



UNITED STATES MARINE CORPS  
MARINE CORPS BASE HAWAII  
BOX 63002  
KANEHOE BAY, HAWAII 96863-3002

5090  
LFE/001-22  
January 7, 2022

Dr. Alan Downer  
Deputy State Historic Preservation Officer  
Department of Land and Natural Resources  
Kakuhihewa Building, Room 555  
601 Kamokila Boulevard  
Kapolei, HI 96707

Dear Dr. Downer:

SUBJECT: SECTION 106 CONSULTATION (Architecture & Archaeology):  
Proposed MCBH Home Basing of The MQ-9A Unmanned Air System  
and KC-130J Aerial Transport Refueling Aircraft Aboard Marine  
Corps Base Hawaii, Kaneohe Bay, District Of Ko'olaupoko,  
Ahupua'a of He'eia, O'ahu, TMK 1-4-4-008:001.

Marine Corps Base Hawaii (MCBH) is consulting with your office in compliance with Section 106 of the National Historic Preservation Act (NHPA) regarding the proposed undertaking by the U.S. Marine Corps to implement the Home Basing of the MQ-9A Unmanned Air System and KC-130J Aerial Transport Refueling Aircraft at the Kaneohe Bay installation (hereinafter referred to as the MCBH Home Basing project). MCBH has determined that the proposed project is an undertaking as defined in 36 CFR §800.16(y). This letter initiates our Section 106 consultation for this undertaking.

**PROJECT DESCRIPTION**

The MCBH Home Basing project is located in the southwest portion of Mokapu Peninsula [enclosure 1]. The project is centered on the area around Hangars 2 and 3 (Facilities 102 and 103) and includes support areas at Pali Kilo, West Field, Charlie Ramp, Transient Ramp, and Crescent Circle (for construction laydown). The undertaking includes home basing a Marine Corps MQ-9A Extended Range Unmanned Aerial Vehicle (UAV) squadron (6 aircraft) and a KC-130J aircraft squadron (15-aircraft) at MCBH Kaneohe. Each squadron consists of personnel, aircraft, and supporting infrastructure. The MQ-9A squadron would conduct UAV training operations, and the KC-130J squadron would conduct aerial refueling. The proposed action would enable the USMC to meet their Title X requirement to provide, train, and equip forces for the Combatant Commander through increasing the capability, versatility, and range of USMC forces in Hawaii.

The MCBH Home Basing project will house the MQ-9A squadron in Hangar 102 and house the KC-130J squadron in the hangar currently occupied by the MV-22 squadron (Facility 6886). It would include demolition of Hangar 3 (Facility 103) and ancillary Aircraft Spares Storage Buildings (Facilities 159, 160 and 161) adjacent to Hangar 3 and construction of a new Type II hangar on its footprint to house the MV-22 squadron. The new hangar will have a steel-frame construction with standing seam metal roofing, concrete filled metal deck floors, and a pile foundation. MCBH also proposes to demolish Facilities 4000 (G-3 Storage) constructed in 1986, and 5068 (Aircraft Rescue), built in 1991, located at the Hot Fuel Pit.

The overall proposed scope of work includes:

- (1) Restripe Charlie Ramp.
- (2) Resurfacing/repaving, and striping of Bravo Ramp.
- (3) Installation of Tie-downs at Bravo Taxi Ramp and Bravo-1.
- (4) Installation of Tie-downs west of Hangar 5 and striping of pavement at the west end of Runway 4/22.
- (5) Replacing taxiway asphalt.
- (6) Hangar 102 modifications to accommodate MQ-9A.
  - (1) Interior upgrades: electrical, mechanical and communication systems.
  - (2) Training simulator.
  - (3) Interior Interim Sensitive Compartmentalized Information Facility (ISCIF).
- (7) Constructing a KC-130J wash rack.
- (8) Two Ground Control Stations (GCSs) with Environmental Control Units (ECUs).
  - (1) Hangar 102.
  - (2) Adjacent to Building 6002.
- (9) Two Ground Data Terminals (GDTs).
  - (1) Keawanui Hill.
  - (2) Adjacent to Hangar 105.
- (10) Construction laydown and staging area at Crescent Circle.
- (11) Demolish Hangar 103 (Hangar 3).
- (12) Construct Type II Hangar 103 aircraft maintenance hangar for MV-22s.
- (13) Reconfigure Hangar 6886 interior spaces from MV-22 to KC-130J use.
- (14) Construct new support facilities adjacent to Hangar 6886.
  - (1) Storage Facility.
  - (2) Propeller Maintenance Facility.
- (15) Construct new Hot Refuel Pit, includes demolition of Facilities 4000 and 5068.
- (16) Restricted area boundary perimeter security fencing.
- (17) Demolition of Facilities 159, 160, and 161 (Aircraft Spares Storage).

See enclosure 2 for a tabular accounting of the above projects and enclosure 3 for a map graphic showing the location of the project elements keyed to the table.

#### **AREA OF POTENTIAL EFFECTS**

The area of potential effects (APE) for this project consists of the Kaneohe Naval Air Station National Historic Landmark District (NHL), the Naval Air Station (NAS) Kaneohe Historic Aviation District (Aviation District), which includes the NHL, Bravo Ramp, Charlie Ramp, Transient Ramp, the Mokapu House Lots Archaeological District at Pali Kilo, portions of the West Field area to the north of the runway, and areas that are adjacent to the Aviation District east of Charlie Ramp and Transient Ramp [enclosure 4].

#### **IDENTIFICATION OF HISTORIC PROPERTIES**

Pursuant to the National Historic Preservation Act (NHPA), Section 106 Implementing Regulations at 36 CFR 800.4(b), qualified preservation professionals have carried out the identification of historic properties within this project's area of potential effects (APE) in accordance with the Secretary of the Interior's Standards and Guidelines for Identification.

## Architecture

There are approximately 65 architectural resources within the APE, as well as three (3) historic districts: the Naval Air Station (NAS) Kaneohe Historic Aviation District, the Kaneohe Naval Air Station National Historic Landmark (NHL), and the Mokapu House Lots Archaeological District at Pali Kilo that have been determined eligible for the National Register of Historic Places (NRHP) under Criteria A (American history) and C (architecture). The NHL possesses exceptional significance. A National Historic Landmark represents an outstanding aspect of American history and culture and is the highest level of designation bestowed on a historic property. Hangars 2 and 3 were built in 1941, and the three ancillary Aircraft Spares Storage buildings (Facilities 159,160, 161) were built in 1942. They are contributing resources to the NAS Kaneohe Historic Aviation District [see enclosure 5 for the table: Summary of Historic Properties within the APE].

## Archaeology

Archaeological evidence indicates people were present on Mōkapu Peninsula at least 500 to 800 years before Western Contact (Tomonari and Clark-Tuggle 2021:III-15). Thirty-one (31) archaeological sites fall at least partially within this project's APE. Twenty-six (26) of these sites (50-80-11-365, -367, -2883, -2884, -4453, -4610, -4611, -4612, -4613, -4614, -4615, -4616, -4617, -4618, -4619, -4620, -4622, -4623, -4624, -4625, -4933, -5733, -5829, -7722, -7724, and -7725) have been evaluated as eligible for listing on the National Register of Historic Places (NRHP). Site -7726 was evaluated as not eligible. The remaining four (4) sites (50-80-11-4621, -5968, -5969, and -7723) have not been evaluated. Additionally, the Mōkapu Burial Area (50-80-11-1017) is approximately 60 meters (m) to the east, and outside of, the APE and is listed on the NRHP. These archaeological resources are listed in the following table at enclosure 6: Summary of Archaeological Sites within the APE.

The archaeological sites previously documented within this project's APE can be divided into three primary temporal categories: traditional Hawaiian, non-military historic, and military. Most sites within the APE are traditional Hawaiian in association, including six (6) surface sites (50-80-11-365, -367, -4616, -4619, -4620, and -4622) and nine (9) subsurface sites (50-80-11-1017, -2883, -4453, -4933, -5733, -5829, -7722, -7723, and -7724). Eleven (11) sites (50-80-11-4610, -4611, -4612, -4613, -4614, -4617, -4618, -4624, -4625, -5968, and -7725) are associated with non-military historical activities. Finally, five (5) are WWII-era military sites (50-80-11-2884, -4615, -4623, -5969, and -7726). Known sites within 100 meters of proposed project elements are described in further detail below.

The potential for this project's ground-disturbing activities to create impacts to documented and undocumented archaeological sites within the APE varies significantly by area [specific archaeological site locations are shown at enclosure 7]. Large portions along the western and southern edges of the APE are entirely made up of imported fill material placed atop marine sediments during mid-20th-century land reclamation and have no sensitivity for archaeology remains. Parts of the APE within the former original extents (pre-land reclamation) of Mōkapu Peninsula range from low to high sensitivity for archaeological remains, with the highest sensitivity areas on and north of Pali Kilo and near the former estuary along the Kāne'ōhe Bay coast. In

the latter area, fill often overlies intact natural sediments, including archaeological deposits. In the northernmost portion of the APE, land modification has been less intensive, and both surface and subsurface archaeological remains are possible.

Site 50-80-11-0365 is the location of a former *heiau* and St. Catherine's Catholic Church on the southern slope of Keawanui Hill, near a proposed location for Project Element 9 (Ground Data Terminals). The precise location of the *heiau* is undetermined, but O'Day (2007) suggests that Sites -4619, -4620, and -4622 could define two sides of *heiau*; contributes to Mōkapu House Lots Archaeological District at Pali Kilo. The site has been evaluated as eligible for listing on the NRHP under Criterion D (Tomonari-Tuggle and Clark 2021). It is expected that the footprint of the Ground Data Terminal (GDT) will be small and have little to no effect on the surrounding sites.

Site 50-80-11-2884 is a complex of four WWII-era foundations located on the lower slope of Keawanui Hill, approximately 85 meters southwest of a proposed location of Project Element 9 (Ground Data Terminals). The site was originally identified by Tuggle and Hommon (1986). The foundations are likely the remains of houses or storage facilities. The site was recommended eligible for the NRHP under Criterion D (Drolet et al 1996). As Project Element 9 will not occur within the site boundaries, no potential impacts are anticipated.

Site 50-80-11-4453 is a subsurface traditional Hawaiian cultural deposit located west of Hangar 105, near or within the location of Project Element 4 (installation of tie-downs and striping). This site is known to have been used for traditional Hawaiian activities, and contains archaeological features and artifacts indicative of pre-Contact habitation and marine exploitation (Charvet-Pond and Rosendahl 1992b:ii). Site 04453 yielded the earliest radiocarbon date for human occupation on the peninsula, A.D. 1037-1309 (calibrated to 2 sigma; Tomonari-Tuggle and Clark 2021:II-15). Additionally, human remains have been previously documented in the site (Charvet-Pond and Rosendahl 1992b). The site was recommended eligible for the NRHP under Criterion D (Tomonari-Tuggle and Clark 2021). Previous documentation of the deposit indicates it underlies coral fill layers that extend 1+ meters below the present surface. The anticipated depth of ground disturbance associated with the installation of tie-downs is not expected to exceed 18 inches (46 cm). It is only expected that the project will affect the site if ground disturbance extends below the coral fill layers.

Sites 50-80-11-4619, -4620, and -4622 are a group of traditional Hawaiian features consisting of a pavement with 2 waterworn uprights, a circular enclosure, and rock and coral piles. The sites are located on the upper slope of Keawanui Hill within 10-25 meters of a proposed location for Project Element 9 (Ground Data Terminals). All three sites may be remnants of the former *heiau* that once stood at the top of the hill (O'Day 2007). The sites were recommended eligible for the NRHP under Criterion C (-4619) and D (-4619, -4620, -4622; Tomonari-Tuggle and Clark 2021). It is expected that the footprint of the Ground Data Terminal will be small and have little to no effect on the surrounding sites.

Site 50-80-11-4623 is a C-shaped structure with corrugated tin and glass bottles on the surface located downslope, approximately 60 meters south of a proposed location for Project Element 9 (Ground Data Terminals). The site was recommended eligible for the NRHP under Criterion D (Tomonari-Tuggle and

Clark 2021). As Project Element 9 will not occur within the boundaries of this site, no potential impacts are anticipated.

Site 50-80-11-4933 is a buried traditional Hawaiian occupation deposit located partially beneath Charlie Ramp where Project Element 1 (ramp restriping) will occur. The deposit formed atop a sand berm separating estuaries along the peninsula's pre-land reclamation southwest shoreline, and contains traditional Hawaiian features, artifacts, and cultural materials. Schilz and Allen (1996) initially identified the site, which consists of two stratified archaeological layers. These are charcoal-stained sands with faunal remains and artifacts. Radiocarbon dating suggests occupation occurred sometime during the late 17th century or later. Intact burials and isolated skeletal remains in disturbed contexts have been documented in the site. The site was recommended eligible for the NRHP under Criterion D (Tomonari-Tuggle and Clark 2021). The restriping of Charlie Ramp is not expected to involve ground disturbance.

#### **NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA)**

If Native American Graves Protection and Repatriation Act (NAGPRA) cultural items including human remains are encountered during any ground disturbing activities associated with this undertaking, all work shall stop, the finds will be secured and protected, and treatment will proceed under the authority of NAGPRA. As a best management practice under NAGPRA, and as stated above, all ground disturbing activity will be monitored by a qualified archaeologist.

#### **PUBLIC INVOLVEMENT**

MCBH will make this information available to the public, in order to provide an opportunity to express their views on resolving adverse effects of the undertaking pursuant to Section 106 Implementing Regulations at 36 CFR 800.6(a)(4). We will consider such views in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties, the likely interest of the public in the effects on historic properties, confidentiality concerns, and the relationship of the Federal involvement to the undertaking. Such notice will be made available to the public via the MCBH public website.

#### **DETERMINATION OF EFFECT**

MCBH has determined the proposed undertaking will result in adverse effects on historic properties in accordance with the Section 106 Implementing Regulations at 36 CFR 800.5(a)(1) based on the following: 1) demolition of Hangar 3, which is eligible for the National Register as a contributing element of the NAS Kaneohe Historic Aviation District; and (2) demolition of Facilities 159, 160 and 161, which are small Aircraft Spares Storage Buildings located adjacent to Hangar 3 and contributing resources to the NAS Kaneohe Historic Aviation District. MCBH also has determined the proposed undertaking may potentially result in an adverse effect on historic properties based on installing tie-downs west of Hangar 5, which is in the vicinity of NHRP-eligible Site 4453 archaeological deposits.

MCBH is forwarding copies of this letter to the consulting parties listed below, including Native Hawaiian Organizations (NHOs), and in accordance with Section 106 Implementing Regulations at 36 CFR 800.6(a) and will consult with

the SHPO and the consulting parties listed below to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. MCBH will also notify the Advisory Council on Historic Preservation (ACHP) of this adverse effect finding to determine its participation in this consultation, pursuant to Section 106 Implementing Regulations at 36 CFR 800.6(a)(1).

**CONSULTATION MEETING**

MCBH will hold a virtual meeting [via Webex or teleconference] on Thursday, 13 January 2022, at 9:00 a.m. (HT) to discuss the project and the eventual development of a memorandum of agreement (MOA) to resolve the adverse effects described above. We will provide instructions for joining the call closer to the date of the meeting.

Should you or your staff have any questions, please contact the MCBH Cultural Resources Management staff, Ms. June Cleghorn at 257-7126 or via email at [june.cleghorn@usmc.mil](mailto:june.cleghorn@usmc.mil), or Dr. Wendy Wichman at 257-7134 or via email at [wendy.wichman@usmc.mil](mailto:wendy.wichman@usmc.mil).

Sincerely,

J. P. HART  
Major, U. S. Marine Corps  
Director, Environmental Compliance and  
Protection Division  
By direction of the Commanding Officer

- Enclosures:
1. Map: Location map showing the general location of the Home Basing of the MQ-9A & KC-130J Squadrons project
  2. Table: Project Elements for the Home Basing of the MQ-9A & KC-130J Squadrons
  3. Map: Project Elements for the Home Basing of the MQ-9A & KC-130J Squadrons
  4. Map: Proposed APE for the Home Basing of the MQ-9A & KC-130J Squadrons
  5. Table: Summary of Historic Properties within the APE for the Home Basing of the MQ-9A & KC-130J Squadrons
  6. Table: Summary of Archaeological Sites within the APE for the Home Basing of the MQ-9A & KC-130J Squadrons
  7. Map: Archaeological Sites within and Near the APE for the Home Basing of the MQ-9A & KC-130J Squadrons

Copy to:

Elaine Jackson-Retondo, Preservation Partnerships & History, National Park Service  
Chair, Oahu Island Burial Council (via Regina Hilo, SHPD)  
Chair, Office of Hawaiian Affairs  
Ms. Anuheia Diamond, Diamond 'Ohana  
Ms. Skye Razon-Olds, Olds 'Ohana  
Ms. Emalia Keohokalole, Keohokalole ``Ohana  
Mr. Norman Llanos, Prince Kuhio Hawaiian CC  
Ms. Na`u Kamali`i, Boyd 'Ohana  
Ms. Donna Ann Camvel, Paoa Kea Lono 'Ohana  
Mr. Cy Harris, Kekumano 'Ohana  
Ms. Terrilee Napua Keko`olani Raymond, Keko`olani 'Ohana  
Ms. Cathleen Mattoon, Koolauloa Hawaiian Civic Club  
Mr. Clive Cabral, Temple of Lono  
Ms. Kaleo Paik, Paik `Ohana  
Ms. Kiersten Faulkner, Historic Hawaii Foundation  
Ms. Elizabeth Merritt, National Trust for Historic Preservation

Architectural References:

AECOM

2018 *Marine Corps Base Hawaii, Kaneohe Bay Cultural Landscape Report.*  
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Naval Facilities Engineering Command Pacific, Pearl Harbor Hawai'i.  
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Thompson, Erwin

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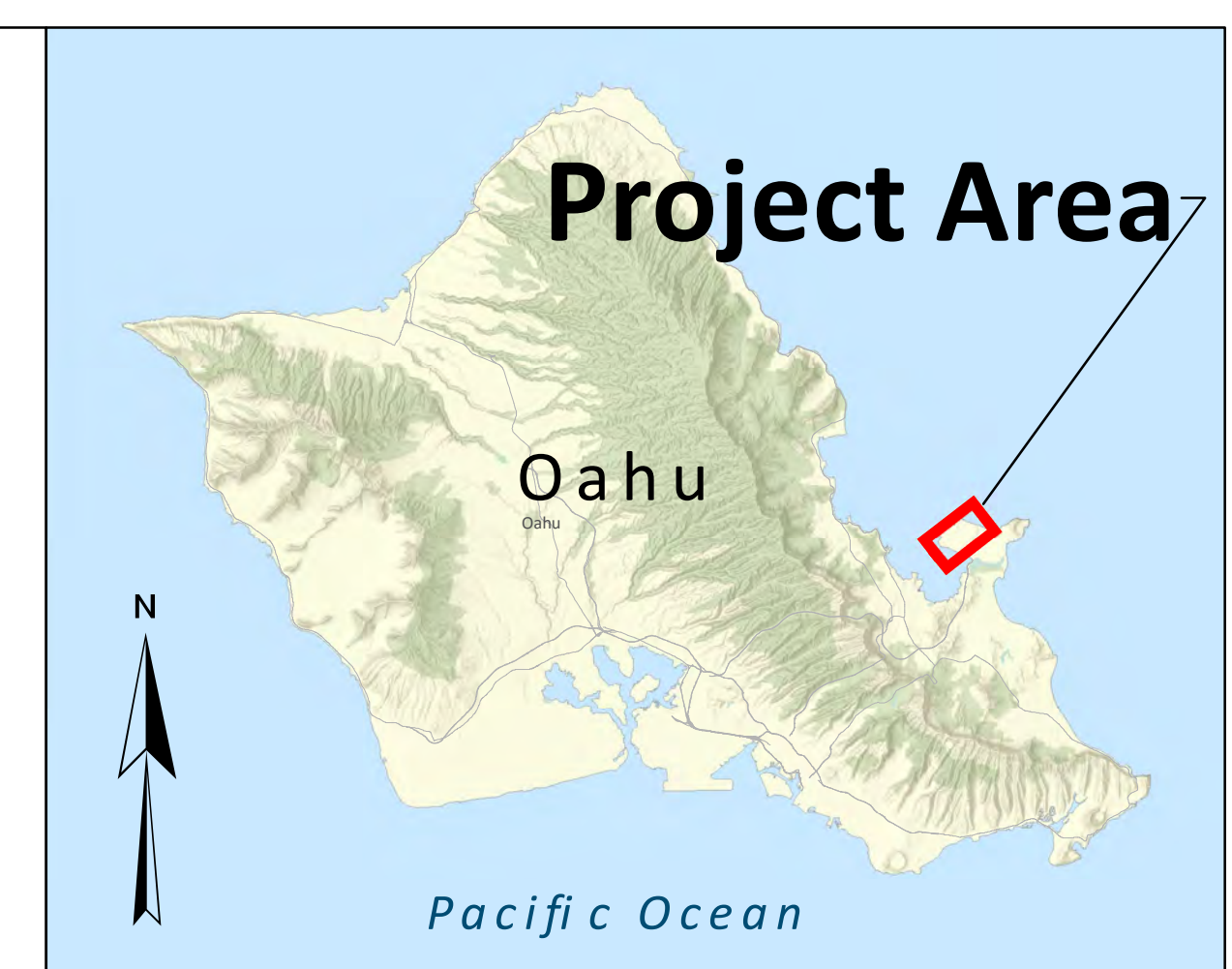


## Enclosure 1: Project Area

### Legend

- Building
- Paved Area
- Road

Sources: Esri, 2021; Hawaii Statewide GIS, 2021; MCBH, 2021

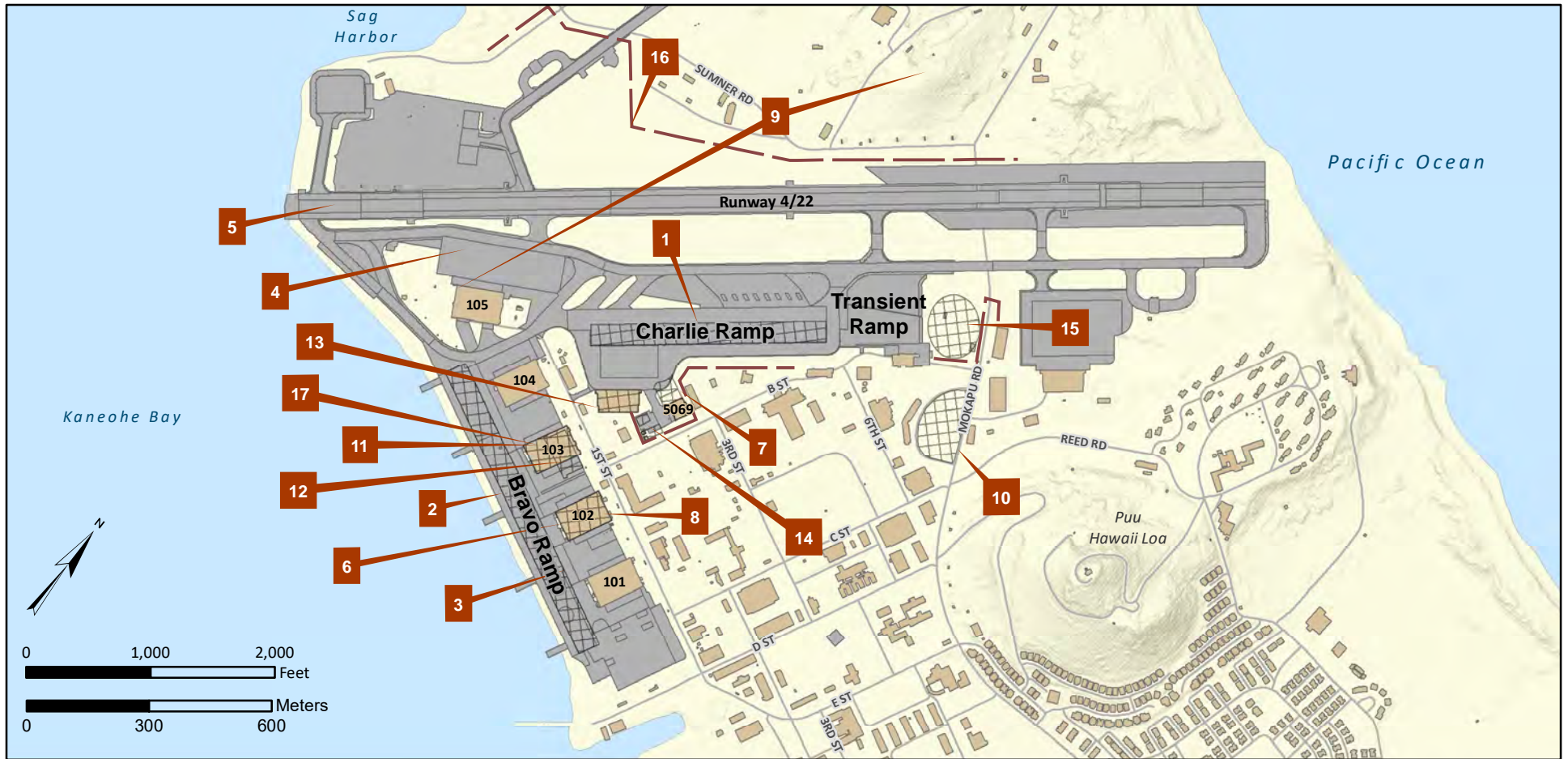




**ENCLOSURE 2: PROJECT ELEMENTS FOR THE HOME BASING OF THE MQ-9A & KC-130J SQUADRONS - JANUARY 2022**

Project Task		Description	Location	FY	
<b>Charlie Ramp Upgrades</b>					
1	Restriping of Charlie Ramp	Restriping	Area west of Hangar 6886; east of Taxiway A where C-130 parking apron project is currently.	TBD	
<b>Hangar 2 Renovations and Infrastructure Improvements for MQ-9</b>					
3	Tie-downs at Bravo Taxi Ramp and Bravo-1.	Install tie-downs at Taxiway Bravo and Bravo-1	Bravo Ramp	FY23	
4	Tie-downs and striping at end of Runway 4/22, west of Hangar 105 (Hangar 5)	Tie-downs near Hangar 105 and striping.	Near end of Runway 4/22; west of Hangar 105	FY22	
6	Hangar 102 modifications to accommodate MQ-9A	Hangar 102 will house the MQ-9 aircraft and squadron personnel. Minimal renovations to support the MQ-9 aircraft and operation include: <ul style="list-style-type: none"> <li>• Interior upgrades: electrical, mechanical and communication systems.</li> <li>• Install new training simulator</li> </ul>	Hangar 102	FY22	
8	Two Ground Control Stations (GCSs) with Environmental Control Units (ECUs)	Mobile GCS with ECUs	Hangar 102	FY22	
9	Two Ground Data Terminals (GDTs)	Two GDTs will be temporarily installed on top of Keawanui Hill (115 feet). Vegetation will be cleared, and temporary construction mats installed for the GDTs and a back-up generator. Power will be supplied through the existing overhead electrical line. GDTs will be tied down using stakes and/or 5,000-lbs. concrete blocks.	<ul style="list-style-type: none"> <li>• Keawanui Hill</li> <li>• Adjacent to Hangar 105</li> </ul>	FY22	
<b>Replace Hangar 3 &amp; Bravo Ramp Upgrades</b>					
2, 5	Resurfacing, repaving, and striping of Bravo Ramp	Repave and restripe for 10 MV-22 aircraft Taxiways B and T need asphalt replacement	Bravo Ramp Bay side of Hangars 2-4 Taxiway B provides access from Taxiway A to the Bravo Ramp. Taxiway T provides access from Taxiway A to the Charlie Ramp.	FY23	

11	Demolish Hangar 103	Demolition of Hangar 3 (Facility 103)	Existing Hangar 3 (Facility 103)	FY25	
17	Demolish 159, 160, 161	Demolition of Aircraft Spares Storage buildings (Facilities 159-161)	Adjacent to Hangar 3 (Facility 103)		
12	Construct new Type II Hangar 103 maintenance hangar for MV-22s	New Type II hangar similar to new MV-22 hangar (6886). Design guidelines will be developed as part of MOA during Section 106 Consultation.	Existing Hangar 3 (Facility 103)	FY25	
<b>P-876 Airfield Security Fencing</b>					
16	New Fencing	For the Level Two Restricted Area boundary perimeter security requirements for Bravo Ramp and Charlie Ramp. Discontinuous sections of fencing need to be filled in along with access control points and signage. The fence will limit access to the airfield.	Near existing aviation facilities along the Bravo Ramp, Charlie Ramp, Transient Ramp and in West Field.	FY24	
<b>Hangar 6886 Associated Work</b>					
7	Construct KC-130J wash rack	Type L wash rack with permanent scaffolding for personnel to safely wash the aircraft. A new tow way will provide access from Charlie Ramp to the wash rack. The Type L wash rack is required for the fixed-wing aircraft (KC-130J, P-8A, C-40, and C-20). The MQ-9 does not require a wash rack.	Wash Rack has been preliminarily located at the former corrosion control hangar (Facility 5069) site after it is demolished.	TBD	
13	Reconfigure Hangar 6886 interior spaces to convert from MV-22 to KC-130J use.	Reconfiguration of interior spaces to meet the needs of the squadron	Hangar 6886	TBD	
14	Construct new support facilities at Hangar 6886	Storage Facility Propeller Maintenance Facility	The project is currently under development	TBD	
<b>Refuel Pit</b>					
15	Demolish Facilities 4000 and 5068 and construct new Hot Refuel Pit, including lines from fuel farm and drainage system.	Installation of a new refuel pit (aircraft direct-fueling station) and new pipelines that will run from Fuel Farm. G-3 Storage building (Facility 4000), built in 1986 and the Aircraft Rescue Halon Reclaim Building (Facility 5068), built in 1991 are not historic.	Adjacent to the Transient Ramp. No confirmed utilities location.	FY26	
<b>Construction Laydown</b>					
10	Construction laydown and staging area at Crescent Circle	Potential construction laydown area. To be confirmed at later date.	Crescent Circle area behind MCAS Terminal Building. South side of Mokapu Road in the "Green Field" site.	TBD	



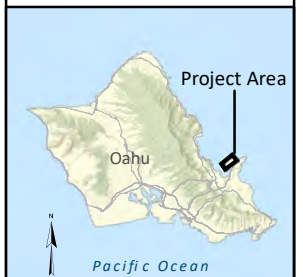
**Enclosure 3: Project Elements**

**Index**

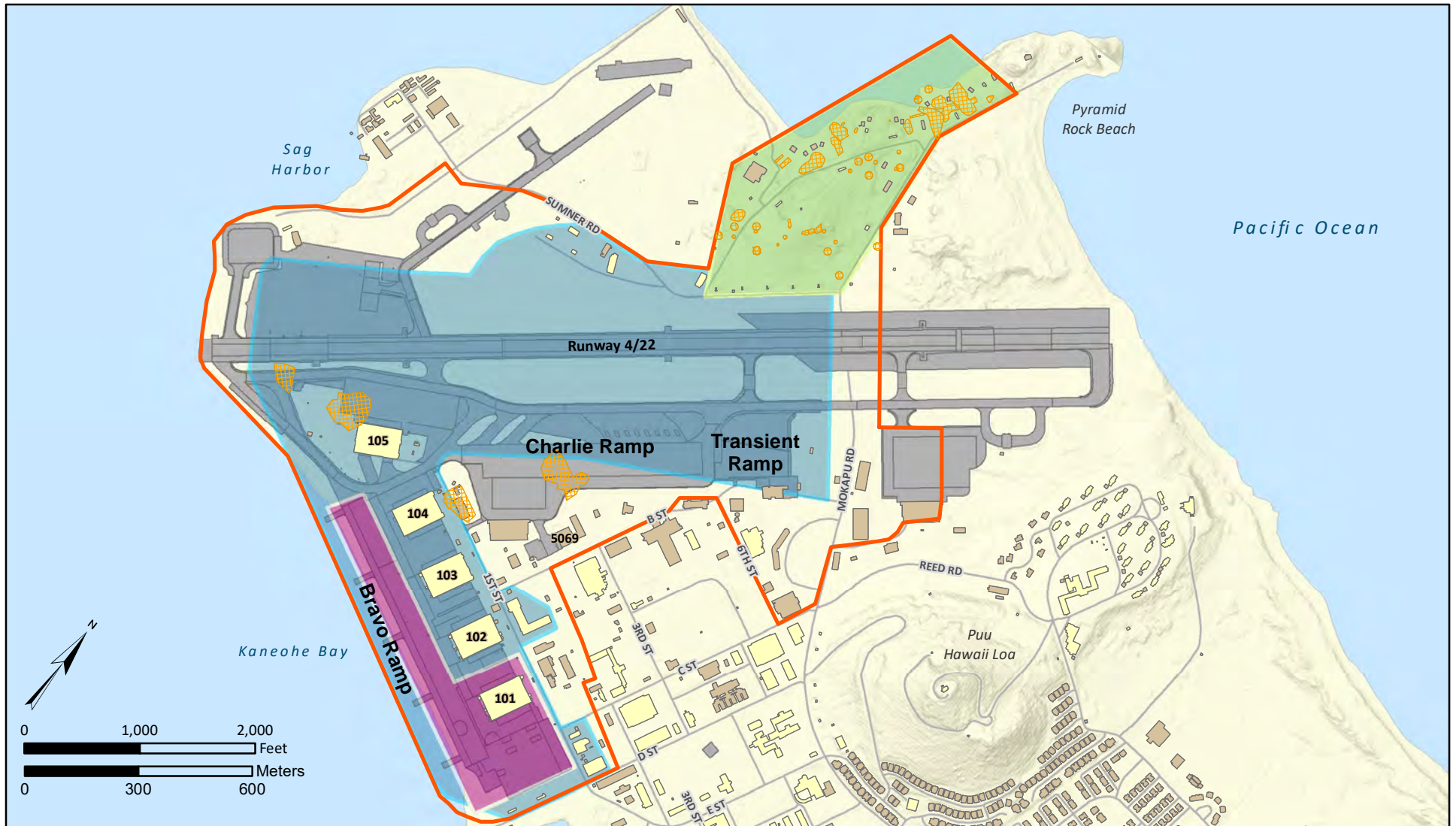
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| <ul style="list-style-type: none"> <li>(1) Restripe Charlie Ramp</li> <li>(2) Resurface, repave, and stripe Bravo Ramp</li> <li>(3) Install tie-downs at Bravo Taxi Ramp and Bravo-1</li> <li>(4) Install tie-downs at and stripe end of Runway 4/22, west of Hangar 105</li> <li>(5) Replace taxiway asphalt</li> <li>(6) Modify Hangar 102 to accommodate MQ-9A:<br/>-Interior upgrades: electrical, mechanical and communication systems<br/>-Training simulator</li> <li>(7) Construct a KC-130J wash rack</li> <li>(8) Install two Ground Control Stations (GCSs) with Environmental Control Units (ECUs) at Hangar 102</li> <li>(9) Install two Ground Data Terminals (GDTs):<br/>-Keawanui Hill<br/>-Adjacent to Hangar 105</li> </ul> | <ul style="list-style-type: none"> <li>(10) Construct laydown and staging area at Crescent Circle</li> <li>(11) Demolish Hangar 103</li> <li>(12) Construct Type II Hangar 103 aircraft maintenance hangar for MV-22s</li> <li>(13) Reconfigure Hangar 6886 interior spaces from MV-22 to KC-130J use</li> <li>(14) Construct new support facilities adjacent to Hangar 6886:<br/>-Storage Facility<br/>-Propeller Maintenance Facility</li> <li>(15) Construct new Hot Refuel Pit and demolish Buildings 4000 and 5068</li> <li>(16) Construct new Security Fencing</li> <li>(17) Demolish Buildings 159, 160, and 161</li> </ul> |
|---|--|

**Legend**

- Proposed Fencing
- Proposed Project Area
- Paved Area
- Building
- Road



Sources: Esri, 2021; Hawaii Statewide GIS, 2021; MCBH, 2021



**Enclosure 4: Area of Potential Effect**




Legend	
— Road	<b>Historic Districts</b>
▭ APE	▭ Mokapu House Lots at Pali Kilo
▭ Paved Area	▭ NAS Kaneohe National Historic Landmark
	▭ NAS Kaneohe Aviation District
	<b>Historic Buildings</b>
	▭ National Register Listed or Eligible
	▭ Not Eligible
	▭ Archaeological Sites (eligible)



Sources: Esri, 2021; Hawaii Statewide GIS, 2021; MCBH, 2021





The inset map shows the island of Oahu with a black box indicating the Project Area's location on the eastern coast. A north arrow and the label 'Pacific Ocean' are also present.






Enclosure 5: Summary of Historic Properties within the APE for the Home Basing of the MQ-9A & KC-130J Squadrons





Summary of Historic Properties within APE			
Name/Facility #	Year Built	Evaluation of Significance	Photo
<b>NHL and Aviation District</b>			
Seaplane Ramps (5) Facilities 1-5	1940	Contributing resource to the <i>Kaneohe Naval Air Station National Historic Landmark District</i> and the Aviation District. Existed at the time of the 7 December 1941 attack and came under fire during the attack. Part of the 1939 initial proposed base layout and were critical to the primary purpose and mission of the original base.	
Maintenance Hangar 1 Facility 101	1941	Contributing resource to the <i>Kaneohe Naval Air Station National Historic Landmark District</i> and the Aviation District. Existed at the time of the 7 December 1941 attack. Bombed and strafed during the attack. As with its neighbor hangars, the building is a visual defining element of Main Base and dominates the landscape when viewed from public vantage points and within the aviation area. Designed by Albert Kahn, Inc.	
Bravo Ramp No Facility #	1939	Contributing resource to the <i>Kaneohe Naval Air Station National Historic Landmark District</i> and the Aviation District. One of the primary targets of the 7 December 1941 Japanese attack. Strafing marks from the attack remain.	





Summary of Historic Properties within APE			
Name/Facility #	Year Built	Evaluation of Significance	Photo
<b>Aviation District</b>			
Maintenance Hangar 2 Facility 102	1939/ 1941	Contributing resource to the Aviation District. One of the first structures built on the NAS (original 1939 portion). Existed at the time of the 7 December 1941 attack. Mostly undamaged by surrounding bombing and strafing during the attack. As with its neighbor hangars, the building is a visual defining element of Main Base and dominates the landscape when viewed from public vantage points and within the aviation area. Designed by Albert Kahn, Inc.	
Maintenance Hangar 3 Facility 103	1941	Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. Undamaged by surrounding bombing and strafing during the attack. As with its neighbor hangars, the building is a visual defining element of Main Base and dominates the landscape when viewed from public vantage points and within the aviation area. Designed by Albert Kahn, Inc.	





Summary of Historic Properties within APE			
Name/Facility #	Year Built	Evaluation of Significance	Photo
<b>Aviation District</b>			
Maintenance Hangar 4 Facility 104	1941	Contributing resource to the Aviation District. Under construction at the time of the 7 December 1941 attack. Undamaged by surrounding bombing and strafing during the attack. As with its neighbor hangars, the building is a visual defining element of Main Base and dominates the landscape when viewed from public vantage points and within the aviation area. Designed by Albert Kahn, Inc.	
Maintenance Hangar 5 Facility 105	1943	Contributing resource to the Aviation District. Built as a land plane hangar during World War II. As with its neighbor hangars, the building is a visual defining element of Main Base and dominates the landscape when viewed from public vantage points and within the aviation area. Designed by Albert Kahn, Inc.	
MWR Storage Facilities 106, 120, 610	1942	Contributing resources to the Aviation District. Part of World War II base build-up. A group of identical concrete buildings, originally built as torpedo storehouses	
Aircraft Spares Storage Facilities 159-163, 166-168, 170, 183, 184, 187-196	1942-1943	Contributing resources to the Aviation District. Part of World War II base build-up. Concrete hangar support building located primarily near Hangars 1-3. Originally stored aircraft armament and supplies	





Summary of Historic Properties within APE			
Name/Facility #	Year Built	Evaluation of Significance	Photo
Shop Maintenance Elect-Refrig/ Public Works Shop Facility 201	1941	Former Utilities Shop and Parachute Loft Stowage Building. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. One of three associated early base support buildings (with Facilities 202 and 203). Part of the 1939 initial proposed base layout. Designed by Albert Kahn, Inc.	
Shop, Maintenance Machine/Public Works Shop Facility 202	1941	Former Torpedo Workshop Building. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. One of three associated early base support buildings (with Facilities 201 and 203). Part of the 1939 initial proposed base layout. Designed by Albert Kahn, Inc.	
Public Works Shop, Grounds/Jan/Pest Cont/Public Works Shop Facility 203	1941	Former Bombsight Workshop and Storage Building. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. One of three associated early base support buildings (with Facilities 201 and 202). Part of the 1939 initial proposed base layout. Designed by Albert Kahn, Inc.	



Summary of Historic Properties within APE			
Name/Facility #	Year Built	Evaluation of Significance	Photo
		<b>Aviation District</b>	
MAG HQS/Photo Lab/ Academic Classroom Facility 301	1941	Former Squadron Offices and Storage Building. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. Part of the 1939 initial proposed base layout. Designed by Albert Kahn, Inc.	
Pump Houses Facilities 302 and 155	1941 and 1943	Concrete sump houses structures. Contributing resources to the Aviation District. Facility 302 existed at the time of the 7 December 1941 attack and was part of the 1939 initial proposed base layout.	
General Warehouse Facility 601	1941	Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. Matching concrete Buildings 601 and 602 were originally used to store smoke drums.	
General Warehouse Facility 602	1942	Contributing resource to the Aviation District. Part of World War II base buildup. Matching concrete Buildings 601 and 602 were originally used to store smoke drums.	

<b>Summary of Historic Properties within APE</b>			
<b>Name/Facility #</b>	<b>Year Built</b>	<b>Evaluation of Significance</b>	<b>Photo</b>
<b>Aviation District</b>			
Storehouse Ordnance/Inert Storehouse Facility 603	1941	Former Small Arms Magazine and Inert Storehouse. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. Early base support structure originally used for arms storage.	
Ordnance Operations Building Facility 605	1941	Former Small Arms Magazine and Inert Storehouse. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack. Early base support structure originally used for arms storage.	
Aircraft Recovery Operations Ground Support Equipment Shop Facility 620	1945	Last extant Quonset intact hut. Former Aircraft Engine Salvage Shop. Contributing resource to the Aviation District.	
Community Storage Facilities 708-712	1942	Underground Structures. Five former Fuse and Detonator Magazines. Contributing resource to the Aviation District. Existed at the time of the 7 December 1941 attack.	

<b>Summary of Historic Properties within APE</b>			
<b>Name/Facility #</b>	<b>Year Built</b>	<b>Evaluation of Significance</b>	<b>Photo</b>
<b>Pali Kilo</b>			
Community Storage Facilities 701-707	1942	Storage magazines. Identical, historic World War II-period earth-sheltered munitions magazines located along the roads throughout the Pali Kilo area.	
Flammables Storehouse Facility 995	1942	The, built as a paint locker. The structure is a good example of cast concrete splinter-proof construction. Individually eligible for the NRHP.	
<b>Historic Buildings in APE But Not Within a District</b>			
Auto Vehicle Shop Facility 351	1941	WWII wood-framed base support building. Part of a grouping of three historic auto repair buildings (Facilities 351, 377, and 399). Individually eligible for the NRHP.	
Transportation Office Facility 352	1942	WWII wood-framed base support building adjacent to the auto shop group of buildings. One of the last remaining buildings of its type at the base, it is eligible for the NRHP.	

<b>Summary of Historic Properties within APE</b>			
<b>Name/Facility #</b>	<b>Year Built</b>	<b>Evaluation of Significance</b>	<b>Photo</b>
<b>Historic Buildings in APE But Not Within a District</b>			
Accessory Overhaul Building Facility 374	1943	Part of World War II base expansion in Hawai'i. A one-story concrete building with a small second-story mezzanine. Built as part of the Assembly and Repair Department for aircraft. Individually eligible for the NRHP.	
Assembly and Repair Shop Hangar Facility 375	1944	Repair shop hangar built as part of WW II base expansion in Hawai'i. Part of the aircraft Assembly and Repair Department. Individually eligible for the NRHP.	
Garage/Auto Repair Facility 377	1945	WWII wood-framed base support building. Part of a grouping of three historic auto repair buildings (Facilities 351, 377, and 399). Individually eligible for the NRHP.	
Auto Vehicle Shop Facility 399	1945	WWII wood-framed base support building. Part of a grouping of three historic auto repair buildings (Facilities 351, 377, and 399). Individually eligible for the NRHP.	
		End.	

Enclosure 6: Summary of Archaeological Sites within or near the APE for the Home Basing of the MQ-9A & KC-130J Squadrons

SIHP Site No. 50-80-11-	District/Area	Period	Site Description <sup>a</sup>	NRHP Status (Significance Criterion)	References
365	MHLAD; MPPA (Proposed) <sup>b</sup>	TH	<i>Heiau</i> ; on southern slope of Keawanui; location of St. Catherine's Catholic Church in 1840s; O'Day 2007 suggests that Sites 4619, 4620, 4622, and Temp Site 1 could define two sides of <i>heiau</i>	NRE-yes (D)	Thrum 1915; MacCaughey 1917; McAllister 1933; Ruzicka and O'Day 2005; O'Day 2007; Nickelsen and Kirkendall 2008a
367	MHLAD; MPAA (Proposed)	TH	Hina Stone; elongated waterworn boulder; one of three features including a fishing shrine with two uprights representing Kane and Kanaloa, a fish trap (Pa Ohua), and shrine with two stones representing Ku and Hina; damaged in 2009	NRE-yes (B, C, D)	MacCaughey 1917; McAllister 1933; Drolet et al. 1996; Schilz et al. 1996; Ruzicka and O'Day 2005; Nickelsen and Kirkendall 2008b
1017	--	TH	Mōkapu Burial Area	NRL (C, D)	Bowles 1940; Bowen 1961, 1974; NRHP 1972; Snow 1974; Barrera 1982; Athens 1985; Cleghorn 1987; Charvet-Pond and Rosendahl 1992a, 1992b, 1992d; Anderson 1997; Collins et al. 1994; Schilz and Allen 1996; Williams and Patolo 1998; Tuggle 1999, 2000, 2002a, 2002b; Prishmont and Anderson 2000; Gosser and Riford 2005; Morrison et al. 2010
2883	MHLAD; MPAA (Proposed)	TH; NM	Subsurface cultural deposits from pre- and post-Contact periods and pre-WWII house sites; pre-Contact deposit possibly continuous with 5733	NRE-yes (D)	Barrera 1982; Tuggle and Hommon 1986; Drolet et al. 1996; Anderson 1998; Ruzicka and O'Day 2005; O'Day 2007; Nickelsen and Kirkendall 2008c
2884	--	M	Four concrete house foundations, ca. WWII	NRE-yes (not given)	Tuggle and Hommon 1986; Drolet et al. 1996; Prishmont et al. 2001

SIHP Site No. 50-80-11-	District/ Area	Period	Site Description <sup>a</sup>	NRHP Status (Significance Criterion)	References
4453	MPAA (Proposed)	TH	Subsurface cultural deposit with pit features, postmolds, shell midden, charcoal; intact burials	NRE-yes (D)	Charvet-Pond and Rosendahl 1992c, 1992e; Prishmont and Anderson 2000; Prishmont et al. 2001; Gosser et al. 2002; Rasmussen 2007; Nickelsen and Kirkendall 2008d; Filimoehala et al. in prep.
4610	MHLAD	NM	House terrace/complex	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; Gosser et al. 2015
4611	MHLAD	NM	House site; pre-WWII	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005
4612	MHLAD	NM	House site; pre-WWII to 1943	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; Allen 2013
4613	--	NM	Stone wall and historic walkway	NRE-yes (D)	Drolet et al. al 1996; Allen 2013
4614	MHLAD	NM	House site; pre-WWII	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; Allen 2013
4615	--	M	Underground storage room; exterior door labelled "Paint Locker"; probable post-WWII	NRE-yes (not given)	Drolet et al. al 1996; Allen 2013
4616	MPAA (Proposed)	TH	Low basalt cobble and boulder wall	NRE-yes (D)	Drolet et al. 1996; Nickelsen and Kirkendall 2008e
4617	MHLAD	NM	House site; pre-WWII	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005
4618	MHLAD	NM	Building cluster; pre-WWII	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005
4619	MHLAD; MPAA (Proposed)	TH	Pavement w/ 2 waterworn uprights; on slope of Keawanui Hill; may be	NRE-yes (C, D)	Nickelsen and Kirkendall 2008f; Ruzicka and O'Day 2005
4620	MHLAD	TH	Enclosure; circular; on upper east facing slope of Keawanui Hill; may be part of Site 365 <i>heiau</i>	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; O'Day 2007; Nickelsen and Kirkendall 2008g
4621	--	NM	Building foundation	n/a	Drolet et al. 1996
4622	MHLAD; MPAA (Proposed)	TH	Rock and coral piles; may be part of Site 365 <i>heiau</i>	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; O'Day 2007; Nickelsen and Kirkendall 2008h

SIHP Site No. 50-80-11-	District/ Area	Period	Site Description <sup>a</sup>	NRHP Status (Significance Criterion)	References
4623	MPAA (Proposed)	M	C-shaped structure; corrugated tin and glass bottles on surface; probable military	NRE-yes (D)	Drolet et al. 1996; Ruzicka and O'Day 2005; O'Day 2007; Nickelsen and Kirkendall 2008i; Allen 2013
4624	MPAA (Proposed)	NM	Enclosure; low walls, rectangular, 11 x 7 m; concrete slab fragment on surface; probably historic-period house	NRE-yes (D)	Drolet et al. 1996; O'Day 2007; Nickelsen and Kirkendall 2008j; Allen 2013
4625	MHLAD	NM	House site; pre-WWII	NRE-yes (D)	Ruzicka and O'Day 2005
4891	MPAA (Proposed)	TH	Subsurface cultural deposit; 6 features w/ cultural material; south of Pyramid Rock	NRE-yes (D)	Nickelsen and Kirkendall 2008k
4933	MPAA (Proposed)	TH	Subsurface cultural deposit with pits, postholes, firepits; bone arrow point	NRE-yes (D)	Schilz and Allen 1996; Rechtman and Wolforth 2000; Allen 2000; Prishmont et al. 2001; Gosser et al. 2002; Nickelsen and Kirkendall 2008l
5733	MPAA (Proposed)	TH; NM	Subsurface cultural deposits; traditional Hawaiian and 19th century; 20th century house and yard; in dune on west-facing slope of Pali Kilo	NRE-yes (D)	Rosendahl 1999; O'Day 2007; Nickelsen and Kirkendall 2008m; Gosser et al. 2015
5829	MPAA (Proposed)	TH	Subsurface cultural deposit, burials; around Building 6470, north of Hangar 104	NRE-yes (D)	Prishmont et al. 2001; Roberts et al. 2002; Dixon et al. 2002; Nickelsen and Kirkendall 2008n; Allen and Rieth 2014; Allen 2015; Barna et al. 2017
5968	--	NM	Historic basalt retaining wall, possibly associated with the Mokapu Experimental Game farm	TBD	Roberts et al. 2002
5969	--	M	Concrete foundation; immediately west of Keawanui	TBD	Roberts et al. 2002
7722	MHLAD	TH	Subsurface cultural deposit	NRE-yes (C, D)	Gosser et al. 2015
7723	--	TH	Intact but disturbed human burial remains; sparse traditional Hawaiian artifacts	n/a	Gosser et al. 2015

SIHP Site No. 50-80-11-	District/ Area	Period	Site Description <sup>a</sup>	NRHP Status (Significance Criterion)	References
7724	MHLAD	TH	Disturbed subsurface cultural deposit (including one human tooth)	NRE=yes (C, D)	Gosser et al. 2015
7725	MHLAD	NM	Retaining wall	NRE=yes (C, D)	Gosser et al. 2015
7726	--	M	Concrete foundations; WWII-era	NRE=no	Gosser et al. 2015

<sup>a</sup> Site descriptions and period designations are reproduced from the updated ICRMP (Tomonari-Tuggle and Clark 2021:Table II-7).

<sup>b</sup> MHLAD: Mōkapu House Lots Archaeological District; MPAA (Proposed): Mōkapu Peninsula Archaeological Area (Proposed).

NRE = National Register Eligible; NRL = National Register Listed

Probable period of use: TH=traditional Hawaiian (pre-Contact/19th Century; NM=non-military; M=military (20th Century)



