STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

August 10, 2017

ADDENDUM NO. 1

PHYSICAL SECURITY AND ENERGY IMPROVEMENTS AT FT. RUGER, STATE OF HAWAII, DEPARTMENT OF DEFENSE, HAWAII ARMY NATIONAL GUARD, JOB NO. CA-1328-C4

The items listed hereinafter are hereby made a part of the contract for the above mentioned project and shall govern the work taking precedence over previously issued contract documents governing the items mentioned. Receipt of this addendum is to be acknowledged on page OF-7 of the proposer's packet.

The following are questions submitted prior to the due date of August 3, 2017.

1. I searched the document but did not see whether a specific model of charging equipment had been specified, or whether it has already been acquired by the DOD or if the contractor will be expected to provide it.

    a. Electric vehicle charging station equipment shall be the responsibility of the contractor and is included in this scope of work. Electrical conduit infrastructure and cabling for electrical and communication lines shall be provided and installed by the contractor. See attached Division 10 – Specialties for model or approved equal or better.

2. Will a class C license work, or does it have to be a Class B?

    a. License requirement for the general contractor is changed from Class B to a Class A license.

3. On Sheet C-02, note 3 tells of the relocation of Bldg. 306B. Could not find any location on sheet C-06 for the relocation?

    a. Information is shown on Sheet C-07, but relocation effort of Bldg. 306B is not a part of this project contract per note 7.

4. The Notes 2 on C-02, states that "The Contractor shall coordinate with and obtain authorization from the Project Manager for removal, disposal and relocation of existing concrete barriers and planters". Could the designer give us an order of magnitude of how many of the concrete barriers and planters would have to be relocated and how many to dispose of? We need these numbers to give a fair bid for this work.

a. Existing concrete barriers will not be dispose of, coordinate with FMO Project Manager for relocation area. See Demolition Plan for existing concrete barriers to be moved and relocated. When relocating existing barriers, there is a need of physical security still to be maintained at areas.

5. Which company maintains the facilities existing access control system which will we have to tie into for this project?

   a. HIARNG's Electronic Security System (ESS) maintains the facilities existing Galaxy Controls access systems. Contractor has to be trained by Galaxy Controls, Inc. to work on HIARNG's ESS.

6. Is there a soils report for this project?

   a. There is no soils report for this project.

7. The electrical drawings show site lighting and bollard light details but no site lighting on the electrical plans. Upon further review the lights are shown on the civil plans, but they do not show the conduit routing, wires and what panel it is being powered from. Would appreciate if the site lighting can be shown on the electrical plans with the information noted above so that we can bid this work properly.

   a. The light bollards are indicated on Sheet E-2 and the light pole/light bollards on Sheet E-4. The Panel schedule is indicated on Sheet E-12, showing the circuiting.

8. In the specifications for "Access Control" (Section 28-Specifications) I find very detailed specifications but I cannot find specifics on the quantities and types of each of the devices that are specified. In searching the drawings, I cannot find a schedule or similar specifics with which I can come up with quantities.

   a. Access Control specifications are referenced in Section 34 41 26. No schedule is provided for quantity and type of access control device. Contractor is responsible for determining quantity of type of device per the design drawings to provide a complete and operating system.

9. Ft Ruger being an historic location, is an archaeologist need to be on site during ground disturbing activities?

   a. A qualified archaeologist shall be required to be on site during ground disturbing activities. An Archaeological Monitoring Report shall be submitted and required at the end of the project. See attached Ft Ruger Phys Security DRAFT Arch Monitoring Plan June-2017; contractor to revise, complete and submit the Draft Archaeological Monitoring Plan to the State Historic Preservation Division for review and acceptance prior to the beginning of construction activities.

10. In electrical drawing sheets E-02 and E-03, it shows telecommunication lines having long runs from the electrical room of Building 306 out to the Employee Entry. Telecommunication frequency will start to reduce over 500 feet, is fiber optics required for long runs?

    a. Fiber optics will be required for runs that are 500 feet or over. A weather box will be needed to keep the elements away from the devices.

Arthur J. Logan
Major General
Adjutant General

Posted: August 10, 2017

DIVISION 10 - SPECIALTIES

SECTION 10990 - MISCELLANEOUS SPECIALTIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide all labor, materials, equipment, tools, etc. for installation of miscellaneous specialties as indicated on the drawings and/or specified herein.

1.02 GENERAL REQUIREMENTS

Provide all specialty items as shown on the drawings, including, but not limited to, the following:

1. Electric Vehicle Charging Stations.

1.03 SUBMITTALS

A. Submit six (6) sets of Charging Station product data and shop drawings indicating installation details.

PART 2 - PRODUCTS

2.01 ELECTRIC VEHICLE CHARGING STATIONS

A. Furnish and install electric vehicle charging station, Model CT4021-GW1 as manufactured by ChargePoint, Inc. or approved equal or better. Charging station shall have the following minimum and optional features:

1. Level 2, commercial, dual bollard, gateway EV charging station.
2. 8' high bollard with graphics on front and back indicating "EV CHARGING ONLY".
3. Power management option, CT4000-PMGMT, power share kit.
4. Bollard Mounting Kit, CT40001-CCM.
5. Power: Dual Port, AC 208/240VAC, 40A.
6. Optional ChargePoint Activation and InstallValid.
7. 5-year Assure Warranty.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install Electric Vehicle Charging Station in strict accordance with manufacturer's printed instructions and/or approved shop drawings. Install complete and fully operational.

END OF SECTION

ARCHAEOLOGICAL MONITORING PLAN

Fort Ruger Physical Security Improvements

3949 Diamond Head Road
Ahupuaa of Waikiki
Honolulu District, Oahu
TMK: (1) 3-1-042:018 & 027

DRAFT

Hawaii Army National Guard
Facilities Management Office
State of Hawaii, Dept. of Defense
June 2017

EXECUTIVE SUMMARY

This Archaeological Monitoring Plan (AMP) has been prepared as a condition stipulated by the State Historic Preservation Division (SHPD) to concur with the Hawaii Army National Guard's (HIARNG) determination of ***no historic properties affected*** for the proposed project, as stated in letter Log No. 2016.01772, Doc. No. 1607MB19. The project involves improving physical security measures at the Joint Facilities Headquarters (JFHQ) Building 306 on Diamond Head Road, Waikiki ahupuaa, Honolulu District, Island of Oahu. Physical security improvements include the installation of vehicle barrier systems, vehicle gates with card readers, bollards, vehicular signage, electrical vehicle charging stations, solar powered lighting, as well as fencing and landscaping of the project area. The ground disturbing components of this project consists of demolition, grading, utility trenching, physical security improvements installation, fencing and signage installation, as well as hardscape and landscape installation. Specific ground disturbance dimensions and activities can be found in section 2.0 of this AMP.

The HIARNG does not anticipate the discovery of significant subsurface cultural resources during this undertaking based on the prior land use history, previous grading, archival research and consultation. Archaeological monitoring will focus on all ground disturbing activities occurring below a 12" depth, associated with the proposed project.

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1.0 INTRODUCTION

The State of Hawaii, Department of Defense (DOD), Hawaii Army National Guard (HIARNG) is planning to improve the current physical security measures at the Joint Facility Headquarters (JFHQ) building fronting Diamond Head Road in Honolulu, Oahu, HI. The physical security improvements will include the installation of vehicle barrier systems, vehicle gates with card readers, bollards, vehicular signage, electrical vehicle charging stations as well as fencing and landscaping of the project area.

1.1 Project Location

The physical address of the project is 3949 Diamond Head Road, located in the Waikiki ahupuaa, Honolulu District, on the Island of Oahu (Figure 1). The project site is approximately 2,000 sq. ft. and is encompassed in the TMKs: [1] 3-1-042:018 & 27 (Figure 2). The project area is managed by the State Department of Defense

1.2 Historic Preservation Compliance

This project requires compliance with both Federal and State historic preservation laws because it is federally funded and the action is on state-owned land. HIARNG is the project manager and initiated the Section 106 consultation process under the National Historic Preservation Act (NHPA) in July 2016. Project consultation and review were also conducted with the State Historic Preservation Division under Chapter 6E of the Hawaii Revised Statutes.

This document uses terminology from both State and Federal historic preservation laws as defined by HRS Ch. 6E-2 and 36 CFR 800.16. This Archaeological Monitoring Plan uses the terms *Project* and *Undertaking*, as well as, *Project Area* and *Area of Potential Effect* interchangeably throughout the remainder of the document. An effort has been made to use the most contextually appropriate terminology.

1.3 Archaeological Monitoring Plan

The Archaeological Monitoring Plan (AMP) sets out procedures to be followed during archaeological monitoring and if unanticipated subsurface cultural deposits or features, including human remains, are discovered during the project. This plan also addresses the following:

- Kinds of historic properties that could be discovered during monitoring or need protection;
- Anticipated locations of historic properties within the project area if any were present;
- Fieldwork needed if significant historic properties or human remains are discovered in these circumstances;
- Confirmation that the monitoring archaeologist has the authority to halt work should an unanticipated discovery be made;
- Efforts to ensure coordination between the contracted team and the archaeologist;
- Laboratory work expected if unanticipated historic properties are discovered and immediate data recovery is determined to be the appropriate treatment;
- Commitment to prepare a report after the conclusion of monitoring; and
- Disposition and archiving of project records and potential collections.

2.0 PROJECT UNDERTAKING

HIARNG, in consultation with SHPD, has determined the Project Area and Area of Potential Effect (APE) for this undertaking consists of _____ square feet (Figure 3). The project area encompasses Building 306, Building 306A, the associated paved entrance, paved parking lot and adjacent landscape grounds. Within the APE is Building 306. Building 306 was built in 1978 and will turn 50 years old in 2028. Fronting Building 306 are original rock and mortar walls that date back from 1936. The rock walls were evaluated in 2014 and were determined contributing resources to the Fort Ruger Historic District. The physical security improvements will not affect the existing rock walls.

2.2 Scope of Work

The Scope of Work (SOW) for this undertaking involves demolition of the existing asphaltic pavement parking lot, grading of the project area. Once demolition and grading is complete, trenching for electric and water utility lines will be conducted. The project involves the installation of modernized physical security measures, including: New electronic card readers, new vehicle arms, passive vehicle cabling, passive vehicle barrier posts and bollards. The project also includes the installation of new electric vehicle charging stations, solar panel light fixtures, as well as posts for fencing and signage. Specific ground disturbance dimension by action is listed below:

Demolition - The project will involve replacing portions of the existing AC parking lot, which will require removing the top 2" of asphaltic pavement (1,250 sq. ft) It will also involve removing existing fencing (1278 lineal feet) as well as 3 qty. existing signs, and an existing concrete ramp.

Water Line Trenching – The project will involve trenching 570 lineal feet to add an additional water line hookup. The trenching will require digging to a maximum depth of 3' and a maximum width of 18".

Physical Security Improvements – The project will include the installation of 4 qty. new card readers, which will require digging 2 ft. deep by 2 ft. wide footings. The project will also include 5 qty. new automatic vehicle arm gates, which will require digging 2'-4" deep by 1'-4" diameter footings. The project will also install 370 lineal feet of passive vehicle barrier cabling, which will require digging 3'-0" deep by 9" wide footings for posts as well as 8'-0" deep by 3'-0" wide footings for transitional posts. Post spacing determined by manufacturer's specifications. The project will also install 2 qty. new electric charging stations, as well as 8 bollards (4'-4" by 2' footing), and 1 new solar panel light fixture (5'-0" x 20" footing).

Fencing/Signage – The project will install 1,020 lineal feet of new fencing. The fencing includes the installation of 6 qty. pedestrian gates and 4 qty. vehicle gates. There will be approximately 120 qty. post holes required at 3'-6" deep by 18" diameter. The project will also install 6 handicap signs and 14 directional vehicle signs, which will require digging footings 2'-4" deep by 18" wide.

Hardscape/Landscape – The project will include the installation of 3 concrete medians for the new vehicle gates and card readers. The median will total 564 sq. ft. and will require digging 10" below existing grade. The medians will also contain 10" high curbing, which will require digging to an 8" depth. The project will also include the installation of landscape plants and irrigation. Trenching for irrigation will not exceed 12" deep.

2.3 Consultation and Determination of Effect

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), HIARNG initiated consultation for the physical security improvements at the Joint Facilities Head Quarters (JFHQ) on Diamond Head Road. In a letter received by the State Historic Preservation Division (SHPD) on July 22nd, 2017 HIARNG determined that the proposed action would result in "no historic properties affected". SHPD responded in a letter dated July 29th, 2017 (Log. No. 2016.01772, Doc. No. 1607MB19) that they concur with the HIARNG's determination with the condition that an AMP is submitted to SHPD for review and acceptance prior to work commencing and that archaeological monitoring be conducted for project related ground disturbance. Parties cc'ed in the correspondence between the HIARNG and the SHPD include; the Diamond Head Citizens Advisory Committee, Diamond Head Neighborhood Board, DLNR State Parks Division, Historic Hawaii Foundation, Island Burial Council, Kawaihapai Ohana, Office of Hawaiian Affairs, Ohana Keaweamahi, Piihonua Hawaiian Homestead Community Association and Waikiki Hawaiian Civic Club.

None of the consulting parties objected to the undertaking. Further, consultation did not identify any Native Hawaiian Organization attaching traditional religious and cultural importance to the landscape within the APE.

3.0 ENVIRONMENTAL SETTINGS

Diamond Head is an ovoid-shaped volcanic crater that measures 3,520 feet in length across the interior. The crater was recognized as a National Natural Landmark in 1968 because it is best known pyroclastic crater in the world and an excellent example of this class of geological feature. The crater floor, however, has been subject to alteration in the 20th century as a result of extensive military use and

construction. The project area is located outside the crater, directly to the east of the crater in an urban area.

3.1 Geology and Soils

The land within and around the project area has been graded and altered through decades of land use and human development. Soil types within the APE consist of Ewa silty clay loam and Makalapa clay (NRCS 2016).

The geologic formation referred to as Diamond Head is a tuff cone resulting from late phases of volcanic activity during the Koko Rift, and is likely the product of a single volcanic eruption occurring approximately 500,00 years ago (Tomonari-Tuggle and Blankfein 1998). The summit of the crater, traditionally referred to as Leahi, is located on the southwest portion of the crater rim, and extends 761 feet above sea level. The summit offers expansive views of the entire southern coast of Oahu and has been used throughout history as a maritime lookout. The eruption that formed Diamond Head crater occurred below a coral limestone reef producing a cone consisting mostly of volcanic ash and coral. The ash is loosely cemented and is subject to erosion from wind, slope-wash, and wave action on the Makai slopes.

3.2 Vegetation

The vegetation is comprised of ornamental landscape plants and grass. Specific plants currently existing in the project area include Bougainvillea, plumeria?, coconut trees?

4.0 HISTORICAL AND CULTURAL OVERVIEW

There are no known written references that indicate the traditional cultural practices that took place within the crater prior to, or after, Western Contact. However, there are a number of sources that indicate traditional Hawaiian cultural practices took place at the summit of the crater and on the exterior slopes. Diamond Head Crater, also traditionally referred to as Leahi, is considered to be a wahi pana or legendary place because of its associations with the Hawaiian demi-goddess Pele and her sister Hiiaka, as well as, alii nui (high chiefs) such as Kamehameha I.

The following section provides information for the history of the Waikiki region to supplement fot the lack of historical information directly related to Leahi. McNamara addresses the dichotomy of appreciating Leahi as an important cultural feature that lacks evidence of traditional Hawaiian modification:

"it is Leahi herself that is a cultural resource to the Kanaka Maoli, not necessarily the cultural markers required of an archaeologist to prove its significance. She is the evidence of our history, our mythology, and our relationships to this aina." (McNamara 2006:36)

4.1 Traditional Use

Leahi is situated in the western portion of the Waikiki ahupuaa (Figure 8). Palolo Valley is located mauka with Waialae Nui to the east and Manoa to the west. The ahupuaa boundary separating Waikiki and Waialaea Nui bisects Kupikipikio, a small peninsula immediately southeast of Leahi. Leahi and

Kupikipikio makeup the southernmost point of Oahu and form a natural boundary separating Malama Bay to the west and Maunalua Bay to the east.

The earliest accounts of Leahi are captured in moolelo. Palikapu indicates that Hiiaka, sister of Pele, is said to have compared Leahi to the brow of the ahi or yellow fin tuna (Tomonari-Tuggle and Blankfein 1998:13).

Several legends authored by non-Hawaiians during the early-20th century claim the crater was formed when Pele struck down her Paoa (a magic spade) that when thrust into the ground would form a "fire pit" or... [open] a crater in which volcanic fires burned" (Westervelt 1963:6). In 1915, Emerson indicated that the formation of Leahi can be attributed to an unsatisfactory attempt by Pele to find a home after attempting the same on the island of Kauai:

"[They] arrived at Oahu, Ka-moho-alii, who still had Pele in his keeping, left the canoes in charge of Holoholo-kai and, with the rest of the party continued the journey on land. The witchery of the Paoa was appealed to from ttime to time, as at Alia-paakai, Puowaena (Punchbowl Hill), Leahi (Diamond Head), and lastly at Makapuu Point but nowhere with a satisfactory response." (Emerson 1915:XII)

Westervelt, having translated stories from The Hawaiian, penned the following passage, which echoes the story told by Emerson:

Pele was not able to strike her *Paoa* down into a mountain side and dig deep for the foundations of her home. She could find fire only in the low lands near the seashore. The best place on Oahu was just back of Leahi, the ancient Hawaiian name for Diamond Head. Here she threw up a great quantity of fire-rock, but at last her fires were drowned by the water she struck below. Thus she passed along the coast of each island to the great volcano of Haleakala. (Westervelt 1973:10)

In the same document, Emerson goes on to say that Hiiaka used Leahi as a lookout:

"Hiiaka standing on the flank of Leahi and exercising a power of vision more wonderful than that granted by the telescope, had sight of a wild commotion on her beloved Hawaii. In the coud-films that embroidered the horizon she saw fresh proof of her sister's unmindfulness of the most solemn pledges." (Emerson 1915:186)

This story highlights the use of Leahi as a lookout, which has persisted throughout history and is one of the main traditional cultural practices associated with the crater. Moreover, a heiau called Ahi is said to have been located at the summit (Division of State Parks 1979:21). The heiau was dedicated to the god of wind and housed a signal fire that was used in traditional navigation. Several other heiau, such as Papaenaena, were located along the southwestern exterior slopes of Leahi along the Waikiki coastline. Human skeletal remains believed to be from ancient Hawaiians have been discovered outside of the crater along Diamond Head Road and other places but no traces of human remains have been located within the crater.

4.2 Pre-Contact

It is uncertain when the colonization of the Waikiki region occurred. The commonly accepted theory for colonization of Oahu is that early Polynesian voyagers first settled the winward side of the island where there was a perennial source of freshwater and an abundance of marine resources. People were soon moving inland to farm and devlop irrigated field systems (loi kalo). As the population grew, families moved into the more marginal areas with less viable and less abundant natural resources (Kirch 1985). Tomonari-Tuggle and Blankfein (1998:8) suggest this period of expansion is when the southern coast of Oahu, particularly the Waikiki area, was populated:

"Waikiki was almost certainly settled during this period, offering easy access to rich ocean resources, a ready freshwater supply from springs and streams, level and easily developed lands for cultivation and aquaculture, and a bounty of game foods like ducks and other wildfowl. Some cultivation probably followed the stream courses into valleys... which were also sources for items like hardwood for tools, weapons, and building materials..."

During the 14th and 15th century, subsistence was based on fishing, gathering, and small-scale agriculture. Over the course of the next three centuries, the social, religious, and political hierarchy throughout the islands changed dramatically as political power overshadowed the importance of lineage when one sought to become a ruler and expand one's control of lands and people through warfare. During this time period chiefs began displaying their political and social power through the construction of monumental architecture like temples (heiau), and large-scale agriculture and aquaculture systems consisting of loi (irrigated terraces) and loko ia (fishponds). "Traditions say the taro fields (and presumably the fishponds) of the Waikiki plain were built by the chief Kalamakua at this time" (Tomonari-Tuggle and Blankfein 1998:12). The first European voyagers to observe and record their visit to the Kona moku described massive and complex agricultural field systems that extended up into the valleys as well as villages that were scattered along the shoreline and stretched inland.

4.3 Early Post-Contact

In the 1790s, Kamehameha I was conducting battles on Maui and Oahu to unify the Hawaiian Islands. In 1795, he landed his fleet of canoes on the beach at Waikiki near Leahi and marched up Nuuanu Valley where his warriors engaged the army of Kalanikupule in the Battle of Nuuanu. His victory in this battle gave him control of Oahu and he would later sign an agreement with Chief Kaumualii of Kauai to become the first moi (king) of the Hawaiian Islands.

Once Hawaii became known to the outside world, Oahu along with the rest of the islands saw a massive influx of foreign visitors followed by a massive decline in the native populations resulting from the spread of disease. Traditional cultural practices were still in place by the time of Western Contact but changed dramatically as foreigners arrived by the shipload and native populations flocked to Honolulu to trade. Between the years 1786 and 1860, at least 113 vessels visited the islands (McAllister 1976:5). The Waikiki ahupuaa, along with the Honolulu area, experienced massive changes in population demographics and culture over the course of the next hundred years. In the early 1800s, Christian missionaries arrived and started to convert native populations and abolish traditional practices. During this period, many of the heiau were destroyed and churches began appearing on the landscape.

In 1848, the Great Mahele transformed the ideological principles governing land tenure in Hawaii. Unlike the agricultural subsistence economy overseen by Hawaiian chiefs, land was being bought and sold by private landowners, including foreigners. During the Mahele, the Lunalilo estate retained Leahi. In 1884, the Minister of the Interior Charles Judd acquired the 729-acre Diamond Head parcel for the Hawaiian Government. In 1898, the United States government acquired 755 acres, including Diamond Head crater and the outer slopes, and established the Fort Ruger Military Reservation. In 1909, the reservation was renamed the Fort Ruger Military Reservation.

4.4 Military History

Fort Ruger (1906-1950) was established as a major coastal defense fortification for Honolulu Harbor and Pearl Harbor. From 1906 until the end of WWII, a number of fortifications, military support facilities and infrastructure would be built at Fort Ruger (Figure 9). Military construction began with the excavation of the Birkhimer (Kapahulu) Tunnel through the northern crater wall in 1908. This tunnel facilitated the construction of fortifications and infrastructure within the crater. The trail on the interior crater wall and construction of Leahi Fire Control Station at the summit occurred between 1909 and 1911. Battery Harlow was built in 1910 on the northern exterior slop of the crater. With its 8 large mortars, this battery was designed to fire over the crater to ships at sea. As Hawaii's first coastal defense structure, Battery Harlow was a critical part of Oahu's early coastal defense system.

Permanent officers' quarters, barracks and an ordnance machine shop were built on the outer slopes of the crater from 1911-1912. The 700,00 gallon reservoir inside the crater also dates to this period. This early construction was overseen by the U.S. Army Corps of Engineers (ACOE) and the facilities were later turned over to the Coastal Artillery.

During World War I, the emphasis shifted to land defense and 4 additional batteries were constructed at Fort Ruger. Batteries Hulings and Dodge (1915) tunneled through the upper northeastern crater wall and were designed to fire guns towards Koko Head. Battery Birkhimer (1916), and underground structure in the crater, was designed to fire 360 degrees (Dorrance 1995:156). Battery Mills (1915) was built at Kupikikipil (Black Point). In addition, at least 6 gun emplacements were constructed along the eastern crater rim in 1915 to protect against a ground attack. The fort was expanded on the exterior of the crater with the construction of wood frame barracks, officers' quarters, stables, wagon sheds, a guardhouse, a Quartermaster Corps detachment, and an administrative building in 1917-1918. By 1917, the major infrastructure was completed. Fort Ruger served as the headquarters for Coast Defense of Oahu until 1921.

Oahu's harbor defense batteries built in the early 1900s were focused on the threat of attack from land and sea. With the advent of military aeronautics, these coastal defenses became obsolete and new ones were constructed during WWII, including Battery 407 at Fort Ruger in 1943. The Kahala Tunnel was excavated through the eastern crater wall in 1943 to facilitate the construction of Battery 407 through the southern crater wall. In 1950, the guns were removed

and Fort Ruger Military Reservation, including Diamond Head crater, was turned over to the Hawaii Army National Guard (HIARNG).

The HIARNG used many of the Fort Ruger buildings in the 1950s and 1960s for administrative functions, maintenance, and storage. In 1960s, HIARNG built new facilities within the crater in response to the Cold War and the need for military readiness in the islands. Buildings constructed by HIARNG withinin the crater consist of Building 301 (One-Unit Armory) constructed in 1962, Building 303 (Adminstrative Offices and Warehouse) constructed in 1964, and the Building 304 Complex (Field Maintenance Shop) constructed in 1964. Infrastructure for these buildings included paved roads, parking lots, a wastewater lift station, and utilities. Also during this time, the FAA acquired a parcel of land in the crater and built a blast-resistant facility in 1961 that was later demolished in 2000.

4.5 Fort Ruger Historic District

The Fort Ruger Historic District, SIHP # 50-80-14-1350, was listed on the Hawaii Register of Historic Places (HRHP) is 1982 and the National Register of Historic Places (NRHP) in 1983. The district has a period of significance between 1909 and 1921. The district is noncontiguous and is composed of ten (10) sites on the interior and exterior of the crater which are significant as tangible reminders of the U.S. Army's presence at Diamond Head crater, as well as, their value as the part of the first coastal defense fortification established in Hawaii (Hibbard and Napoka 1980).

When the nomination was prepared in 1980, many of the structures associated with Fort Ruger on the outside of the crater had been demilshed for development of Kapiolani Community College and the state park. The NRHP nomination lists 10 contributing elements: (1) the Guardhouse, (2) Battery Harlow, (3) Battery Hulings, (4) Battery Dodge, (5) twelve 6-pound gun emplacements, (6) Battery Birkhimer, (7) Battery 407, (8) Leahi Fire Control Station, (9) winch and cable system, and (10) Kapahulu Tunnel (Hibbard and Napoka 1980)(Figure 10). The nomination did not include the Kahala Tunnel built in 1943 because it was not 50 years old at the time of the nomination. However, Battery 407, also constructed in 1943, was included in the nomination based on its association with the coastal defense fortifications. Leahi Fire Control Station is particularly special as noted in the nomination: "It is the most elaborate structure of its kind in the United States as most fire control stations are simple free-standing towers built of metal." (ibid. 1980). The fortifications within the district are all made of reinforced concrete and vary in size from massive Battery Harlow to a dozen modest six-pound gun emplacements along the rim of the crater.

In 2009 e^2M survey of facilities at Fort Ruger recommended expanding the period of significance for the Fort Ruger Historic District to include sites from the World War II (1941-1945) and Cold War periods (1946 through 1989), as well, as extending the boundaries of the district to encompass all contributing elements. The rock and mortar wall fronting B306 on Diamond Head Road is located within the project area (APE) and has been determined to be eligible for the NRHP as a contributing element to the Fort Ruger Historic District. The proposed project will not alter or adversely affect the rock and mortar wall with a stamp date of 1916.

5.0 PREVIOUS ARCHAEOLOGICAL & ARCHITECTURAL STUDIES

No archaeological inventory surveys have been conducted within the project area, but two (2) architectural studies have been performed. Fifteen (15) historic property investigations have taken place near the project area including eleven (11) archaeological surveys within and on the exterior slopes of Diamond Head crater. Historic property investigations have been conducted for HIARNG and DLNR State Parks by various consultants, including International Archaeological Research Institute Inc. (IARII), Ogden Environmental and Energy Services Co (Ogden), Engineering-Environmental Management Inc. (e^2M), and HDR/Hawaii Pacific Engineers (HDR).

5.1 Archaeological Studies

The first known archaeological investigation to take place near the general Diamond Head area is that of two men, George Carter and James Wilder in 1906. Clark (1977) claims that the two men conducted an amateur archaeological survey near the beach at Kaalawai and discovered some stones of what they determined to be a heiau (cited in Tomonari-Tuggle and Blankfein 1998:31).

A similar pseudo-archaeological investigation was conducted by Thomas G. Thrum who compiled all the historical accounts of Papaenaena Heiau in the 1920s (Thrum 1926:109).

The first professional archaeological study to take place near Diamond Head was conducted by J. Gilbert McAllister of Bishop Museum in 1929. This was an island-wide survey of prominent archaeological and cultural sites on Oahu. McAllister's report describes three sites in the general vicinity of the project area – Papaenaena Heiau at Leahi, Pahu-a-Maui, and the village of Waikiki (McAllister 1933:71-78).

In 1968, Kenneth Emory of Bishop Museum tested the area assumed to be the location of Papaenaena Heiau. Two test pits indicated 0.9m (36") of imported topsoil above a 1" to 2" layer of original soil on top of bedrock. There was no evidence of the heiau and he concluded that the original structure was demolished (Tomonari-Tuggle and Blankfein 1998:33).

In 1977, State Parks conducted a reconnaissance survey of the lower section of the Diamond Head summit trail. The survey noted two historic military features (building foundations) along the trail to the summit but found no evidence of pre-contact Hawaiian or pre-military sites (Yent and Griffin 1977).

In 1988, McMahon conducted a surface reconnaissance survey of 19 acres on the northeastern exterior slopes of the crater. The survey observed remains of military activity related to the Fort Ruger Military Reservation (cited in Tomonari-Tuggle and Blankfein 1998:33).

In 1992, Mullins conducted archaeological monitoring during the installation of a new sewage system at the Diamond Head lighthouse constructed in 1892 (SIHP #50-80-14-1338). Archaeological monitoring did not find any evidence of pre-contact occupation and showed that the parcel was created by cut-and-fill terracing. Sparse artifacts dating from the late 1800s and early 1900s were found during the monitoring (Tomonari-Tuggle and Blankfein 1998:33).

In 1996, Ogden conducted an intensive literature search with limited site inspection of Battery Harlow for the purpose of developing a preservation plan. The report summarizes the history of Battery Harlow, provides environmental data and documents the pre- and post-contact land uses in the Diamond Head area, including the construction history at Fort Ruger. Based on this background research the report provides architectural, anthropological, and historical recommendations for conservation and integration of the area (Allen and Shideler 1996). The report concludes by recommendation that Battery Harlow be conserved and prepared for active preservation, protected against further decay, and made safe and accessible for visitation.

In 1997, IARII conducted an archaeological and historical assessment of the 0.9-acre parcel formerly occupied by the Federal Aviation Administration (FAA). The survey focused on the Combined Center Radar Approach Control building composed of three concrete structures built in 1961 within Diamond Head crater (Tomonari-Tuggle and Blankfein 1997). No archaeological sites were identified during the survey. The structures were demolished in 2000 and the land was transferred back to State Parks.

In 1998, IARII conducted the most comprehensive historical research and archaeological reconnaissance survey of Diamond Head State Monument to date. The study identified 35 sites of various types and functionality. All the sites were from the 20th century and most are associated with Fort Ruger. The survey report notes nine (9) sites on the crater rim, nine (9) sites within the crater interior, eleven (11) sites in the general Fort Ruger area outside the crater, and six (6) other sites on the crater exterior (Tomonari-Tuggle and Blankfein 1998:43). This survey did not address any of the structures within the project area.

In 2011, State Parks conducted an archaeological survey and monitored construction of a new multi-purpose pathway on the northern exterior slopes of the crater (Yent 2011). The survey took place between 2010 and 2011 and documented concrete building foundations (22), asphalt roadways and pavements (8), rock and mortar walls (8), and drainage features (4) associated with Fort Ruger, and constructed circa 1910 to the 1930s. Site number 50-80-14-7198 was assigned to the complex of sites within the 12-acre project area. Excavation to a depth of 6-8 inches for the construction of the new concrete path exposed natural deposits of volcanic ash with scattered concrete and building debris from the previous demolition of the buildings associated with Fort Ruger. There was no indication of any subsurface cultural deposits.

5.2 Architectural Studies

In 2009, HIARNG contracted the firm e^2M to conduct a Historic Building Survey and Evaluation of HIARNG facilities located at Fort Ruger and Diamond Head. The survey investigated eighteen (18) resources, including Building 301. Twelve (12) of the buildings evaluated had not been previously documented and were determined not eligible for the NRHP. The remaining six are eligible for the NRHP as contributing elements to the Fort Ruger Historic District and five of those six are included in the 1980 Fort Ruger Historic District nomination (e2M 2009:4-61).

In 2014, the HIARNG contracted HDR to conduct a Historic Building Survey and Evaluation or resources located at six HIARNG facilities, one of those being Fort Ruger (Blackwell and Barnes 2014). A total of eight (8) resources were documented during the survey and none were recommended as being individually eligible for listing on the NRHP. Five (5) of the historic properties, Building 303, 304, 304D, the rock walls, and the Guardhouse, which is already listed on the NRHP, were recommended as contributing elements to the Fort Ruger Historic District. The remaining three (3) resources, Building 303A, 304A and 304E, were not recommend as eligible for the NRHP. Six of the eight resources documented during the survey are located within the crater while two (rock walls and Guardhouse) are located outside the crater.

6.0 INVENTORY OF HISTORIC PROPERTIES

No historic properties from pre-contact or early post-contact periods have been identified within the project area. There are 4 buildings within the APE that are not eligible for the NRHP and will not be affected by the proposed project. There are lava rock and mortar walls around the perimeter of the proposed project area, which will not be affected by the proposed project.

6.1. Rock and Mortar Walls

Lava rock and mortar walls fronting Building 306 along Diamond Head Road are present within the APE. The walls are approximately 12 inches thick and date from circa 1935-1936, as evidenced by a date inscribed in concrete along one of the walls. The walls range from 1 to 3 feet high above grade. The walls follow the curve of the road and are often adjoined by a concrete sidewalk with a lava rock curb. Several of the walls terminate in square posts with pyramidal caps, which are typically located at vehicular entrances or at breaks in the wall to allow for pedestrian access into Fort Ruger. Several sections of the walls have been repaired multiple times, often with unsympathetic materials, including Portland cement.

6.2 Significance Evaluation

The lava rock walls at Fort Ruger were recommended as not eligible for listing on the NRHP on an individual basis, but recommended as contributing resources to the Fort Ruger Historic District during a 2014 Historic Building Survey.

7.0 ANTICIPATED FINDINGS

The lack of information about the cultural and historical use of Leahi prior to Western Contact makes it difficult to predict the presence/absence of cultural deposits from this period. From an archaeological perspective, it is difficult to explain the importance of Leahi without being able to provide traces of physical human modification prior to 1900. Nonetheless, Leahi is recognized as an important cultural landscape with significant spiritual, cultural and social meaning.

The military occupation of the crater from the early 1900s until the present suggests substantial modification of the crater floor and surrounding areas. For this reason, the HIARNG does not

anticipate the discovery of any significant surface and/or subsurface cultural materials during this project. The specific project area and APE has been subject to grading and excavation during the construction of Building 306 in 1978 and the subsequent grading of the associated parking lot.

The HIARNG does anticipate observing insignificant, and likely isolated, historic-to-modern trash, such as soda bottles and cans. Because much of the area is covered in asphalt pavement, it is expected that much of the excavation will uncover base course materials, such as basalt gravel and possibly crushed coral.

8.0 ARCHAEOLOGICAL MONITORING

Archaeological monitoring will be conducted during all ground-disturbing activities of this project to monitor for the presence or absence of subsurface cultural materials. An archaeologist will conduct full-time archaeological monitoring during the demolition of asphalt paving (approximately 1,250 sq. ft.), fencing removal (approximately 1,278 ln. ft.), water line trenching (approximately 570 ln. ft.) , as well as the installation of the following: 4 qty. card readers, 5 qty. vehicle arm barriers, 370 ln. ft. of vehicle barrier cabling, 2 qty. electric car charging stations, 1 qty. light fixture, 8 qty. bollards, 1,020 ln. ft. of fencing and 20 qty. signs. Archaeological monitoring will also be conducted during the preparation and installation of 3 qty. concrete medians (approximately 564 sq. ft.), as well as installation of irrigation lines and planting.

8.1 General Monitoring Procedures

The general procedures set out in the following section will guide archaeological monitoring actions taken prior to, and during the project, and when preparing the monitoring report. Discussed specifically are actions to be taken if any historic properties, including human remains, are discovered during ground disturbing activities. Also addressed are tasks needed to gather sufficient information to prepare a monitoring report which would meet, at a minimum, the standards established by HAR 13-279-5.

All archaeological monitoring will be conducted by a qualified archaeologist per HAR 13-281. The Principle Investigator (PI) for this project, will conduct or oversee all aspects of the work, including report preparation, in accordance with HAR 13-282.

Over the course of the proposed project, the following procedures will be executed:

1. The HIARNG Project Manager and/or contracted company is responsible for notifying the PI of its intended work schedule and of any scheduling changes as the project commences. An archaeologist will be on site to monitor ground disturbing activities including removal of slabs and pavement, fencing removal, installation and landscaping.
2. At the start of the project, the monitoring archaeologist will conduct an on site briefing with the construction supervisor and all workers involved in the project. The briefing will include an explanation of commitments made in the monitoring

plan and other information needed to ensure effective execution of the plan. This will include, but is not limited to, the following:

a. If any possible or suspected archaeological finds are observed during monitoring.

PRE-BID CONFERENCE ATTENDANCE LIST

DATE: August 2, 2017, 9:00am
PROJECT: Physical Security & Energy Improvements at Ft. Ruger, State of Hawaii
Department of Defense, Hawaii Army National Guard, Job No. CA-1328-C4

NAME:	MIKE GRADY
TITLE:	BUS MGR
COMPANY:	HAWAIYA TECH
PHONE:	425 246 6462
FAX:	
CELL:	
EMAIL:	MGRADY @ HAWAIYATECH.COM

NAME:	VIRGIL CADIENTE
TITLE:	FMO PROJECT MANAGER
COMPANY:	DOD - FMO
PHONE:	808-844-6555
FAX:	808 - 672 - 1529
CELL:	
EMAIL:	virgilio.r.cadiente.nfg@mail.mil

NAME:	JONATHAN ASUNCION
TITLE:	ESTIMATOR
COMPANY:	INDEX BUILDERS, INC.
PHONE:	(808) 689-7168
FAX:	(808) 689-0654
CELL:	(808) 391-0667
EMAIL:	jonathan@indexbuilders.com

NAME:	JESSEL GALIZA
TITLE:	FMO DESIGN + PM ASSISTANT
COMPANY:	DOD-FMO
PHONE:	808.672.1543
FAX:	808. 672. ~~1529~~ 1529
CELL:	—
EMAIL:	jessel.m.galiza.nfg@mail.mil

NAME:	Wayne West
TITLE:	Project Manager
COMPANY:	Engineered Structures INC
PHONE:	808 220 7277
FAX:	
CELL:	
EMAIL:	Wayne West @ ESI construction.com

NAME:	Chris Tabuna
TITLE:	INSPECTOR
COMPANY:	HIARNG / FMO
PHONE:	672 1537
FAX:	-
CELL:	
EMAIL:	christopher.t.tabuna@nfg.mail.mil

NAME:	Stacey Canaday
TITLE:	Superintendent
COMPANY:	Engineered Structures
PHONE:	808-779-5480
FAX:	
CELL:	
EMAIL:	Stacey Canaday @ ESI Construction

NAME:	
TITLE:	
COMPANY:	
PHONE:	
FAX:	
CELL:	
EMAIL:	

NAME:	Kalani Kawaihlo
TITLE:	Estimator
COMPANY:	Arita Paulson
PHONE:	871 4787
FAX:	~~871~~
CELL:	870-0266
EMAIL:	Kalani@aritapaulson.com

NAME:	
TITLE:	
COMPANY:	
PHONE:	
FAX:	
CELL:	
EMAIL:	

PRE-BID CONFERENCE ATTENDANCE LIST

DATE: August 2, 2017, 9:00am
PROJECT: Physical Security & Energy Improvements at Ft. Ruger, State of Hawaii
Department of Defense, Hawaii Army National Guard, Job No. CA-1328-C4

NAME:	KANANI LANGLEY
TITLE:	BUILDING INSPECTOR II
COMPANY:	DOD
PHONE:	8083486062
FAX:	–
CELL:	3486002
EMAIL:	–

NAME:	James Kurita
TITLE:	VP/COO
COMPANY:	LYZ inc.
PHONE:	808 478-7723
FAX:	808 845-3449
CELL:	808 478-7723
EMAIL:	jkurita@328school.com

NAME:	Perlas Bartolome
TITLE:	
COMPANY:	Environmental Support
PHONE:	8 255 207
FAX:	
CELL:	
EMAIL:	perlas@oldgwings-[illegible].com

NAME:	Jason Garilao
TITLE:	Project Engineer
COMPANY:	LYZ, Inc.
PHONE:	808-294-2094
FAX:	
CELL:	
EMAIL:	J. Garilao@328school.com

NAME:	JACOB STECHMANN
TITLE:	SUPERINTENDENT/PM
COMPANY:	NAKASATO
PHONE:	808-845-4986
FAX:	
CELL:	318-235-5535
EMAIL:	ESTIMATING@NAKASATOLLC.com

NAME:	Malcolm Barcarse Jr.
TITLE:	Vice President
COMPANY:	A and B Electric
PHONE:	682-4024
FAX:	682-3614
CELL:	
EMAIL:	malcolmjr@abelectricllc.com

NAME:	Stephen Wong
TITLE:	Project Manager
COMPANY:	R H S Lee, Inc
PHONE:	455 9026
FAX:	455 3850
CELL:	
EMAIL:	stevewong@rhslee.com

NAME:	Michelle Takata
TITLE:	Vice Pres.
COMPANY:	Star Com Builders
PHONE:	95-6088
FAX:	95-6588
CELL:	
EMAIL:	mmtakata@starcombuilders.com

NAME:	PARRIS ERNST
TITLE:	PROJECT MANAGER
COMPANY:	VINYL TECH / MASONRY
PHONE:	808-455-3713
FAX:	808 456-5153
CELL:	808-781-6741
EMAIL:	

NAME:	MICHAEL KEITH
TITLE:	PRESIDENT
COMPANY:	TITAN INDUSTRIES LLC.
PHONE:	673-2022
FAX:	673-2023
CELL:	690-4471
EMAIL:	MKEITH@TITANHAWAII.com