 1996. This deadline was among many missed by the respective developers.

In 2005, the County passed Ordinance 2005-157 which amended the requirement further to specify a roundabout, and the developer did contract with an engineering firm to create plans for this improvement, which was noted in a 2016 annual report from Waikoloa Highlands as “construction plans for the roundabout at the Waikoloa Road/Paniolo Avenue intersection have been completed.” However, the plans were apparently not paid for by the developer and were never approved or acted upon.

As Waikoloa Highlands was the only developer that had even taken any steps, and they are the developer that has lost their rezoning due to inactivity, it appears that the reliance on developers to make the needed safety and capacity improvements to the intersection has failed, and the improvements are now overdue. It is time for the County to create a new plan that does not rely on developers, or to find a way to get contributions from developers regardless of their development progress so that the community involved is not harmed simply because developers decided not to develop their properties.

8. Improvement/solution Options

As part of researching the Waikoloa Road - Paniolo Avenue intersection, the subcommittee received some feedback from the community and reviewed some documentation that suggested adding a traffic signal or a roundabout to the intersection as a solution to the apparent safety and capacity problems. The subcommittee spent some time to evaluate if one or the other solution, or even a different solution, would be better for the intersection.

Ultimately, however, it is the responsibility of professionals in traffic design to determine the correct type(s) of improvement(s) for the intersection, so the subcommittee is providing this very brief synopsis for information only.

Research into the topic of traffic signals vs. roundabouts revealed that roundabouts are generally considered safer than traffic signals, as any accidents that occur in a roundabout are typically at a lower speed than at a traffic signal (or unsignalized intersection), resulting in fewer and less

severe injuries to any people involved. Roundabouts sometimes result in fewer total accidents of all types, but occasionally result in a slight increase in total accidents, though with fewer and less serious personal injuries. The main drawback of roundabouts is that it is more difficult for pedestrians with vision disabilities to cross the road at a roundabout.

Other options, such as adding stop signs on Waikoloa Road or adding a pedestrian crossing signal, could be considered, but the subcommittee advises again that the determination of what improvements should be made should be the responsibility of professionals in the field.

9. Funding/Development Options

There are various funding options for making the needed Waikoloa-Paniolo intersection improvements. The main options are, in no particular order:

1. County CIP process
2. Department of Public Works, Traffic Division
3. Developer obligations related to rezoning, subdivision, or building plan approvals

The option with the least cost to the County is the developer obligation option, but this has not worked in this case. The property owners that were given a requirement to make improvements have not developed their properties, and do not appear that they will do so any time soon, so this option cannot be pursued unless a new developer enters the picture. See section 7 above for more details on the current (unsuccessful) developer obligations.

The option that appears to have the shortest path to development is to work with the Department of Public Works (DPW), specifically starting with the Traffic Division. The Traffic Division could perform a traffic count at the intersection and then evaluate the data collected using their expertise and tools. This would result in specific recommendations for improvements that would address the issues revealed by the Traffic Division's evaluation. The recommendations would then be passed to the Engineering Division at DPW for further analysis and planning. The Engineering Division would be able to create a specific plan and request funding via CIP or via a direct request to the County Council to appropriate funds for the needed improvements. The improvement project could then proceed as planned by the Engineering Division.

The County CIP process is well-known and follows an annual review and approval process as part of the County budget. This method of proposing a Waikoloa-Paniolo intersection improvement project is suggested if the DPW is unable to move forward on the project directly, or if an opportunity arises to submit a CIP with support from Council Members in the current budget approval cycle.

10. Conclusion/Recommendations

After considering all of the information in this report and numerous source materials (see References), the members of the Waikoloa Subcommittee believe the Waikoloa-Paniolo intersection needs to have traffic controls added, such as a traffic signal or a roundabout.

Reiterating the recommendation from Section 4, the subcommittee recommends requesting that the Traffic Division perform a traffic count at the intersection and then evaluate the results using their tools and expertise to determine what improvements, if any, are warranted for the intersection at this time. The subcommittee also recommends requesting that the traffic count be repeated every three years to identify further improvements or changes necessary in the future as the Waikoloa Village area continues to grow.

After the Traffic Division completes the traffic count and analysis, and based on the recommendations the Traffic Division produces, the subcommittee recommends following up with the Engineering Division, the Department of Public Works, and the County Council to support the intersection improvements. If needed, the subcommittee also then recommends submitting a CIP for the intersection improvements.

11. References

Apple Maps copyright information: <https://gspe21-ssl.ls.apple.com/html/attribution-136.html>
Other sources, citations, and references to be updated in additional document.

Memo

Date: January 12, 2026

To: Min Zhong, Nan Inc

From: Andrew Scher and Sohrab Rashid, Fehr & Peers

Subject: Waikoloa Industrial Yard Transportation Assessment (Waikoloa, Hawai'i)

Fehr & Peers has prepared a transportation assessment for the Waikoloa Industrial Yard (project) near Waikoloa Village on the island of Hawai'i. The project is estimated to be constructed by 2028 and is situated on 14.9 acres within TMK: (3) 6-8-001:067. This memorandum includes an assessment of the vehicle trip generation anticipated during typical project operations, an analysis of operations at the project access from Waikoloa Road to verify whether the project will result in unacceptable delays, and a sight distance assessment for the proposed project access from Waikoloa Road to determine whether any improvements are recommended to provide adequate sight distance at the project access point. A brief executive summary is presented below followed by the detailed technical assessment.

Executive Summary

The proposed project is expected to generate a maximum of 43 inbound employee trips in the AM peak hour and 43 outbound employee trips in the PM peak hour. Additionally, a maximum of three (3) inbound and three (3) outbound truck trips are expected during the morning (AM) peak hour, and zero (0) inbound and outbound truck trips in the evening (PM) peak hour. Per Section 25-2-46 Concurrency Requirements of the Hawai'i County Code, a full Traffic Impact Analysis Report (TIAR) is not required since the project does not generate more than 50 peak hour trips. Delays at the project driveway are considered reasonable, and no changes are needed to the existing Waikoloa Road geometry.

The sight distance assessment determined that adequate sight distance may be impeded by natural features vehicles turning onto Waikoloa Road from the proposed project access driveway given high speeds on the roadway. Accordingly, the following measures should be considered to improve sight distance:

- Install advanced warning signs to ensure drivers on Waikoloa Road are aware of the project driveway and the potential for turning vehicles.
- Install radar speed feedback signs to ensure drivers drive at the posted speed limit along the highway adjacent to project site. The posted speed on Waikoloa Road near the project driveway is currently 45 miles per hour (mph) yet approximately 75% of drivers were observed traveling at speeds greater than 45 mph.

- Reduce posted speed to 35 mph around the curve similar to other locations along Waikoloa Road.
- Remove natural features which currently limit sight distance. This may involve trimming grasses and shrubs, moving rocks, and/or flatten mounds adjacent to roadway.
- Re-assess sight distance after these recommendations have been implemented.

Project Description

The proposed project consists of an asphalt batch plant, a concrete plant, and supporting facilities such as a maintenance shop, warehouse, equipment staging yard, and main office building. The project proposes vehicle/truck driveway access from Waikoloa Road approximately ½-mile mauka or east of the access driveway to the existing Goodfellow Bros quarry. The proposed driveway intersection will be located outside of the curve of Waikoloa Road and will be the only access point to the project site. **Figure 1** shows the project vicinity, proposed project site, and potential access points.

Existing Conditions

Waikoloa Road is the key roadway providing vehicular access to the project site and is operated and maintained by the County of Hawai'i. Waikoloa Road is an east-west, two-lane roadway with a posted speed limit of 45 mph along most of the roadway, including at the proposed project driveway, and 35 mph near some curves approximately one mile makai of the proposed project driveway. The roadway has no designated bicycle or pedestrian facilities in the vicinity of the project site. In addition, no bus stops to access existing transit services are provided near the proposed project site entrance. While there is bus service along Waikoloa Road, the nearest stops are two to three miles away at Paniolo Road and Queen Ka'ahumanu Highway respectively.

48-hour traffic counts were conducted on September 16, 2025 and September 17, 2025 on Waikoloa Road at the proposed project driveway location using pneumatic tubes. Speed and vehicle class were recorded for all vehicles counted along the roadway. Detailed count data is provided in **Attachment A**. Key findings from the traffic count data include:

- AM traffic peaked on Waikoloa Road at 7:00 AM with an average volume of 826 vehicles.
- PM traffic peaked on Waikoloa Road at 3:00 PM with an average volume of 939 vehicles.
- Average Daily Traffic (ADT) volume of 11,233 was counted.
- Typical vehicle speeds along Waikoloa Road were between 45 and 50 mph.
- Average speed along Waikoloa Road was 47 mph and the 85th percentile speed was 53 mph (i.e., the speed at which 85% was traveling at or below, which is a typical traffic engineering metric).

During field observations, it was noted that platoons of several vehicles would often pass, followed by longer stretches with few or no vehicles. For example, in one minute of observations, vehicles were passing for approximately 20 seconds followed by 40 seconds with no vehicles passing.



FIGURE 1

Project Location and Study Area

- Project Site
- Proposed Project Access

Crash data for 2020 to 2025 was provided by the State of Hawai'i Department of Transportation – Highways Division (HDOT) for the study corridor between Queen Ka'ahumanu Highway and Paniolo Avenue. A total of 54 crashes were reported along Waikoloa Road from the five (5) years of available data, and the locations are displayed on **Figure 2**. Detailed crash data is provided in **Attachment B**. Crashes occurred at various points along the study corridor, with some concentration at intersections and road curvatures. The highest number of crashes occurred at the signalized intersection of Waikoloa Road and Queen Ka'ahumanu Highway. Key findings from the crash data include:

- Three (3) crashes involved fatalities, none of which involved pedestrians or bicycles.
- Of the 54 incidents, 31 involved collisions between motor vehicles, and three (3) involved collisions with motorcycles. The remainder involved non-collisions (e.g. overturning or rolling off the roadway) or collision with an object (e.g. guardrail).
- Of the three fatal incidents, two (2) involved head on collisions, and one involved rollover off the roadway. The fatal incidents occurred along the study corridor, not at the intersections at either end.
- 11 collisions occurred between the proposed driveway and Quarry Road.
 - One was fatal.
 - Four involved crossing the center line, including the fatal collision.
 - Three involved running off the roadway.
- At the curve of the road nearest to the proposed driveway, three (3) non-fatal collisions and one fatal collision have occurred.
 - The fatal collision involved crossing the center line and a head-on collision.
 - Three involved crossing the center line and colliding with a vehicle from the opposite direction or head-on, and one involved running off the roadway.

It should be noted that approximately 75% of counted vehicles were traveling above the 45 mph speed limit according to speed data collected in September 2025. The 85th percentile speed for counted vehicles was 53 mph.

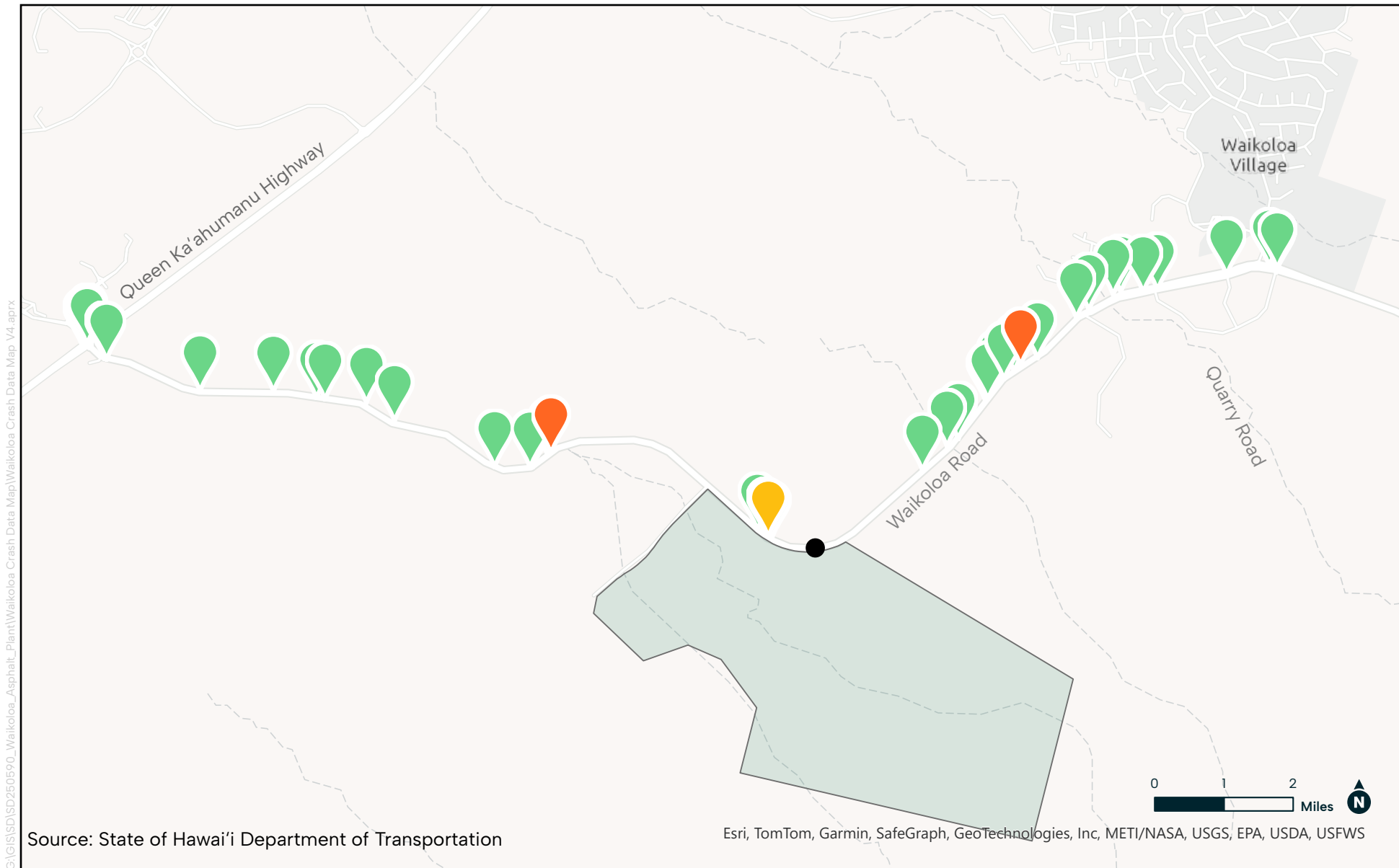


FIGURE 2

Waikoloa Road Crash Data (2020 - 2025)

 No Fatalities
 One Fatality

 Two Fatalities
 Proposed Project Site Access
 Project Site

Project Trip Generation

This section describes the anticipated number of vehicle trips and the directionality of those trips that would result from the proposed project. Traffic added to the roadway system by the project is estimated using a three-step process: (1) project trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of project-generated traffic that would be added to the roadway network. The second step estimates the direction of travel to and from the project site. The new trips are assigned to specific street segments and intersection turning movements during the third step. This process is described in more detail in the following sections.

Employees and truck deliveries are the primary traffic associated with asphalt plants. In general, workers are assumed to make one (1) inbound trip and one (1) outbound trip for a total of two (2) daily trips. Detailed information on employee and truck activity was provided by Grace Pacific and included the estimated number of employees and truck trips per day, as well as per peak AM and PM period. Once operational, the project will employ the following:

- Five (5) employees at the asphalt plant, which will operate 24 hours a day.
- 14 employees at the concrete plant, which will operate 24 hours a day.
- Six (6) employees at the maintenance shop, which will operate 24 hours a day.
- Approximately 30 employees at the main office building.

It is assumed that all employees will travel to the travel site by private vehicle and that employee trips will be distributed across the day based on shift work, with some trips occurring outside the typical peak commute periods. Estimates are expected to be no greater than those assumed herein and summarized below in **Table 2**.

Table 2: Peak Hour and Daily Project Trip Generation

Trip Type	Daily Trips	AM In	AM Out	AM Total	PM In	PM Out	PM Total
Auto	92	43	0	43	0	43	43
Trucks	80	3	3	6	0	0	0
Total	172	46	3	49	0	43	43

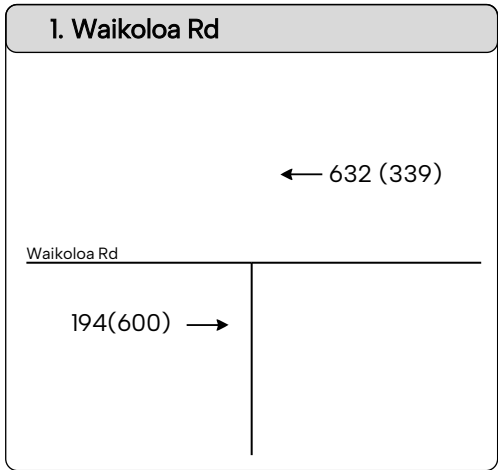
Source: Fehr & Peers, 2025

The trip distribution for project-generated traffic was estimated based on the 2025 traffic count data collected on Waikoloa Road. Based on the traffic count data, 80% of workers are expected to travel to the project site from the west, and 20% of workers are expected to travel to the site from the east.

Trip distribution percentages were applied to the forecasted trip generation and assigned to the surrounding roadway network to assess potential traffic impacts in the area. Per Section 25-2-46 Concurrency Requirements of the Hawai'i County Code, a full Traffic Impact Analysis Report (TIAR) is not required since the project does not generate more than 50 peak hour trips. Therefore, an analysis of intersection operations was conducted only at the project driveway to verify that implementation of the project would not cause excessive delays or potential operational issues to drivers along Waikoloa Road. **Figure 3** shows the Existing (2025) and 2028 Plus Project traffic volumes and lane configurations.



Existing (2025)



Plus Project (2028)

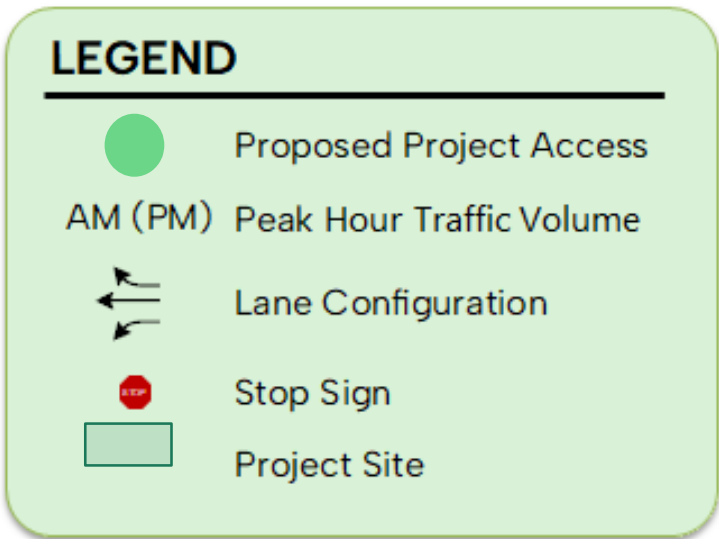
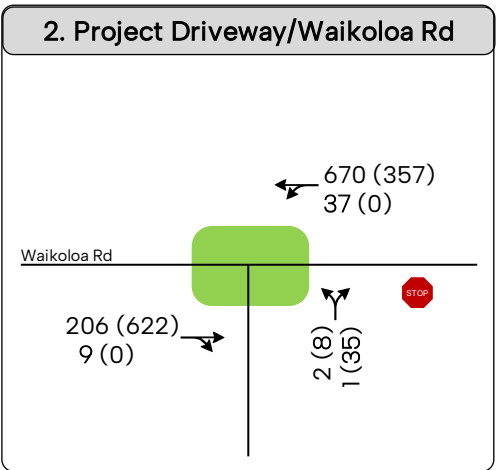


FIGURE 3
Peak Hour Traffic Volumes and Lane Configurations –
Existing (2025) & Plus Project (2028)

Driveway Operations Analysis

Methodology

Operations at the project access driveway were evaluated during the busiest peak (one) hour in the morning (7:00 to 8:00 AM) and in the afternoon (3:00 to 4:00 PM) for the study area. Two-day (48-hour) roadway segment counts were collected along Waikoloa Road, and AM and PM peak hour traffic volumes were determined from these counts.

Traffic operations were evaluated for 2028 Plus Project Conditions. This scenario accounts for an increase in traffic volume of two (2) percent per year as a result of ambient growth in the study area by 2028 plus the addition of project generated traffic. This growth rate was developed based on historic HDOT traffic count data.

The analysis of roadway operations performed for this study is based on procedures presented in the Highway Capacity Manual 7th Edition (HCM 7), published by the Transportation Research Board in 2022. The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined, from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents “at-capacity” operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

Traffic operations at the proposed project driveway were analyzed using procedures consistent with HCM 7. **Table 1** provides a description of each Level of Service grade and its corresponding delay for signalized and unsignalized intersections. The average control delay for all intersections was calculated using Synchro 12.0 analysis software. An unsignalized intersection’s LOS is determined by the computed control delay and is defined for each minor movement.

Table 1: Unsignalized Intersection Level of Service Criteria

Level of Service	Description	Unsignalized Delay (Seconds)
A	Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 15.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 15.0 to 25.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 25.0 to 35.0
E	This level is often considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 35.0 to 50.0
F	This level is often considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 50.0

Source: Highway Capacity Manual (Transportation Research Board, 2022).

Based on previous studies conducted in Hawai'i County, the minimum desired operating standard for a signalized intersection is LOS D. If the addition of project traffic is expected to degrade desirable service levels (LOS D or better) to lower than desirable service levels (LOS E or F) then the project is considered to have a project-specific impact. Impacts are also defined to occur when the addition of project traffic exacerbates locations already operating or projected to operate at LOS E or F. An impact is considered a cumulative impact at a signalized intersection if the addition of project trips exacerbates LOS E or F operations and increases overall intersection delay by more than five (5) seconds.

Additionally, for unsignalized intersections, one or more signal warrants must also be met. The signal warrants are described in Chapter 4V of the *Manual on Uniform Traffic Control Devices (MUTCD, 2009)* published by the U.S. Department of Transportation Federal Highways Administration (FHWA).

Impacts to public transit, pedestrian facilities and travel, and bicycle facilities and travel are considered significant if the proposed project conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or if it generates additional demand that cannot be reasonably accommodated by existing or planned multi-modal facilities.

Analysis Results

Levels of service (LOS) was calculated for the project site access intersection under 2028 Plus Project Conditions using the volumes from **Figure 3**, and the results are presented in **Table 3**. The corresponding LOS calculation sheets are included in **Attachment C**. Note that the LOS presented in **Table 3** is for the movement with the highest delay, which would be the left-turn movement out of the proposed site driveway.

Table 3: 2028 Plus Project Intersection Levels of Service

Intersection	Traffic Control ¹	Peak Hour	Delay (sec/veh)	LOS ²	Worst Movement
Waikoloa Road & Project Driveway	SSSC	AM	16.7	C	NBL
		PM	15.7	C	NBL

Source: Fehr & Peers, 2026.

¹ SSSC = Side-Street Stop-Controlled

² LOS = Level of Service

The analysis results indicate that the intersection will operate at a desirable level under peak conditions. The effects of employee and truck trips generated by the proposed project under typical operations will not cause Waikoloa Road and the project driveway to operate at an undesirable level. Traffic on Waikoloa Road is expected to experience little to no delay.

Active and Transit Mode Access

Given the undeveloped nature of the project site and the low-density development of the surrounding area, the potential conflict is low between site-generated traffic and non-automobile modes including walking and biking. While separate bicycle and pedestrian facilities are typically encouraged to reduce vehicle traffic, the rural circulation system and distant land uses in the vicinity of the project site will not be conducive to multi-modal travel for nearly all site employees.

Due to a lack of bus stops in the vicinity of the site, using transit to access the site is not an option for workers. While it might be possible to provide a temporary stop on Waikoloa Road adjacent to the site, the walking distance required to get to the interior of the site would be beyond a typical reasonable walk for a transit patron (over two miles).

The project is not expected to conflict with any existing active transportation modes (i.e., bicycling and walking) or transit, and it would not create excessive demand for these modes given its isolated location. Accordingly, no impacts to non-automobile travel are anticipated.

Vehicle Access and Sight Distance

Stopping sight distance is the minimum distance for a driver (at a given speed) to perceive a hazard and bring the vehicle to a complete stop to avoid a collision. Intersection sight distance is longer than stopping sight distance and is the minimum distance required between a driver waiting to turn left or right onto a roadway and the driver of an approaching vehicle (at a given speed). Fehr & Peers conducted a sight distance assessment to determine the minimum distance from the proposed driveway needed to ensure that drivers turning onto Waikoloa Road do not unduly interfere with operations along Waikoloa Road and to ensure that drivers traveling on Waikoloa Road will be able to stop if a vehicle exited the project driveway and stopped in the through lane, causing an obstruction. Based on the speed data collected on Waikoloa Road, on average vehicles travel between 45 and 50 mph. Approximately 27% of vehicles traveled between 50 and 55 mph and 94% of vehicles traveled at or below 55 mph. With 33% of vehicles traveling in excess of 50 mph, the speed of drivers along Waikoloa Road at the project driveway is notably higher than the posted speed limit and many drivers are comfortable driving at up to 55 mph.

Additionally, the average grade on Waikoloa Road near the project driveway based on sight observations and measurements is less than 3%. Equation 9-1 from A Policy on Geometric Design of Highway and Streets (American Association of State Highway Transportation Officials, (AASHTO), 6th Edition, 2011) was used to determine the minimum required stopping sight distance assuming a design speed of 55 mph with a grade less than 3% and a time gap of 9.5 seconds for single unit trucks. Use of a design speed of 10 mph over the posted driving speed and accounting for 94% of observed vehicle speeds provides a conservative evaluation and results in a minimum required sight distance of 770 feet for vehicles turning left onto Waikoloa Road. For vehicles turning right, a time gap of 8.5 seconds for single unit trucks was used, yielding a required sight distance of 690 feet.

Field observations and calculations indicate a sight distance along Waikoloa Road mauka from the proposed driveway of 700 feet and makai of the proposed driveway of 730 feet. **Figure 4** on the following page identifies the required and existing sight distance. Assuming a 55 mph design speed, there may be some natural features (grasses, rocks, etc.) impeding the required 770-foot sight distance. However, mauka sight distance is adequate if a 50 mph design speed is assumed (approximately 73% of vehicles travel at or below this speed). Given the travel speeds along the roadway, the following safety measures should be considered:

- Install advanced warning signs, such as the “truck crossing” sign installed in advance of the Goodfellow Bros quarry, to ensure drivers are aware of the project driveway and are alert to the potential presence of heavy vehicles turning into and out of the project site.
- Install radar speed feedback signs to ensure drivers drive the posted speed limit along the highway adjacent to the project site. Note that the posted speed on Waikoloa Road near the project driveway is 45 mph, yet approximately 75% of drivers were observed traveling at speeds greater than 45 mph. Required sight distance is reduced to 630 feet for a design speed of 45 mph.
- Install supplemental advisory speed signs for a reduced speed to 35 mph around the curve similar to other locations along Waikoloa Road approximately one mile makai of the proposed driveway.
- Remove natural features which currently limit sight distance. Removal to the level of the roadway is ideal within the area of limited visibility illustrated on Figure 4. This may involve trimming grasses and shrubs, remove rocks, and/or flatten mounds adjacent to roadway.
- Re-assess sight distance after these recommendations have been implemented



FIGURE 4
Sight Distance

Attachment A

Type of report: Midblock Count - Speed Data

LOCATION: Waikoloa Road SPECIFIC LOCATION: CITY/STATE: Waimea, HI															QC JOB #: 17229201 DIRECTION: EB DATE: Sep 16 2025		
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	9	15	4	3	0	0	0	0	31	41-50	24
01:00 AM	1	0	0	0	2	0	6	5	6	0	0	0	0	0	20	41-50	11
02:00 AM	0	0	0	1	3	1	2	5	1	0	0	0	0	0	13	41-50	7
03:00 AM	0	0	0	0	0	0	2	4	1	0	3	0	0	0	10	41-50	6
04:00 AM	0	0	0	0	0	3	4	3	3	2	0	0	0	0	15	36-45	7
05:00 AM	1	0	0	0	0	2	6	16	9	4	0	1	0	0	39	46-55	25
06:00 AM	7	0	1	0	0	11	17	38	28	8	2	0	0	0	112	46-55	66
07:00 AM	14	0	2	1	1	12	57	78	40	8	0	0	0	0	213	41-50	135
08:00 AM	9	0	0	3	4	11	44	76	31	13	1	1	0	0	193	41-50	120
09:00 AM	7	0	0	0	3	17	72	92	32	7	1	0	0	0	231	41-50	164
10:00 AM	5	1	0	0	2	14	89	86	37	11	0	0	0	0	245	41-50	175
11:00 AM	6	0	0	0	4	12	79	97	48	5	0	0	0	0	251	41-50	176
12:00 PM	6	0	0	0	0	11	59	127	66	15	1	0	0	0	285	46-55	193
01:00 PM	10	0	0	0	0	17	84	145	90	19	1	0	0	0	366	46-55	235
02:00 PM	11	0	0	0	7	24	118	180	81	19	0	0	0	0	440	41-50	298
03:00 PM	12	0	2	13	19	73	184	210	71	8	0	0	0	0	592	41-50	394
04:00 PM	16	0	1	2	8	40	148	266	103	11	3	0	1	0	599	41-50	414
05:00 PM	21	0	0	2	9	58	199	228	77	5	4	0	0	0	603	41-50	427
06:00 PM	11	0	0	0	13	52	192	138	32	9	0	0	0	0	447	41-50	330
07:00 PM	5	0	0	0	0	9	104	115	54	4	2	0	0	0	293	41-50	219
08:00 PM	2	1	0	0	0	9	100	90	22	4	1	0	0	0	229	41-50	190
09:00 PM	2	0	0	0	2	8	65	72	23	7	1	0	0	0	180	41-50	137
10:00 PM	2	0	0	0	0	7	51	66	20	5	1	1	0	0	153	41-50	117
11:00 PM	2	0	0	0	0	4	26	45	20	3	0	0	0	0	100	41-50	71
Day Total	150	2	6	22	77	395	1717	2197	899	170	21	3	1	0	5660	41-50	3914
Percent	2.7%	0%	0.1%	0.4%	1.4%	7%	30.3%	38.8%	15.9%	3%	0.4%	0.1%	0%	0%			
AM Peak Volume	7:00 AM 14	10:00 AM 1	7:00 AM 2	8:00 AM 3	8:00 AM 4	9:00 AM 17	10:00 AM 89	11:00 AM 97	11:00 AM 48	8:00 AM 13	3:00 AM 3	5:00 AM 1	12:00 AM 0	12:00 AM 0	11:00 AM 251		
PM Peak Volume	5:00 PM 21	8:00 PM 1	3:00 PM 2	3:00 PM 13	3:00 PM 19	3:00 PM 73	5:00 PM 199	4:00 PM 266	4:00 PM 103	1:00 PM 19	5:00 PM 4	10:00 PM 1	4:00 PM 1	12:00 PM 0	5:00 PM 603		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

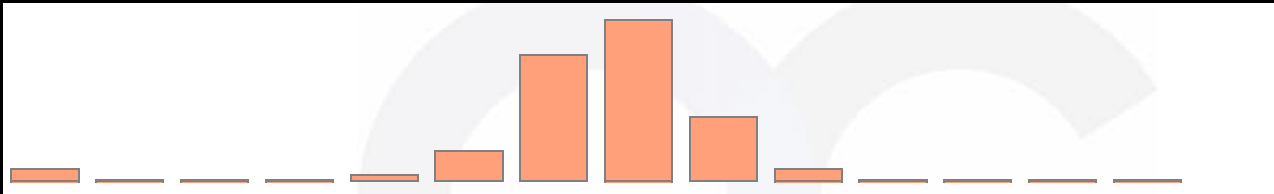
Type of report: Midblock Count - Speed Data

LOCATION: Waikoloa Road SPECIFIC LOCATION: CITY/STATE: Waimea, HI															QC JOB #: 17229201 DIRECTION: EB DATE: Sep 17 2025		
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	0	0	3	12	9	6	2	1	0	0	0	34	41-50	21
01:00 AM	1	0	0	0	0	1	5	8	1	0	0	0	0	0	16	41-50	13
02:00 AM	2	0	0	0	0	0	3	5	3	0	0	0	0	0	13	41-50	8
03:00 AM	0	0	0	0	0	3	1	1	3	0	0	0	0	0	8	36-45	4
04:00 AM	0	0	0	0	1	0	1	8	5	2	1	0	0	0	18	46-55	13
05:00 AM	2	0	0	0	2	3	4	19	10	1	1	0	0	0	42	46-55	29
06:00 AM	10	1	1	0	0	11	27	48	22	4	0	0	0	0	124	41-50	75
07:00 AM	11	0	2	1	2	5	44	64	37	6	2	0	0	0	174	41-50	108
08:00 AM	13	0	0	0	0	22	46	80	22	5	0	0	0	1	189	41-50	126
09:00 AM	14	0	0	0	5	22	87	79	24	4	1	0	0	0	236	41-50	166
10:00 AM	4	0	1	0	1	16	57	91	44	8	0	0	0	0	222	41-50	148
11:00 AM	9	0	0	0	0	10	71	106	45	9	0	0	0	0	250	41-50	177
12:00 PM	6	4	2	6	3	8	54	134	55	10	1	1	0	0	284	46-55	189
01:00 PM	10	0	0	0	3	13	112	142	69	22	2	0	1	0	374	41-50	254
02:00 PM	16	0	0	0	7	38	135	180	63	7	1	0	0	0	447	41-50	315
03:00 PM	16	0	0	1	19	73	221	188	58	6	0	0	0	0	582	41-50	409
04:00 PM	16	0	0	3	9	68	242	214	44	5	0	0	0	0	601	41-50	456
05:00 PM	18	0	0	0	0	15	184	211	76	9	1	0	0	0	514	41-50	395
06:00 PM	5	0	0	0	8	29	137	144	63	8	0	0	0	0	394	41-50	281
07:00 PM	2	0	0	0	0	20	64	140	47	12	3	0	0	0	288	41-50	204
08:00 PM	8	0	0	0	0	11	76	105	36	7	1	0	0	0	244	41-50	181
09:00 PM	4	0	0	0	0	12	56	82	29	3	0	0	0	0	186	41-50	138
10:00 PM	6	0	0	0	1	9	31	51	35	9	2	0	0	0	144	46-55	86
11:00 PM	3	0	0	0	0	5	25	41	27	6	2	0	0	0	109	46-55	68
Day Total	177	5	6	11	61	397	1695	2150	824	145	19	1	1	1	5493	41-50	3845
Percent	3.2%	0.1%	0.1%	0.2%	1.1%	7.2%	30.9%	39.1%	15%	2.6%	0.3%	0%	0%	0%			
AM Peak Volume	9:00 AM 14	6:00 AM 1	7:00 AM 2	7:00 AM 1	9:00 AM 5	8:00 AM 22	9:00 AM 87	11:00 AM 106	11:00 AM 45	11:00 AM 9	7:00 AM 2	12:00 AM 0	12:00 AM 0	8:00 AM 1	11:00 AM 250		
PM Peak Volume	5:00 PM 18	12:00 PM 4	12:00 PM 2	12:00 PM 6	3:00 PM 19	3:00 PM 73	4:00 PM 242	4:00 PM 214	5:00 PM 76	1:00 PM 22	7:00 PM 3	12:00 PM 1	1:00 PM 1	12:00 PM 0	4:00 PM 601		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

SUMMARY - Midblock Count - Speed Data

LOCATION: Waikoloa Road															QC JOB #: 17229201		
SPECIFIC LOCATION:															DIRECTION: EB		
CITY/STATE: Waimea, HI															DATE: Sep 16 2025 - Sep 17 2025		
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	327	7	12	33	138	792	3412	4347	1723	315	40	4	2	1	11153	41-50	7759
Percent	2.9%	0.1%	0.1%	0.3%	1.2%	7.1%	30.6%	39%	15.4%	2.8%	0.4%	0%	0%	0%			
Cumulative Percent	2.9%	3%	3.1%	3.4%	4.6%	11.7%	42.3%	81.3%	96.8%	99.6%	99.9%	100%	100%	100%			
ADT 5576															85th Percentile: 51 MPH Mean Speed(Average): 45 MPH Median: 45 MPH Mode: 48 MPH		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

TRUE DATA TO IMPROVE MOBILITY

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: EB

CITY/STATE: Waimea, HI

DATE: Sep 16 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	0	31
01:00 AM	0	13	3	3	0	0	0	0	0	0	0	0	0	1	20
02:00 AM	0	8	2	2	1	0	0	0	0	0	0	0	0	0	13
03:00 AM	0	8	0	0	2	0	0	0	0	0	0	0	0	0	10
04:00 AM	0	9	4	0	1	0	0	1	0	0	0	0	0	0	15
05:00 AM	0	21	11	0	3	0	0	3	0	0	0	0	0	1	39
06:00 AM	0	74	23	0	5	1	0	2	0	0	0	0	0	7	112
07:00 AM	0	127	43	9	12	3	0	5	0	0	0	0	0	14	213
08:00 AM	0	119	41	1	14	2	0	7	0	0	0	0	0	9	193
09:00 AM	0	144	54	2	18	0	0	6	0	0	0	0	0	7	231
10:00 AM	1	170	51	2	12	0	0	5	0	0	0	0	0	4	245
11:00 AM	0	170	55	1	10	0	0	9	0	0	0	0	0	6	251
12:00 PM	0	195	60	3	18	0	0	3	0	0	0	0	0	6	285
01:00 PM	0	253	82	1	16	0	0	4	0	0	0	0	0	10	366
02:00 PM	0	319	79	1	24	1	0	5	0	0	0	0	0	11	440
03:00 PM	0	385	149	2	40	0	0	4	0	0	0	0	0	12	592
04:00 PM	1	424	126	5	21	1	0	5	0	0	0	0	0	16	599
05:00 PM	1	446	123	0	11	1	0	0	0	0	0	0	0	21	603
06:00 PM	0	368	55	3	10	0	0	0	0	0	0	0	0	11	447
07:00 PM	0	246	39	0	3	0	0	0	0	0	0	0	0	5	293
08:00 PM	0	207	19	1	0	0	0	0	0	0	0	0	0	2	229
09:00 PM	0	152	22	1	3	0	0	0	0	0	0	0	0	2	180
10:00 PM	0	130	18	1	2	0	0	0	0	0	0	0	0	2	153
11:00 PM	0	83	14	1	0	0	0	0	0	0	0	0	0	2	100
Day Total	3	4099	1075	39	227	9	0	59	0	0	0	0	0	149	5660
Percent	0.1%	72.4%	19%	0.7%	4%	0.2%	0%	1%	0%	0%	0%	0%	0%	2.6%	
ADT 5660															
AM Peak Volume	10:00 AM	10:00 AM	11:00 AM	7:00 AM	9:00 AM	7:00 AM	12:00 AM	11:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM	11:00 AM
	1	170	55	9	18	3	0	9	0	0	0	0	0	14	251
PM Peak Volume	4:00 PM	5:00 PM	3:00 PM	4:00 PM	3:00 PM	2:00 PM	12:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	5:00 PM
	1	446	149	5	40	1	0	5	0	0	0	0	0	21	603

Comments:

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: EB

CITY/STATE: Waimea, HI

DATE: Sep 17 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	26	3	2	1	0	0	1	0	0	0	0	0	1	34
01:00 AM	0	12	3	0	0	0	0	0	0	0	0	0	0	1	16
02:00 AM	0	7	3	1	0	0	0	0	0	0	0	0	0	2	13
03:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
04:00 AM	0	13	2	1	1	0	0	1	0	0	0	0	0	0	18
05:00 AM	0	28	9	0	1	0	0	2	0	0	0	0	0	2	42
06:00 AM	2	87	17	0	5	1	0	3	0	0	0	0	0	9	124
07:00 AM	0	108	36	5	10	2	0	2	0	0	0	0	0	11	174
08:00 AM	0	121	28	3	22	0	0	2	0	0	0	0	0	13	189
09:00 AM	0	145	52	1	17	0	0	7	0	0	0	0	0	14	236
10:00 AM	0	153	35	2	22	1	0	6	0	0	0	0	0	3	222
11:00 AM	0	166	52	3	16	0	0	4	0	0	0	0	0	9	250
12:00 PM	2	197	60	2	14	1	0	2	0	0	0	0	0	6	284
01:00 PM	0	274	73	0	10	0	0	7	0	0	0	0	0	10	374
02:00 PM	0	327	78	1	13	0	0	12	0	0	0	0	0	16	447
03:00 PM	0	406	124	3	23	0	0	10	0	0	0	0	0	16	582
04:00 PM	1	450	116	1	14	0	0	3	0	0	0	0	0	16	601
05:00 PM	0	384	95	0	16	0	0	1	0	0	0	0	0	18	514
06:00 PM	0	323	56	4	5	0	0	1	0	0	0	0	0	5	394
07:00 PM	0	241	42	0	3	0	0	0	0	0	0	0	0	2	288
08:00 PM	0	207	26	2	1	0	0	0	0	0	0	0	0	8	244
09:00 PM	0	152	28	2	0	0	0	0	0	0	0	0	0	4	186
10:00 PM	0	127	10	0	1	0	0	0	0	0	0	0	0	6	144
11:00 PM	0	89	15	0	2	0	0	0	0	0	0	0	0	3	109
Day Total	5	4050	963	33	198	5	0	64	0	0	0	0	0	175	5493
Percent	0.1%	73.7%	17.5%	0.6%	3.6%	0.1%	0%	1.2%	0%	0%	0%	0%	0%	3.2%	
ADT 5493															
AM Peak	6:00 AM	11:00 AM	9:00 AM	7:00 AM	8:00 AM	7:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	9:00 AM	11:00 AM
Volume	2	166	52	5	22	2	0	7	0	0	0	0	0	14	250
PM Peak	12:00 PM	4:00 PM	3:00 PM	6:00 PM	3:00 PM	12:00 PM	12:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	4:00 PM
Volume	2	450	124	4	23	1	0	12	0	0	0	0	0	18	601

Comments:

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: EB

CITY/STATE: Waimea, HI

DATE: Sep 16 2025 - Sep 17 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	8	8149	2038	72	425	14	0	123	0	0	0	0	0	324	11153
Percent	0.1%	73.1%	18.3%	0.6%	3.8%	0.1%	0%	1.1%	0%	0%	0%	0%	0%	2.9%	
ADT 5576															

Comments:

Type of report: Midblock Count - Volume Data

LOCATION: Waikoloa Road										QC JOB #: 17229201	
SPECIFIC LOCATION:										DIRECTION: EB	
CITY/STATE: Waimea, HI										DATE: Sep 16 2025 - Sep 17 2025	
Start Time	Mon 16 Sep 25	Tue 17 Sep 25	Wed 17 Sep 25	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile	
12:00 AM	31	34				33			33		
01:00 AM	20	16				18			18		
02:00 AM	13	13				13			13		
03:00 AM	10	8				9			9		
04:00 AM	15	18				17			17		
05:00 AM	39	42				41			41		
06:00 AM	112	124				118			118		
07:00 AM	213	174				194			194		
08:00 AM	193	189				191			191		
09:00 AM	231	236				234			234		
10:00 AM	245	222				234			234		
11:00 AM	251	250				251			251		
12:00 PM	285	284				285			285		
01:00 PM	366	374				370			370		
02:00 PM	440	447				444			444		
03:00 PM	592	582				587			587		
04:00 PM	599	601				600			600		
05:00 PM	603	514				559			559		
06:00 PM	447	394				421			421		
07:00 PM	293	288				291			291		
08:00 PM	229	244				237			237		
09:00 PM	180	186				183			183		
10:00 PM	153	144				149			149		
11:00 PM	100	109				105			105		
Day Total	5660	5493				5584			5584		
% Weekday Average	101.4%	98.4%									
% Week Average	101.4%	98.4%				100%					
AM Peak Volume	11:00 AM 251	11:00 AM 250				11:00 AM 251			11:00 AM 251		
PM Peak Volume	5:00 PM 603	4:00 PM 601				4:00 PM 600			4:00 PM 600		
Comments:											

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Type of report: Midblock Count - Speed Data

LOCATION: Waikoloa Road SPECIFIC LOCATION: CITY/STATE: Waimea, HI															QC JOB #: 17229201 DIRECTION: WB DATE: Sep 16 2025		
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	4	1	1	2	0	0	0	8	46-55	5
01:00 AM	0	0	0	0	0	1	0	2	1	2	1	0	0	0	7	46-55	3
02:00 AM	1	0	0	0	0	1	1	5	5	6	0	0	0	0	19	51-60	11
03:00 AM	0	0	0	0	0	1	1	10	20	8	4	0	0	0	44	46-55	30
04:00 AM	3	0	0	2	3	2	9	34	53	15	3	1	0	0	125	46-55	87
05:00 AM	7	0	0	0	3	4	20	83	86	36	7	0	0	0	246	46-55	169
06:00 AM	13	0	0	5	11	12	50	174	229	45	4	1	0	0	544	46-55	403
07:00 AM	18	0	0	0	4	16	77	269	208	45	0	0	0	0	637	46-55	477
08:00 AM	8	0	0	1	9	17	95	234	128	10	1	0	0	0	503	46-55	362
09:00 AM	9	0	0	0	3	9	96	213	65	7	2	0	0	0	404	41-50	309
10:00 AM	10	0	1	0	0	15	82	162	67	9	2	0	0	0	348	41-50	244
11:00 AM	3	0	0	0	4	10	57	130	75	15	0	0	0	0	294	46-55	205
12:00 PM	8	0	0	1	2	3	69	140	76	6	1	0	0	0	306	46-55	216
01:00 PM	14	0	0	0	2	7	58	142	68	9	1	1	0	0	302	46-55	210
02:00 PM	9	1	0	1	0	2	53	144	71	15	0	0	0	0	296	46-55	215
03:00 PM	16	0	0	0	0	6	73	152	100	15	1	0	0	0	363	46-55	252
04:00 PM	9	0	1	3	2	6	59	135	76	9	0	0	0	0	300	46-55	211
05:00 PM	19	0	0	0	6	17	58	207	82	15	1	0	0	1	406	46-55	289
06:00 PM	16	0	0	0	0	3	58	132	66	14	0	0	0	0	289	46-55	198
07:00 PM	4	0	0	0	3	4	20	58	32	4	2	0	0	0	127	46-55	90
08:00 PM	4	0	0	0	0	0	19	40	34	12	1	0	0	0	110	46-55	74
09:00 PM	1	0	0	0	0	0	27	41	29	5	4	0	0	0	107	46-55	70
10:00 PM	3	0	0	0	0	0	3	14	18	6	2	0	0	0	46	46-55	32
11:00 PM	0	0	0	0	0	1	1	7	2	1	1	0	0	0	13	46-55	9
Day Total	175	1	2	13	52	137	986	2532	1592	310	40	3	0	1	5844	46-55	4124
Percent	3%	0%	0%	0.2%	0.9%	2.3%	16.9%	43.3%	27.2%	5.3%	0.7%	0.1%	0%	0%			
AM Peak Volume	7:00 AM 18	12:00 AM 0	10:00 AM 1	6:00 AM 5	6:00 AM 11	8:00 AM 17	9:00 AM 96	7:00 AM 269	6:00 AM 229	6:00 AM 45	5:00 AM 7	4:00 AM 1	12:00 AM 0	12:00 AM 0	7:00 AM 637		
PM Peak Volume	5:00 PM 19	2:00 PM 1	4:00 PM 1	4:00 PM 3	5:00 PM 6	5:00 PM 17	3:00 PM 73	5:00 PM 207	3:00 PM 100	2:00 PM 15	9:00 PM 4	1:00 PM 1	12:00 PM 0	5:00 PM 1	5:00 PM 406		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Type of report: Midblock Count - Speed Data

LOCATION: Waikoloa Road SPECIFIC LOCATION: CITY/STATE: Waimea, HI															QC JOB #: 17229201 DIRECTION: WB DATE: Sep 17 2025		
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	1	3	4	1	1	0	0	0	10	46-55	7
01:00 AM	0	0	0	0	0	0	1	3	4	2	2	0	0	0	12	46-55	7
02:00 AM	2	0	0	0	0	0	2	2	9	2	1	0	0	0	18	47-56	11
03:00 AM	0	0	0	0	0	2	0	16	15	5	1	0	0	0	39	46-55	31
04:00 AM	4	0	0	1	2	3	4	26	48	28	2	0	0	0	118	51-60	76
05:00 AM	4	0	0	0	0	5	17	98	108	20	4	0	0	0	256	46-55	206
06:00 AM	11	0	0	6	5	16	73	212	188	35	3	0	0	0	549	46-55	400
07:00 AM	15	0	0	0	2	17	84	270	199	37	2	0	0	0	626	46-55	469
08:00 AM	6	0	0	0	0	15	111	247	120	19	1	0	0	1	520	46-55	367
09:00 AM	12	0	0	0	0	3	71	174	88	14	0	0	0	0	362	46-55	262
10:00 AM	4	0	0	1	0	12	64	149	65	11	2	0	0	0	308	46-55	214
11:00 AM	13	0	0	0	0	3	52	140	55	9	0	0	0	0	272	46-55	195
12:00 PM	7	1	0	0	0	8	58	157	61	14	0	0	0	0	306	46-55	218
01:00 PM	7	0	0	0	1	4	61	161	50	16	0	0	0	0	300	41-50	222
02:00 PM	8	0	0	0	0	9	58	160	60	9	0	0	0	0	304	46-55	220
03:00 PM	12	0	1	0	0	11	57	163	60	6	1	0	0	0	311	46-55	223
04:00 PM	12	0	0	0	0	4	85	126	62	8	0	1	0	0	298	41-50	211
05:00 PM	7	0	0	0	0	4	54	135	62	10	0	0	0	0	272	46-55	197
06:00 PM	4	0	0	0	0	0	31	84	38	10	0	0	0	0	167	46-55	122
07:00 PM	2	0	0	0	0	2	28	42	23	7	1	0	0	0	105	41-50	70
08:00 PM	2	0	0	0	0	0	18	44	39	15	6	0	0	0	124	46-55	83
09:00 PM	0	0	0	0	0	0	12	36	33	11	1	0	0	0	93	46-55	69
10:00 PM	3	0	0	0	0	1	2	26	20	4	1	1	0	0	58	46-55	46
11:00 PM	1	0	0	0	0	0	1	5	10	4	2	0	0	0	23	46-55	15
Day Total	136	1	1	8	10	119	945	2479	1421	297	31	2	0	1	5451	46-55	3900
Percent	2.5%	0%	0%	0.1%	0.2%	2.2%	17.3%	45.5%	26.1%	5.4%	0.6%	0%	0%	0%			
AM Peak Volume	7:00 AM 15	12:00 AM 0	12:00 AM 0	6:00 AM 6	6:00 AM 5	7:00 AM 17	8:00 AM 111	7:00 AM 270	7:00 AM 199	7:00 AM 37	5:00 AM 4	12:00 AM 0	12:00 AM 0	8:00 AM 1	7:00 AM 626		
PM Peak Volume	3:00 PM 12	12:00 PM 1	3:00 PM 1	12:00 PM 0	1:00 PM 1	3:00 PM 11	4:00 PM 85	3:00 PM 163	4:00 PM 62	1:00 PM 16	8:00 PM 6	4:00 PM 1	12:00 PM 0	12:00 PM 0	3:00 PM 311		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

SUMMARY - Midblock Count - Speed Data

LOCATION: Waikoloa Road															QC JOB #: 17229201		
SPECIFIC LOCATION:															DIRECTION: WB		
CITY/STATE: Waimea, HI															DATE: Sep 16 2025 - Sep 17 2025		
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	311	2	3	21	62	256	1931	5011	3013	607	71	5	0	2	11295	46-55	8024
Percent	2.8%	0%	0%	0.2%	0.5%	2.3%	17.1%	44.4%	26.7%	5.4%	0.6%	0%	0%	0%			
Cumulative Percent	2.8%	2.8%	2.8%	3%	3.5%	5.8%	22.9%	67.3%	93.9%	99.3%	99.9%	100%	100%	100%			
ADT 5647															85th Percentile: 53 MPH Mean Speed(Average): 48 MPH Median: 48 MPH Mode: 48 MPH		
Comments:																	

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

TRUE DATA TO IMPROVE MOBILITY

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: WB

CITY/STATE: Waimea, HI

DATE: Sep 16 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classified	Total
12:00 AM	0	4	1	2	0	0	0	1	0	0	0	0	0	0	8
01:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
02:00 AM	0	13	3	0	2	0	0	0	0	0	0	0	0	1	19
03:00 AM	0	37	7	0	0	0	0	0	0	0	0	0	0	0	44
04:00 AM	0	89	24	0	6	0	0	3	0	0	0	0	0	3	125
05:00 AM	0	166	56	4	9	0	0	4	0	0	0	0	0	7	246
06:00 AM	0	347	138	6	33	0	0	7	0	0	0	0	0	13	544
07:00 AM	0	433	139	1	33	1	0	10	3	0	0	0	0	17	637
08:00 AM	2	360	105	7	12	0	0	9	0	0	0	0	0	8	503
09:00 AM	0	297	66	1	24	0	0	5	2	0	0	0	0	9	404
10:00 AM	0	256	63	0	8	0	0	9	2	0	0	0	0	10	348
11:00 AM	0	220	57	1	10	2	0	1	0	0	0	0	0	3	294
12:00 PM	0	207	68	3	10	0	0	7	3	0	0	0	0	8	306
01:00 PM	0	210	61	1	10	0	0	6	0	0	0	0	0	14	302
02:00 PM	0	238	36	1	9	1	0	2	0	0	0	0	0	9	296
03:00 PM	1	259	74	1	12	0	0	1	0	0	0	0	0	15	363
04:00 PM	1	235	41	6	7	0	0	1	0	0	0	0	0	9	300
05:00 PM	3	302	69	1	14	0	0	2	0	0	0	0	0	15	406
06:00 PM	1	222	40	1	9	0	0	1	0	0	0	0	0	15	289
07:00 PM	0	103	18	0	2	0	0	0	0	0	0	0	0	4	127
08:00 PM	0	91	11	0	3	0	0	1	0	0	0	0	0	4	110
09:00 PM	0	82	19	0	5	0	0	0	0	0	0	0	0	1	107
10:00 PM	0	32	8	1	2	0	0	0	0	0	0	0	0	3	46
11:00 PM	0	8	3	1	1	0	0	0	0	0	0	0	0	0	13
Day Total	8	4217	1108	38	221	4	0	70	10	0	0	0	0	168	5844
Percent	0.1%	72.2%	19%	0.7%	3.8%	0.1%	0%	1.2%	0.2%	0%	0%	0%	0%	2.9%	
ADT 5844															
AM Peak Volume	8:00 AM 2	7:00 AM 433	7:00 AM 139	8:00 AM 7	6:00 AM 33	11:00 AM 2	12:00 AM 0	7:00 AM 10	7:00 AM 3	12:00 AM 0	12:00 AM 0	12:00 AM 0	12:00 AM 0	7:00 AM 17	7:00 AM 637
PM Peak Volume	5:00 PM 3	5:00 PM 302	3:00 PM 74	4:00 PM 6	5:00 PM 14	2:00 PM 1	12:00 PM 0	12:00 PM 7	12:00 PM 3	12:00 PM 0	12:00 PM 0	12:00 PM 0	12:00 PM 0	3:00 PM 15	5:00 PM 406
Comments:															

Comments:

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: WB

CITY/STATE: Waimea, HI

DATE: Sep 17 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	7	1	0	1	0	0	1	0	0	0	0	0	0	10
01:00 AM	0	7	3	0	1	0	0	1	0	0	0	0	0	0	12
02:00 AM	0	11	5	0	0	0	0	0	0	0	0	0	0	2	18
03:00 AM	0	34	5	0	0	0	0	0	0	0	0	0	0	0	39
04:00 AM	0	85	21	2	5	0	0	1	0	0	0	0	0	4	118
05:00 AM	0	181	55	2	9	0	0	5	0	0	0	0	0	4	256
06:00 AM	1	360	138	5	26	1	0	8	0	0	0	0	0	10	549
07:00 AM	1	449	126	3	21	0	0	12	0	0	0	0	0	14	626
08:00 AM	2	380	98	6	18	0	0	9	2	0	0	0	0	5	520
09:00 AM	0	279	56	1	9	1	0	4	0	0	0	0	0	12	362
10:00 AM	0	218	64	1	10	1	0	6	4	0	0	0	0	4	308
11:00 AM	1	209	38	0	11	0	0	1	0	0	0	0	0	12	272
12:00 PM	0	229	52	0	10	2	0	4	2	0	0	0	0	7	306
01:00 PM	0	231	42	4	7	0	0	7	2	0	0	0	0	7	300
02:00 PM	0	241	36	2	11	0	0	6	0	0	0	0	0	8	304
03:00 PM	2	236	49	4	9	0	0	0	0	0	0	0	0	11	311
04:00 PM	0	235	43	3	5	0	0	0	0	0	0	0	0	12	298
05:00 PM	0	220	38	1	5	0	0	1	0	0	0	0	0	7	272
06:00 PM	0	136	23	1	3	0	0	0	0	0	0	0	0	4	167
07:00 PM	0	96	5	0	2	0	0	0	0	0	0	0	0	2	105
08:00 PM	0	107	12	0	2	1	0	1	0	0	0	0	0	1	124
09:00 PM	0	72	16	0	5	0	0	0	0	0	0	0	0	0	93
10:00 PM	0	45	9	0	1	0	0	0	0	0	0	0	0	3	58
11:00 PM	0	17	3	1	0	0	0	1	0	0	0	0	0	1	23
Day Total	7	4085	938	36	171	6	0	68	10	0	0	0	0	130	5451
Percent	0.1%	74.9%	17.2%	0.7%	3.1%	0.1%	0%	1.2%	0.2%	0%	0%	0%	0%	2.4%	
ADT 5451															
AM Peak Volume	8:00 AM	7:00 AM	6:00 AM	8:00 AM	6:00 AM	6:00 AM	12:00 AM	7:00 AM	10:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM	7:00 AM
	2	449	138	6	26	1	0	12	4	0	0	0	0	14	626
PM Peak Volume	3:00 PM	2:00 PM	12:00 PM	1:00 PM	2:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM	3:00 PM
	2	241	52	4	11	2	0	7	2	0	0	0	0	12	311

Comments:

LOCATION: Waikoloa Road

QC JOB #: 17229201

SPECIFIC LOCATION:

DIRECTION: WB

CITY/STATE: Waimea, HI

DATE: Sep 16 2025 - Sep 17 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	15	8302	2046	74	392	10	0	138	20	0	0	0	0	298	11295
Percent	0.1%	73.5%	18.1%	0.7%	3.5%	0.1%	0%	1.2%	0.2%	0%	0%	0%	0%	2.6%	
ADT 5647															

Comments:

Type of report: Midblock Count - Volume Data

LOCATION: Waikoloa Road							QC JOB #: 17229201			
SPECIFIC LOCATION:							DIRECTION: WB			
CITY/STATE: Waimea, HI							DATE: Sep 16 2025 - Sep 17 2025			
Start Time	Mon 16 Sep 25	Tue 17 Sep 25	Wed 18 Sep 25	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	8	10				9			9	
01:00 AM	7	12				10			10	
02:00 AM	19	18				19			19	
03:00 AM	44	39				42			42	
04:00 AM	125	118				122			122	
05:00 AM	246	256				251			251	
06:00 AM	544	549				547			547	
07:00 AM	637	626				632			632	
08:00 AM	503	520				512			512	
09:00 AM	404	362				383			383	
10:00 AM	348	308				328			328	
11:00 AM	294	272				283			283	
12:00 PM	306	306				306			306	
01:00 PM	302	300				301			301	
02:00 PM	296	304				300			300	
03:00 PM	363	311				337			337	
04:00 PM	300	298				299			299	
05:00 PM	406	272				339			339	
06:00 PM	289	167				228			228	
07:00 PM	127	105				116			116	
08:00 PM	110	124				117			117	
09:00 PM	107	93				100			100	
10:00 PM	46	58				52			52	
11:00 PM	13	23				18			18	
Day Total	5844	5451				5651			5651	
% Weekday Average	103.4%	96.5%								
% Week Average	103.4%	96.5%				100%				
AM Peak Volume	7:00 AM 637	7:00 AM 626				7:00 AM 632			7:00 AM 632	
PM Peak Volume	5:00 PM 406	3:00 PM 311				5:00 PM 339			5:00 PM 339	
Comments:										

Report generated on 9/23/2025 9:42 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Attachment B

CRASH REPORT LEGEND

HEADING	DESCRIPTION	VALUES
REPORT NO	report number	Varies
COUNTY(2)	county	HON = Honolulu MAU = Maui HAW = Big Island KAU = Kauai
PRIM CITY(25)	city or town	Varies (no coding)
OCCUR DATE(6)	date	Month/Day/Year (xx/xx/xxxx) or Day-Month-year (xx-xx-xxxx)
OCCUR DAY(6)	day	SU = Sunday MO = Monday TU = Tuesday WE = Wednesday TH = Thursday FR = Friday SA = Saturday
OCCUR TIME(7)	time	Hour/Minute entry based on military time (00:00 - 23:59)
MV TOTAL INV(9)	# of motor vehicles involved	1, 2, 3, etc.
MC TOTAL INV(9)	# motorcycles involved	1, 2, 3, etc.
MOP TOTAL INV(9)	# mopeds involved	1, 2, 3, etc.
BC TOTAL INV(9)	# bicycles involved	1, 2, 3, etc.
PED TOTAL INV(9)	# pedestrians involved	1, 2, 3, etc.
PRIM ROUTE NO(27)	primary roadway route number	Varies (no coding)
PRIM MILEPOST(28)	primary roadway milepost	Varies (no coding)
PRIM ST HWY NAME(24)	primary roadway name	Varies (no coding)
REFER DIST(29)	crash distance from reference	Distance given in feet or miles (to the nearest foot or mile)
REFER DIST UNIT(29)	unit of crash distance from reference	Unit in foot or mile
REFER DIRECTION(29)	crash direction from reference	N = North S = South E = East W = West
REFER NAME(30)	reference name	Varies
PRIM JURISDICT	primary roadway jurisdiction	Three character alphanumeric entries (S1R, S1U, C5R, P7R, O8R, etc.) S = State C = County P = Private O = Other (Federal/Military) U = Urban R = Rural 1 = Interstate 2 = Primary 3 = Secondary 4 = State Local 5 = County Secondary 6 = County Local 7 = Private 8 = Other (Federal/Military) (Note: Beginning in 2009, only the S for state and C for county used for the classification of roads. The numbers and Urban and Rural classifications are chosen randomly.)
LOC FIRST HARM(31A)	location of first harmful event	INTERSECTION/JUNCTION 01 = Intersection Area 02 = Driveway Access ON ROADWAY-NOT AT INTERSECTION 10 = Left or Inner Lane 11 = Right or Outer Lane 12 = Other Main Lane 13 = Merge/Transition Lane 14 = Acceleration Lane 15 = Deceleration Lane 16 = Left Turn Lane 17 = Right Turn Lane 18 = Bikeway OFF-ROADWAY-OTHER 30 = Driveway 31 = Private Road 32 = Parking Lot OTHER ROADWAY 40 = Entrance/Exit Ramp 41 = Railway Crossing 42 = Midblock Crosswalk 43 = HOV Crossover Lane 44 = Gore 45 = Separator 46 = Parking Lane 47 = Emergency Escape Ramp

		19 = Bus/HOV/Zipper Lane OFF-ROADWAY 20 = Left Shoulder 21 = Right Shoulder 22 = Left Roadside 23 = Right Roadside 24 = Median 25 = Median Crossover 26 = Outside ROW (Trafficway)	48 = Other (Specify)
INTERSECTION RELATED(27)	Intersection	N = No	Y = Yes
CRASH ACTIONS(31B)	crash actions in sequence	NON-COLLISION 01 = Overturn/Rollover on Roadway 02 = Overturn/Rollover off Roadway 03 = Submersion 04 = Fire/Explosion 05 = Jackknife 06 = Ran off Roadway 07 = Cargo/Equipment Loss or Shift 08 = Fell/Jumped from Motor Vehicle 09 = Downhill Runaway 10 = Separation of Units 11 = Cross Median/Centerline 12 = Equipment Failure 13 = Thrown or Falling Objects 14 = Other Non-Collision (Specify) 15 = Cross Centerline COLLISION WITH OBJECT/ANIMAL 20 = Overhead Cables 21 = Guardrail Face 22 = Guardrail End 23 = Culvert 24 = Ditch 25 = Bridge/Overhead Structure 26 = Bridge Pier or Support 27 = Bridge Rail 28 = Building 29 = Tunnel 30 = Curb 31 = Embankment/Retaining Wall 32 = Fence 33 = Utility Pole/Light Support 34 = Traffic Signal/Sign Post 35 = Other Post/Pole/Support 36 = Impact Attenuator/Crash Cushion 37 = Concrete Traffic Barrier 38 = Other Traffic Barrier 39 = Tree (Standing) 40 = Hydrant 41 = Mailbox 42 = Animal 43 = Other (Specify) 44 = Traffic Sign Post	COLLISION WITH PERSON (PED ACTION) 50 = Unknown 51 = Crossing in Crosswalk 52 = Crossing Outside Crosswalk 53 = Crossing No Crosswalk 54 = Darting Out 55 = Walking in Roadway 56 = Playing/Exercising in Roadway 57 = Directing Traffic 58 = Pushing/Working on Vehicle 59 = Getting On/Off Vehicle 60 = Roadwork 61 = Other (Specify) COLLISION WITH BICYCLE OR MOPED 70 = Unknown 71 = Riding in Bikeway 72 = Riding Outside Bikeway 73 = Riding in Road/No Bikeway 74 = Riding off Roadway 75 = Crossing Roadway 76 = Fell In/On Roadway 77 = Other (Specify) COLLISION WITH MOTOR VEHICLE IN TRANSPORT 80 = Head On 81 = Rear End 82 = Sideswipe - Same Direction 83 = Sideswipe - Opposite Direction 84 = Angle - Same Direction 85 = Angle - Opposite Direction 86 = Angle - Not Specified 87 = Broadside 88 = Rear to Side 89 = Rear to Rear 90 = Other (Specify) COLLISION WITH MOTOR VEHICLE - OTHER 100 = Motor Vehicle in Other Roadway 101 = Railway Vehicle (Train/Engine) 102 = Parked MV (motor vehicle) 103 = Work Zone/Maintenance Equipment
GPS LATITUDE(23)	GPS latitude measurement	Varies (no coding)	
GPS LONGITUDE(23)	GPS longitude measurement	Varies (no coding)	
LANE DEPARTURE	lane departure	N = No	Y = Yes
INVOLVED SPEED	involved speeding	N = No	Y = Yes
LIGHTING(19)	lighting	01 = Daylight 02 = Dawn 03 = Dusk 04 = Spot Illumination 05 = Continuous Lighting	06 = Dark/Lights Off 07 = Dark/No Lights 08 = Dark/Unknown 09 = Unknown

WEATHER COND 1(18)	weather condition	01 = Clear 02 = Cloudy 03 = Rain 04 = Hazy, Fog, Smoke 05 = Windy, Severe Crosswinds 06 = Sleet/Hail 07 = Snow 08 = Blowing Sand/Soil 09 = Unknown
WEATHER COND 2(18)	weather condition	See previous list (WEATHER COND 1)
NUMBER KILLED	# persons killed	1, 2, 3, etc.
NUMBER SERIOUS INJURIES	# persons seriously injured	1, 2, 3, etc.
NUMBER INJURED	# persons injured	1, 2, 3, etc.
CRASH YEAR	crash year	Varies

C000 Report No	C002 County	C025 Prim City	C006 Occur Date	C006 Occur Day	C007 Occur Time	C009		C009		C009		C027 Prim Route No	C028 Prim Milepost	C024 Prim St Hwy Name	C029		C030 Refer Name	C000 Prim Jurisdict	C031A Loc First Harm	CF027		C023 GPS Latitude	C023 GPS Longitude	CF024 Lanedeparture	CF010 Involvedspeed	C019 Lighting	C018 Weather Cond 1	C018 Weather Cond 2	C010 Number Killed	CF158		DB Crash Year
						MV Total Inv	C009 MC Total Inv	MOP Total Inv	C009 BC Total Inv	PED Total Inv	Refer Dist				Refer Direction	Intersectionrel ated				CF031B Crashactions	Numberseriousinjuries									C010 Number Injured		
21-014174	HAW	WAIKOLOA	20-02-2021	SA	3:35	2	0	0	0	0	19	75.03	QUEEN KAAHUMANU HWY	150	FT	SW	WAIKOLOA RD	S3U	1	Y	81	19.921698	-155.8608	N	N	4	1	-	0	1	2	2021
21-021156	HAW	WAIKOLOA	16-03-2021	TU	14:51	2	0	0	0	0	19	75.021	QUEEN KAAHUMANU HWY	100	FT	SW	WAIKOLOA RD	S3U	12	Y	81	19.921783	-155.860682	N	N	1	1	-	0	0	0	2021
21-021760	HAW	WAIKOLOA	18-03-2021	TH	15:36	1	1	0	0	0	19	75.027	QUEEN KAAHUMANU HWY	131	FT	SW	WAIKOLOA RD	S3U	12	Y	81	19.921728	-155.860758	N	N	1	1	5	0	1	1	2021
21-058830	HAW	PUAKO	18-07-2021	SU	13:13	2	0	0	0	0	19	75	QUEEN KAAHUMANU HWY	11	FT	NE	WAIKOLOA RD	S3U	12	Y	81	19.922008	-155.860449	N	N	1	1	-	0	0	0	2021
22-068115	HAW	WAIKOLOA	5/8/2022	FR	8:01	0	0	1	0	0	19	74.999	QUEEN KAAHUMANU HWY	16	FT	NE	WAIKOLOA RD	S3U	18	Y	8	19.92208	-155.8605	N	N	1	1	-	0	0	1	2022
22-073279	HAW	WAIKOLOA	21-08-2022	SU	14:35	2	0	0	0	0	19	75.001	QUEEN KAAHUMANU HWY	6	FT	NE	WAIKOLOA RD	S3U	1	Y	80	19.92192	-155.86049	N	N	1	1	-	0	1	2	2022
23-004561	HAW	PUAKO	13-01-2023	FR	21:30	2	0	0	0	0	19I	74.98	QUEEN KAAHUMANU HWY	32	FT	SW	WAIKOLOA RD	S3U	1	Y	87	19.92189	-155.86053	N	N	5	1	-	0	0	6	2023
23-062611	HAW	PUAKO	29-06-2023	TH	11:23	2	0	0	0	0	19I	74.999	QUEEN KAAHUMANU HWY	132	FT	SW	WAIKOLOA RD	S3U	1	Y	81	19.921795	-155.860815	N	N	1	1	-	0	0	0	2023
24-047340	HAW	WAIKOLOA	23-05-2024	TH	5:05	2	0	0	0	0	19I	74.996	QUEEN KAAHUMANU HWY	116	FT	SW	WAIKOLOA RD	S3U	1	Y	81	19.921758	-155.860729	N	Y	2	1	-	0	0	0	2024
24-051647	HAW	WAIKOLOA	5/6/2024	WE	16:14	2	0	0	0	0	1169026B	1.137	WAIKOLOA BEACH DR	16	FT	N	QUEEN KAAHUMANU HWY	C7U	1	Y	81	19.922043	-155.860485	N	N	1	1	-	0	0	2	2024
19-001512	HAW	WAIKOLOA	6/1/2020	MO	23:30	2	0	0	0	0	-	-	WAIKOLOA RD & PANIOLO AV 6	FT	N	FIRE HYDRANT	-	1	N	01, 87	19.92632	-155.78705	N	N	4	1	-	0	0	2	2020	
21-019791	HAW	WAIKOLOA	11/3/2021	TH	15:40	2	0	0	0	0	-	-	PANIOLO AVE	-	-	-	WAIKOLOA RD	-	1	Y	87, 01	19.92657	-155.78698	N	N	1	1	-	0	0	4	2021
21-031513	HAW	WAIKOLOA	20-04-2021	TU	16:50	2	0	0	0	0	19I	6	WAIKOLOA ROAD	20	FT	S	PANIOLO AVE	-	1	Y	87	19.92657	-155.78698	N	N	1	2	3	0	1	3	2021
21-062501	HAW	WAIKOLOA	30-07-2021	FR	13:10	2	0	0	0	0	-	-	WAIKOLOA RD & PANIOLO AV	-	-	-	INTERSECTION OF WAIKOLOA	-	1	Y	84	19.92657	-155.78698	N	N	1	2	5	0	0	0	2021
21-107066	HAW	WAIKOLOA	17-12-2021	FR	11:05	2	0	0	0	0	19I	-	WAIKOLOA RD	0.55	MI	E	PANIOLO AVE	-	1	Y	87	19.92657	-155.78698	N	N	1	1	-	0	0	0	2021
22-063150	HAW	WAIKOLOA	21-07-2022	TH	16:12	2	0	0	0	0	19I	-	WAIKOLOA RD	5	FT	E	PANIOLO AVE	-	1	Y	87	19.92657	-155.78698	N	Y	1	1	-	0	1	1	2022
20-008870	HAW	WAIKOLOA	30-01-2020	TH	19:00	0	1	0	0	0	-	2	WAIKOLOA RO	0.1	MI	E	2 MILE MARKER	-	14	N	14, 15, 06, 08	19.91713	-155.84153	N	N	7	1	-	0	0	2	2020
20-017252	HAW	WAIKOLOA	28-02-2020	FR	19:00	3	0	0	0	0	19I	2.1	WAIKOLOA RD	0.71	MI	NW	HAWAII CONCRETE RD	C4U	12	N	15, 83, 21, 80	19.91514	-155.83186	Y	N	6	1	-	1	1	1	2020
21-020961	HAW	WAIKOLOA	15-03-2021	MO	20:33	1	0	0	0	0	19I	4	WAIKOLOA ROAD	0.1	MI	N	4MM	-	21	N	35	19.91602	-155.80669	Y	N	7	1	-	0	0	0	2021
21-027474	HAW	WAIKOLOA	7/4/2021	WE	1:33	1	0	0	0	0	19I	-	WAIKOLOA ROAD	0.9	MI	E	3 MILE MARKER ON WAIKOLO	-	20	N	6	19.91041	-155.8191	Y	N	7	1	-	0	0	0	2021
21-027977	HAW	WAIKOLOA	8/4/2021	TH	14:35	2	0	0	0	0	19I	3	WAIKOLOA ROAD	-	-	N	3 MILE MARKER	-	11	N	83	19.92493	-155.79712	Y	N	1	1	-	0	0	0	2021
21-043241	HAW	WAIKOLOA	30-05-2021	SU	6:14	2	0	0	0	0	19I	1	MM 191-1; WAIKOLOA RD , B10.5	MI	E	1 MILE MARKER	-	12	N	83	19.91855	-155.84635	Y	N	1	1	-	0	0	0	2021	
21-068005	HAW	WAIKOLOA	16-08-2021	MO	19:28	1	0	0	0	0	19I	-	WAIKOLOA RD	2316	FT	SW	QUARRY RD	-	12	N	90	19.92021	-155.80324	N	N	7	3	-	0	0	0	2021
21-089824	HAW	WAIKOLOA	25-10-2021	MO	2:32	1	0	0	0	0	19I	-	WAIKOLOA RD	0	FT	-	ULUWEHI ST	-	24	Y	33	19.925106	-155.796649	Y	N	4	1	-	0	0	0	2021
21-100636	HAW	WAIKOLOA	28-11-2021	SU	23:24	2	0	0	0	0	19I	-	WAIKOLOA RD	350	FT	SE	MM 3	-	1	N	15, 85	19.909864	-155.818215	Y	N	6	1	-	0	0	0	2021
21-101857	HAW	WAIKOLOA	1/12/2021	WE	19:07	1	0	0	0	0	19I	-	WAIKOLOA RD	264	FT	W	PUA MELIA ST	-	11	N	42	19.925092	-155.795262	N	N	5	1	-	0	0	0	2021
21-103040	HAW	WAIKOLOA	4/12/2021	SA	3:00	1	0	0	0	0	19I	-	WAIKOLOA RD	0.5	MI	E	4 MILE MARKER	-	21	N	06, 24	19.92101	-155.80179	Y	N	7	3	-	0	0	0	2021
21-107263	HAW	WAIKOLOA	17-12-2021	FR	20:05	1	0	0	0	0	19I	-	WAIKOLOA RD	0.5	MI	E	MILE MARKER 3	-	10	N	15, 06, 02	19.92021	-155.80324	Y	N	7	1	-	0	0	0	2021
21-108380	HAW	WAIKOLOA	21-12-2021	TU	14:04	1	0	0	0	0	19I	-	WAIKOLOA RD	-	-	-	PUA MELIA ST	-	1	Y	40	19.92523	-155.79438	Y	N	1	1	-	0	0	0	2021
22-005059	HAW	WAIKOLOA	17-01-2022	MO	9:20	2	0	0	0	0	19I	-	WAIKOLOA RD	183	FT	SW	QUARRY RD	-	12	N	102	19.92349	-155.79939	N	N	1	1	-	0	0	0	2022
22-005626	HAW	WAIKOLOA	19-01-2022	WE	3:15	1	0	0	0	0	19I	-	WAIKOLOA RD	3724	FT	SW	QUARRY RD	-	21	N	37	19.91602	-155.80669	Y	N	7	1	-	0	0	0	2022
22-014240	HAW	WAIKOLOA	16-02-2022	WE	8:20	1	0	0	0	0	19I	1.757	WAIKOLOA RD	5047	FT	W	HAWAII CONCRETE RD	-	21	N	14, 06	19.914284	-155.835341	N	N	1	1	-	0	0	1	2022
22-035374	HAW	WAIKOLOA	24-04-2022	SU	14:30	2	0	0	0	0	19I	4.185	WAIKOLOA RD	2909	FT	SW	QUARRY RD	C4U	14	N	81	19.918316	-155.804995	N	N	1	1	-	0	0	1	2022
22-041831	HAW	WAIKOLOA	14-05-2022	SA	11:21	0	2	0	0	0	19I	-	WAIKOLOA RD	577	FT	SE	QUEEN KAAHUMANU HWY	-	12	N	84, 08	19.920923	-155.859323	N	N	1	1	-	0	1	1	2022

Attachment C

HCM 7th TWSC
1: Project Driveway & Waikoloa Road

Opening Year (2028)
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	9	37	670	2	1
Future Vol, veh/h	206	9	37	670	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	95	95	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	224	9	39	728	2	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	233	0	1035	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	806	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1300	-	250	796
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	429	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1300	-	238	796
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	408	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.4	16.73
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	-	-	91	-
HCM Lane V/C Ratio	0.011	-	-	0.03	-
HCM Control Delay (s/veh)	16.7	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

HCM 7th TWSC
1: Project Driveway & Waikoloa Road

Opening Year (2028)
PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	622	0	0	357	8	35
Future Vol, veh/h	622	0	0	357	8	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	94	94	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	676	0	0	388	9	38

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	676	0	1064	676
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	388	-
Critical Hdwy	-	-	4.17	-	6.47	6.27
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.263	-	3.563	3.363
Pot Cap-1 Maneuver	-	-	892	-	241	445
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	892	-	241	445
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	15.65
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	384	-	-	892	-
HCM Lane V/C Ratio	0.122	-	-	-	-
HCM Control Delay (s/veh)	15.7	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-



AB Maui Quarries, LLC Waikōloa Industrial Yard Project
 TMK: (3) 6-8-001:067 (por.)

Ka Pa‘akai O Ka ‘Āina Analysis

February 19, 2026

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 ASM Affiliates

At the request of AB Maui Quarries, LLC (ABMQ; developer and landowner), ASM Affiliates (ASM) conducted a Ka Pa‘akai O Ka ‘Āina analysis to assess potential impacts associated with the proposed development of a 14.9-acre portion of the 934.66-acre parcel, Tax Map Key (TMK): (3) 6-8-001:067, in Waikōloa Ahupua‘a, South Kohala District, Island of Hawai‘i (Figures 1 through 3). The proposed Waikōloa Industrial Yard development project (Labeled ‘Waikōloa Industrial Yard’ in Figure 4) consists of the construction of a base yard, asphalt plant, concrete plant, office and parking area, maintenance shop, warehouse, fuel farm, equipment staging yard, and stormwater basin related uses (Figure 5). Additionally, a proposed well will be located to the east of the Waikōloa Industrial Yard project area (see Figure 4). This cultural analysis intended to support the submission of a Special Use Permit (SUP) application for the proposed development project that will be put forward to the Leeward Planning Commission (LPC) and State of Hawai‘i Land Use Commission (HLUC), as well a Ground Water Use Permit (GWUPA) for the proposed well that will be reviewed by the State of Hawai‘i Commission on Water Resource Management (CWRM).

In *Ka Pa‘akai O Ka ‘Āina v. Land Use Commission* (LUC), the Hawai‘i Supreme Court asserted that the State has a constitutional obligation to preserve and protect customary and traditional rights of native Hawaiians to the extent feasible; and that the agency must provide sufficient evidence to the Commission that these types of practices are protected, if they exist in the location in question. This “Ka Pa‘akai framework” was created by the Court “to help ensure the enforcement of traditional and customary native Hawaiian rights while reasonably accommodating competing private development interests.” The Commission, in its capacity as an agency of the State, is obligated to conduct a “Ka Pa‘akai analysis” of a proposed action. This analysis should be used to inform any decision on the impact of the proposed action on traditional and customary practices.

Consequently, the Court required an assessment of the following:

- (1) “the identity and scope of ‘valued cultural, historical, or natural resources’ in the project area, including the extent to which traditional and customary native Hawaiian rights are exercised in the project area;
- (2) “the extent to which those resources -- including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action;” and
- (3) “the feasible action, if any, to be taken ... to reasonably protect native Hawaiian rights if they are found to exist.”

The *Ka Pa‘akai o ka ‘Āina* analysis provided here begins with a description of the project area, including information on the geological and physical setting. To provide a context within which to assess the potential impact of the proposed action on traditional and customary practices, a brief culture-historical background

for the proposed Waikōloa Industrial Yard project area is presented, followed by the Court-required assessment of the aforementioned items.

PROPOSED DEVELOPMENT ACTIVITY

ABMQ, LLC is proposing to develop a 14.9-acre portion (Labeled 'Waikōloa Industrial Yard' in Figure 4) of the 934.66-acre parcel located at TMK: (3) 6-8-001:067. The proposed development activity consists of the construction of an asphalt plant, concrete plant, office and parking area, maintenance shop, warehouse, fuel farm, and stormwater basin (see Figure 5). Additionally, a proposed well will be drilled to the east of the Waikōloa Industrial Yard project area (see Figure 4).

PROJECT AREA DESCRIPTION

The proposed Waikōloa Industrial Yard project area is located towards the central portion of the 934.66-acre subject parcel, while the proposed well site is located within the eastern half of the parcel (see Figures 1 through 4). The western portion of the parcel is bounded to the north by Waikōloa Road, to the south by an existing gravel quarry, and to the west by a paved access road leading from Waikōloa Road to the quarry. The eastern portion of the parcel is bounded to the north and east by an undeveloped parcel owned by the Waikōloa Village Association, and to the south by an undeveloped State-owned parcel.

Geologically, the subject parcel is situated on the northwestern flank of Mauna Loa where it joins the southwestern flank of Mauna Kea at elevations ranging from 650 to 1,840 feet (200 to 560 meters) above mean sea level (amsl), roughly 4 to 6 miles (6.5 to 9.7 kilometers) inland of the coast (see Figures 1 through 3). The terrain slopes consistently to the northwest and is comprised primarily of lava flow from two distinct eruptive episodes of Mauna Loa that occurred between 1,500 and 5,000 years before present (B.P.; Sherrod et al. 2021; Trusdell and Lockwood 2004). The Mauna Loa flows are comprised almost entirely of jagged 'a'ā lava with very little vegetation cover. The well site is situated on the older of these two flows (labeled Qk1y in Figure 6) dating to between 3,000-5,000 years B.P. This flow is commonly referred to as the Kanikū flow and is mentioned in the boundary commission testimonies for the ahupua'a of Waikōloa and Pu'uānāhulu as the marking the traditional boundary between the Districts of South Kohala and North Kona (Maly and Maly 2002). The project area is situated within younger of the flows (labeled Qk2 in Figure 6), which has been radiocarbon dated to roughly 1,500 years B.P. (Trusdell and Lockwood 2024), consists of a massive 'a'ā flow that originated from summit of Mauna Loa and covered portions of the Kanikū flow.

Soil classifications within the subject parcel vary by geological substrate (Soil Survey Staff 2022). The well site location and eastern sliver of the project area have not developed any measurable soil covering and are classified as 'a'ā lava flows on 2 to 20 percent slopes (labeled "10" in Figure 7). Similarly, soils on the Kanikū flow are classified as Lava flow-Nanuku complex on 2 to 20 percent slopes (labeled as "352" in Figure 7); the majority of the project area consists of these soils.

The climate in this area is generally warm with a mean annual temperature ranging between 68 to 75 degrees Fahrenheit (Giambelluca et al. 2014). Mean annual rainfall is around 12 inches a year (Giambelluca et al. 2013). Typical trade winds create prevailing winds out of the east that average between 7 and 14 miles per hour, but which can blow down the mountains at speeds of 20 to 30 miles per hour during the nighttime. Daytime sea breezes, which blow onshore, are often of similar strength (Juvik and Juvik 1998).

Vegetation within the Waikōloa Industrial Yard project area and well site is mostly limited to sparse fountain grass (*Pennisetum setaceum*). Along the northern portions of the subject parcel and within the kīpuka of the older Mauna Kea lava flows, the fountain grass becomes much thicker. Stands of the endemic wililwili tree (*Erythrina sandwicensis*) are also present near the eastern boundary of the subject parcel (Clark 2025).

Prior land disturbance within the subject parcel is limited to a few isolated bulldozer cuts and larger bulldozed swaths primarily in the areas adjacent to Waikōloa Road and the existing gravel quarry. A bulldozed powerline maintenance road follows the southern boundary of the property. Another bulldozed 4WD road (a former access road) extends mauka-makai on the 'a'ā across the northern portion of the property. Additionally, owing to the former use of the property for military training during World War II,

several impact craters were observed throughout the subject parcel and metal shrapnel from the exploded munitions is scattered across the ground surface (Clark 2025).

IDENTIFICATION OF CUSTOMARY AND TRADITIONAL RESOURCES AND PRACTICES

In an effort to identify any valued cultural, historical, or natural resources, and to assess the extent to which traditional and customary rights are, or have been, exercised in the project area, this section presents a summary of historical-archival information concerning Waikōloa Ahupua‘a and, where applicable, the broader regional areas including the kalana (subdistrict) of Waimea and moku (district) of Kohala Hema (South Kohala). This section also includes a summary of findings from previous archaeological and cultural studies conducted within the project area and vicinity. Primary source materials were obtained from key state agencies, including the State Historic Preservation Division, Hawai‘i State Archives, and the Department of Accounting and General Services Land Survey Division. Additional historical context was derived from digital databases, such as the Office of Hawaiian Affairs’ Papakilo and Kīpuka databases, Waihona ‘Āina, Ulukau Hawaiian Electronic Library, Hawai‘i Genealogical Indexes, and Newspapers.com. Furthermore, secondary resources housed at ASM Affiliates’ Hilo office provided a broader contextual understanding of historical land use, political shifts, and cultural transformations in Hawai‘i.

Traditional Mo‘olelo featuring Waikōloa

Waikōloa is an ahupua‘a (land division) located within the moku (district) of Kohala. Specifically, Waikōloa is the southern-most ahupua‘a of Kohala, existing within Kohala Hema (South Kohala). A Hawaiian proverb describes the extent of the Kohala district, spanning from Honoke‘ā in the north to Keahualono to the south:

Kohala, mai Honoke‘ā a Keahuolono.

Kohala, from Honoke‘ā to Keahualono.

The extent of Kohala. (Pukui 1983: 196).

In “Place Names of Hawai‘i,” Waikoloa (spelled without the kahakō) is translated literally as “duck water,” though in parentheses it is stated, “This may be Wai-kō-loa, the name of a wind” (Pukui et al. 1974). The latter spelling of Waikōloa is today the more commonly accepted spelling for the ahupua‘a of Waikōloa. Waikōloa can also be translated as “water carried far” (Maly 1999:25). From 1914 to 1917, the nupepa (newspaper) *Ka Hōkū o Hawai‘i* published a series of stories titled “Ka‘ao Ho‘oniua Pu‘uwai no Ka-Miki” (The Heart Stirring Tale of Ka-Miki). These stories recount the exploits of two supernatural brothers, Ka-Miki and Maka‘iole, as they traversed myriad landscapes on various adventures. Locations are regularly personified within these tales and are given human attributes such as family relationships, personalities, and professions. Waikōloa is described as a wind goddess, and her interactions with the two brothers and adjacent regions are recounted in the following section:

Upon completing their training, Ka-uluhe sent Ka-Miki and Maka‘iole to fetch ‘awa from Waipi‘o water from a sacred spring on Mauna Kea, and other items needed to prepare the‘awa for drinking. While traveling on the plain of Waikōloa, Ka-Miki and Maka‘iole gathered the sedge Ka-lau-o-ke-Kāhuli which was to be used for straining the ceremonial ‘awa drink. At Holoholokū, some of the sacred water of Kāne which Ka-Miki was carrying in the ‘awa bowl Hōkū‘ula was lifted out by the wind, Waikōloa. The water was carried some distance, and where it fell a spring was formed. The deity Pōhaku-a-Kāne retrieved some of the water from the spring, and carried it to his companion deity Pōhakulua at the base of Mauna Kea. The spring from where Pōhakuakāne fetched the water came to be called Waiki‘i (Water fetched)...(Maly 1999: 25).

It comes as no surprise that Waikōloa is visualized as a wind goddess, given the powerful winds that typify this region. The literal meaning of Waikōloa is also evident in this recounting, as the strength of her wind causes the water in Hōkū'ula to be whisked miles upland to Waiki'i.

One of the earliest specific references to the Waikōloa area appears in the work of Samuel Mānaiakalani Kamakau who recounted the chants and legendary traditions of Hawaiian prehistory in his writings. According to Kamakau (1976) the priest Pā'ao arrived in the Hawaiian Islands during the 13th century from Kahiki, which has since been interpreted as Tahiti. Keeper of the god Kūkā'ilimoku, Pā'ao had fought bitterly with his older brother, the high priest Lonohele, who expelled him from his homeland (Kamakau 1991). Lonohele did not let Pā'ao leave peacefully but instead called on the cold north winds to sink his canoes; one of the winds was named "Waikōloa" (Kamakau 1991:5). Despite Lonohele's best efforts, Pā'ao's canoe was not destroyed and he and his companions (thirty-eight men, two stewards, his sister, chief Pili and his wife, and the prophet Makuaka'ūmana) arrived safely in Hawai'i after their perilous journey. Kamakau recounts the following details of Pā'ao and Pili's arrival in Hawai'i:

It is thought that Pā'ao came to Hawai'i in the time of the ali'i La'au because Pili ruled as mo'i after La'au. You will see Pili there in the line of succession, the mo'o kū'auhau, of Hanala'anui. It is said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were ali'i maka'āinana or just commoners, maka'āinana, during this time.

. . . There were seventeen generations during which Hawai'i Island was without chiefs—some eight hundred years. . . The lack of a high chief was the reason for seeking a chief in Kahiki, and that is perhaps how Pili became the chief of Hawai'i. He was a chief from Kahiki and became the ancestor of chiefs and people of Hawai'i Island (1991: 101-102).

The moku of Kohala appears in several versions of the Pili ruling line's origin story, such as a version discussed by Beckwith (1976) in which Mo'okini and Kaluawilinau, two kahunas of Moikeha, decide to stay on at Kohala. In addition, Kamakau (1964) recounts that

In the burial cave of Pu'uwepa in Kohala, Hawaii are deposited the bones of Pa'ao, the famous kahuna who built the heiau of Mo'okini at Kohala, and who lived a span of 15 generations before he died. Its entrance is said to be beneath the sea (ibid.: 41).

The Pili chiefs initial ruling center was likely in Kohala too, but Cartwright (1933) suggests that Pili later resided in and ruled from Waipi'o Valley in the Hāmākua District.

Lonoikamakahiki and the Battle of Hōkū'ula

Lonoikamakahiki was a celebrated ruling chief of Hawai'i Island and boasts lineage from the ancient Pili dynasty with a heritage rooted on Hawai'i Island, and likely Waipi'o Valley, since roughly A.D. 1300. He was the son of Keawenui a 'Umi, and the grandson of celebrated ali'i nui 'Umi a Līloa and recognized as an accomplished and dexterous warrior. He integrates prominently into the history and significance of Waikōloa as a *wahi pana* (celebrated place) to the people of old. With respect to Waikōloa, Lonoikamakahiki figures into this notable *mo'olelo* regarding his triumph over the invading Maui chief Kamalālāwalu. During the time of Lonoikamakahiki's rule, several battles transpired in the coastal portion of South Kohala. One such battle was fought between Lonoikamakahiki and his older brother, Kanaloakua'ana, who rebelled against him. According to Fornander (1880:120-121):

Informed by Kaikilani of the revolt on Hawaii, Lonoikamakahiki left Oahu at once, crossed the channels of the group, and avoiding the Kohala coast, where the rebels were in force, sailed to Kealakekua [Kealakekua], and sent messengers to Kau to acquaint Pupuakea of the arrival of himself and Kaikilani. Pupuakea responded promptly, and, taking a mountain road above the coast villages, he joined Lono and the forces that the latter had collected in Kona at Puuanahulu, on a land called Anaehoomalu, near the boundaries of Kohala and

Kona. The rebel chiefs were encamped seaward of this along the shore. The next day Lono marched down and met the rebels at a place called Wailea, not far from Wainanaliʻi, where in those days a watercourse appears to have been flowing. Lono won the battle, and the rebel chiefs fled northward with their forces. At Kaunaoa, between Puako and Kawaihae, they made another stand, but were again routed by Lono, and retreated to Nakikiaianihau, where they fell in with reinforcements from Kohala and Hamakua. Two other engagements were fought at Puupa [on the plain north of Waikōloa] and Puukohola, near the Heiau of that name, in both of which Lono was victorious. His brother Kanaloakapulehu was taken prisoner, slain, and sacrificed at the Heiau, but Kanaloakuakawaiea escaped with the scattered remnant of the rebel forces. The rebels now fled into Kohala, and were hotly pursued by Lonoikamakahiki. Several skirmishes were fought during the pursuit; at Kaiopae, where Kanaloakuakawaiea was slain; at Kaiopihi, and finally at Puumane, on the high lands above Pololu, where the last remnant of the rebel force was conquered and slain, and the island returned to its allegiance to Lono and Kaikilani.

Fornander (1916-1917) relates that a series of subsequent attacks were instigated and waged by Kamalālāwalu, the *aliʻi nui* of Maui, against Lonoikamakahiki. These battles occurred along the South Kohala coastline, the first of which ensued at Wailea, then Kaunaʻoa, and finally commenced at Puakō, where his brother and high chief Kanaloakuaʻana, was brutally tortured and eventually slaughtered. Thereafter, Kamalālāwalu and his army, upon the advice of two of Lonoikamakahiki's allies Kauhapaewa and Kihapaewa who had gained his trust and infiltrated Kamalālāwalu's camp, proceeded to Hōkūʻula in Waimea in anticipation of the continuation of battle in which they assumed an automatic victory. Upon awakening the next morning, Kamalālāwalu was stunned to discover that a great constellation of men had amassed near the coast; what seemed like thousands of warriors from all of Hawaiʻi Island had gathered as far as the eye could see and were prepared to savagely wage war upon the intruder Maui chief.

Realizing that he was vastly outnumbered, Kamalālāwalu attempted to reconcile differences with Lonoikamakahiki in an attempt to escape certain death, but the latter, being enraged at the manner in which his ally Kanaloakuaʻana was slain, denied him. The supreme volume of Lonoikamakahiki's forces was incomparable to Kamalālāwalu's, especially when coupled with the latter's unfamiliarity with the battleground. According to Fornander (1916-1917:344), "the Kau and Puna warriors were stationed from Holoholoku to Waikōloa. Those of Hilo and Hamakua were located from Mahiki to Puukanikanihia, while those of Kohala guarded from Momoualua to Waihaka." After just three days, Lonoikamakahiki reigned victoriously, and Kamalālāwalu and nearly all of the invaders, with the exception of his son Kauhiakama, were executed.

Traditional Settlement Patterns

According to Kirch and McCoy (2023), the concept of the ahupuaʻa was established sometime during the A.D. 1400s. This land unit became the equivalent of a local community, with its own social, economic, and political significance. Ahupuaʻa were ruled by aliʻi ʻai ahupuaʻa or lesser chiefs, who, for the most part, had complete autonomy over this self-supporting piece of land, which was managed by a konohiki (headman of an ahupuaʻa, below the chief). Ahupuaʻa were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to early Hawaiian life and was the product of strict resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003). The aliʻi and the makaʻāinana (commoners) were not confined to the boundaries of their ahupuaʻa; when there was a perceived need, they also shared with their neighboring ahupuaʻa ʻohana (Hono-ko-hau 1974). The ahupuaʻa were further divided into smaller sections such as the ʻili, moʻoʻaina, paukuʻaina, kihapai, koele, hakuone, and kuakua (Hommon 1986). The chiefs of these land units gave their allegiance to a territorial chief or mōʻī (king).

In some early accounts, Waikōloa ahupua'a was referred to as Waikōloa Nui, and the neighboring ahupua'a of Lālāmilo as Waikōloa Iki (Maly 1999). Waikōloa is situated between the moku of Kohala and Kona and is bordered by Pu'uana'hulu to the south (Figures 8 and 9). Traditionally, Waikōloa was an 'ili of the kalana (or 'okana) of Waimea, a land division that in ancient times was treated as a sub-district, smaller than a district (moku o loko), but comprised of several other land divisions that contributed to its wealth (Maly and Maly 2002). The lands within the kalana of Waimea were those that form the southern limits of present day South Kohala District including 'Ōuli, Wai'aka, Lālāmilo, Puakō, Kalāhuipua'a, 'Anaeho'omalū, Kananaka, Ala'ōhi'a, Paulama, Pu'ukalani, Pu'ukapu, and Waikōloa, where the current study area is located. Bernice Judd, a former librarian at the Hawaiian Mission Children's society, explains that:

In the early days Waimea meant all the plateau between the Kohala Mountains and Mauna Kea, inland from Kawaihae. This area is from eight to ten miles long and from three to five miles wide. There was no running water on Mauna Kea, so the inhabitants lived at the base of the Kohala Mountains, where three streams touched the plain on their way towards the sea. . . The middle stream, which was famous for wild ducks, was named Waikoloa, or Duckwater. This and the most westerly stream, called Kohakohau, went towards Kawaihae, but neither reached the sea, except in times of flood (Judd 1932: 14).

Pre-Contact Period Settlement Patterns

By the seventeenth century, large areas of Hawai'i were controlled by a few powerful ali'i 'ai moku (high-level chiefs). There is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that the unification of the island resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980). 'Umi a Līloa, a renowned ali'i of the Pili line who ruled from Waipi'o Valley, is often credited with uniting the island of Hawai'i under one rule (Cordy 2000). According to Kamakau (1992) 'Umi was a skilled fisherman, and fishing for aku, his favorite fish, often brought him to the beaches of South Kohala from Kalāhuipua'a to Makaula, where he also fished for 'ahi and kala with many other famed fishermen and all the chiefs of the kingdom. 'Umi's reign lasted until around ca. AD 1620 and was followed by the rule of his son, Keawenui a 'Umi, and then his grandson, Lonoikamakahiki (Cordy 2000).

This period, beginning with the rule of Lonoikamakahiki in ca. AD 1650 and lasting until ca. AD 1795, was marked by both political intensification and continual conquest by the reigning ali'i (Kirch and McCoy 2023). Wars occurred regularly between intra-island and inter-island polities during this period and included battles that transpired in the vicinity of the current study area. One such battle was fought between Lonoikamakahiki (Lono) and his older brother, Kanaloakua'ana, who rebelled against him. According to Fornander, Kanaloakua'ana and his rebel forces were situated at:

. . . the land called Anaehoomalu, near the boundaries of Kohala and Kona. The rebel chiefs were encamped seaward of this along the shore. The next day Lono marched down and met the rebels at the place called Wailea, not far from Wainanalii, where in those days a watercourse appears to have been flowing. Lono won the battle, and the rebel chiefs fled northward with their forces. At Kaunooa [Kauna'oa], between Puako and Kawaihae, they made another stand, but were again routed by Lono, and retreated to Nakikiaianihau, where they fell in with reinforcements from Kohala and Hamakua. Two other engagements were fought at Puupa [on the plain north of Waikōloa] and Puukohala [sic], near the Heiau of that name, in both of which Lono was victorious. . . (Fornander 1996:120-121)

Later, Lonoikamakahiki battled the forces of Maui led by Kamalālāwalu (Kama) on the plain of Waikōloa below Pu'u 'Ōā'oaka (Maly and Maly 2002). According to Kamakau (1991):

After Kama-lala-walu's warriors reached the grassy plain, they looked seaward on the left and beheld the men of Kona advancing toward them. The lava bed of Kaniku and all

the land up to Hu'ehu'e was covered with the men of Kona. Those of Ka'u and Puna were coming down from Mauna Kea, and those of Waimea and Kohala were on the level plain of Waimea [Waikōloa]. The men covered the whole of the grassy plain of Waimea like locusts. Kamalalawalu with his warriors dared to fight. The battlefield of Pu'oa'oaka was outside of the grassy plain of Waimea, but the men of Hawaii were afraid of being taken captive by Kama, so they led [Kamalalawalu's forces] to the waterless plain lest Maui's warriors find water and hard, waterworn pebbles. The men of Hawaii feared that the Maui warriors would find water to drink and become stronger for the slinging of stones that would fall like raindrops from the sky. The stones would fall about with a force like lightning, breaking the bones into pieces and causing sudden death as if by bullets . . .

. . . The Maui men who were used to slinging shiny, water-worn stones grabbed up the stones of Pu'oa'oaka. A cloud of dust rose to the sky and twisted about like smoke, but the lava rocks were light, and few of the Hawaii men were killed by them. This was one of the things that helped to destroy the warriors of Kama-lala-walu: They went away out on the plain where the strong fighters were unable to find water . . . The warriors of Maui were put to flight, and the retreat to Kawaihae was long. [Yet] there were many who did reach Kawaihae, but because of the lack of canoes, only a few escaped with their lives . . . Kamalalawalu, ruler of Maui, was killed on the grassy plain of Puako, and some of his chiefs were also destroyed. (1991:58-60)

By the eighteenth century, the rule of Hawai'i Island was divided amongst the chiefs of Kona and Hilo (Kamakau 1992). Keawe, a Pili line ruler and the son of Kanaloakapulehu, was the chief of Kohala, Kona, and Ka'ū. When Keawe died, he split the rule of his lands between two of his sons, further dividing the island's chiefdoms; Kalaninui'iamamao became the ruling chief of Ka'ū, and Ke'eaumoku became the ruling chief of Kona and Kohala (Kamakau 1992). Wars between the ali'i continued unabated through this transition, culminating with the conquest of the islands by Kamehameha I.

Early Historic Period Settlement Patterns

The arrival of Western explorers in Hawai'i marked the end of the Precontact Period and the beginning of the early Historic Period. With the arrival of foreigners, Hawai'i's culture and economy began to drastically change (Kirch and McCoy 2023). Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little modification of material culture. There was a continued trend toward craft and status specialization, intensification of agriculture, ali'i-controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i in 1795, Hawai'i had seen the beginnings of a market system economy (Kent 1983). Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, potatoes, corn, beans, figs, oranges, guava, and grapes (Wilkes 1845). Later, as the Historic Period progressed, Kamehameha I died, the kapu system was abolished, and Christianity established a firm foothold in the islands. Introduced diseases and global economic and political forces began to have a devastating impact on traditional Hawaiian lifeways.

It was during this time that Western visitors began recording their impressions of Hawai'i. One of the earliest to write of Kohala was Archibald Menzies, a surgeon and naturalist who arrived with Captain Vancouver in 1793. During one of his visits, Vancouver anchored at Kawaihae and Menzies went ashore and walked inland towards Waimea. Menzies' journal records the journey and describes the land in the vicinity of the current study area as follows:

I travelled a few miles back...through the most barren, scorching country I have ever walked over, composed of scorious dregs and black porous rock, interspersed with dreary caverns and deep ravines...The herbs and grasses which the soil produced in the rainy

seasons were now mostly in the shriveled state, thinly scattered and by no means sufficient to cover the surface from the sun's powerful heat, so that I met with few plants in flower in this excursion. (Menzies 1920:55)

During that same voyage, five cows, two ewes, and a ram brought by Vancouver in 1793 were set free to roam in the saddle area of Waimea between Mauna Kea, Mauna Loa, and Hualālai (Escott et al. 2008). Around the turn of the eighteenth century, Kamehameha gave control of present day Waikōloa, then Waikōloa Nui Ahupua'a (excluding the coastal 'ili of 'Anaeho'omalu and Kalāhuipua'a), to Isaac Davis, one of his early foreign advisors (Rosendahl 2000). Although the land of Waikōloa Nui gifted to Davis encompassed a large area, it lacked extensive resources and was primarily a place for catching birds and gathering pili grass. When Davis died in 1810 without naming an heir, John Young, another of Kamehameha's early foreign advisors who settled at Kawaihae, took control of the land and protected it for Davis' children, who were at that time too young to take on the responsibility (Rosendahl 2000).

Waikōloa Nui eventually became a favored pasture for the cattle given by Vancouver to Kamehameha, who made them kapu and therefore forbidden to kill (Kamakau 1992). By the early nineteenth century these cattle had quickly multiplied in the region to the extent that they became a scourge for the native planters of the Waimea area. In order to protect the upland agricultural fields from the overwhelming number of grazing cattle, sometime between 1813 and 1819, Kamehameha ordered the construction of a wall extending from the northern boundary of Waikōloa Nui to near Pu'u Huluhulu (Barrère 1983). The wall was designed to keep wild cattle in Waikōloa Nui and out of the more agriculturally productive areas on the Waimea side. The wall was called Pā of Kauliokamoa after the konohiki who oversaw its construction (Wolforth 2000).

Māhele 'Āina of 1848

By the middle of the nineteenth century, the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership in the Hawaiian Islands, and the Māhele 'Āina of 1848 became the vehicle for determining ownership of native lands. During this period, land interests of the King (Kauikeaouli, Kamehameha III), the high-ranking chiefs (the ali'i), and the low-ranking chiefs (the konohiki) were defined. The chiefs and konohiki were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission (Chinen 1961:13). During the Māhele, all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. All three types of land were subject to the rights of the native tenants therein. In 1862, the Commission of Boundaries (Boundary Commission) was established in the Kingdom of Hawai'i to legally set the boundaries of all the ahupua'a that had been awarded as part of the Māhele. Subsequently, in 1874, the Boundary Commission was authorized to certify the boundaries for lands brought before them. The primary informants for the boundary descriptions were elderly native residents of the land. The boundary information was collected primarily between 1873 and 1885 and was usually given in Hawaiian but transcribed in English.

As a result of the 1848 Māhele, Waikōloa (Nui) Ahupua'a was awarded to George Davis Hū'eu, son of Isaac Davis. As mentioned above, Kamehameha I had given Davis the land as a reward for his service, but after Davis died prematurely under suspicious circumstances in 1810, his friend John Young (another advisor to Kamehameha I) took it upon himself to make sure that Isaac Davis' children would receive their father's lands when they came of age (Wolforth et al. 2005). A portion of Young's Last Will and Testament reads as follows :

... I give and bequeath to be equally divided between my surviving children and the surviving children of my departed friend, the late Isaac Davis, of Milford in England, in such manner as it may please His Majesty the King and his Chiefs; Provided always that each and all of the said children receive a just and equal portion. (Cahill 1996:196)

As a result, John Young's lands were designated 'āina ho'oilina, or inherited lands, during the Māhele. This designation was applied only to these lands and does not appear elsewhere in the Māhele records (Wolforth 2005). Royal Patent number 5671 was issued to Isaac Davis, consisting of a large area of dry, non-arable terrain on grassy slopes known as pili lands (after the pili grass that grew in abundance there), which extended to the 'a'ā on the Kona District boundary; and did not include any portion of the fertile uplands or shoreline access (Wolforth 2005). In 1865, George Hū'eu, Davis' only surviving heir, received Waikōloa as an unsurveyed Land Commission Award. According to later boundary commission testimony for Waikōloa:

...the King intended to give, and did give to Isaac Davis, a tract of land of very great extent, although not of proportionate value. There were no cattle or sheep in this country when the grant was made, and the land given to Isaac Davis only yielded what revenue could be derived from wild birds and pili grass (Boundary Commission 1867 in Wolforth et al. 2005:13)

The coastal areas of Waikōloa, 'Anaeho'omalū and Kalāhuipua'a had been passed from Kamehameha I to Kamehameha II and then to Kamehameha III who retained them as Crown Lands until he passed them on to his wife Queen Kalama (LCAw 4452; Wolforth 2005). Only nine small residential kuleana were awarded in the uplands of Waikōloa near the town of Waimea; none were awarded within or in close proximity to the current study area (Maly 1999). Coastal residents in South Kohala relied primarily on the ocean for sustenance, and they augmented their diet with produce procured through trade with the upland areas. According to testimony from the 1865 Boundary Commission hearings, Waikōloa ahupua'a was known as a place for bird catching; Ehu testified, "Waikōloa was the land that had the birds" (Maly 1999:88). Oral histories indicate that a dry land planting area referred to as Makahonu was present in Waikōloa near the intersection of Waikōloa Road and Queen Ka'ahumanu Highway, mauka of the current study area. There is no information in the oral histories of what was specifically cultivated in the planting area, although 'Anaeho'omalū and other proximal locations were favorable areas for growing sweet potatoes (Handy et al. 1991). According to Maly (1999:153), Makahonu "was still used through the turn of the [twentieth] century." Other testimony collected between 1865 and 1867 regarding the boundary between the ahupua'a of Waikōloa and Pu'uānāhulu indicates that the subject parcel is along a portion of the boundary that corresponds to the Kanikū lava flow between Hanamaulua, a "pili land," and Kauakahialaa, a hill (Maly and Maly 2002).

In 1868, George Hū'eu leased his remaining lands in Waikōloa to the Waimea Grazing and Agricultural Company, which made them the largest ranching operation on the island at that time (Escott 2008a). Under the terms of the lease, the Hū'eu family was allowed to continue grazing their 1,000 head of cattle, 1,000 head of sheep, and 100 horses there (Escott 2008a). Due to persistent drought conditions within its grazing lands, the Waimea Grazing and Agricultural Company went out of business in the late 1870s. Parker Ranch purchased their herd and acquired their lease for roughly 95,000 acres in Waikōloa.

Waikōloa during the Twentieth Century

At the turn of the 20th century, the landholdings of Parker Ranch continued to grow as then-manager Alfred W. Carter acquired thousands of acres in Waikōloa and neighboring ahupua'a. This included the Pu'uloa Sheep and Stock Company, which encompassed over 3,700 acres and the Ke'āmuku Sheep Station in Waikōloa. Over the next decade these lands were converted to cattle ranching. By 1932, Parker Ranch had grown to include over 325,000 acres of fee lands (Bergin 2004). With the expansion of ranching operations, population also expanded in Waimea. At this time, little to no development had occurred in the general vicinity of the subject parcel.

In December of 1943, nearly 123,000 acres of land in the Waimea-Waikōloa area were leased by the U. S. War Department for use as a troop training area (Escott 2008b). The U.S. Military's 91,000-acre Waikōloa Maneuver Area was the site of an artillery firing range on which live ammunition and other explosives were employed, with the remaining acreage utilized for troop maneuvers. The Waikōloa Maneuver Area

extended from the coast to present-day Pōhakuloa Training Area, and from the Waimea-Kawaihae Road to south of Waikōloa Road, where the current study area is located. According to Escott:

The military utilized portions of this property for troop maneuvers and weapons practice, while other areas served as artillery, aerial bombing and naval gun fire ranges. Troop exercises were conducted using 30 caliber rifles, 50 caliber machine guns, hand grenades, bazookas, flame throwers, and mortars. Larger ordnance and explosive (OE) or unexploded ordnance (UXO) items used included 37 millimeter (mm), 75 mm, 105 mm, and 155 mm high explosive (HE) shells, 4.2 inch mortar rounds, and barrage rockets. From 1943 through 1945 nearly the entire Waikoloa Maneuver Area was in constant use, as the Marine infantry reviewed every phase of training from individual fighting to combat team exercises. (Escott 2008b:35)

In September of 1946, the Waikōloa Maneuver Area, with the exception of the 9,141-acre Lālāmilo Firing Range, was returned to Parker Ranch (Haun et al. 2010). Following World War II, the lands in the vicinity of the current study area were once again used for cattle ranching and bird hunting; however, clean-up of unexploded ordnance within the Waikōloa Maneuver Area is still ongoing.

Substantial changes on the Parker Ranch lands began to occur in the mid-twentieth century with the transfer to its sixth-generation heir, Richard Palmer Smart (Ketner et al. 2021). Seeking to diversify the ranch's business interests, Smart initiated a \$300,000,000 resort and residential development on 10,000 acres of land in 'Anaeho'omalu and along the South Kohala coastline makai of the project area, which the press referred to as the "Gold Coast" (Honolulu Star-Bulletin 1968; The Honolulu Advertiser 1959). Newspaper commentary at the time noted that the supposedly barren land, capable of supporting "only brush, scrubby trees, cactus and rocks," made it "difficult to envision. . . as a future resort or city," but Smart's plans drew the interest of several resort developers (Honolulu Star-Bulletin 1969). Smart initially intended to offer 'Anaeho'omalu's 31,000-acres for lease, but in 1963 decided to sell the ahupua'a for roughly \$11 million. In May of 1968, the Boise Cascade Home and Land Corporation purchased 25,500 acres of land above 'Anaeho'omalu Bay (including the current subject parcel) with visions of creating an amenity-rich resort dreamscape. Although the development of the resort was aimed at attracting tourists to the famed coast, the ultimate success of the resort was at least partially reliant on the creation of Waikōloa Village, a residential subdivision mauka of 'Anaeho'omalu Bay to the northeast of the subject parcel. In order to facilitate the imminent urbanization of 'Anaeho'omalu, a main thoroughfare leading makai from Māmalahoa Highway to 'Anaeho'omalu, known as Waikōloa Road, was developed. This road, which forms a portion of the northern boundary of the subject parcel, was not only beneficial for mere transportation purposes, but the newfound accessibility afforded commercial promise to the barren region (Ketner et al. 2021).

By the late 1960s, the groundwork for the Waikōloa Village community was underway and on June 27, 1970, Boise Cascade held their first open house to welcome the public and, as their promotional material boasted, to "celebrate the advances made by Boise Cascade and Morrison-Knudsen in reclaiming the Ahupua'a of Waikōloa for Man" (Boise Cascade 1970). The road leading makai from Māmalahoa Highway to the newly created Waikōloa Village community was paved just in time for the gathering and this new road was "the pathway that, in a sense, tangibly opens Waikōloa to its rebirth" (Boise Cascade 1970:1). Plans for this new community included the construction of a vast water system to furnish future residents and businesses, the creation of a golf course, a residential subdivision, an equestrian center, condominiums, and a shopping center. By August of 1972, the Waikōloa Village saw its first permanent resident (Boise Cascade 1972) and on July 7th, 1974, the road leading makai from Waikōloa Village to 'Anaeho'omalu was formally dedicated (Waikoloa Office of Public Affairs 1974), thus drastically reducing travel time from the newly created village to other important centers along the Kona-Kohala coast. By the mid to late-1970s, Waikōloa Village had been mostly built out, which effectively transformed the landscape into a budding community. With the opening of the coastal resorts in the mid-1980s, Waikōloa Village continued to expand to meet the demands of a growing visitor industry and saw an influx of new residents.

While most of the early development of Waikōloa Village was centered around the area northeast of the project area, the town has since expanded into the area south of Waikōloa Road (Ketner et al. 2021), and the influx of new residents has created the need for additional construction materials, including gravel, which has been quarried from an area adjacent to the subject parcel for more than 25 years (Gotay and Rechtman 2015b). A review of aerial photographs indicates that the access road to the existing quarry (along the western boundary of the subject parcel) was cut during the mid-1990s, and that use of the quarry itself, and subsequent expansion began during the late 1990s (Rechtman 1999). Dozing and clearing activities associated with the use of the quarry appear to have expanded into the current subject parcel sometime between 2006 and 2008 (Figure 10). The planning for the use of the quarry and its subsequent expansion was accompanied by archaeological and cultural studies that included portions of the subject parcel.

PREVIOUS ARCHAEOLOGICAL AND CULTURAL STUDIES

Archaeological studies in the vicinity of the project area began with Jensen and Burgett (1991) who conducted an archaeological inventory survey of a roughly 300-acre area (including the western portion of the subject parcel) for a proposed quarry site on the Waikōloa Beach Resort Reserve Lands (now portions of TMKs: [3] 6-8-001:066 and 067) that documented numerous archaeological sites within the subject parcel (Figure 11). The survey consisted of a 100% aerial survey at 30-50 feet altitude via helicopter, augmented by a pedestrian survey of 15-20% of the property in areas identified as high probability with respect to the presence of historic properties. This survey area encompassed the southwestern corner of the subject parcel and documented 19 precontact and early contact archaeological sites (Table 1). The sites included 27 features that appear to have been created primarily for burial or ceremonial purposes, with associated short-term habitation activities. These included platforms, terraces, modified outcrops, and mounds. Thirteen sites were deemed culturally significant as they were believed to potentially contain one or more burials. The sites appeared to be interconnected by a poorly defined trail system. It was recommended that these sites would be preserved “as is” by avoiding construction activities within a 50 foot-wide buffer. It was further recommended that if work was proposed in the vicinity of the 19 documented sites, that additional survey should occur to the north and east of the identified sites (see Figure 10; Jensen and Burgett 1991).

Table 1. Sites included in the archaeological preserve.

<i>SIHP Site No.</i>	<i># of Features</i>	<i>Feature Type</i>	<i>Function</i>
50-10-11-15030	2	(A) Mound (B) Paving	Possible burial
50-10-11-15031	1	Rock shelter	Temporary habitation
50-10-11-15032	1	Platform	Possible burial/ceremonial
50-10-11-15050	1	Platform	Possible burial/ceremonial
50-10-11-15051	4	(A) Platform (B) Rock shelter (C) Modified sink (D) Terrace	Temporary habitation with possible burial(s)
50-10-11-15052	4	(A-D) Platforms	Possible burial/ceremonial
50-10-11-15053	1	Platform	Possible burial
50-10-11-15054	1	Platform	Possible burial
50-10-11-15055	1	Platform	Possible burial
50-10-11-15056	1	Platform	Possible burial/ceremonial
50-10-11-15057	2	(A and B) Platforms	Possible burial/ceremonial
50-10-11-15058	1	Modified outcrop	Indeterminate
50-10-11-15059	1	Trail	Transportation
50-10-11-15060	1	Platform	Possible burial
50-10-11-15061	1	Platform	Possible burial
50-10-11-15062	1	Rock shelter	Temporary habitation
50-10-11-15063	1	Filled blister	Possible burial
50-10-11-15064	1	Terrace	Possible burial
50-10-11-15065	1	Rock shelter	Temporary habitation

*Data source is from Jensen and Burgett (1991).

Extensive oral histories with fifteen kama'āina from the Kekaha region were recorded by Kumu Pono Associates in the late 1990s (Maly 1998). These recordings documented the local Hawaiian families' love for and connections to the lands, beaches, lava flows, oceans, and fishing grounds of Ka'ūpūlehu. The Kekaha region lies directly south of Waikōloa, in the northern portion of the moku of Kona. The project parcel sits just north of the boundary of Pu'uanahulu, which lies in the moku of Kona. Though the Native Hawaiian population was greatly impacted by Western contact, Kanaka Maoli (native Hawaiian) culture and the concept of 'ohana (family) has continued, and like all cultures, has changed with the times. One of their informants, kama'āina Hannah Kihalani Springer, spoke of lava flows and landscapes, which Maly (1998:257-258) summarized:

In discussing the Ka'ūpūlehu lava flows that demarcate the region of Kalaemanō, Hannah shares that—All of the landscapes of the *pae 'āina Hawai'i nei* (the Hawaiian Archipelago) are cultural landscapes. The absence of our ancestor's signature upon the landscape speaks as clearly as the presence of their signature upon the land—thus likening the flows to a place of the gods. There may be different expressions of culture and greater or lesser values in those all encompassing landscapes, but that is an important thing to recognize. Not only landscapes, but seascapes as well; that the world view is all encompassing.

Interviews conducted by Rechtman Consulting, LLC in 2000 recorded information about the interviewees' experiences with and knowledge of traditional or otherwise significant places and traditional practices (Rechtman and Rudolph 2001). Springer added the following discussion:

... [B]iological communities of resources ... as well as geophysical features on the landscape all have value to me as a child of the land, in a sense that I guess they're my siblings, but they're clearly cultural resources as well whether we think of in that perhaps ill-defined time of traditional Hawaiian occupation where we know that the '*a'ali'i*, the *lama*, would have been useful for their material culture whether as sources of fuel or as building materials. So any work that may be done in the study area that might be reconstructive or mitigating the impacts of development. I would hope that they would, the developers, would look to the native plant palette and utilize those resources in whatever landscaping or other landscaping work that they have to do in that area. One of the things that we're becoming more comfortable with voicing desire of, is that the landscape that we grew up in, as mighty as the changes upon it might be, still retain some familiarity for us and some of that familiarity is best demonstrated by the view planes that we have across the landscape. (ibid.:9)

In 2015, ASM conducted an Archaeological Assessment immediately adjacent to the southwestern boundary of the current subject parcel (Gotay and Rechtman 2015a). The survey area included a portion of the existing quarry property within the 300-acre area previously surveyed by Jensen and Burgett (1991). No archaeological resources were discovered as a result of the 2015 survey, but the 19 archaeological sites documented by Jensen and Burgett were discussed, and the requirement for avoiding impacts to those sites was reiterated.

A field inspection and historic preservation review status report was completed by ASM Affiliates (Rechtman 2017) in 2017 for TMKs: (3) 6-8-003:015, 016, and 040; a roughly 41-acre parcel northeast of the project area. No historic properties were identified as a result of the field inspection.

In 2020, ASM conducted a Cultural Impact Assessment (CIA) within a 1.3-acre project area (TMK [3] 6-8-003:016) to inform the environmental assessment being prepared for the proposed Waikōloa Public Library (Ishihara and Brandt 2020). The assessment was based on a review of previous archaeological reports, historical records, and Hawaiian language sources translated into English. Six individuals and/or organizations with longstanding knowledge of the area were contacted for interviews. A representative from the Waikōloa Dy Forest Initiative (WDFI), Jenn Lawson, was the single respondent. No cultural resources were documented as a result of the CIA, which also did not identify any ongoing cultural practices associated with the study area. It was determined that the Waikōloa Public Library Project would have no

direct impact on any historic properties or traditional and customary Native Hawaiian practices. While no direct adverse impacts to traditional cultural practices or valued cultural resources were anticipated, the following recommendations were offered to ensure that the proposed project considered the concerns and thoughts shared by the consulted party: (1) take steps to prevent the spread of wildfires during construction; (2) develop partnerships with local organizations to collaborate on future community-based projects or events that will highlight the natural and cultural history of Waikōloa; (3) support the efforts of WDFI in restoring the highly fragile dryland forest ecosystem and to minimize water use in landscaping; (4) consider working with WDFI to develop a landscaping plan that utilizes ecologically appropriate native plants from the area.

In 2022, at the request of the Waikōloa Village Association (WVA), ASM prepared a *Ka Pa‘akai O Ka ‘Āina* Analysis in anticipation of the development of an irrigation well within the existing Waikōloa Golf Course Parcel (Gonzales and Barna 2022). The subject area had already been extensively modified into a golf course, with no extant historic features. Wai was discussed as a culturally important resource as part of the analysis, and efforts toward careful water usage relating to the proposed well were recommended.

In 2025, ASM conducted an Archaeological Reconnaissance Survey (ARS) for the current subject parcel (Clark 2025). Of the 19 sites previously documented by Jensen and Burgett in the western corner of the subject parcel, 14 were positively re-identified and correlated to their existing Statewide Inventory of Historic Places (SIHP) site designations; no sites, features, or potential historic properties were identified within the proposed SUP or well project areas (Figure 12). Eleven of the sites were found to be in the same condition as previously described: Sites 50-10-11-15030, -15032, all features of 15051 and 15052, 15053, 15054, -15055, -15056, -15057, -15058, and -15060. Two sites, Sites 50-10-11-15031 and -15062, both rock shelters, appear to have partially collapsed since they were previously documented and are now in worse condition. The trails documented by Jensen and Burgett and designated as Site 50-10-11-15059 were barely discernable during the ARS fieldwork, and their originally documented routes could not be identified with any certainty. Five sites, Sites 50-10-11-15050, -15061, -15063, -15064, and -15065, were not positively re-identified during the fieldwork for the current ARS. These sites are likely still present, but could not be positively re-identified for reasons detailed in the recent ARS report. The other three sites are situated at the eastern end of the site complex in an area that was extensively bulldozed ca. 2000 to 2006 (see Figure 10) and it is possible that those sites were destroyed. A rock shelter (Site 50-10-11-15062) which was documented near those sites was found in a collapsed state completely surrounded by bulldozer-flattened section of ‘a‘ā (Clark 2025).

In a letter dated September 12, 2025, the DLNR-SHPD provided an effect determination of “no historic properties affected” pursuant to HAR §13-284-7(a)(1) for grading activities associated with the bulldozing of a 10-foot-wide access trail (extending through the location of the current SUP project area) to facilitate the drilling of geotechnical bore holes on a 5.7-acre portion of the current subject parcel (Project No. 2025PR00952; Doc. No. 2509JG10). While the DLNR-SHPD agreed that the proposed project was unlikely to have an effect on historic properties, they requested that orange construction fencing be placed along a portion of a 300-foot avoidance buffer that Nan, Inc. has instituted to protect the sites documented by Jensen and Burgett (1991) and verified to their office in writing prior to the start of bulldozing activities.

More recently, in a letter dated November 6, 2025, DLNR-SHPD reviewed a permit to facilitate the construction of an asphalt driveway and general grading activities on an 83.94-acre portion of the subject parcel that included the current SUP project area in its entirety (Figure 13). DLNR-SHPD provided an effect determination of “no historic properties affected” pursuant to HAR §13-284-7(a)(1) for that project (Project No. 2025PR01155; Doc. No. 2511JG04). In the letter, DLNR-SHPD reiterated the need to install and verify the placement of orange construction fencing along a portion of a 300-foot avoidance buffer that Nan, Inc. has instituted to protect the sites documented by Jensen et al. (1991).

CONSULTATION

Gathering input from community members with genealogical ties and long-standing residency or relationships to the study area is vital to the process of assessing potential cultural impacts to resources, practices, and beliefs. It is precisely these individuals that ascribe meaning and value to traditional resources and practices. Community members often possess traditional knowledge and in-depth understanding that are unavailable elsewhere in the historical or cultural record of a place.

Consultation for the current Ka Pa‘akai Analysis involved gathering oral histories and conducting interviews with community members and organizations who hold pilina (relationships) with the Waikōloa region, in an effort to document historical connections to place while also receiving feedback on the project proposal from these individuals and groups. Generating detailed stories about people and places helps to ensure that this knowledge and these connections are transferred to future generations. In conducting interviews with kūpuna and kama‘āina who possess pilina with Waikōloa, we have tried to capture some of personal histories, stories of the landscape, and mo‘olelo associated with this area.

Four individuals/organizations were contacted via email and/or phone: Ka‘iulani Blankenfeld, Leonora Opunui, Jen Lawson, Director of the Waikōloa Dry Forest Initiative, and Rick Gmirkin, archaeologist with the Ala Kahakai National Historic Trail. Two of the individuals accepted the interview requests. An additional individual replied but was unavailable at the time.

Ka‘iulani Blankenfeld

Ka‘iulani Blankenfeld works as the Director of Hawaiian Culture at the Fairmont Orchid resort, located on the South Kohala coast. She has lived in Waikōloa Village for 42 years. Her ‘ohana were the first residents in their section of Waikōloa, known as Kīpona Hills. She remembers when the Village had little more than a general store and post office. Waikōloa Village was planned primarily as a retirement community, but it did not take long for families to move into the new town; Ms. Blankenfeld raised her three children in her current home. In those early years, the community had to lobby for a school to be built. Private funds were raised and Waikōloa Elementary School was built ahead of schedule and under the projected budget – after construction, the school was obtained by the Department of Education. Her children attended Waikōloa Elementary School in the 1990s, starting with her oldest son Pa‘a in the 4th grade and middle son Kahoku in kindegarten.

Ms. Blankenfeld shares that Waikōloa is a name for the strong wind here, translated as “water carried far.” She points out that historically, this relatively harsh landscape would not have been permanently inhabited as it is today. In her words, “Hawaiians [of the past] always lived near a source of fresh water.” Inland Waikōloa is notably dry, but Ka‘iulani explains the coastal regions would have provided more resources and better long-term habitation.

Though not a place of permanent residence, Waikōloa was still important historically. A famous figure who traversed the South Kohala/ North Kona region is Lonoikamakahiki, whom Ka‘iulani traces her lineage back to. She tells a story in which Lonoikamakahiki (shortened here as Lono) treats his wife Ka‘ikilani poorly due to the jealous rumors of his people, who claim his wife is not loyal. In a fit of rage, he kills her; brokenhearted at what he has done, he sets sail for Kaua‘i. His dedicated retainer, Kapaihihilina (shortened as Kapa), follows him and cares for Lono in his madness. As soon as he is well, Lono and Kapaihihilina return to Hawai‘i Island – yet once again, jealous lies fly from the mouths of Lono’s people, besmirching Kapa. Kapa gets ready to leave, and Lono pleads with him not to. Kapa points out that he has been nothing but steadfast -- “When your clothes were gone, I wore banana leaves” – and the two men make a pact to never let rumors get in the way of their friendship. In the ahupua‘a of ‘Anaeho‘omalū, makai of Waikōloa and coastal of the project site, there is an ahu that was built to commemorate their pact called Keahualono. This ahu is cared for by other descendants of north Kona/ south Kohala, including families affiliated with Nā ‘Ōiwi o Pu‘uanahulu.

There is another heiau along the shoreline in the same region, dedicated to Hi'iaka. The wai'ōpae anchialine tidepools along these shores are culturally and ecologically important. Ms. Blankenfeld adds that there are many old trails that cross throughout Waikōloa down to the coast, which were used for the movement of people in the past.

When asked whether she was aware of any specific cultural resources or cultural practices within the project area, Ms. Blankenfeld said she was not. However, she pointed out that this does not mean historic features or practices are not present.

Ms. Blankenfeld shares that it is imperative that the land developers assess the plants growing in the area. She points out that endangered dryland plants such as uhiuhi have been found in similar development areas in the past. In her words, "Be cognizant of the dryland forest above." Taking note of old infrastructure and features is important to prevent undue damage to historic sites. She asks that new infrastructure be made to blend in with the landscape. If plants are to be grown or planted, she suggested that only native species or canoe plants should be planted. "We need to stop importing plants" to prevent invasive pests, which happens too often.

Ms. Blankenfeld emphasizes that there are kūpuna in every place, even if they only passed through. We do not know what exists under the lava flow in this area. She shares wisdom passed down from her mother: "E nihi ka hele: walk gently wherever you go – you are most likely walking over 'iwi of ancestors, whether they are your own or someone else's." She encourages developers to take time to honor 'āina, plant tī, and oli kahea to open the land and create a pale (protective layer). As she says, "We need to be much more intentional in how we do things."

Jen Lawson

Jen Lawson is the Executive Director of the Waikōloa Dry Forest Initiative (WDFI). Jen first started coming to Waikōloa 15 years ago. On her first trip to the region, she learned about Pu'u Hīna'i, Waikōloa's prominent hill, and the endemic wiliwili trees. She has been working with the Waikōloa Dry Forest Initiative for 13 years. The overarching mission of WDFI is community-oriented involvement in native plant conservation and dryland forest restoration.

Ms. Lawson describes the land preserve that WDFI occupies as being essentially right next door to the subject parcel. She explains that land use within the vicinity has been destructive, including development, bulldozers, and utility easements. There have been a lot of development projects across the broader landscape over the years.

When asked about her knowledge of any cultural resources and traditions of the Waikōloa area, Ms. Lawson was able to share that the region was known for a savannah or closed-canopy landscape, which includes the native wiliwili (*Erythrina sandwicensis*) tree (Figure 14). She went on to add that the mauka region of Waikōloa was an area known for native birds whose feathers were sought after to make cloaks for ali'i (chiefs) and lei (garland). However, because the Waikōloa forest has been subjected to years of degradation, the native bird population has declined tremendously, and the traditional practice of bird gathering has since ceased. Ms. Lawson has read that uhiuhi harvesting occurred in these landscapes, historically. Trails went through the Waikōloa region, connecting ranching activities up mauka with the coastline. Cultural practices are happening in the WDFI preserve every day, which is nearby. As she puts it, "There is a resiliency in this landscape." She shares that there are lava tube systems that run through the WDFI preserve and likely connect to adjacent areas, possibly including the project area. These tubes have been disturbed in modern times.

To Ms. Lawson's knowledge, the area currently known as Waikōloa Village was not traditionally inhabited and was most likely used as a place of travel and accessed periodically for certain resources. Historically, agriculture occurred in Waikōloa, particularly with paniolo culture and ranching. People have largely seen this environment as not being valuable, which Ms. Lawson points out is a problem because this landscape is important both culturally and ecologically. Old wiliwili and lama have been found in these landscapes,

and she explains that these old trees need to be understood as important. She says it is, “hard to put a value on these areas”.

Ms. Lawson expressed that a critical consideration for any development within Waikōloa is proper fire mitigation. She communicated uncertainty about the potential nursery plans, reiterating that this area is ecologically sensitive. Developers need to be aware of pests (coconut rhinoceros beetle, little fire ants, invasive plants, etc.). She recommended remaining aware of culturally important plants and avoiding kūpuna (elderly) trees.

ANALYSIS AND RECOMMENDATIONS

In accordance with the first component of the Ka Pa‘akai framework, ASM conducted comprehensive archival research and consultation to identify cultural, historical, and natural resources within the project area and to assess the presence and extent of traditional and customary practices that may be impacted by the proposed project. The identified resources and rights are summarized below, followed by a discussion of the extent to which those resources (including traditional and customary native Hawaiian rights) could be affected or impaired by the proposed action (the construction of a base yard, asphalt plant, concrete plant, office and parking area, maintenance shop, warehouse, fuel farm, equipment staging yard, and stormwater basin related uses within a roughly 14.9-acre portion of the subject parcel) and recommendations regarding feasible actions that could be taken as part of the proposed project to reasonably protect those resources and rights.

(1) Identification of Valued Cultural, Historical, or Natural Resources in the Project Area (including the extent to which traditional and customary native Hawaiian rights are exercised)

The cultural, historical, and natural resources identified in the vicinity of the proposed SUP and well project areas include the cultural features of the archaeological sites documented Jensen and Burgett (1991), the native flora and fauna of the Hawaiian dryland forest; and the winds and waters of Waikōloa Ahupua‘a. Native Hawaiian rights associated with the are discussed below. It is important to recognize that the historical associations and use of these resources are not distinct, they are inherently interconnected with relevance to the exercise of traditional and customary native Hawaiian rights, which in the case of the current project could include caring for ancestral cultural features, mauka-makai travel, the collection of plant resources, bird hunting, and access to the winds and waters of the ahupua‘a. The valued cultural, historical, and natural resources and associated traditional and customary native Hawaiian rights identified in the vicinity of the current project area are discussed in further detail below.

The 19 archaeological sites and associated cultural features that were originally documented by Jensen and Burgett (1991), 14 of which were positively re-identified during the recent ARS of the subject parcel conducted by Clark (2025), represent valued cultural and historical resources. The documented features included a mound, paved area, modified sink, terrace, modified outcrop, platforms, rock shelters, a and a trail system located within a roughly 30-acre area in the southwestern corner of the subject parcel. The features appear to have been used primarily for burial purposes during the Precontact Period, with associated ceremonial and short-term habitation activities also occurring in the area. It is possible that the features at this location are associated with the battle between Lonoikamakahiki, an ali‘i of Hawai‘i Island, and Kamalālāwalu, an ali‘i of Maui Island, that occurred in the area during the mid-seventeenth century (Clark 2025). The platforms and terraces may represent the burials of warriors that were slain during that battle. If these features are related to that event, it would help explain why no other similar features were found elsewhere within the subject parcel, despite similar terrain and access opportunities. Among those consulted for this project and in review of previous studies conducted in the vicinity, there was no mention of people or groups who actively care for these features. However, as recognized burial/ceremonial sites that have been previously deemed significant for their traditional cultural value to Native Hawaiians, access to the area to mālama (care for) the sites is a traditional and customary right for the native Hawaiian descendants of those sites (per HAR §13-300).

Traditionally, access to the cultural/historical sites discussed above, as documented by Jensen and Burgett (1991), would have been facilitated by network of trails crossing the rough 'a'ā terrain. Trails were also the arteries connecting coastal and inland settlements, facilitating communication and trade between communities. Trail systems allowed inhabitants along the coast to traverse the rough terrain of Waikōloa and adjacent lands in order to access upland resources. These trails connected communities with one another, allowing people from different locales to meet and exchange news or goods (Figure 15). In the post-contact period, as paniolo culture became dominant, these trails were often repurposed to allow ranchers to move cattle from mauka to makai. Remnant sections of trail (Site 50-10-11-15059) were identified within the subject parcel by Jensen and Burgett (1991), which indicates that this area was traversed in the past, likely to connect to other sites in the area. Additionally, the presence of temporary habitation features such as modified overhangs documented within the subject parcel would have been important to travelers requiring respite during mauka-makai journeys.

The lands of upper Waikōloa (in the vicinity of the current project area) were traditionally used for bird hunting and the gathering of plant resources by Native Hawaiians travelling along the network of mauka-makai trails. Waikōloa was once home to an extensive dryland forest filled with species that were essential to biodiversity and supported other native animals and insects that relied on the dryland plant species as food sources and as habitat. Wiliwili trees were historically a major canopy tree within the dryland forest ecosystem of this region. Though few in number due to environmental changes in the modern day, wiliwili trees remain vital for their role in desert environments and are still culturally valued for materials such as their bright red seeds, which can be strung to make seed lei (Krauss 1993). During traditional times, the wood of the wiliwili and uhiuhi were utilized to construct Native Hawaiian implements and surfboards. Over the past decade, many of these trees have succumbed to the invasive erythrina gall wasp (Faucette et al. 2008). Remaining old-growth wiliwili, such as those found along the eastern edge of the subject parcel and in proximity to the project area, are critical to the overall survival of this vulnerable species and the perpetuation of cultural relationships.

Waikōloa is home to other native dryland plants, including more common species such as 'uhaloa (*Waltheria indica*), 'ilima (*Sida fallax*), 'a'ali'i (*Dodonaea viscosa*), 'āweoweo (*Chenopodium oahuense*), pili (*Heteropogon contortus*), and pua kala (*Argemone glauca*). While these plants may be frequently spotted, they have experienced significant population loss since Western contact. Most native dryland plants hold cultural importance in various ongoing practices such as lā'au lapa'au (Hawaiian medicine), lei making, and wood carving. Common species are important bastions of living cultural connections that have withstood the challenges of environmental degradation. Herbivorous birds such as nēnē (*Branta sandvicensis*) require berries and foliage as a mainstay of their diet, with native plants being best suited for their needs. Kōlea (*Pluvialis fulva*) visit during Ho'oilō, the rainy winter season. These seasonal birds feed exclusively on insects, which often require vegetation for their own survival. Unique native insects also call these dryland regions home. In recent years, eggs and caterpillars of the endemic Blackburn's sphinx moth (*Manduca blackburni*) have been observed in the adjacent ahupua'a of Pu'uanahulu (Elliot 2019). As with native flora, native fauna hold relational significance for many kama'āina.

The birds found in these native forests were once prized for their feathers which were used for the creation of royal accoutrements such as 'ahu'ula (feather cloaks), mahiole (feather helmets), and kahili (feather standards). Some species of birds were also important as a food source (Gomes 2016). Kia manu (bird hunters) were well-versed in techniques of capturing birds, which involved observing mannerisms and habitats of different species, mimicking calls, and using natural materials to create traps (Emerson 1894). Cultural-historical research and oral accounts indicate that this practice continued into the historic period. Bird hunting activities were largely curtailed due to the degradation of the landscape that occurred with the rise of ranching and resulting loss of habitat and food sources for the birds. This loss of habitat was exacerbated when the land was repurposed by the military during WWII for training activities associated with the Waikōloa Maneuver area.

Though Waikōloa is a relatively arid region, wai, a valued cultural and natural resource, is present beneath the surface of the project area and will be tapped by the proposed well. The word wai is a component of several other words associated with water such as kahawai (river, stream, creek), punawai (spring), 'auwai (irrigation ditch), lokowai (freshwater pond, lake). The term waiwai (water-water) is used to express the idea of prosperity and wealth of an individual or a place and refers to the amount of and access to fresh water (Handy et al. 1991). The name of this region can be translated as “water carried far” (Maly 1999). Water that naturally makes its way to Waikōloa must come from a distance, either in the form of rain or seasonal flooding within the otherwise dry kahawai. Waikōloa is home to several such kahawai that have been carved into the landscape over tens of thousands of years, including Kamakoa, 'Auwaiakeakua, and Popo'o. Upland in Waimea, Waikōloa stream runs with more regularity. When Waikōloa stream is especially plentiful, its waters flow downslope along tributaries that lie primarily in Lālāmilo Ahupua'a, directly north of Waikōloa. Underground freshwater sources mix with saltwater along portions of the South Kohala coast, forming anchialine ponds. These ponds are essential habitat for unique lifeforms that require brackish water to survive, such as endemic 'ōpae'ula (Hawaiian red shrimp, *Halocaridina rubra*). There appear to be no names recorded for the rain in Waikōloa, possibly due the irregularity with which it occurs.

The continuous mauka to makai flow of wai provides present and past communities with fresh drinking water, supplies water to irrigated fields and fishponds, recharges ground water supplies, and sustains productive estuaries and fisheries by transporting nutrients from the uplands to the sea (Sproat 2009). Because a flowing river was considered a vital artery for both the land and people, great care was paid to maintaining clean water ways. When the kahawai of Waikōloa and adjacent lands are inundated, they flow out into moana (the sea). Due to the loss of native groundcover, soils within these mostly dry streambeds are generally loose and poorly absorbent. It is common for heavy rain events to result in extreme sedimentation along south Kohala's shores. This leads to negative consequences for corals, fish, and other marine life that thrive in nearshore waters. These occurrences are a potent reminder of the connectivity between land and sea and the need for proper terrestrial management for the health of downslope and coastal environments.

The name Waikōloa also belongs to a wind goddess of this region (Maly 1999). Waikōloa is well known for the strong makani (winds) that sweep down from the upper saddle between Mauna Kea and Mauna Loa. The strong Waikōloa winds bring occasional rain and help to cool a region that often experiences high temperatures. In terms of ecological importance, these gusts help wind-borne seeds of native plants such as 'a'ali'i (*Dodonaea viscosa*) travel beyond their immediately vicinity, expanding their range.

(2) Extent to which Valued Cultural, Historical, or Natural Resources in the Project Area -- including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action.

The proposed action — the construction of a base yard, asphalt plant, concrete plant, office and parking area, maintenance shop, warehouse, fuel farm, equipment staging yard, and stormwater basin related uses within a roughly 14.9-acre portion of the subject parcel — has limited potential to affect or impair valued cultural, historical, or natural resources (including traditional and customary native Hawaiian rights) in the project area. The proposed development activities are more than 300-feet from the nearest cultural/historic sites recorded by Jensen and Burgett (1991) and re-identified by Clark (2025) within the southwestern portion of the subject parcel. The project proponent (Nan, Inc.) has created a voluntary buffer around these sites that extends an additional 300 feet out from the 50-foot preservation buffer originally recommended by Jensen and Burgett (1991), encompassing a roughly 83-acre portion of the subject parcel. The DLNR-SHPD, in a letter dated November 6, 2025 (Project No. 2025PR01155; Doc. No. 2511JG04), recently concluded that the grading of an 83.94-acre portion of the subject parcel that includes the location of the asphalt plant, concrete plant, and associated infrastructure in their entirety (see Figure 13) would result in an effect of “no historic properties affected” pursuant to HAR §13-284-7(a)(1). activity is outside of the proposed buffer zones for the sites and no additional sites were documented within the subject parcel during the recent ARS fieldwork conducted by Clark (2025). As long the avoidance buffer around the documented

historic properties is maintained and heeded throughout the duration of the construction activities and the side facing the proposed development is marked with orange construction fencing (as requested by the DLNR-SHPD) the proposed project should impact or impair any valued cultural or historical resources,

While the proposed project does have the potential to negatively impact native flora, very little vegetation is actually present within the project areas, and the likelihood of encountering native species within those area is unlikely. Wiliwili trees are found along the eastern edge of the subject parcel which borders the WDFI property, however, and caution should be taken to avoid these and other native dryland species within the proposed development area if possible. Historically, the Waikōloa region teemed with native dryland plants such as wiliwili, lama, and uhiuhi. These and other species provided people with materials to make hale (houses), tools, lei, woven goods, and for ceremonial purposes, amongst other applications (Medieros et al. 1998). Today, less than ten percent of Hawai'i dry forests remain (Bell et al. 2013). Native flora and fauna are at risk due to threats such as land development, wildfires, competition with invasive species, and introduced diseases. The reduction in native plants has had a significant impact on other lifeforms that rely on them for food and shelter, particularly native birds.

Background research and consultation revealed that the upper reaches of Waikōloa Ahupua'a and the greater South Kohala District were once renowned as a region for bird hunting and the collection of feathers for the creation of royal accoutrements. Despite the dry and barren environs of Waikōloa, the area was a prime location to find native birds once prized for their feathers, but also hunted as food sources. Due to the degradation of the native forest over the past two centuries, however, the bird population has dwindled and the traditional practice of bird hunting and gathering of feathers is no longer viable in this area, therefore the current project has minimal potential to impact this cultural practice.

The drilling of a well within the project area has the potential to affect the valued cultural and natural resource referred to in 'Olelo Hawai'i as wai (fresh water). The use of wai contained in the basal aquifer beneath the project area could potentially also affect any downslope aquatic resources that are dependent upon that wai, such as the coastal ponds and tide pools of Waikōloa. While the actual drilling of the well itself has limited potential to affect this resource; over use of the aquifer, from this well or the collective use of all the wells in the area could deplete the supply of underground water and as a result impair traditional and customary native Hawaiian rights to fishing and the collection of marine resources that are practiced at the coast. However, if the amount of water withdrawn from the aquifer remains below the sustainable yield (as determined by CWRM), and care is taken to avoid activities that would result in the contamination or over use of this resources, then such potential impacts would be considered unlikely.

Though there are no foreseeable impacts to the makani (winds) that sweep through Waikōloa as a result of the proposed project, any unsecured materials or debris within the project area have the potential to be dispersed by these often strong winds, which may have negative effects on nearby valued cultural, historical and natural resources.

(3) Feasible actions to be taken to reasonably protect native Hawaiian rights.

Aerial imagery suggests that previous bulldozing associated with the use of the quarry adjacent to the subject parcel during the early 2000s may have inadvertently damaged some of the archaeological sites previously documented by Jensen and Burgett (1991) within the subject parcel (Clark 2025). To avoid any future impacts to these valued cultural/historical resources, the project proponent should install orange construction fencing along the perimeter of the 300-foot avoidance area surrounding the sites as required by DLNR-SHPD (Project No. 2025PR01155; Doc. No. 2511JG04), and ensure that the buffer is marked on all construction plans, maintained during all construction activities, heeded by all construction crews, and respected after all construction is complete. The project proponent should also seek historic preservation review of any proposed future project within the subject parcel and comply with any stipulations that are imposed upon the project by the DLNR-SHPD (as has already been done for the current project).

Additionally, several sites that were re-identified during the Clark (2025) ARS are believed to be possible burials. Iwi kūpuna (ancestral bones) are honored by many Kānaka Maoli and kama'āina. There exists a

memory of nā po'e kahiko, the ancestors, who knew and loved this region. Requests for access through the project area to visit these ancestral sites for cultural purposes, should be considered and honored, and the preparation of a cultural access plan that provides appropriate protocols for accessing the archaeological sites should also be considered. If such a plan is developed it should be done in consultation with the DLNR-SHPD and the descendant community of Waikōloa (such as described in HAR §13-300).

A few native plant species, such as wiliwili, are known to exist in the general vicinity of the project area. Care should be taken to avoid removing native plants from the ecosystems as part of the proposed development activity. To avoid impacting these valued natural and cultural resources, further contributing to the degradation of the dryland forest, and impairing traditional gathering rights, it is recommended that a botanical survey of the project area be conducted and that if any rare native species are identified they should be avoided or transplanted to a safe location. Native plants appropriate to the area should also be considered for landscaping activities. Consulted parties have requested that the project proponent be made aware of the devastating impacts that invasive species have had on the dryland forest habitat of Waikōloa. Imported plants are often invasive and can easily spread across the landscape, wreaking havoc for remaining native species. Imported materials such as soil and cinder can house invasive pests such as snails, coqui frogs, little fire ants, and fungal and bacterial pathogens. The spread of these threats poses a serious risk for culturally important native species. The developer should consider working with local native plant nurseries and the WDFI to obtain seeds and other locally sourced, safe materials to prevent the spread of invasive plants and pests.

Additionally, fire safety is a primary concern in Waikōloa. In the past two decades, two large fires have occurred, forcing evacuation of residents within Waikōloa Village. The aridness of these lands combined with high fuel loads in the form of invasive vegetation such as fountain grass, along with persistent winds, makes Waikōloa a veritable tinderbox. Wildfires devastate native habitats, pose a risk to communities, and destroy culturally important features and resources. The developer should remain aware of fire and other safety risks that may cause damage to the remaining dryland forest or the residents of Waikōloa Village. It is recommended that all applicable fire safety protocols be followed as part of the proposed development, and that strategic firebreaks (that avoid impacts to the identified valued cultural, historical, and natural resources) be created as part of the development to help contain the spread of wildfires.

Responsible management of freshwater resources is necessary for the proposed on-site well. Terrestrial water systems are essential for the perpetuation of native species. These waters connect to brackish and oceanic systems downslope. The developer should conduct hydrological studies to ensure that the drilling and use of the proposed well will not cause any harm to the aquifer or valued cultural and natural resources along the coast. At a minimum, water drawn from the aquifer should remain below the sustainable yield determined by CWRM, the level of the aquifer should be continuously monitored, and contingency plans should be made for alternative water sources in case any impacts to the aquifer or near shore resources are discovered.

In general, mindful building practices that focus on minimizing surface and subsurface ground disturbance will help to lessen any potential impacts to cultural landscape, aligning with the Hawaiian values of kuleana and stewardship of the 'āina. This includes placing height restrictions on buildings to ensure view planes are maintained and prevent obscuring any traditional landmarks or locations that are utilized as locational references from both on land and at sea. Construction materials should also be secured at all times to guard against the high winds that sweep through the area.

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February 19, 2026

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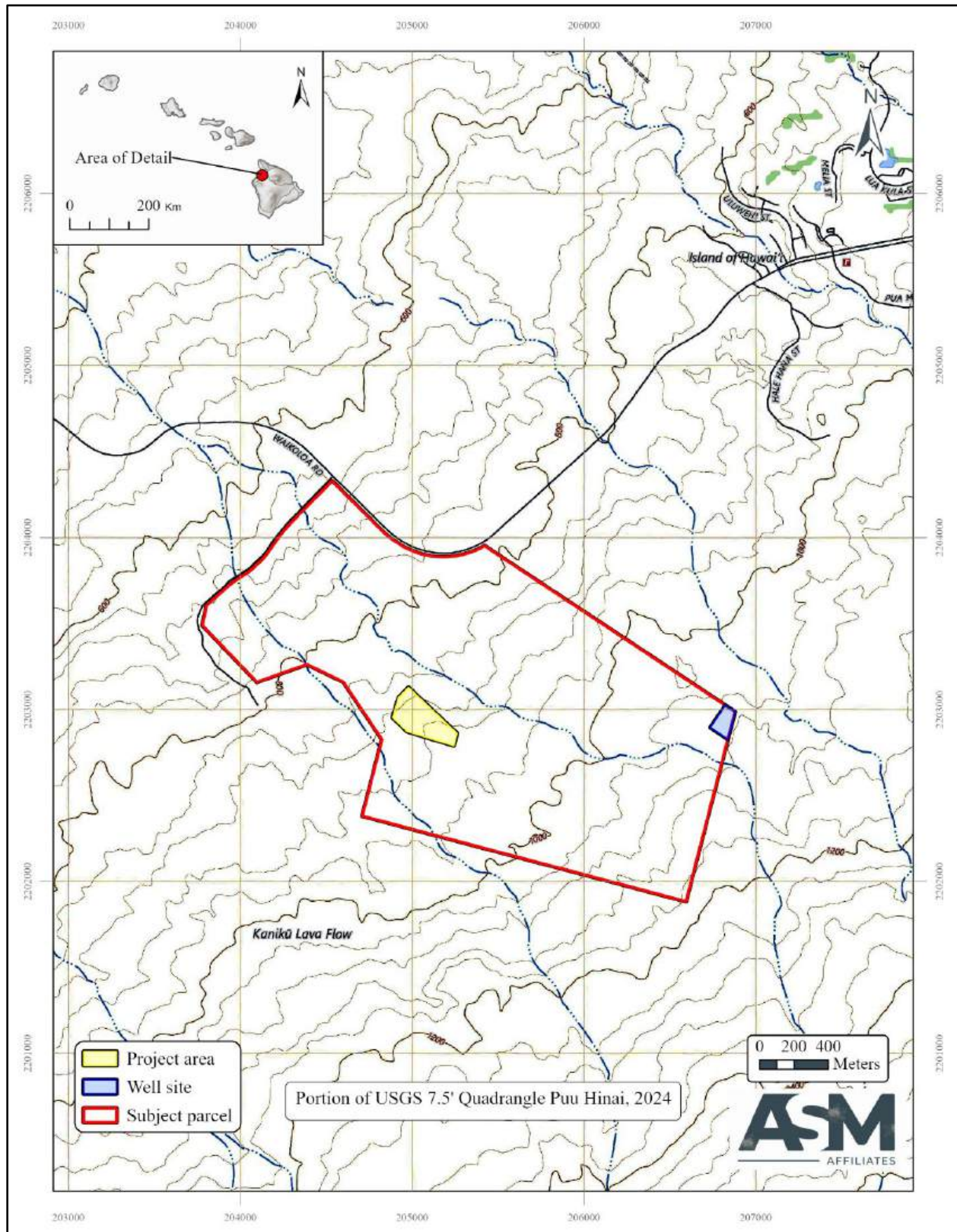


Figure 1. Project area location (subject parcel outlined red).

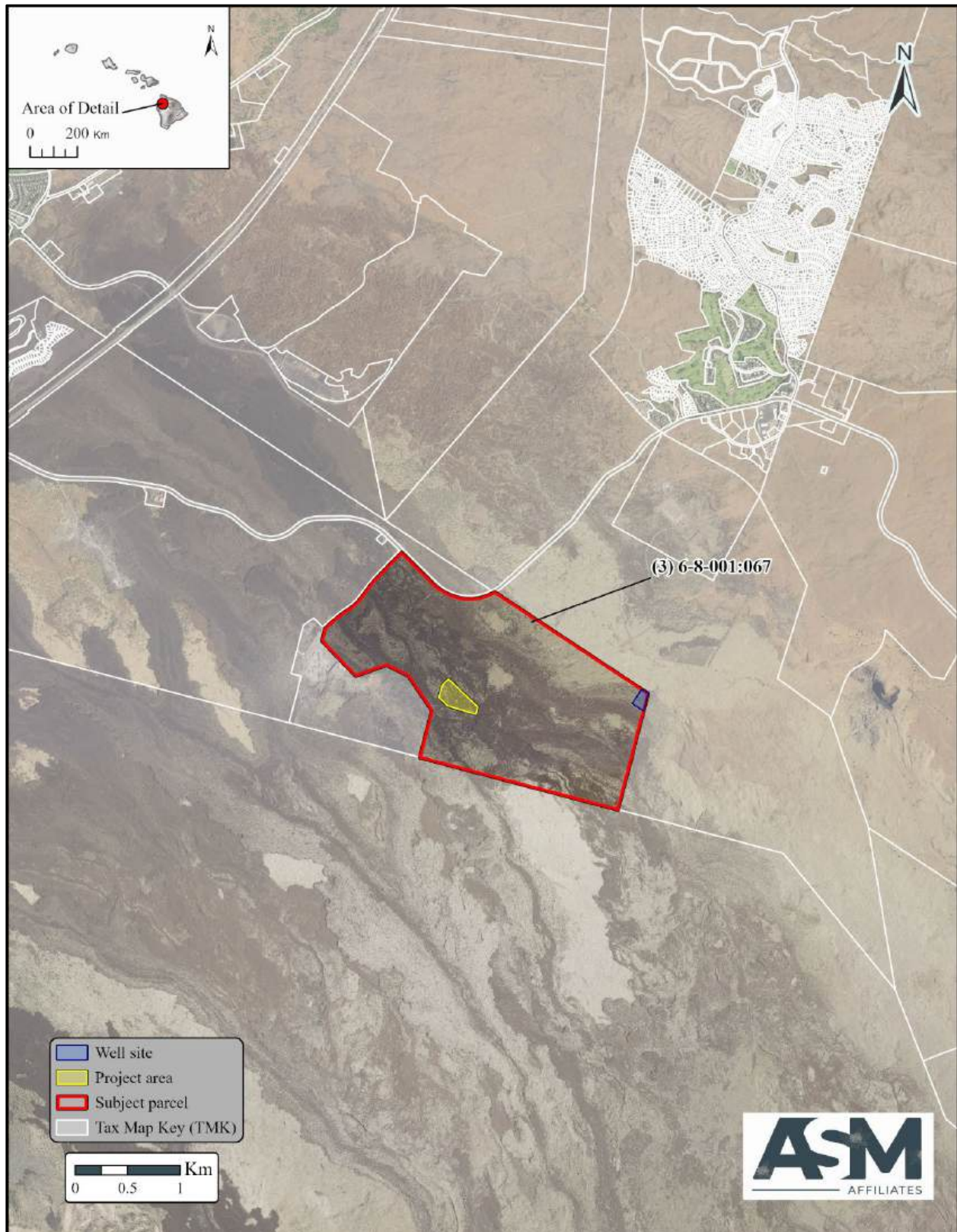


Figure 2. Tax map parcel boundaries in the vicinity of the subject parcel.

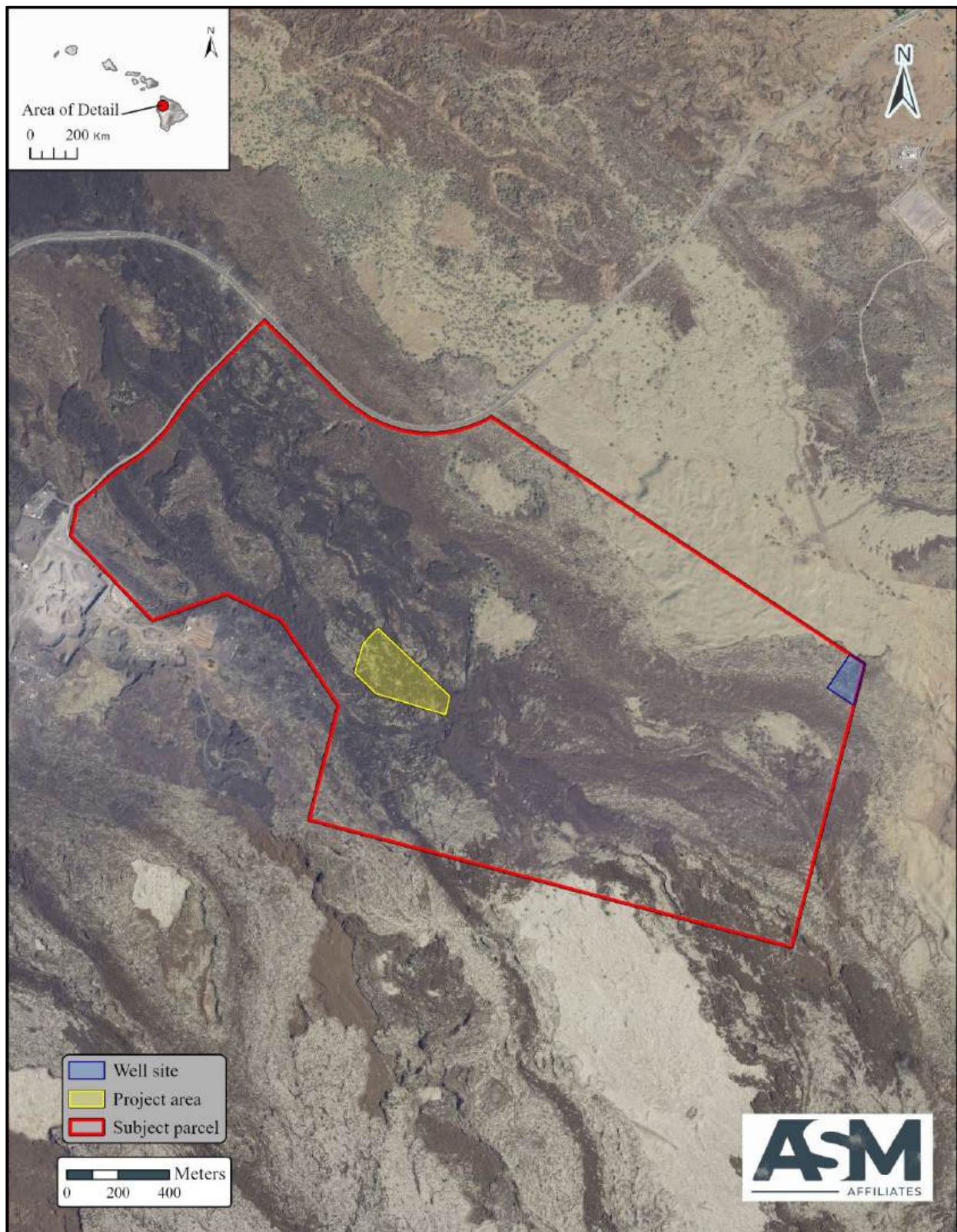


Figure 3. Aerial view of the subject parcel (outlined in red).

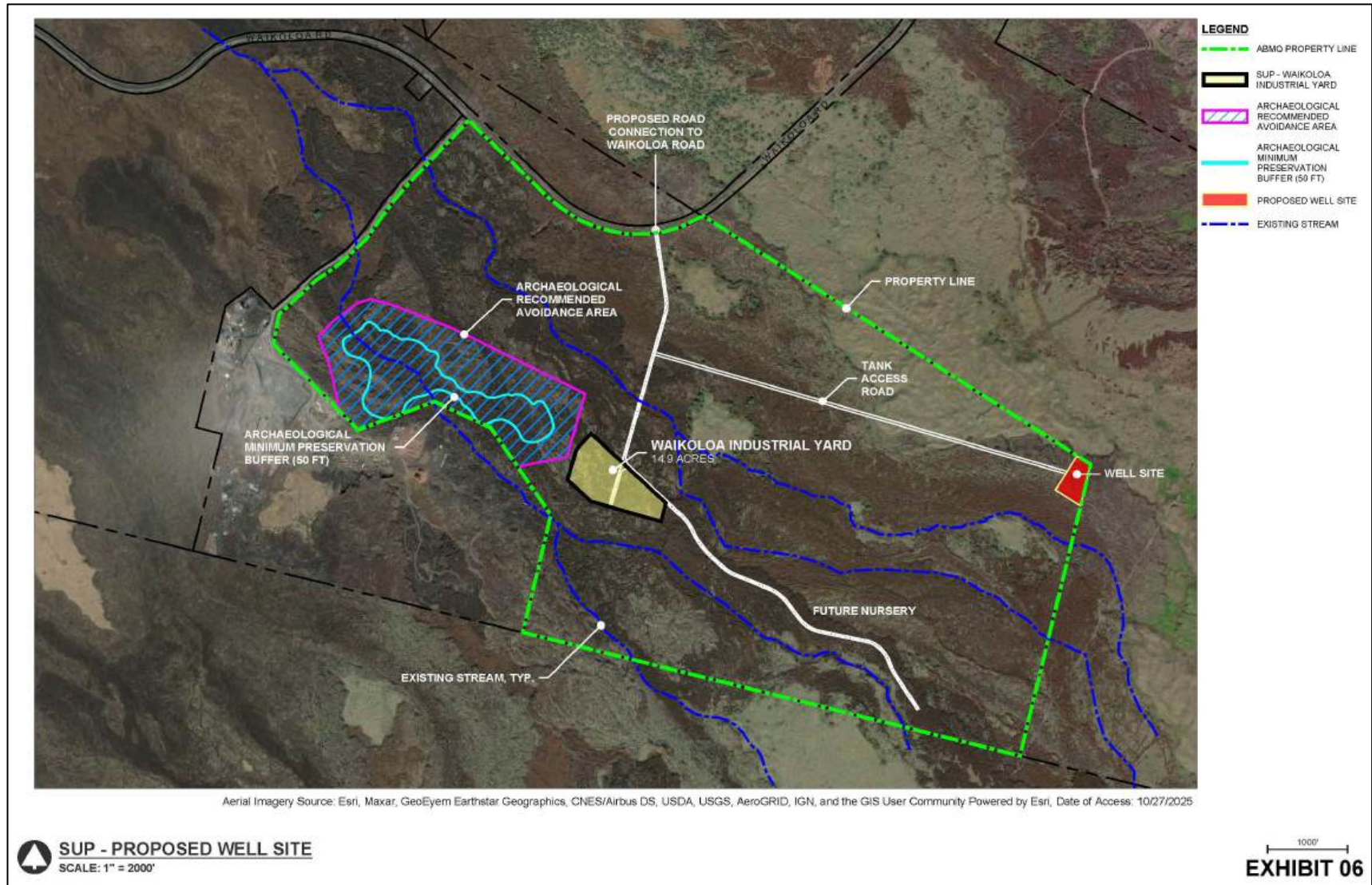


Figure 4. Conceptual development plan within the parcel. Archaeological sites identified during the Jensen and Burgett survey (1991) are located in the western portion of the subject parcel (outlined in turquoise).

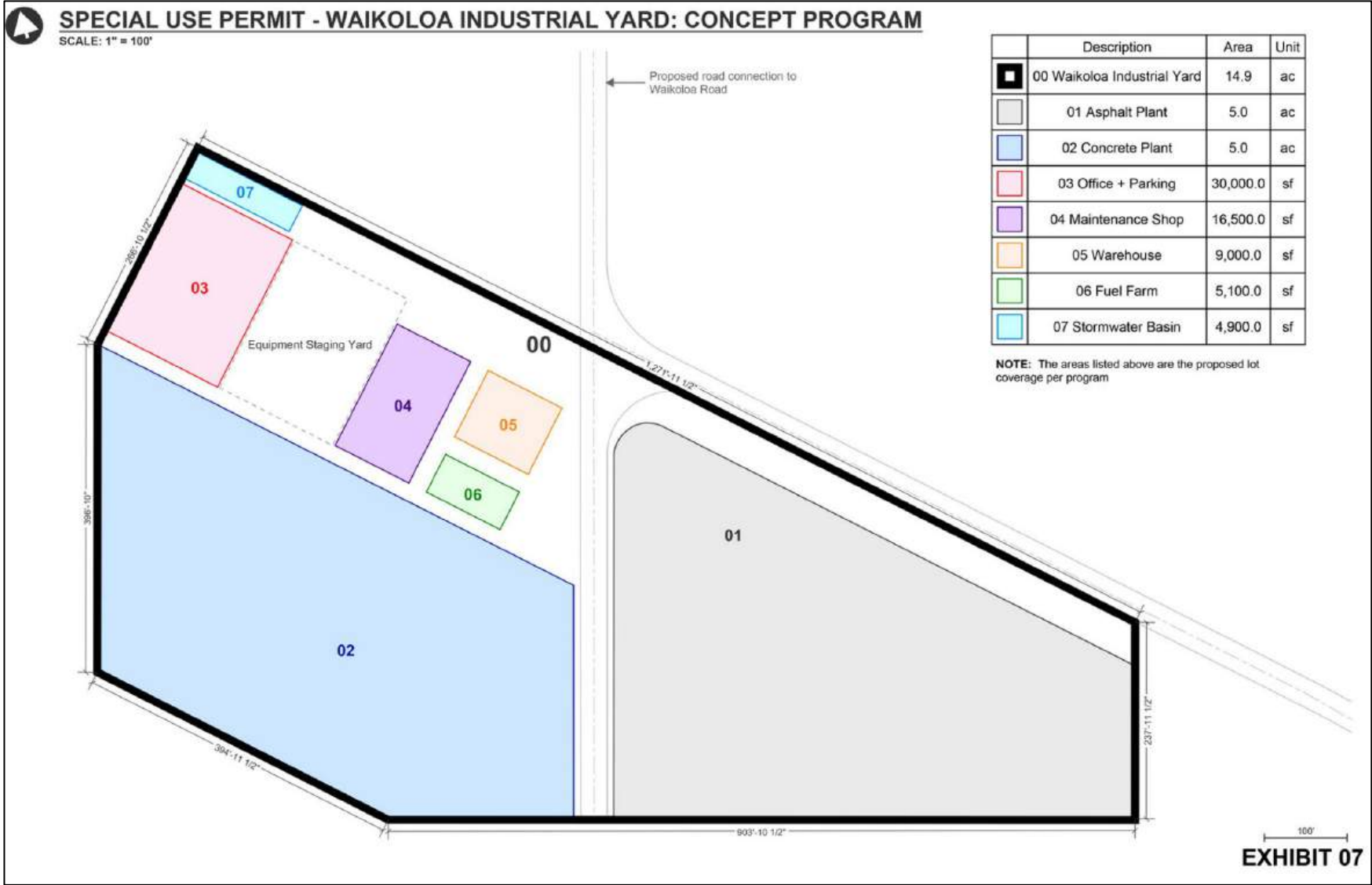


Figure 5. Conceptual development plan within the proposed Waikōloa Industrial Yard project permit area.

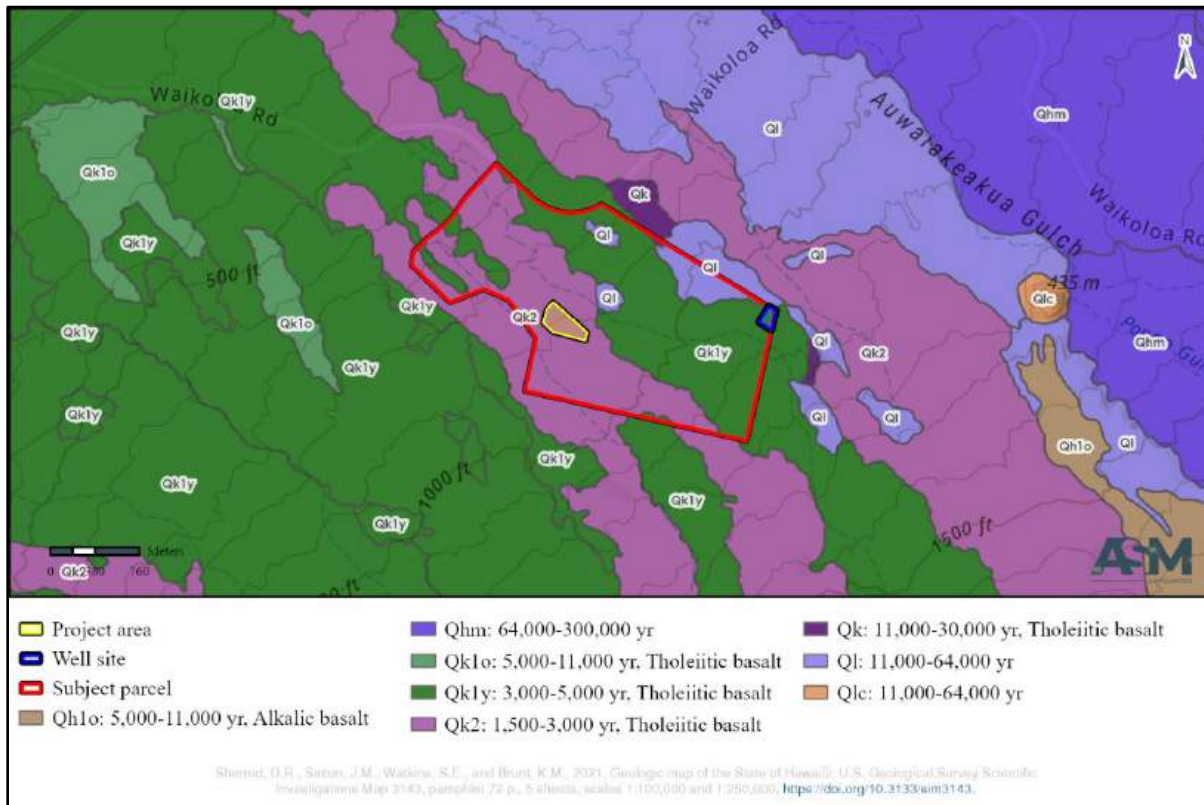


Figure 6. Geology in the vicinity of the project area.

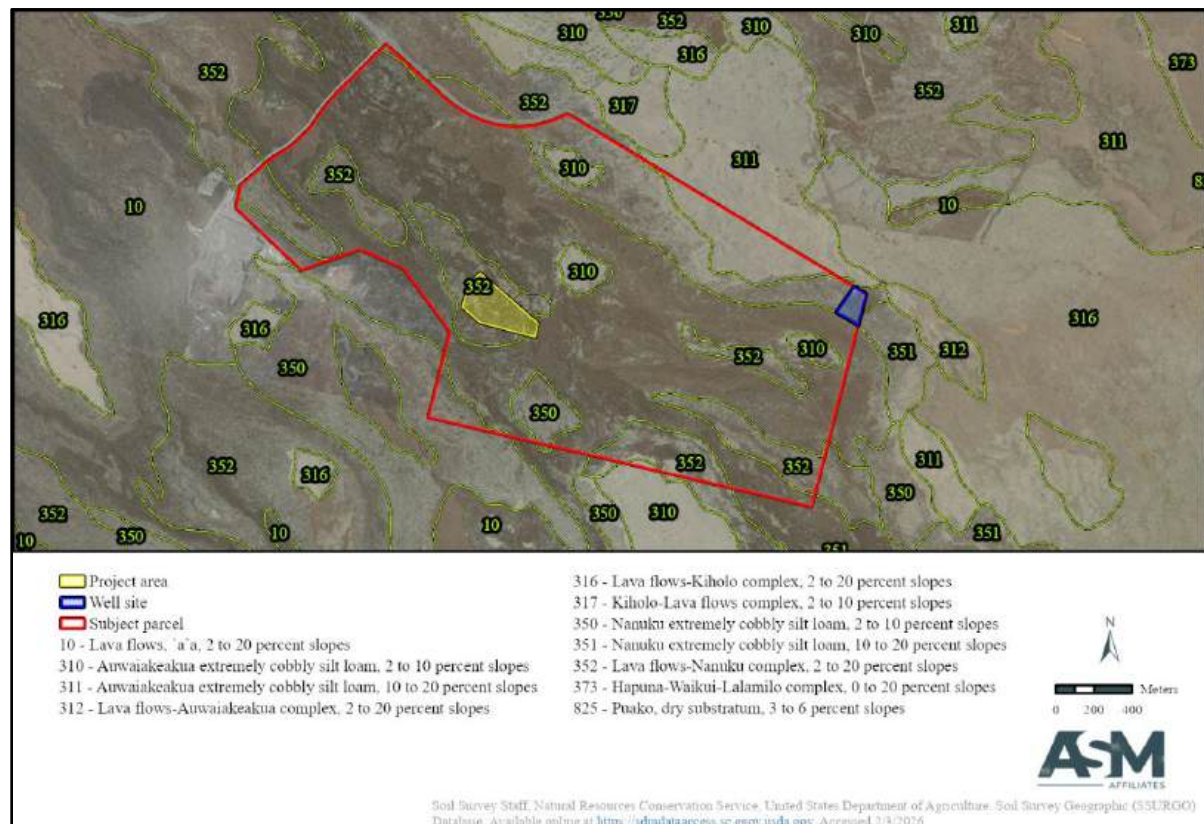


Figure 7. Soils in the vicinity of the project area.

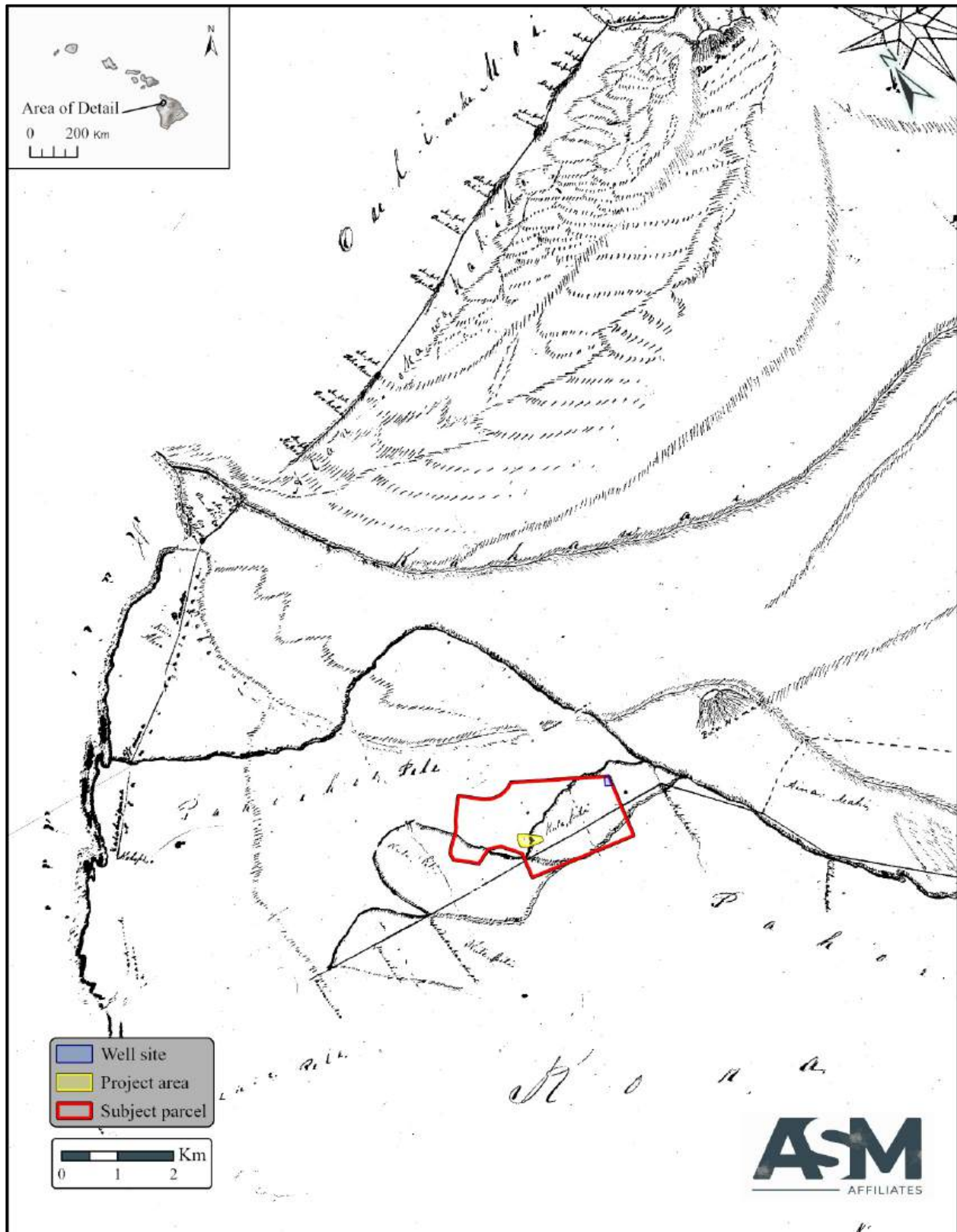


Figure 8. Registered Map No. 574 showing Waikōloa (prepared by Kaelemakule, n.d.).

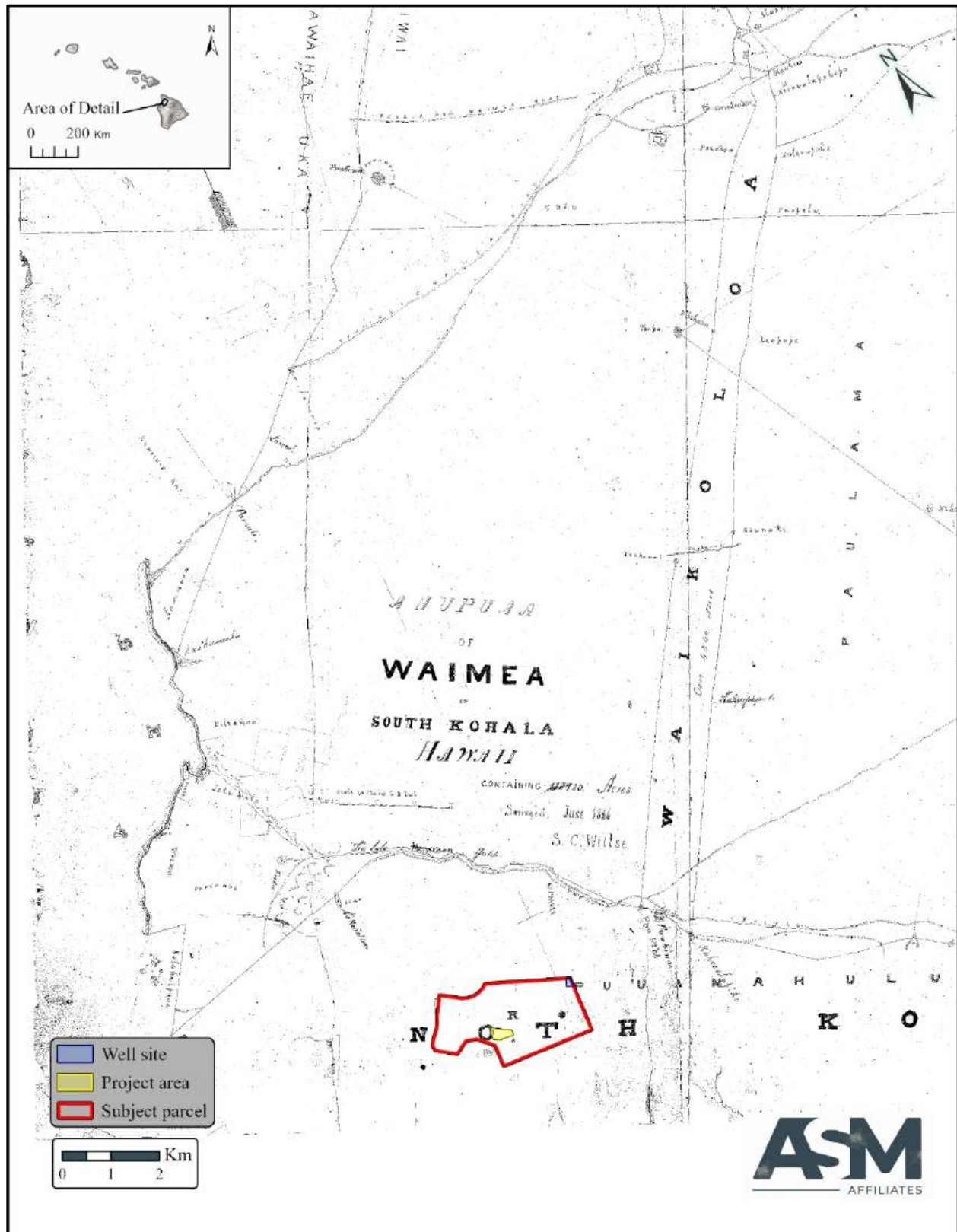


Figure 9. Hawai'i Registered Map No. 712 featuring Waikōloa and the greater south Kohala region. North Kona and Pu'uānāhulu ahupua'a to the south.

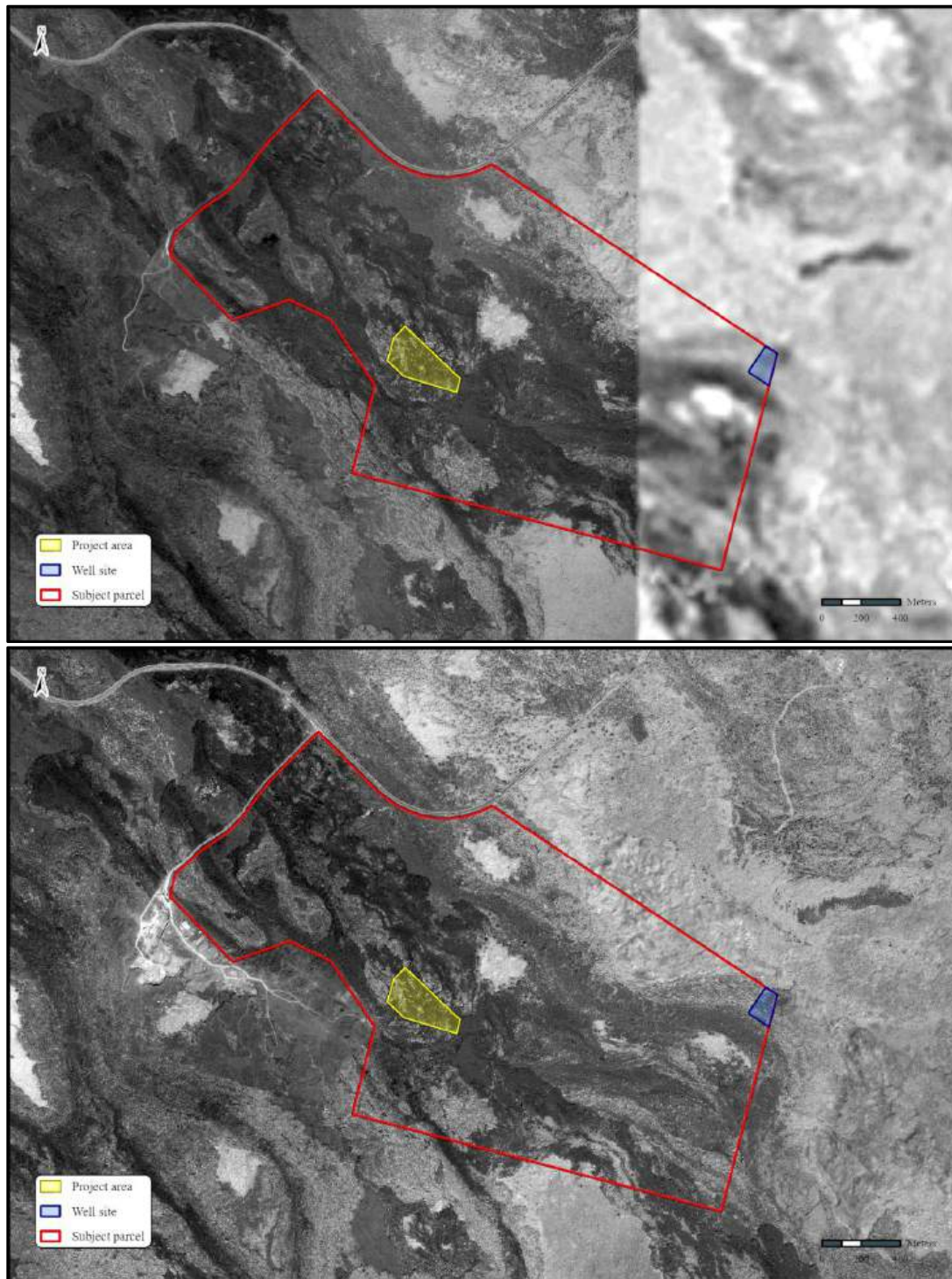


Figure 10. Satellite imagery of the western portion of the subject parcel taken ca. 2000 (above) and 2006 (below), demonstrating expansion of the road and quarry area during that time period (Google Earth November 19, 2025).

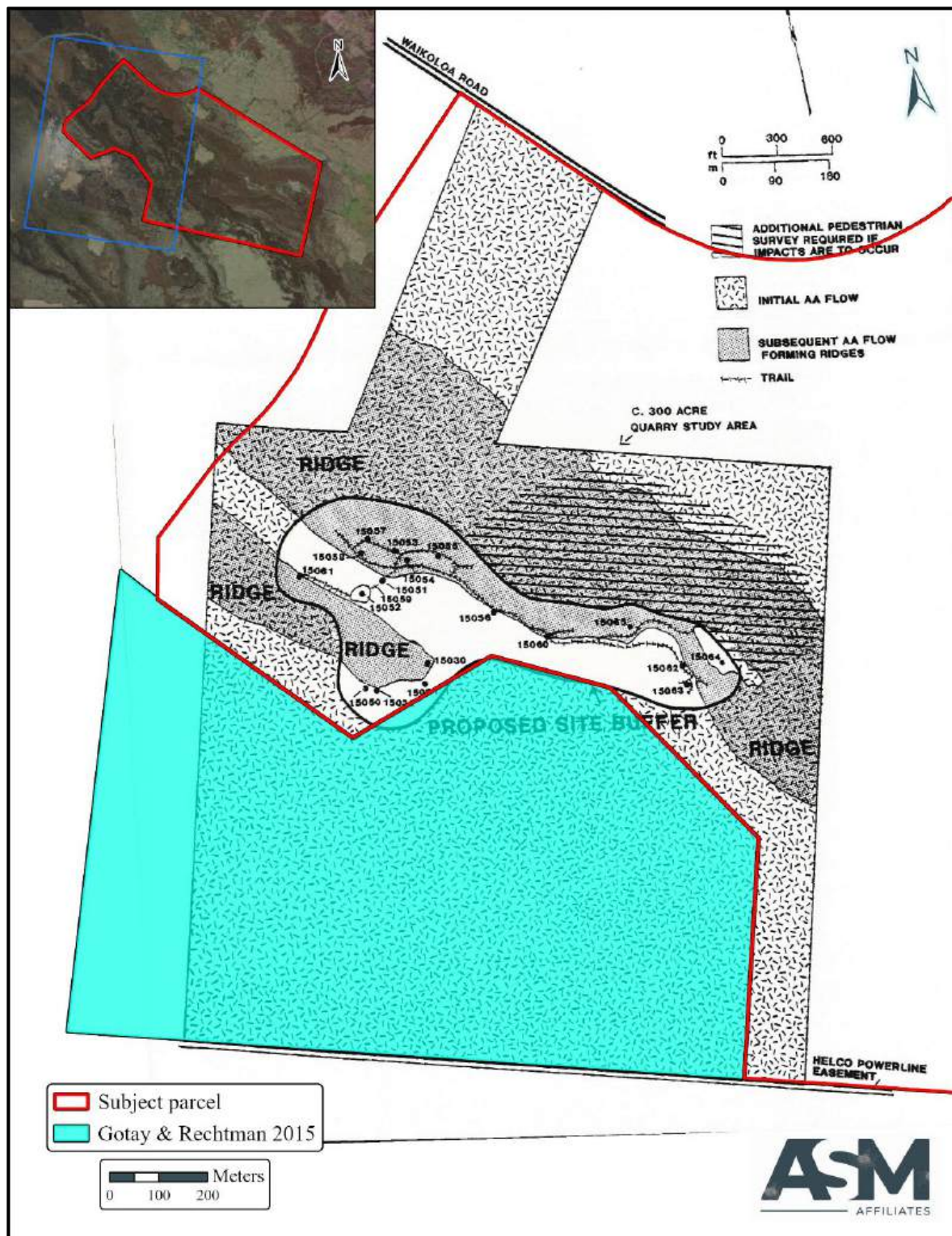


Figure 11. Jensen and Burgett (1991) site location map on the subject parcel with the location of the Gotay and Rechtman (2015a) study indicated.

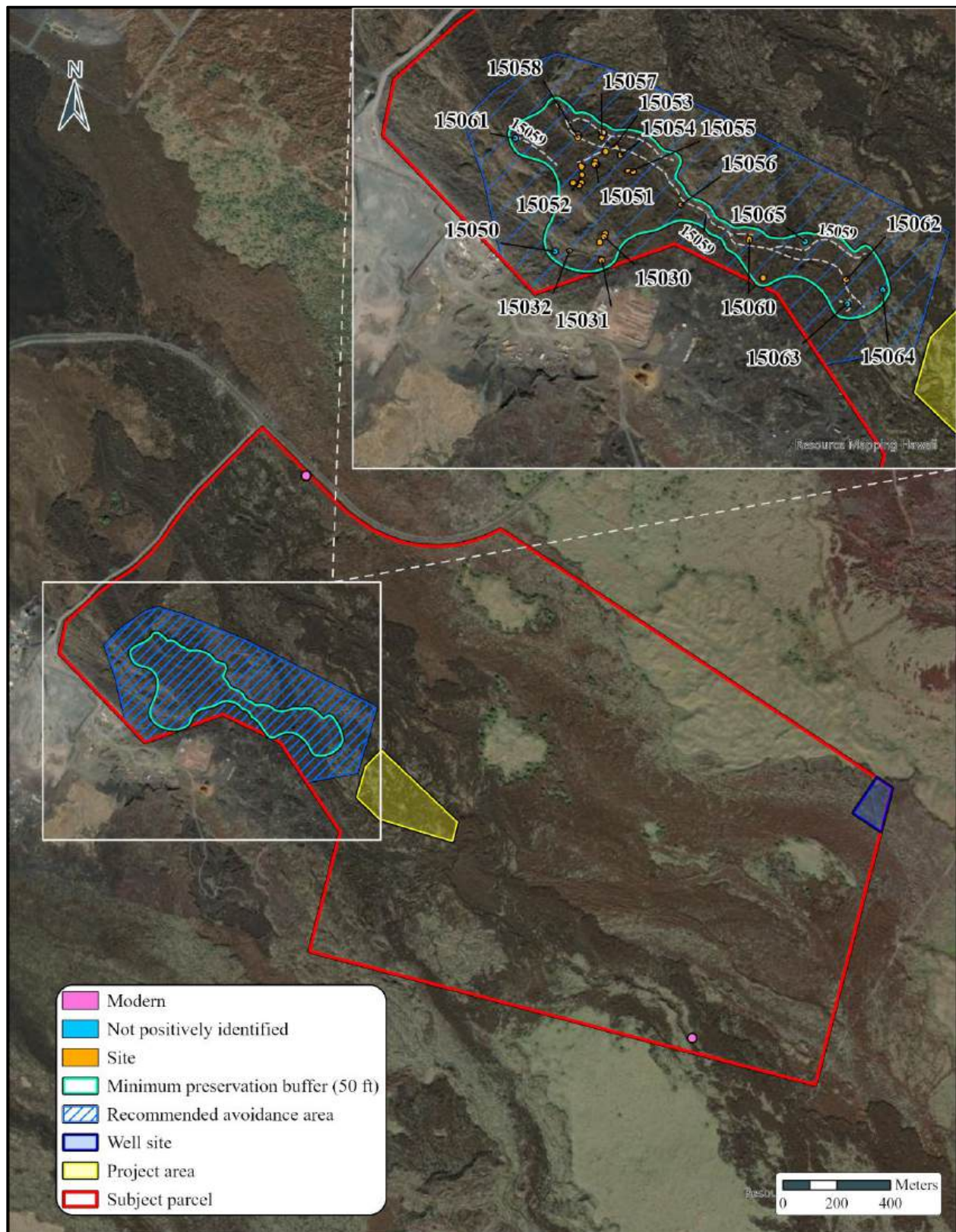


Figure 12. Site location map from Clark (2025) showing the location of the current project areas.

February 19, 2026

Ka Pa'akai O Ka 'Āina Analysis for AB Maui Quarries, LLC Waikōloa Industrial Yard Project

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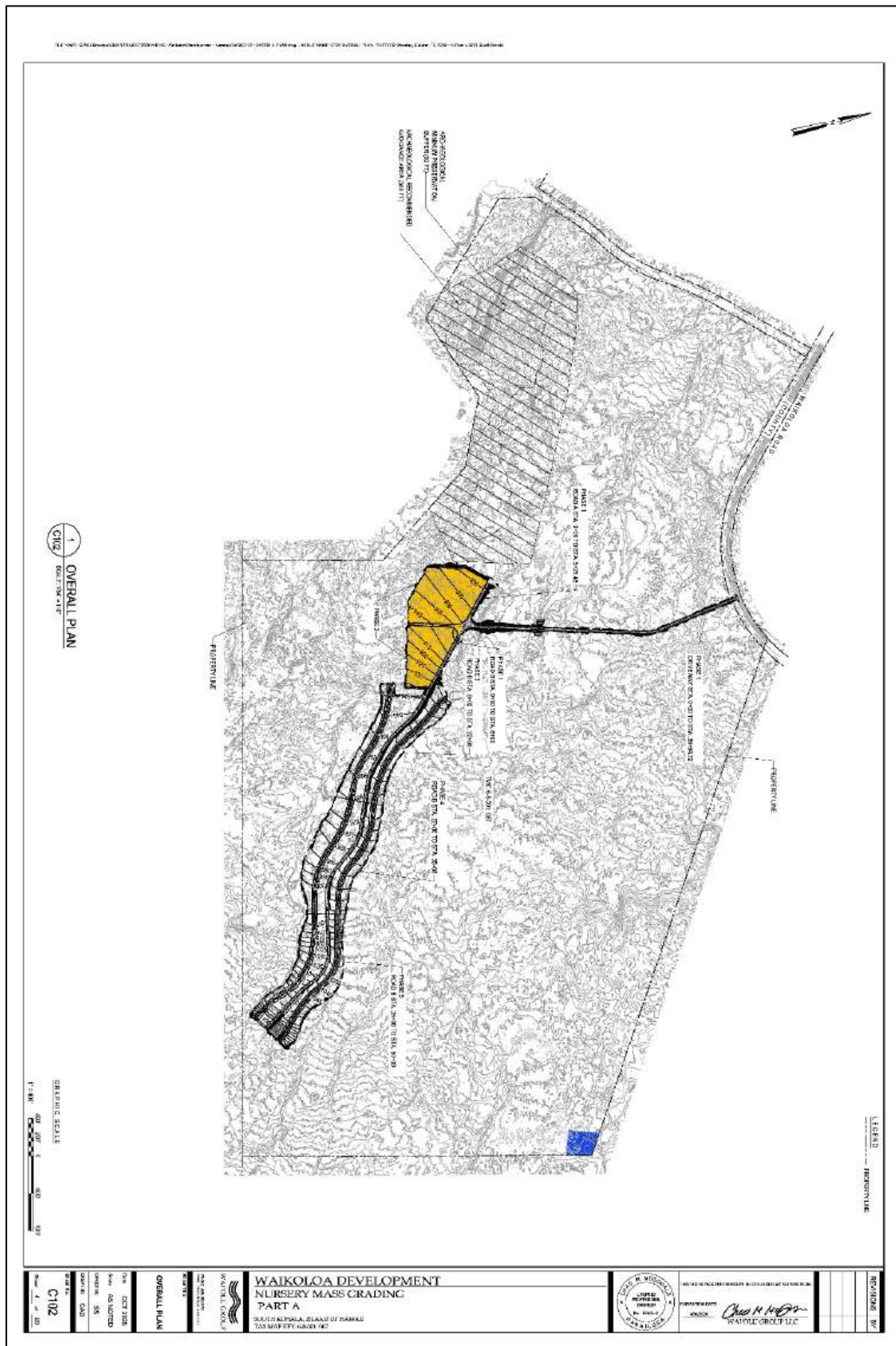


Figure 13. Grading plan recently reviewed by the DLNR-SHPD showing the location of the current project areas (Industrial Yard-yellow; Well-blue) in relation to the archaeological avoidance area.



Figure 14. Wiliwili tree on eastern edge of subject parcel, view to the south.

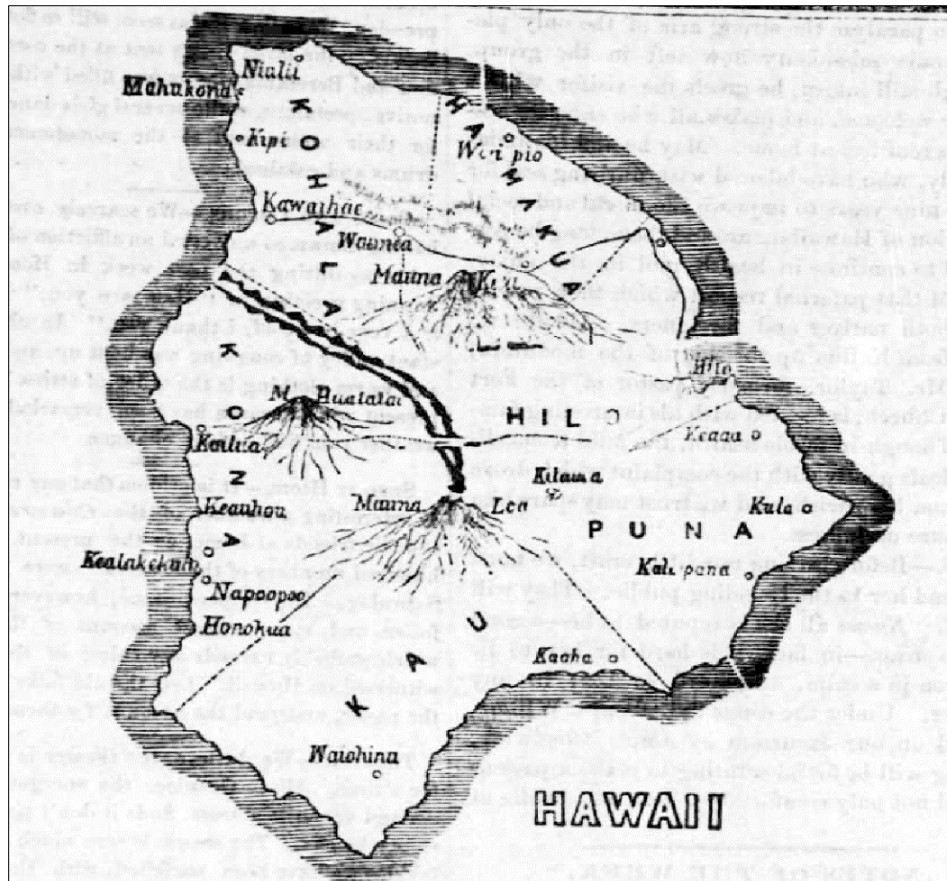


Figure 15. Map of Hawai'i Island published in the *Pacific Commercial Advertiser* on February 17, 1859, showing a trail across Waikōloa connecting Waimea and Hilo. From Ishihara and Brandt (2020).

C. Kimo Alameda, Ph.D.
Mayor

William V. Brilhante Jr.
Managing Director



Reed K. Mahuna
Police Chief

Sherry D. Bird
Deputy Police Chief

County of Hawai'i

POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

APRIL 2, 2026

COH PLANNING DEPT
APR 7 2026 PM 12:09

REC'D HAND DELIVERED

TO : JEFFREY W. DARROW, PLANNING DIRECTOR

FROM :  THOMAS A. SHOPAY III, ACTING ASSISTANT CHIEF, AREA II OPERATIONS

SUBJECT : SPECIAL PERMIT APPLICATION (PL-SPP-2026-000121)
APPLICANT: AB MAUI QUARRIES, LLC
REQUEST: TO CONSTRUCT AND OPERATE A CONCRETE AND ASPHALT BATCH PLANT AND MAINTENANCE SHOP, OFFICE BUILDING, AND WAREHOUSE FOR MECHANICAL REPAIR AND STORAGE AND RELATED ACCESSORY USES ON A 14.9-ACRE PORTION OF A 934.66-ACRE PROPERTY
TAX MAP KEY: (3) 6-8-001:067, WAIKOLOA, SOUTH KOHALA, HAWAII

We appreciate the opportunity to review and provide commentary on the Special Permit Application (PL-SPP-2026-000121).

The Hawai'i Police Department has reviewed the proposal and has concerns regarding the planned project access road as it connects to Waikoloa Road and the FEHR & PEERS Waikoloa Industrial Yard Transportation Assessment.

The area in which the project access road is planned to connect to Waikoloa Road is on a turn and within a 45 mile-per-hour zone. While the FEHR & PEERS assessment indicates that the impact is within acceptable means, we would like to raise our concern of its location and suggest the intersection be moved to a straight-away in order to increase line of sight visibility. Increased visibility will allow motorists a greater opportunity to see vehicles slowing to make the turn into the project road, as well as for motorists to see vehicles exiting the project road. This will aid in the avoidance of traffic collisions.

Should you have any questions or concerns, please contact Captain Roylen Valera, Commander of our South Kohala District at phone number (808) 887-3080 or via email at Roylen.Valera@hawaiiipolice.gov.

RV
26HQ0221

Planning Dept.
Exhibit 2



HAWAII WATER SERVICE

P.O. Box 384809
Waikoloa, HI 96738 Tel: (808) 657-6368

January 27, 2026

WAI'OLU GROUP
Attn: Jeff Onaga, PE

RE: WHWC Will Serve – Waikoloa Development TMK: (3) 6-8-001:067

Dear Mr. Onaga:

Hawaii Water Service Co., Inc. dba: West Hawaii Water Company (the “Company”) is authorized by the Hawaii Public Utilities Commission (“HPUC”) to provide water service in the Waikoloa area of Hawaii Island, State of Hawaii. You are requesting the availability and source of water for the “Waikoloa Development” located on TMK (3) 6-8-001:067 (the “Project”). As provided to the Company, you are requesting the availability of 5,550 gallons per day (gpd) to serve the Project.

This letter confirms that the Project is located within the Company’s service territory as defined by the HPUC. Subject and pursuant to the terms and conditions set forth herein and in the Company’s Rules and Regulations, Rule XX, WHWC Tariff No. 1 (the “Tariff”), the Company is willing and able to provide 5,550 gpd of water to the Project.

Water service will be provided in accordance with and subject to the terms and conditions of the Company’s Tariff at rates approved by the HPUC, as both may be amended or modified from time to time. Please consult the Company’s Tariff to determine any additional requirements and conditions that can and/or will be imposed upon you in connection with service to the Project. In addition, the Company’s willingness to provide water service to the Project is subject to the following conditions:

1. CIAC Fee:

Pursuant to the Company’s current Tariff, you will be required to pay a Contribution in Aid of Construction (“CIAC”) fee to the Company as a condition of receiving service to the Project (Tariff Rule XX). CIAC fees are used by the Company for the purpose of expanding the capacity of the water system. The actual CIAC fee will be based on the calculation of the CIAC in accordance with Rule XX at the time that payment is made but is currently \$5.40/gallon (See Exhibit A). Payment will be due, in full, upon execution of an Extension Agreement, as described below. The fee is subject to change with the Consumer Price Index (CPI).





HAWAII WATER SERVICE

2. Extension Agreement:

An Extension Agreement is required with the Company for the Project within one (1) year after the date of the Will Serve Letter or this Will Serve will automatically terminate and become void. The full amount of the CIAC fees shall be paid upon execution of the Extension Agreement. The Extension Agreement will automatically terminate as to any unused capacity if the Project is not completed within two (2) years after the date of the Extension Agreement date. The Company may extend this date as provided in Rule XX, Section 12 of its Tariff.

3. Conservation:

The Extension Agreement will include provisions requiring you to agree to reasonably cooperate with the Company in water conservation efforts, which may include data collection and sharing of technology with respect to cooling equipment, planting of drought resistance vegetation, and reduction in irrigation usage in case of water shortages.

In addition, according to Rule XX of the Company's Tariff, an additional contribution in aid of construction may be required if water consumption for the Project results in an increase in annual average water usage in excess of the greater of 300 gallons per day or 20% over the annual average water consumption that was utilized in calculating the CIAC initially paid.

If you have any questions concerning the above-mentioned requirements, please do not hesitate to call.

Sincerely,

Geoff Fulks
General Manager

Via email: [REDACTED]





HAWAII WATER SERVICE

EXHIBIT A

WAI'OLU GROUP - Waikoloa Development

CIAC Fee Calculation - TMK: 6-8-001:067

West Hawaii Water Company

1/27/2026

Latest Project:

DW-8	
6,378,956.43	Expense - Final
1,440,000.00	GPD Production
\$ 4.43	Cost Per Gallon
\$ 0.97	CPI Cincrease
\$ 5.40	GPD Cost

5,550	Project GPD
5.40	Cost GPD
\$ 29,993.72	Net CIAC

CPI Calculation

348.922	2025 - Annual
286.008	2020 Annual CPI-Base
62.91	Increase
21.997%	Percent Increase
\$ 0.97	\$ Increase

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

CIARA W.K. KAHANE
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

November 6, 2025

Neil Azevedo, Acting Director
Department of Public Works
County of Hawaii
101 Pauahi Street, Suite 7
Hilo, HI 96720
public_works@hawaiiicounty.gov

IN REPLY REFER TO:
Project No. 2025PR01155
Doc. No. 2511JG04
Archaeology

Planning Dept.
Exhibit 4

Dear Neil Azevedo:

**SUBJECT: Hawaii Revised Statutes (HRS) Chapter 6E-42 Historic Preservation Review -
County of Hawaii Grading Permit Application (PW.ENG2025-00196)
Applicant: Trevor Yatomi (Proponent's representative)
Waimea, Waikoloa Ahupua'a, South Kohala District, Island of Hawai'i
TMK: (3) 6-8-001:067**

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject project which our office received for review on October 16, 2025. The submittal included an HRS 6E Submittal Form, a Permit Snapshot Report (PW.ENG2025-00196), a drainage report, construction plans, an archaeological reconnaissance survey (RS) letter report (Clark, September 2025, and photos of the project area (HICRIS Submission No. 2025PR01155.001). SHPD requested additional information on November 5, 2025 and received the requested information on November 6, 2025 (Submission No. 2025PR01155.002).

The applicant proposes grading activities to facilitate the construction of an asphalt driveway and general grading activities for future development and access. The project area comprises an 83.94-acre portion of the subject project parcel. The ground disturbing activities will include the grading of an ~70.72-acre area; side slopes for the roadway will be graded at 2:1 slope to existing grade. The proponent indicates that project objective is to provide access routes within the property; prepare a portion of the property for uses consistent with agriculture zoning activities such as plant nursery operations; provide a graded area for possible future building structures, water well and tank(s). Additionally, the proponent indicates that additional permits that may be required for future development include: grading permits, special use permits, well construction permits, and building permits for uses consistent with the property zoning.

The submittal material indicate that the project area has not been impacted by any previous ground-disturbing activities, and SHPD records and the RS report (Clark, September 2025) indicate the current project area was included within a previous archaeological inventory survey (AIS; Jensen and Burgett 1999) that resulted in the identification of historic properties (Sites # 50-10-11-15030 [Complex], 50-10-11-15031 [Rock Shelter], 50-10-11-15032 [Platform], 50-10-11-15050 [Platform], 50-10-11-15051 [Complex], 50-10-11-15052 [Platform complex], 50-10-11-15053 [Platform], 50-10-11-15054 [Platform], 50-10-11-15055 [Platform], 50-10-11-15056 [Platform], 50-10-11-15057 [Platform], 50-10-11-15058 [Modified outcrops], 50-10-11-15059 [Trail], 50-10-11-15060 [Platform], 50-10-11-15061 [Platform], 50-10-11-15062 [Rock Shelter], 50-10-11-15063 [Modified blister], 50-10-11-15064 [Terrace], and 50-10-11-15060 [Rock Shelter]). However, none of the previously identified historic properties are located within the current project area. Additionally, SHPD previously reviewed an associated project (HICRIS Project No. 2025PR00952; Doc. No. 2509JG10) involving geotechnical borings for a proposed access road that overlaps the current project area. SHPD made a project effect determination of "no historic properties affected" on the condition

that SHPD be provided with photo and written verification of the installation of the interim protection measures (orange construction fencing) along the preservation buffer boundary surrounding the previously identified [Jensen and Burgett 1991] historic properties in the vicinity where the proposed road encroaches the buffer.

Based on the information provided, SHPD's project effect determination is **"No historic properties affected"** pursuant to HAR §13-284-7(a)(1) for the current project with the understanding that the 50-ft.-wide preservation buffer will not be impacted. Additionally, pursuant to HAR §13-284-7(e), when SHPD comments that the proposed project shall not affect significant historic properties, the HRS §6E historic preservation review process ends. The permit issuance process may continue.

As of November 6, 2025, SHPD has not received the requested submission of photo and written verification of installation of the interim protection measures around the 50-ft.-buffer for the fourteen previously identified (Jensen and Burgett (1991) historic properties.

Again, SHPD requests the submission of the photo and written verification that the interim protection measures prior to the initiation of the current project and as part of the grading activities for the related project (HICRIS Project No. 2025PR00952, Doc. No. 2509JG10). Please submit this documentation to HICRIS Project No. 2025PR01155 in response to our HICRIS request.

Attach to construction plans and permit: If historic properties such as lava tube openings, concentrations of artifacts, structural remains or human skeletal remains are found during construction activities please cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division at (808) 933-7653.

Please contact Joshua Gastilo at joshua.gastilo@hawaii.gov for questions regarding archaeological resources or this letter.

Aloha,



Jessica L. Puff, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: County of Hawaii, Engineering Division, dpweng@hawaiicounty.gov
Brad Uemoto, brad.uemoto@hawaiicounty.gov
Trevor Yatomi, [REDACTED]
Matt Clark, [REDACTED]

From: [Saito, Tracie](#)
To: [Planning Internet Mail](#)
Subject: RE: Request for Comments on Special Permit Application No. PL-SPP-2026-000121 | AB Maui Quarries LLC on TMK: (3) 6-8-001:067
Date: Friday, March 27, 2026 3:34:54 PM
Attachments: [image001.png](#)

Aloha,

Adding in some last minute comments for the Solid Waste Section:

“If the proposed operations include recycling of asphalt or concrete, please contact the Department of Health’s Solid and Hazardous Waste Branch, Solid Waste Section to determine whether a solid waste management permit is required for the recycling activities.”

Thank you,

Tracie Saito

Planner | Office of Solid Waste Management
Solid and Hazardous Waste Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #100 | Pearl City, HI 96782
Office: (808) 586-4226
Direct: (808) 586-4041

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From: Saito, Tracie
Sent: Friday, March 27, 2026 12:25 PM
To: planning@hawaiiicounty.gov
Subject: RE: Request for Comments on Special Permit Application No. PL-SPP-2026-000121 | AB Maui Quarries LLC on TMK: (3) 6-8-001:067

Aloha,

Please see the attached documentation in response to the request regarding the proposed Special Permit Application.

<https://health.hawaii.gov/epo/files/2024/10/SHWB-standard-comments-v4-October->

[2024-update.pdf](#)

Thank you,

Tracie Saito

Planner | Office of Solid Waste Management
Solid and Hazardous Waste Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2827 Waimano Home Road, #100 | Pearl City, HI 96782
Office: (808) 586-4226
Direct: (808) 586-4041

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From: Steen, Raimee <Raimee.Steen@hawaiicounty.gov>

Sent: Tuesday, March 17, 2026 3:50 PM

To: Civil Defense Distribution Group <civildefense@hawaiicounty.gov>; HCPDOne <HCPDOne@hawaiipolice.gov>; South Kohala Traffic Safety <sktscsecretary@gmail.com>; HDOA.PLANNING <hdoa.planning@hawaii.gov>; DLNR.Engr <dlnr.engr@hawaii.gov>; Waikoloa Village Association <gm@wvagolf.com>; HELCO <ci@hawaiianelectric.com>; Bauer, Jackson M <jackson.m.bauer@hawaii.gov>; DPW Eng <dpweng@hawaiicounty.gov>; DPW Traffic <dpwtrf@hawaiicounty.gov>; DWS (DWSEngineeringReview@hawaiidws.org) <DWSEngineeringReview@hawaiidws.org>; Matsumoto, Kaiulani <kmatsumoto@hawaiidws.org>; DEM (COH) <cohdem@hawaiicounty.gov>; Baybayan, Clinton <Clinton.Baybayan@hawaiicounty.gov>; Henderson, Royd <Royd.Henderson@hawaiicounty.gov>; Kawasaki, Edward <Edward.Kawasaki@hawaiicounty.gov>; Morrison, Bethany J <Bethany.J.Morrison@hawaiicounty.gov>; Palma, Maryam <Maryam.Palma@hawaiicounty.gov>; Honda, Eric T. <Eric.Honda@doh.hawaii.gov>; Une, Michael Y. <michael.une@doh.hawaii.gov>; Haae, Glenn <glenn.haae@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>; SHWB <shwb@doh.hawaii.gov>; DBEDT LUC <dbedt.luc.web@hawaii.gov>; DBEDT State Planning <dbedt.stateplanning@hawaii.gov>; DLNR.CO.PublicDLNR <dlnr@hawaii.gov>; Hatayama, Jay M <jay.m.hatayama@hawaii.gov>; Martin, Candace M <candace.m.martin@hawaii.gov>; Hiromasa, Dane K <dane.hiromasa@doh.hawaii.gov>; DOH.wwb <DOH.wwb@doh.hawaii.gov>; Tomomitsu, Mark S <mark.tomomitsu@doh.hawaii.gov>

Cc: Roy, Alex <Alex.Roy@hawaiicounty.gov>; Dacayanan, Melissa <Melissa.Dacayanan@hawaiicounty.gov>

Subject: [EXTERNAL] Request for Comments on Special Permit Application No. PL-SPP-2026-000121

| AB Maui Quarries LLC on TMK: (3) 6-8-001:067

Importance: High

Good afternoon,

Please see the attached memo requesting your review and comments on the subject application. No hard copy will be provided. The application packet is linked within the memo; however, for your convenience here is a direct link:  [Application Packet for Agencies Review \(PL-SPP-2026-000121\)](#)

We kindly ask that you submit your comments to planning@hawaiicounty.gov no later than April 17, 2026.

If you have any questions, please feel free to contact Alex Roy (cc'd herein) at (808) 961-8140.

Thank you,

Raimee Steen

Clerk II | Planning Division

County of Hawaii Planning Department

101 Pauahi Street, Suite 3 | Hilo, HI 96720

Direct: (808)-961-8038 | Main: (808)-961-8288

raimee.steen@hawaiicounty.gov

Solid and Hazardous Waste Branch

Standard Comments

October 11, 2024

The Solid and Hazardous Waste Branch administers programs in the areas of:

- 1) Management of hazardous waste;
- 2) Management of solid waste; and
- 3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at <https://www.capitol.hawaii.gov/hrscurrent/>.

Hazardous Waste Program

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [<https://health.hawaii.gov/shwb/hazwaste/hwrules/>]. These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

Solid Waste Section

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 342I, HRS, and chapter 11-58.1, HAR, “Solid Waste Management Control” [<http://health.hawaii.gov/shwb/solid-waste/>].
- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.
- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.
- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

Solid and Hazardous Waste Branch Standard Comments

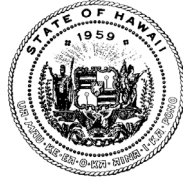
Office of Solid Waste Management

- The Office of Solid Waste Management (OSWM) administers statewide integrated solid waste management planning activities, which apply to the counties, as well as various recycling programs, e.g. the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC Program is conducted pursuant to chapter 342G, HRS, which contains compliance and enforcement provisions, and chapter 11-282, HAR, “Deposit Beverage Recycling” [<http://health.hawaii.gov/hi5/rules-regulations-additional-links/>]. OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to chapter 342H, HRS, and chapter 11-58.1, HAR, “Solid Waste Management Control” [<http://health.hawaii.gov/shwb/solid-waste/>]. Authority for the integrated solid waste management planning and ADF programs is contained in chapter 342G, HRS.
- Glass Advance Disposal Fee Program: Businesses that import glass containers into Hawaii are required to register with the Department of Health and pay a 1.5 cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.
- Deposit Beverage Container Program: Business that manufacture or import deposit beverage containers into Hawaii are required to register with the Department of Health and pay the five cent deposit and one cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.
- The Department of Health reimburses and pays an associated handling fee for the redemption of deposit beverage containers (DBC). These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which standardizes the redemption process).
- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes and divert recyclables from being landfilled.
- Solid waste management plans seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Solid and Hazardous Waste Branch Standard Comments

Underground Storage Tank Program

- The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR [<http://health.hawaii.gov/shwb/underground-storage-tanks/>], include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS.
- A permit is required prior to the installation and operation of a UST. Any new UST system that will be installed must have secondary containment with interstitial monitoring. Refer to subchapters 2, 3, 4, and 12 of chapter 11-280.1, HAR. The installation permit expires 1 year from the date of issuance. The operation permit expires 5 years from the date of issuance.
- §11-280.1-50, HAR, requires owners and operators of USTs or tank systems to notify DOH within twenty-four (24) hours and follow the procedures in §11-280.1-52, HAR, if any of the following occur, with specific exceptions found in the rules:
 - 1) The discovery by any person of evidence of regulated substances which may have been released at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, or nearby surface water);
 - 2) Unusual UST system operating conditions observed or experienced (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST, or an unexplained presence of water in the tank); or
 - 3) Monitoring results from a release detection method required under §§11-280.1-41 or 11-280.1-42 indicate a release may have occurred.
- For release response actions, responsible parties and their consultants and contractors should not only follow the applicable regulations, but also the Department of Health Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website [<https://health.hawaii.gov/heer/>], including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations (EHE)/Environmental Hazard Management Plans (EHMP).



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

MEMORANDUM

DATE: March 27, 2026

TO: Mr. Jeffrey W. Darrow
Planning Director, County of Hawaii

FROM: Eric Honda
District Environmental Health Program Chief

SUBJECT: Special Permit Application (PL-SPP-2026-000121)
Applicant: AB Maui Quarries, LLC
Request: To Construct and Operate a Concrete and Asphalt Batch Plant and
Maintenance Shop, Office Building, and Warehouse for
Mechanical Repair and Storage and Related Accessory Uses on a
14.9-Acre Portion of a 934.66-Acre Property
TMK: 6-8-001:067, Waikoloa, South Kohala, Hawai'i

In most cases, the District Health Office will no longer provide individual comments to agencies or project owners to expedite the land use review and process.

Agencies, project owners, and their agents should apply Department of Health "Standard Comments" regarding land use to their standard project comments in their submittal. Standard comments can be found on the Land Use Planning Review section of the Department of Health website: <https://health.hawaii.gov/epo/landuse/>. Contact information for each Branch/Office is available on that website.

Note: Agencies and project owners are responsible for adhering to all applicable standard comments and obtaining proper and necessary permits before the commencement of any work.

General summary comments have been included for your convenience. However, these comments are not all-inclusive and do not substitute for review of and compliance with all applicable standard comments for the various DOH individual programs.

Clean Air Branch

Planning Dept.
Exhibit <u>6</u>

1. All project activities shall comply with the Hawaii Administrative Rules (HAR), Chapters 11-59 and 11-60.1.
2. Control of Fugitive Dust: You must reasonably control the generation of all airborne, visible fugitive dust and comply with the fugitive dust provisions of HAR §11-60.1-33. Note that activities that occur near existing residences, businesses, public areas, and major thoroughfares exacerbate potential dust concerns. It is recommended that a dust control management plan be developed which identifies and mitigates all activities that may generate airborne and visible fugitive dust and that buffer zones be established wherever possible.
3. Standard comments for the Clean Air Branch are at: <https://health.hawaii.gov/epo/landuse/>

Clean Water Branch

1. All project activities shall comply with the HAR, Chapters 11-53, 11-54, and 11-55.
 1. The following Clean Water Branch website contains information for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects with HAR, Chapters 11-53, 11-54, and 11-55: <https://health.hawaii.gov/cwb/clean-water-branch-home-page/cwb-standard-comments/>.

Hazard Evaluation & Emergency Response Office

1. A Phase I Environmental Site Assessment (ESA) and Phase II Site Investigation should be conducted for projects wherever current or former activities on site may have resulted in releases of hazardous substances, including oil or chemicals. Areas of concern include current and former industrial areas, harbors, airports, and formerly and currently zoned agricultural lands used for growing sugar, pineapple or other agricultural products.
2. Standard comments for the Hazard Evaluation & Emergency Response Office are at: <https://health.hawaii.gov/epo/landuse/>.

Indoor and Radiological Health Branch

1. Project activities shall comply with HAR Chapters 11-39, 11-45, 11-46, 11-501, 11-502, 11-503, and 11-504.
2. Noise may be generated during demolition and/or construction. The applicable maximum permissible sound levels, as stated in Title 11, HAR, Chapter 11-46, "Community Noise Control," shall not be exceeded unless a noise permit is obtained from the Department of Health.
3. Construction/Demolition Involving Asbestos: If the proposed project includes renovation/demolition activities that may involve asbestos, the applicant should contact the Asbestos and Lead Section of the Branch at <https://health.hawaii.gov/irhb/asbestos/>.

Safe Drinking Water Branch

1. Agencies and/or project owners are responsible for ensuring environmental compliance for their projects in the areas of 1) Public Water Systems; 2) Underground Injection Control; and 3) Groundwater and Source Water Protection in accordance with HAR Chapters 11-19, 11-20, 11-21, 11-23, 11-23A, and 11-25. They may be responsible for fulfilling additional requirements related to the Safe Drinking Water program: <https://health.hawaii.gov/sdwb/>.
2. Standard comments for the Safe Drinking Water Branch can be found at: <https://health.hawaii.gov/epo/landuse/>.

Solid & Hazardous Waste Branch

1. Hazardous Waste Program - The state regulations for hazardous waste and used oil are in HAR Chapters 11-260.1 to 11-279.1. These rules apply to the identification, handling, transportation, storage, and disposal of regulated hazardous waste and used oil.
2. Solid Waste Programs - The laws and regulations are contained in HRS Chapters 339D, 342G, 342H, and 342I, and HAR Chapters 11-58.1 and 11-282. Generators and handlers of solid waste shall ensure proper recycling or disposal at DOH-permitted solid waste management facilities. If possible, waste prevention, reuse, and recycling are preferred options over disposal. The Office of Solid Waste Management also oversees the electronic device recycling and recovery law, the glass advanced disposal fee program, and the deposit beverage container program.
3. Underground Storage Tank Program – The state regulations for underground storage tanks are in HAR Chapter 11-280.1. These rules apply to the design, operation, closure, and release response requirements for underground storage tank systems, including unknown underground tanks identified during construction.
4. Standard comments for the Solid & Hazardous Waste Branch can be found at: <https://health.hawaii.gov/epo/landuse/>.

Wastewater Branch

For comments, please email the Wastewater Branch at doh.wwb@doh.hawaii.gov.

Sanitation / Local DOH Comments:

1. According to HAR §11-26-35, No person, firm, or corporation shall demolish or clear any structure without first ascertaining the presence or absence of rodents that may endanger public health by dispersal from such premises. Should any such inspection reveal the presence of rodents, the rodents shall be eradicated before demolishing or clearing the structure. A demolition permit is required prior to demolition.

Other

1. [CDC - Healthy Places - Healthy Community Design Checklist Toolkit](#) recommends that state and county planning departments, developers, planners, engineers, and other interested parties apply these principles when planning or reviewing new developments or redevelopment projects.
2. If new information is found or changes are made to your submittal, DOH reserves the right to implement appropriate environmental health restrictions as required. Should there be any questions on this matter, please contact the Department of Health, Hawaii District Health Office, at (808) 933-0917.

AB Maui Quarries, LLC

636 Laumaka Street
Honolulu, Hawaii 96819
Telephone: (808) 842-4929
Facsimile: (808) 841-8281

DATE: June 1, 2026

TO: Jeffrey W. Darrow, Director
Planning Department
County of Hawaii
101 Pauahi Street, Suite 3

FROM: AB Maui Quarries, LLC

RE: Special Permit Application (PL-SPP-2026-000121)
Applicant: AB Maui Quarries, LLC
Request: To Construct and Operate a Concrete and Asphalt Batch Plant and
Maintenance Shop, Office Building, and Warehouse for Mechanical Repair and
Storage and Related Accessory Uses on a 14.9-Acre Portion of a 934.66- Acre
Property
Tax Map Key: (3) 6- 8- 001: 067, Waikoloa, South Kohala, Hawaii

By letters dated April 2, 2026, from the State of Hawai'i Office of Planning and Sustainable Development (OPSD), comments were provided to the County Planning Department regarding the above-referenced Special Permit Application (PL-SPP-2026-000121). AB Maui Quarries, LLC (Applicant) respectfully acknowledges and thanks the OPSD for its review of the above-referenced Special Permit Application and for the opportunity to respond to the comments set forth in OPSD's letter dated May 4, 2026. The Applicant appreciates OPSD's time and consideration in evaluating the Project and submits the following responses to the comments provided by OPSD for its further review.

OPSD Comment 1:

The 14.9-acre Permit Area does not appear to include the proposed access road connection to Waikoloa Road or the septic tank and leach field IWS, see Exhibit B. As accessory uses to a non-permitted use in the State Agricultural District, the area occupied by the access road and IWS must be included as part of the Permit Area, and if the addition of these features increases the Permit Area to more than 15 acres, then the special permit is subject to approval by the State Land Use Commission pursuant to Hawaii Revised Statutes (HRS) §205-6 (d).

Response:

The updated permit area will remain below the 14.9 acre threshold referenced by OPSD and described below. The Applicant clarifies that the proposed septic tank and leach field Individual Wastewater System (IWS), encompassing approximately 1,000 square feet, is located entirely within the previously identified 14.9-acre Permit Area.

TO: Jeffrey W. Darrow, Director
RE: Special Permit Application (PL- SPP- 2026- 000121)
June 1, 2026

The project access road, encompassing approximately 2.2 acres, will be incorporated into the Special Permit area through a corresponding reduction and reconfiguration of the overall Permit Area boundary, such that the total Permit Area remains within 14.9 acres (see Exhibit A).

As revised, the total Permit Area will remain 14.9 acres and a revised metes and bounds description, consistent with Exhibit A, will be provided to the Planning Department to reflect these adjustments.

OPSD Comment 2:

The Applicant should confirm that the USACE has cleared the Permit Area of potential contamination and unexploded ordnance.

Response:

Prior to any land disturbance or construction activities within the Permit Area, the Applicant will coordinate with the U.S. Army Corps of Engineers (USACE), as appropriate, to confirm the status of any required review or clearance relating to potential contamination and unexploded ordnance in the Permit Area, as applicable. Applicant will obtain and provide documentation of any required USACE clearance prior to commencement of ground-disturbing activities.

OPSD Comment 3:

The Source of the aggregate for the Project is not disclosed. If aggregate is transported to the Permit Area via the intersection of Queen Kaahumanu Highway and Waikoloa Road, then the Applicant should consult with the Hawaii Department of Transportation Highways Division, Hawaii District regarding the potential impact of debris on the State roadway.

Response:

The Applicant acknowledges that aggregate materials for the Project may be transported via the intersection of Queen Ka'ahumanu Highway and Waikoloa Road. The Applicant will consult with the Hawaii Department of Transportation (HDOT), Highways Division, Hawaii District regarding the transport of aggregate materials and the potential impacts to State roadways. Pursuant to HRS §291C-131(a), vehicles operating on public highways must be constructed, covered, or loaded in a manner that prevents any materials from dropping, sifting, leaking, blowing, spilling, or otherwise escaping onto the roadway, except as otherwise allowed by statute. All aggregate transport associated with the Project will comply with this requirement to avoid debris impacts to State roadways.

TO: Jeffrey W. Darrow, Director
RE: Special Permit Application (PL- SPP- 2026- 000121)
June 1, 2026

OPSD Comment 4:

No assessment was conducted of the potential presence of protected species in the Permit Area. However, OPSD notes that the Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) was asked to comment on the Project. OPSD will defer to any concerns expressed by DOFAW.

Response:

The Applicant acknowledges OPSD's comment regarding protected species. Based on the existing project record, the Permit Area consists primarily of rough a'a terrain with sparse vegetation, and the likelihood of encountering protected species is expected to be low. The Applicant will work with and coordinate with the Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW"), as appropriate.

OPSD Comment 5:

Other than the issues noted above, the Project appears to be an appropriate candidate for a Special Permit under Hawaii Administrative Rules (HAR) §15-15-95:

Response:

The Applicant appreciates OPSD's recognition that, subject to the issues identified in its comment letter, the Project appears to be an appropriate candidate for Special Permit approval. The Applicant respectfully requests that the Planning Department consider the foregoing responses in its continued review of the application.

Mahalo,



Wyeth M. Matsubara
AB Maui Quarries, LLC

EXHIBIT A

Edits to Maps in Special Permit Application (PL-SPP-2026-000121)



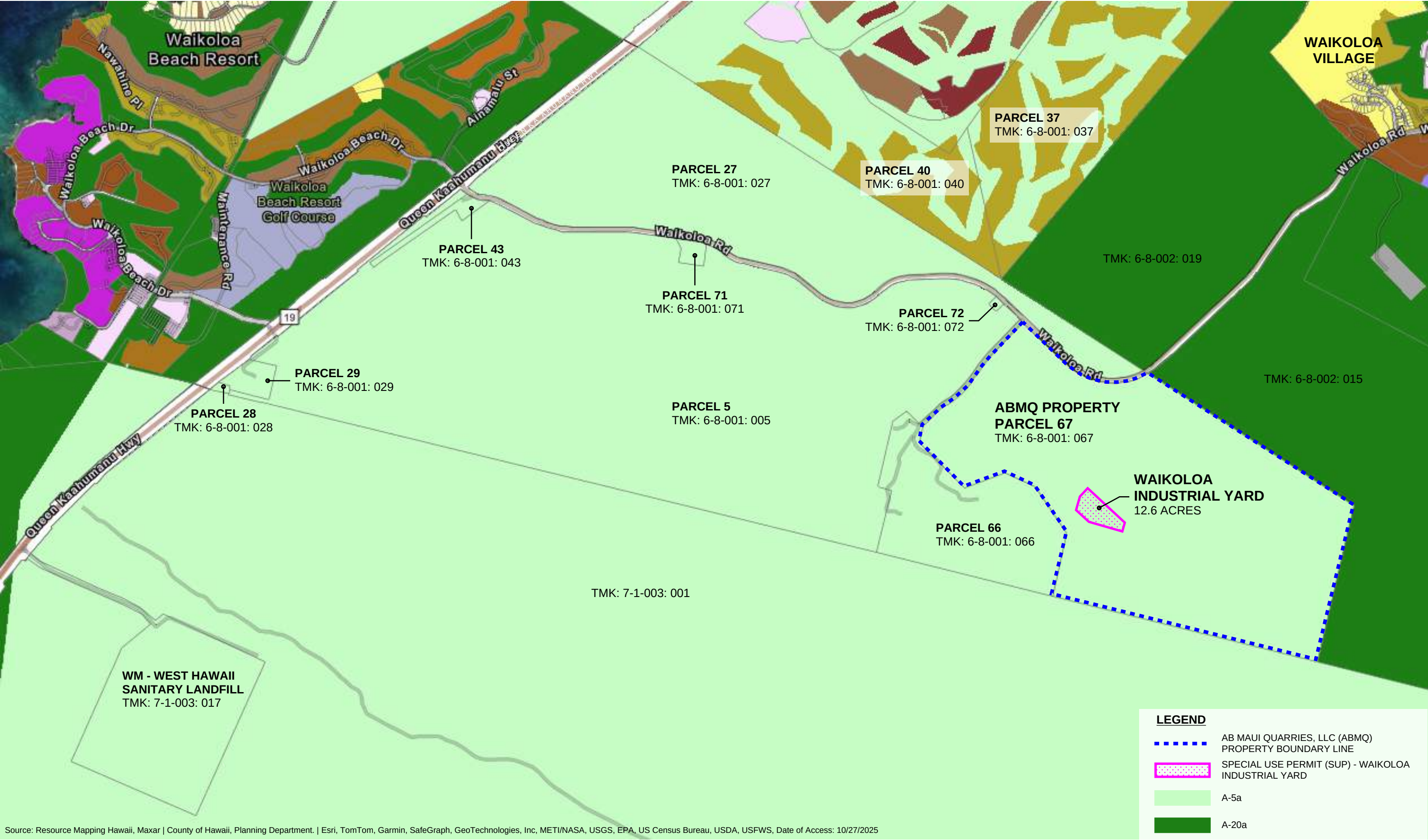


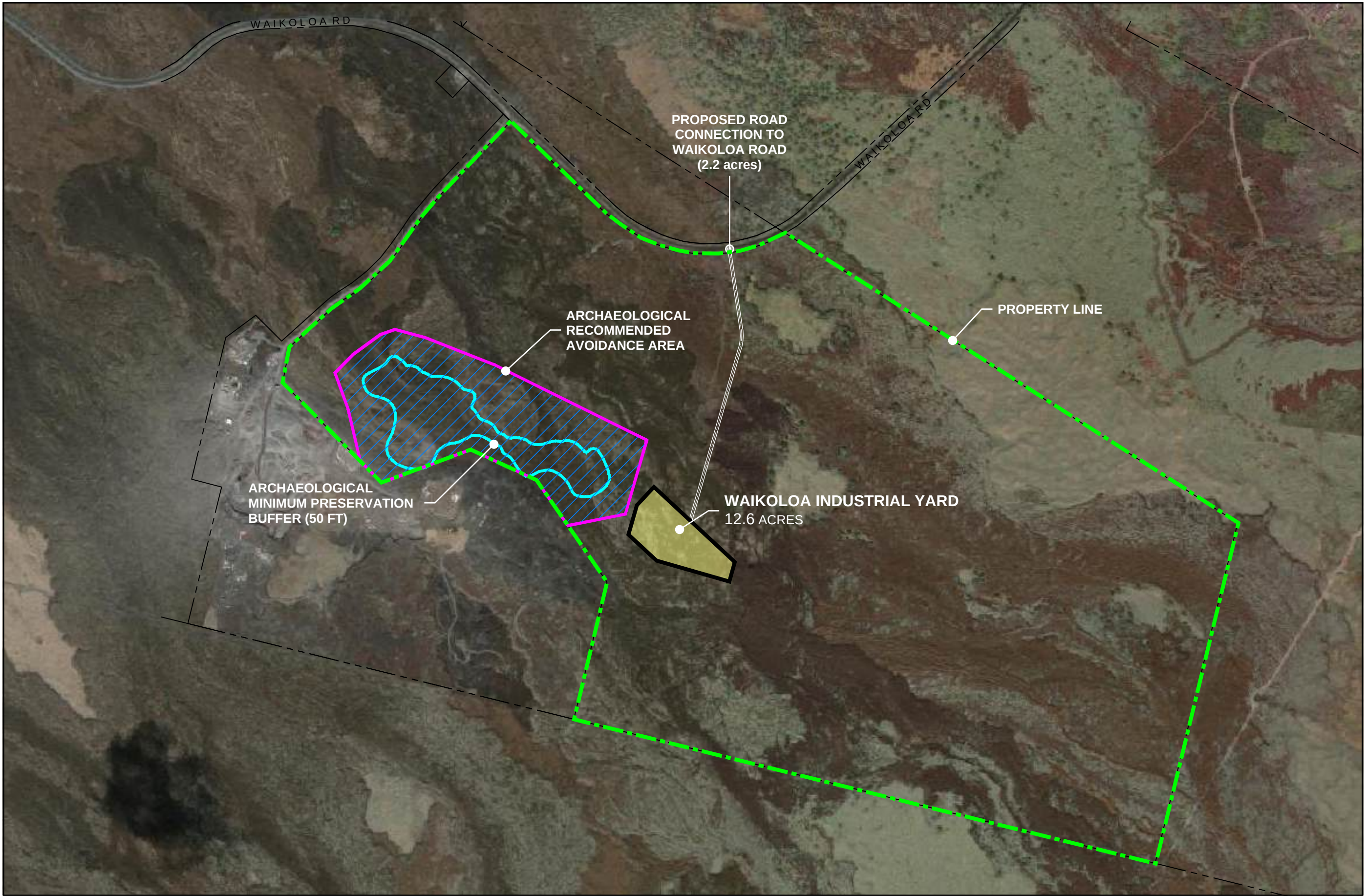
SITE MAP: COUNTY OF HAWAI'I ADOPTED 2005 LAND USE PATTERN ALLOCATION GUIDE (LUPAG)

SCALE: 1" = 2000'

2000'

EXHIBIT 02





LEGEND

- ABMQ PROPERTY LINE
- SUP - WAIKOLOA INDUSTRIAL YARD
- ARCHAEOLOGICAL RECOMMENDED AVOIDANCE AREA
- ARCHAEOLOGICAL MINIMUM PRESERVATION BUFFER (50 FT)

Aerial Imagery Source: Esri, Maxar, GeoEyem Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Powered by Esri, Date of Access: 10/27/2025



SUP WAIKOLOA INDUSTRIAL YARD - BATCH PLANT

SCALE: 1" = 2000'

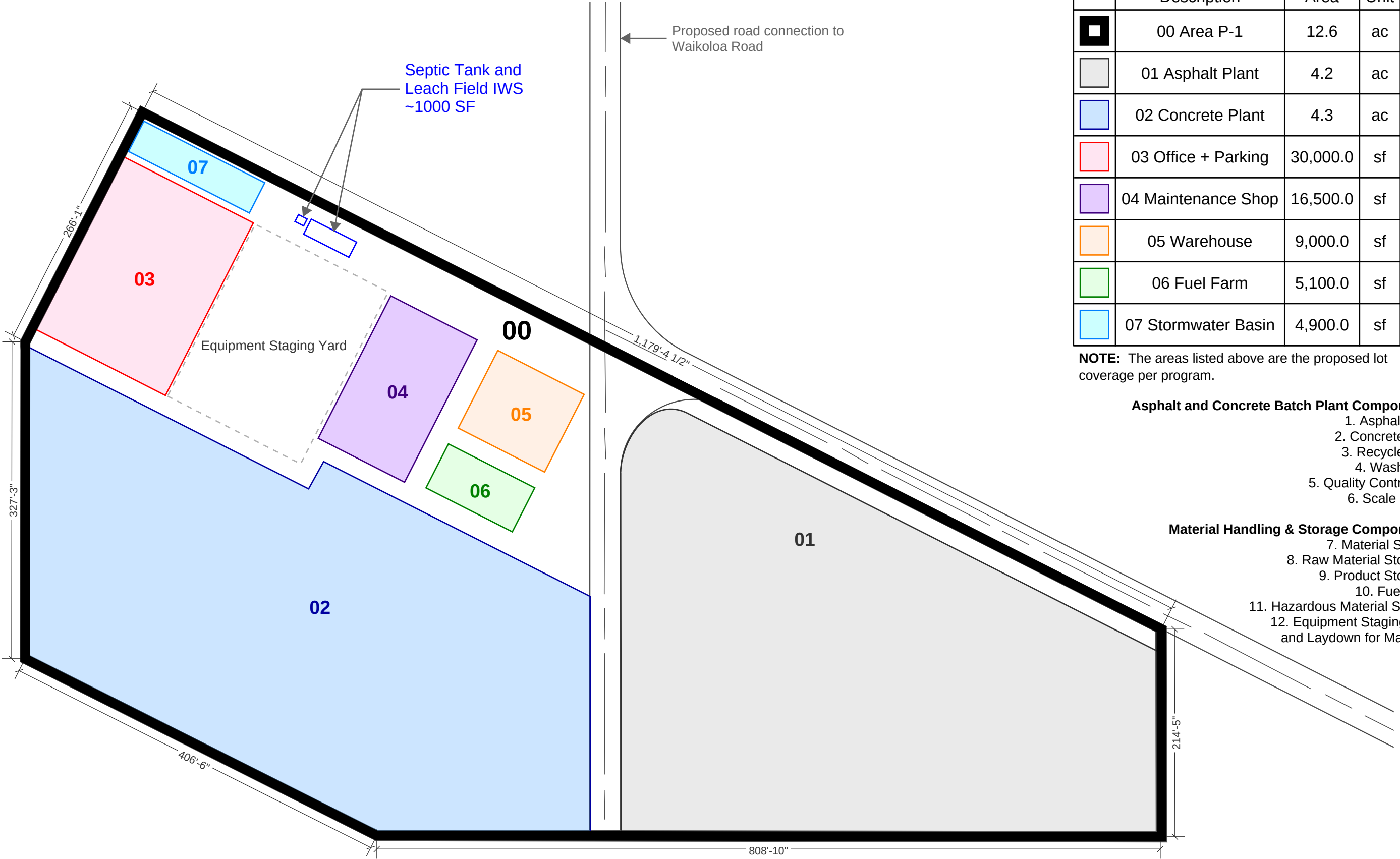
1000'

EXHIBIT 05



SPECIAL USE PERMIT - WAIKOLOA INDUSTRIAL YARD: CONCEPT PROGRAM

SCALE: 1" = 100'



	Description	Area	Unit
■	00 Area P-1	12.6	ac
■	01 Asphalt Plant	4.2	ac
■	02 Concrete Plant	4.3	ac
■	03 Office + Parking	30,000.0	sf
■	04 Maintenance Shop	16,500.0	sf
■	05 Warehouse	9,000.0	sf
■	06 Fuel Farm	5,100.0	sf
■	07 Stormwater Basin	4,900.0	sf

NOTE: The areas listed above are the proposed lot coverage per program.

Asphalt and Concrete Batch Plant Components:

- 1. Asphalt Plant
- 2. Concrete Plant
- 3. Recycle Plant
- 4. Wash Plant
- 5. Quality Control Lab
- 6. Scale House

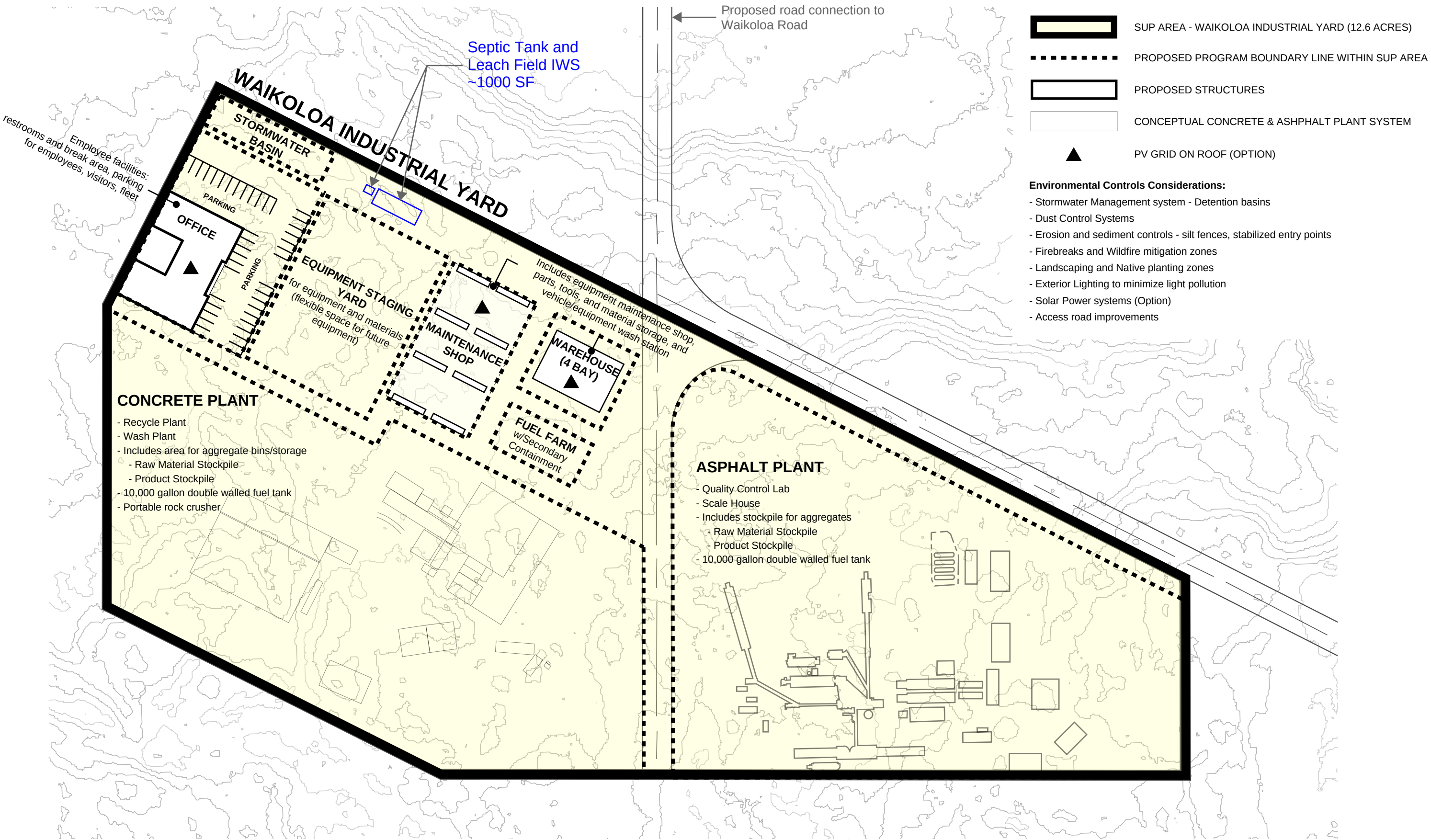
Material Handling & Storage Components:

- 7. Material Staging
- 8. Raw Material Stockpile
- 9. Product Stockpile
- 10. Fuel Farm
- 11. Hazardous Material Storage
- 12. Equipment Staging Yard and Laydown for Materials



SPECIAL USE PERMIT - WAIKOLOA INDUSTRIAL YARD: CONCEPT LAYOUT

SCALE: 1" = 100'



100'