



DEPARTMENT OF THE NAVY  
COMMANDER  
NAVY REGION HAWAII  
NAVY CLOSURE TASK FORCE-RED HILL  
850 TICONDEROGA ST STE 110  
JBPHH HI 96860-5101

5090  
Ser N4/174  
29 Mar 24

Via email and HICRIS

Dr. Alan Downer, Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Blvd., Suite 555  
Kapolei, HI 96707

Reference: Joint Base Pearl Harbor Hickam Proposed Enhanced Use Lease for Renewable Energy Plant  
(HICRIS 2023PR00994)

TMKs:

- (1)1-1-010:012 - direct effects (Site 5 southern boundary)
- (1)1-1-010:066 - direct effects (Site 5)
- (1)9-9-001:007 - indirect effects and general area of utility routes
- (1)9-9-001:008 - direct effects (Site 2), indirect effects, and general area of utility routes
- (1)9-9-001:011 - indirect effects and general area of utility routes
- (1)9-9-001:012 - indirect effects
- (1)9-9-001:013 - indirect effects and general area of utility routes
- (1)9-9-001:019 - general area of utility routes
- (1)9-9-001:021 - general area of utility routes
- (1)9-9-001:022 - indirect effects and general area of utility routes
- (1)9-9-001:023 - indirect effects and general area of utility routes
- (1)9-9-001:024 - general area of utility routes
- (1)9-9-001:025 - general area of utility routes
- (1)9-9-001:036 - indirect effects (a very small sliver) and general area of utility routes

Dear Dr. Downer:

This letter continues consultation with your office on the proposed undertaking to support an enhanced use lease for energy generation and storage facilities at Joint Base Pearl Harbor (JBPHH) Hickam, Oahu, Hawaii. In a letter dated August 14, 2023 we identified the area of potential effects (APE), in conformance with Stipulation VI of the 2012 Commander Navy Region Hawaii (CNRH) Programmatic Agreement (PA). The proposed APE encompassed areas of direct and indirect effects. Consistent with Stipulation IX.C.1 of the 2012 CNRH PA, this letter explains the proposal, effects to historic properties, and proposes measures to resolve adverse effects in accordance with 36 CFR 800.6.

### Proposed Undertaking

Commander Joint Base Pearl Harbor-Hickam (JBC) proposes to lease Navy land to a commercial developer to construct and operate renewable energy infrastructure on two sites (approximately 25 acres total) at JBPHH. One site would house a biofuel-powered Firm Renewable Generation (FRG) plant and one site would house a photovoltaic (PV) solar generating system. Both sites would house lithium-ion battery energy storage systems (BESS). The power generation sites would be connected to the existing Hawaiian Electric Company (HECO) electric infrastructure. The land would be leased for up to 37 years. After the terms of the lease expire, the Navy and the lessee would consider a range of options, including renewing the agreement and lease or decommissioning the system.

The project's proposed actions include installation of a 46 kV electrical transmission backbone; interior modifications to the Storehouse General NSC/X02 and Battery Shop, Sorting Assembly Warehouse, and three former battalion warehouses; replacement of the substation protective relays; and replacement of outdated equipment at 19 transformer stations and at Hickam Field.

The project would generate and store renewable energy to improve energy security, strategic flexibility, and energy resiliency at JBPHH. The proposed power generation facilities would provide renewable energy to the HECO power grid, which would greatly improve electrical resiliency and reliability for the Navy and HECO customers on O'ahu. It would also serve as backup energy for JBPHH in the case of a power outage to ensure resiliency on base. It would also enable HECO to move cheaper, cleaner energy to where it is needed, both on and off base, which supports the installation's renewable energy goals while contributing to the Hawaii Clean Energy Initiative's goal of generating 100 percent of Hawai'i's energy from renewable sources by 2045 (Hawai'i Revised Statutes 196-10.5).

The project would address the Navy's critical security energy gaps by providing energy resiliency to JBPHH in the event of a grid outage.

### Area of Potential Effects

As documented in our August 14, 2023 letter, the APE considers aspects of the undertaking with the potential to affect historic properties, including the effects of demolition, new construction, and visual effects associated with the introduction of new visual elements in the Pearl Harbor National Historic Landmark (PHNHL) (smokestacks at the FRG Plant, Site 2). The proposed undertaking (project) would be located at JBPHH, situated on the eastern shore of Pearl Harbor on the south side of Oahu. The project area depicted in Figure 1 indicates the area where construction could occur. Figure 2 depicts the overall APE to reflect potential effects to the PHNHL.

The APE includes the specific locations of project activities: 25 acres of land that would be leased for the construction of the FRG, BESS, and PV on Site 2 and Site 5 and the construction staging areas within these two sites, the electrical transmission backbone that would connect project components with substations, the fuel line, and six additional buildings (Storehouse General NSC/X02, Battery Shop, Sorting Assembly Warehouse, and three former defense battalion resources) where tenants would be relocated (see Figures 2 through 6). Historic properties within the APE include both archaeological and architectural resources, including the PHNHL.

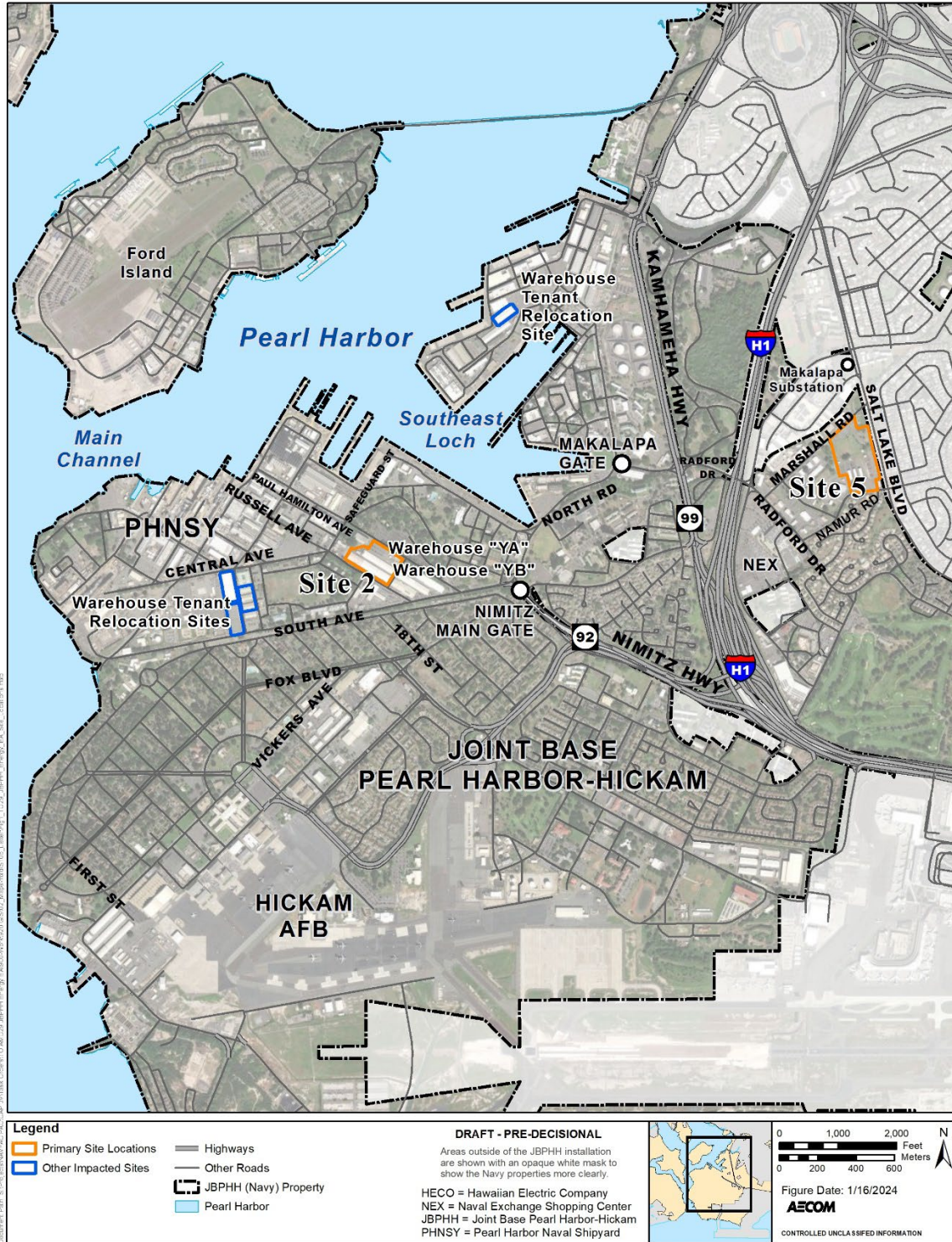


Figure 1. Location Map Showing Areas of Direct Project Action



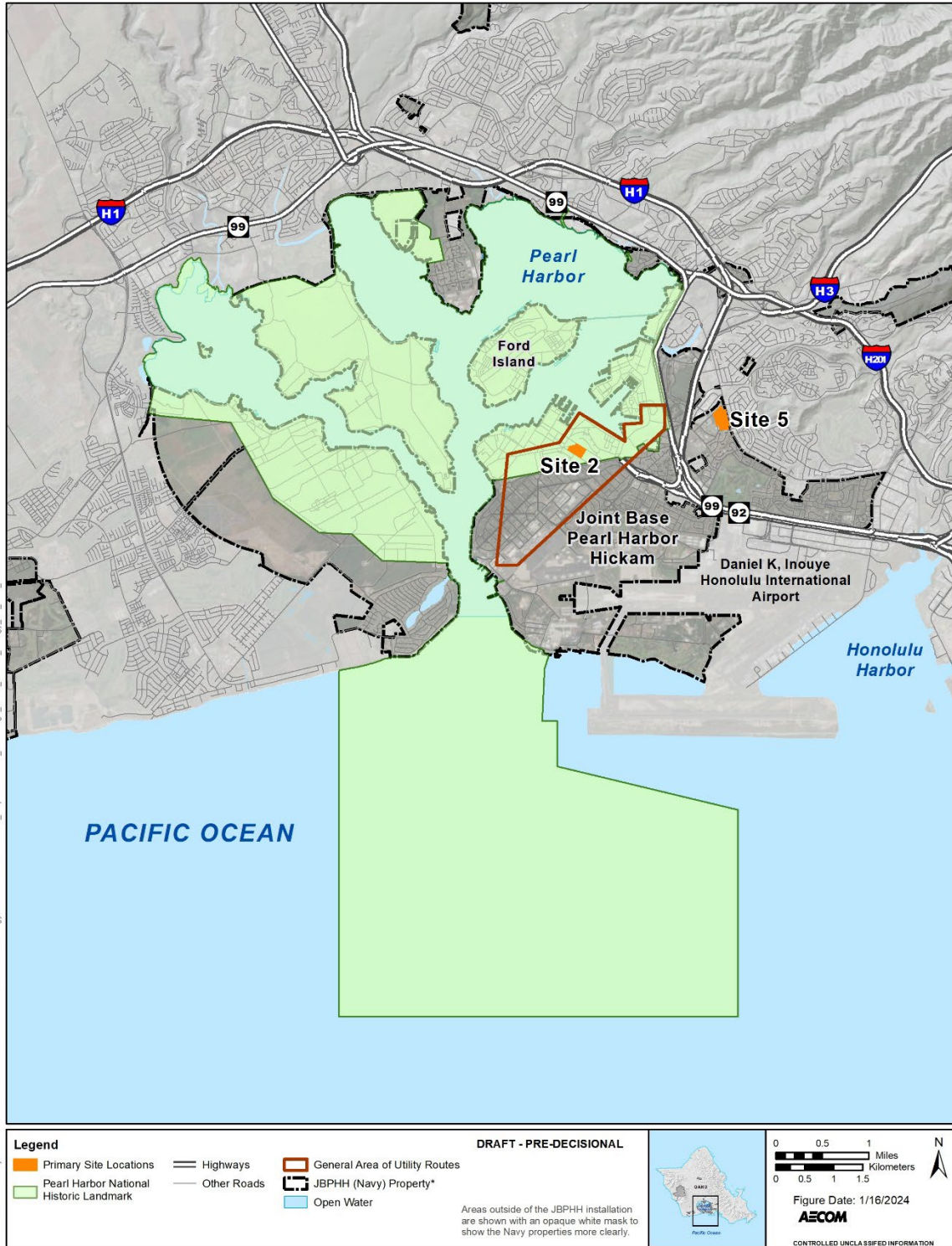


Figure 2. Area of Potential Effects



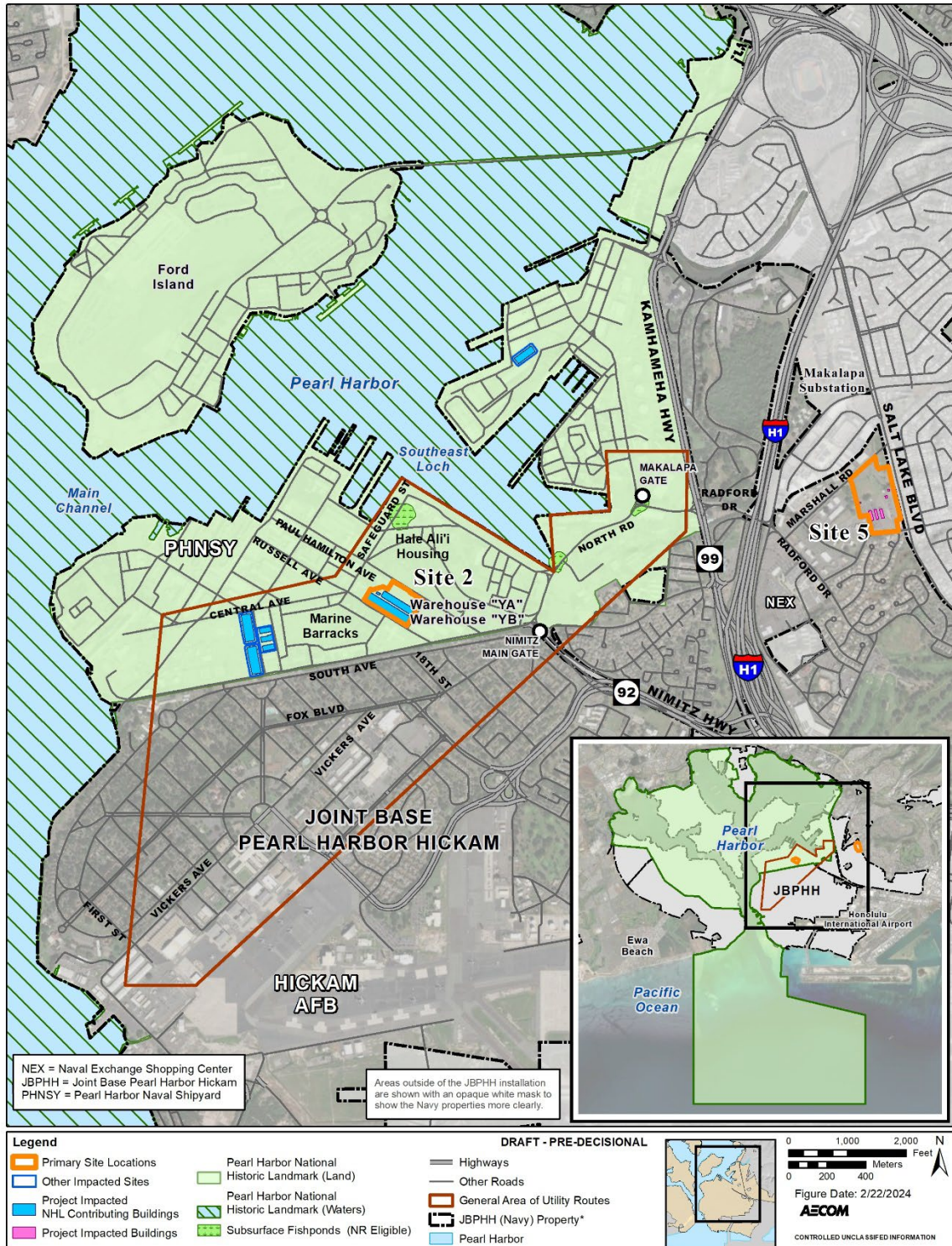
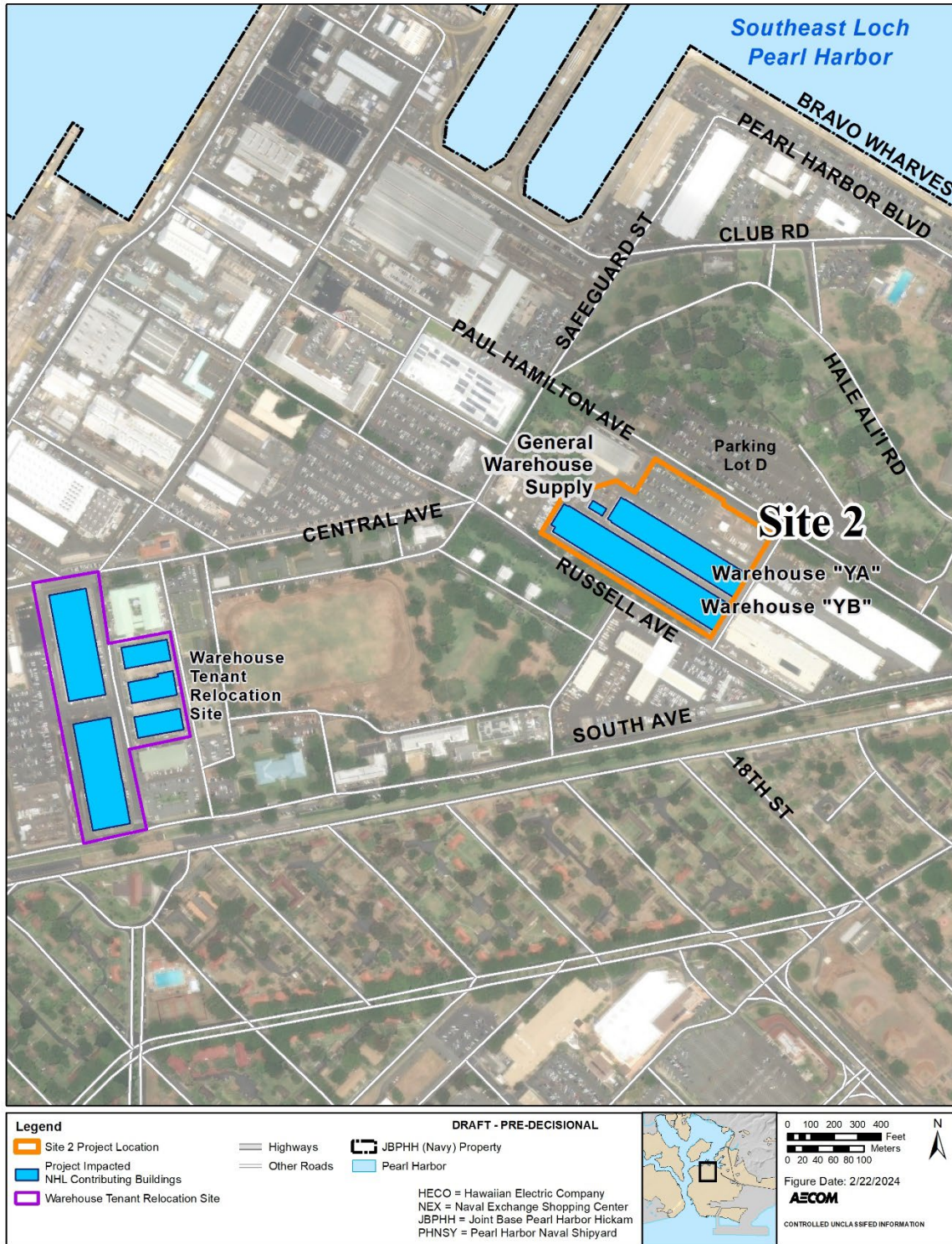


Figure 3. Map Showing Construction Locations and Historic Properties





**Figure 4. Project Site 2 and Warehouse Tenant Relocation Site, Including Warehouses YA and YB to be Removed**



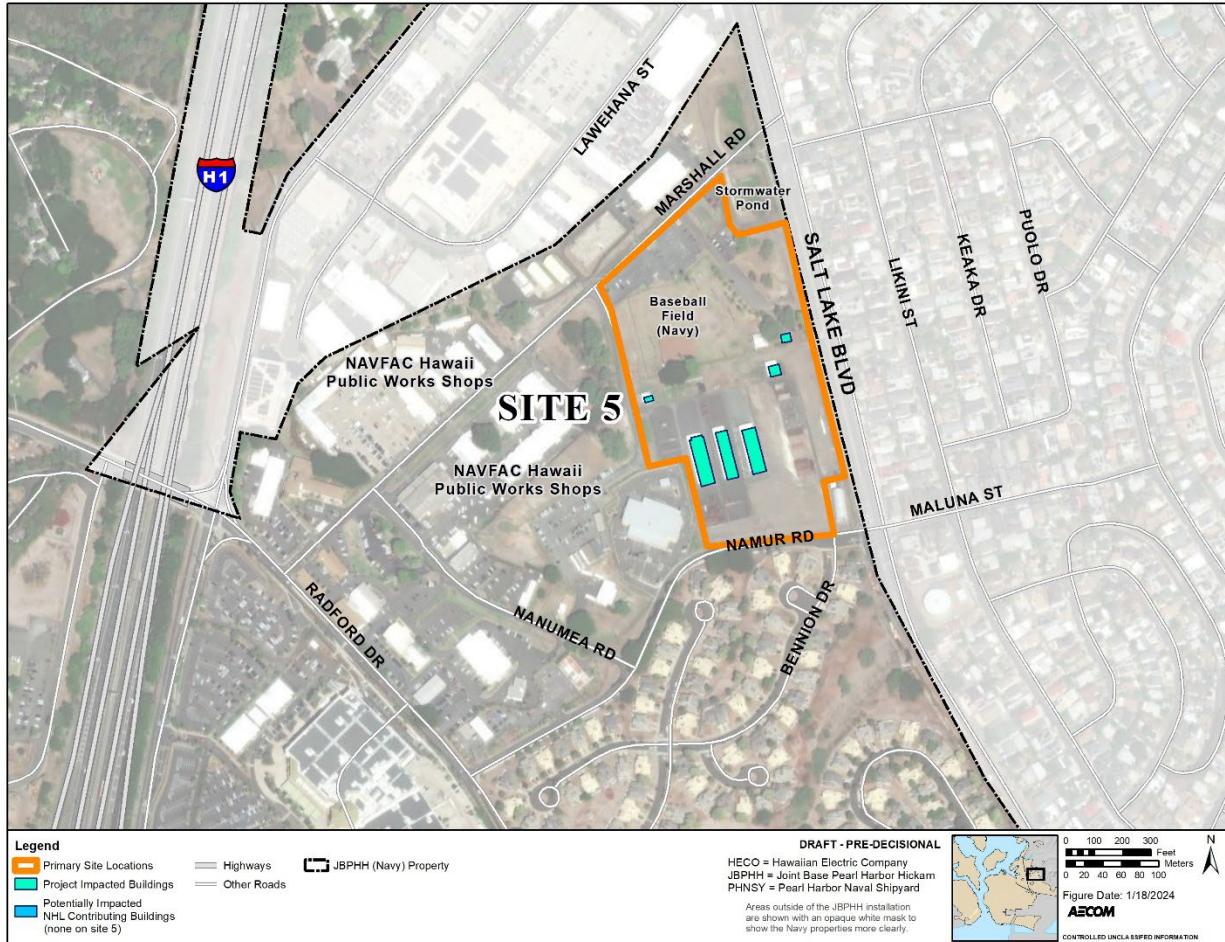


Figure 5. Site 5, Showing No Historic Properties Present



JBPHH Enhanced Use Lease for Renewable Power Generation



Figure 6. Site 5 General Layout

### Identification of Historic Properties

The Navy has conducted inventories of JBPHH to identify historic properties in the APE including the PHNHL and other historic properties (Allen, 2005; DON, 2008; 2011; WCP, HHF, and Mason, 2014; Vernon, Orr, and Collins, 2016; SEARCH, 2016).

Site 5 lies outside the PHNHL and includes no eligible architectural or archaeological resources. The Lumber Shed (Facility X31), built in 1946, is not associated with the PHNHL and has been determined not eligible for listing in the National Register of Historic Places (NRHP) (DON, 2008). An NRHP-eligible Quonset hut (Facility X24) stands adjacent to but not within the project area at Site 5.

Several locations in the Pearl Harbor area are associated with traditional Hawaiian place names, but no traditional cultural properties have been identified in the APE (Allen, 2005; Vernon, Orr, and Collins, 2016).

### Pearl Harbor National Historic Landmark

Much of Naval Base Pearl Harbor, established in 1898, was designated an NHL historic district in 1964 (with updates in 1972, 1974, and 1978) for its strategic importance related to the Pacific and the U.S. annexation of Hawaii, and for its critical roles in World War II (Levy, 1978). The PHNHL encompasses more than 16 square miles of land and water around Pearl Harbor that has historically been used by the U.S. Navy and is part of JBPHH today.

The direct project actions associated with the undertaking encompass a portion of the PHNHL. Project Site 2 lies within the PHNHL Main Base area and is across Central Avenue from the Shipyard and across Russell Avenue from the Marine Barracks. The project would involve interior alterations to the PHNHL-contributing Storehouse General NSC/X02 and Battery Shop to ensure future usability. Interior shelving would be added to three other adjacent facilities (226, 283, and 284) for relocation of DLA tenants. Table 1 describes PHNHL-contributing historic properties and their relationship to project sites.

Project Site 2 encompasses three warehouse facilities (Warehouses YA, YB, and General Warehouse Supply) that are NRHP-listed as contributing resources to the PHNHL. In the area surrounding Site 2 are industrial facilities to the north, Marine Barracks and Marine Officers' Quarters to the west and south across Russell Avenue, and Hale Alii Officers' Quarters to the northeast. The Marine Officers' Quarters, a group of flat-roofed, neoclassical residences, are shielded from the road and warehouses by a tall and dense hedge and trees.

**Table 1 PHNHL-Contributing Resources Associated with Project Actions**

<i>Facility</i>	<i>Description</i>	<i>Project Site and NRHP Status</i>
Warehouse YA	Originally known as “Storehouse YA,” the facility contributes to the PHNHL. Constructed in 1941, the one-story building measures approximately 626 feet long, 101 feet wide, and 24 feet tall. Character-defining features include gable roof with overhanging eaves, wood fascia over paired rafters, corrugated metal cladding, large-scale sliding wood doors with wood and louvered panels, and triple six-over-six double-hung wood windows.	Site 2, Contributing to PHNHL
Warehouse YB	Originally known as “Storehouse YB,” also known as General Warehouse Supply, the facility contributes to the PHNHL. Constructed in 1941, the one-story building is approximately 801 feet long, 121 feet wide, and 24 feet high. Character-defining features include gable roof with shed roof extension over the south side, overhanging eaves, wood fascia over paired rafters, corrugated metal cladding, and sliding wood doors with louver panels.	Site 2, Contributing to PHNHL
Warehouse 226	Originally known as “Defense Battalion Warehouse” in the Marine Barracks area (or Marine Corps Reservation), the facility contributes to the PHNHL. Constructed in 1943, this is a one-story steel frame warehouse built during WWII and is one of the original groupings of five storehouses; it is currently part of a row of identical warehouses with 283 and 284. Exterior siding and roofing is corrugated metal, it has a gable roof and round roof vents along the ridge. There are large sliding doors with metal frame and are covered by corrugated metal and a concrete loading dock along the north side.	Functions will be relocated here (not within Sites 2 and 5,) contributing to PHNHL
Warehouse 283 (Maintenance Shop)	Originally known as a “Defense Battalion Warehouse” in the Marine Barracks area, the facility contributes to the PHNHL and was constructed in 1940 as part of the pre-war and WWII expansion of the Marine garrison in Hawaii. This is one of the original groupings of five storehouses; it is currently part of a row of identical warehouses with 226 and 284. It is a large warehouse building with a concrete slab foundation and steel structure. The exterior siding and roofing are corrugated metal. Gable roofs have round roof bents along the ridge.	Functions will be relocated here (not within Sites 2 and 5,) contributing to PHNHL
Warehouse 284 (Storehouse)	Originally known as a “Defense Battalion Warehouse” in the Marine Barracks area, the facility contributes to the PHNHL and was constructed in 1940 as part of the pre-war and WWII expansion of the Marine garrison in Hawaii. This is one of the original groupings of five storehouses; it is currently part of a row of identical warehouses with 226 and 283. It is a large warehouse building with a concrete slab foundation and steel structure. The exterior siding and roofing are corrugated metal. Gable roofs have round roof bents along the ridge.	Functions will be relocated here; contributing to PHNHL



**Table 1 PHNHL-Contributing Resources Associated with Project Actions**

<i>Facility</i>	<i>Description</i>	<i>Project Site and NRHP Status</i>
General Warehouse	Originally known as the Lubrication Building, also known as the General Warehouse Supply, the facility is a contributing resource to the PHNHL. Constructed in 1943, the one-story building is approximately 65 feet long, 26 feet wide, and 18 feet high. Character-defining features include gable roof with overhanging eaves, wood fascia, corrugated metal cladding, and four structural bays.	Site 2; contributing to PHNHL
Storehouse General NSC/X02 (Facility 393)	Originally known as the Pipe and Hardware Storehouse, the facility contributes to the PHNHL and is located outside and to the west of Site 2 between South and Central avenues. Constructed in 1943, the two-story building measures approximately 456 feet long, 152 feet wide, and 40 feet tall. Character-defining features include a low-slope gable roof with overhanging eaves, a thin wood fascia, exposed rafters, and wood sheathing; corrugated metal panel cladding; large-scale sliding six-panel wood doors; large-scale wood frame mesh sliding doors; two-over-two double-hung wood sash and three-lite hopper windows; and concrete truck ramps leading to the second floor.	Functions will be relocated here; contributing to PHNHL
Battery Shop (Facility 394)	Originally known as the Ordinance Group Building, the facility contributes to the PHNHL and is located outside and to the west of Site 2 between South and Central avenues. Constructed in 1945, the two-story building is approximately 456 feet long, 152 feet wide, and 40 feet high. Character-defining features include a low-slope gable roof with overhanging eaves, a thin wood fascia, exposed rafters, and wood sheathing; corrugated metal panel cladding; large-scale sliding six-panel wood doors; large-scale wood frame mesh sliding doors; two-over-two double-hung wood sash and three-lite hopper windows; and concrete truck ramps leading to the second floor.	Functions will be relocated here; contributing to PHNHL
Sorting Assembly Warehouse (Facility 452K)	The Sorting Assembly Warehouse is located within the NHL on Kuahua Peninsula and was originally referred to as Facility K-D/Storehouse. Constructed in 1941, the one-story building is approximately 353 feet long, 101 feet wide, and 24 feet high. Character-defining features include corrugated metal panel cladding, timber columns on poured-in-place concrete footings, gable roof with overhanging eaves and clipped rafter ends, wood sliding doors, and metal sash sliding windows.	Functions will be relocated here; contributing to PHNHL

**Table 1 PHNHL-Contributing Resources Associated with Project Actions**

<i>Facility</i>	<i>Description</i>	<i>Project Site and NRHP Status</i>
Shipyard railway system remnants	Historic railroad tracks are present to the southwest of Warehouses YA and YB. Narrow-gauge rail tracks are also present to the west and north of the General Warehouse Supply. Historically, the rail lines were on Avenue D, which was the main line in 1912, connecting Pearl Harbor with the O.R.&L. Line outside of the facility (Rail Study 2.4-14). The rail lines along the south elevation of Warehouses YA and YB were extended to the east in 1942 to serve recently built facilities (Rail Study 2.4-17). Historic railroad tracks are also to the north along Central Avenue. Eleven subsurface railroad track remnants are also present further to the northwest in a triangular parcel between Central Avenue and Ingersoll Avenue (Rail Study 2.4-90). The Central Avenue line was built in 1919 and a small spur was constructed in 1942 to direct railcars to a repair shop north of Central Avenue. The extant rail sections are consistent with the narrow-gauge rail used throughout PHNSY and Intermediate Maintenance Facility. The Shipyard railway system was determined eligible for the NRHP under Criteria A and C for its role in supporting the construction of the Navy Yard and maintenance of naval vessels during World War II and its unique engineering qualities.	Site 2 and other locations; contributing to PHNHL
Key: NHL = National Historic Landmark; PHNHL = Pearl Harbor National Historic Landmark; PHNSY = Pearl Harbor Naval Shipyard.		

#### Archaeological Resources

Four previous archaeological investigations were conducted within the project's action areas (Anderson, 1995; Athens et al., 2000; Magnuson, 2001; Hammatt, Shideler, and McDermott, 2013).

Anderson (1995) conducted monitoring of a sewer installation project (MILCON P-115) and documented fishpond deposits associated with Loko Wailolowai (State Inventory of Historic Places [SIHP] 50-80-13-0100).

Athens (2000) completed paleoenvironmental coring at 18 buried and 3 extant fishponds on Navy lands at Pearl Harbor. Fishpond sediments were identified at 8 of the 21 fishponds tested, including Loko Pohaku (SIHP 50-80-13-0098), Loko Wailolokai (50-80-13-0099), and Loko Wailolowai (50-80-13-0100). Two paleoenvironmental cores were completed at each of the above fishponds and possible fishpond deposits were identified below 2.90-3.42 meters (9.51–11.22 feet) of fill. Radiocarbon data obtained from the fishponds provided estimated ages of later than A.D. 1436-1636 for Loko Pohaku, sometime in the first millennium for Loko Wailolokai, and later than A.D. 1214-1412 for Loko Wailolowai.

Magnuson (2001) conducted monitoring during backhoe excavation of underground storage tanks (USTs) at Hickam Air Force Base. Intact natural sediments were observed at 8 of the 41 UST sites, and likely fishpond soil from Loko Lelepaua was observed at 1 UST site several hundred meters southwest of the Project. No additional traditional Hawaiian cultural material or deposits were encountered.

Hammatt, Shideler, and McDermott (2013) completed an archaeological inventory survey for the Honolulu High-Capacity Transit Corridor Project from Kalaloa Drive to Middle Street. Testing revealed remnants of a mid-20<sup>th</sup> century roadway network (SIHP 50-80-13-7420) and remnants of a World War II military warehouse and related infrastructure and roads (50-80-13-7421), but no findings or sites were identified within the Project areas.

Three known archaeological sites (50-80-13-0098, 0099, and 0100) consist of buried fishponds below 2.90–3.42 meters of fill located in the APE near the proposed electrical transmission backbone and fuel line. These sites—which include Loko Pohaku (SIHP 50-80-13-0098), Loko Wailolokai (50-80-13-0099), and Loko Wailolowai (50-80-13-0100)—overlap with the project areas for the utility transmission lines (Table 2). These fishponds were filled in during the early 20<sup>th</sup> century as part of land reclamation efforts. Allen (2005) evaluated the three fishponds as eligible for listing in the NRHP under Criteria A and D.

**Table 2** Previously Recorded Archaeological Sites within the Project Action Areas

<i>Site 50-80-13-</i>	<i>Type</i>	<i>Function and Affiliation</i>	<i>Description</i>	<i>NRHP Eligibility</i>	<i>References</i>
0098	Fishpond	Aquaculture/ Traditional Hawaiian	McAllister (1933, 102) noted Loko Pohaku (also Pahakea) had covered 2.5 acres; buried; depth of fill is 3.42 m.	NRHP eligible under Criteria A and D	McAllister (1933); Sterling and Summers (1978); Klieger (1995); Athens (2000)
0099	Fishpond	Aquaculture/ Traditional Hawaiian	Loko Wailolokai (buried; McAllister 1933:102) was very small and was also known as Waihilikai and Wailiokai; depth of fill is 2.95 m.	NRHP eligible under Criteria A and D	McAllister (1933); Sterling and Summers (1978); Klieger (1995); Athens (2000)
0100	Fishpond	Aquaculture/ Traditional Hawaiian	McAllister (1933, 102) considered Loko Wailolowai (buried) a possible fishpond site; depth of fill is 3.16 m.	NRHP eligible under Criteria A and D	McAllister (1933); Sterling and Summers (1978); Klieger (1995); Anderson (1995); Athens (2000)

Key: NRHP = National Register of Historic Places.

Assessment of Effects to Historic Properties

The project actions affecting the PHNHL include construction of new facilities and removal of three PHNHL contributing buildings (Warehouses YA and YB and General Warehouse Supply). Reuse of six historic properties (Storehouse General NSC/X02, Battery Shop, Sorting Assembly Warehouse, and defense battalion warehouses 226, 283, and 284) would require interior building alterations not



expected to adversely affect the buildings. Construction of the electrical transmission backbone are not expected to adversely affect archaeological resources. Project activities will adversely affect aspects of the PHNHL that characterize its historical setting, feeling, and association. Visual simulations demonstrate that effects to the PHNHL would be localized in and around project Site 2, discussed in more detail below.

#### Potential Effects to the Built Environment

No adverse effects are expected at Site 5. No historic properties have been identified in the project action area, which is outside of the PHNHL. The historic Quonset (Facility X24) would not be adversely affected. Similarly, the construction of the FRG and 46 kV electrical transmission backbone as part of the project's in-kind consideration actions would avoid the historic rail line remnants along Russell Avenue that contribute to the PHNHL. No effects to these rail line remnants would occur.

The construction of the FRG Plant at Site 2 would alter the PHNHL through the introduction of new built elements (Figure 7 and Figure 8). The FRG Plant would replace large scale historic warehouse buildings with an industrial facility, and the addition of exhaust stacks as part of the FRG Plant would be a change to the PHNHL. The exhaust stacks may measure up to 110 feet in height. Lighting for worker activity and security during operation of the facilities would add to existing lighting at Site 2, following the Dark Skies Instruction, and follow best practices in coordination with United States Fish and Wildlife Service.

The Navy conducted visual analyses to support an assessment of impacts to the setting and key viewpoints in the PHNHL (See Attachment B). The analysis addresses 12 key observation points (KOPs) within the PHNHL, including two located at other individually listed historic properties (the USS Missouri and the USS Arizona Memorial [Figure 9, Table 3]). Attachment B provides additional information for each KOP, including a narrative summary, photographic comparison of existing and proposed conditions, and an assessment of project changes to historical visual characteristics at each KOP. Each KOP analysis concludes with an overall finding of the project's visual impacts to the PHNHL as seen from the KOP. Alterations to the PHNHL's setting, feeling, and association would be concentrated at KOP 2 (Russell Avenue [west]), KOP 5 (Paul Hamilton Avenue [east]), KOP 10 (Paul Hamilton Avenue [west]), and KOP 11 (Russell Avenue [east]), which all include foreground views of Site 2.

#### Potential Effects to Archaeological Sites

No adverse effects to known archaeological sites are anticipated from the project. Most of the project actions are within areas identified with low potential for archaeological sites (DON, 2008). The 46 kV electrical transmission backbone would be installed underground with installation occurring via horizontal directional drilling and micro-tunneling where feasible, with trenching only as necessary. The known archaeological sites (50-80-13-0098, -0099, and -0100) are all buried fishponds that are located below 2.90–3.42 meters of fill that could be disturbed by the installation of the electrical transmission backbone. These sites would only be affected if there is ground-disturbing work that extends through the fill into the fishpond sediments. The Navy will provide SHPO with information on the alignment and anticipated depth of ground disturbance with recommended measures to avoid these resources. If avoidance proves impossible, prior to approving the work, the Navy will conduct supplementary Section 106 consultation to assess potential effects and resolution measures.

Ground disturbance would occur from installation of the PV system at Site 5. Ground disturbance would occur as part of demolition of existing facilities and construction of the FRG Plant at Sites 2 and

5. The solar panels at Site 5 would be installed with standard panel screws and thus no substantive ground disruption would occur. No known archaeological resources are present at Site 2 or Site 5. Archaeological monitors will be present during ground disturbing activities as envisioned in the Archaeological Treatment Protocols section discussed later in this document.



**Figure 7. Existing Aerial View (Ameresco, 2023).**



**Figure 8. Conceptual Aerial View (Ameresco, 2023).**



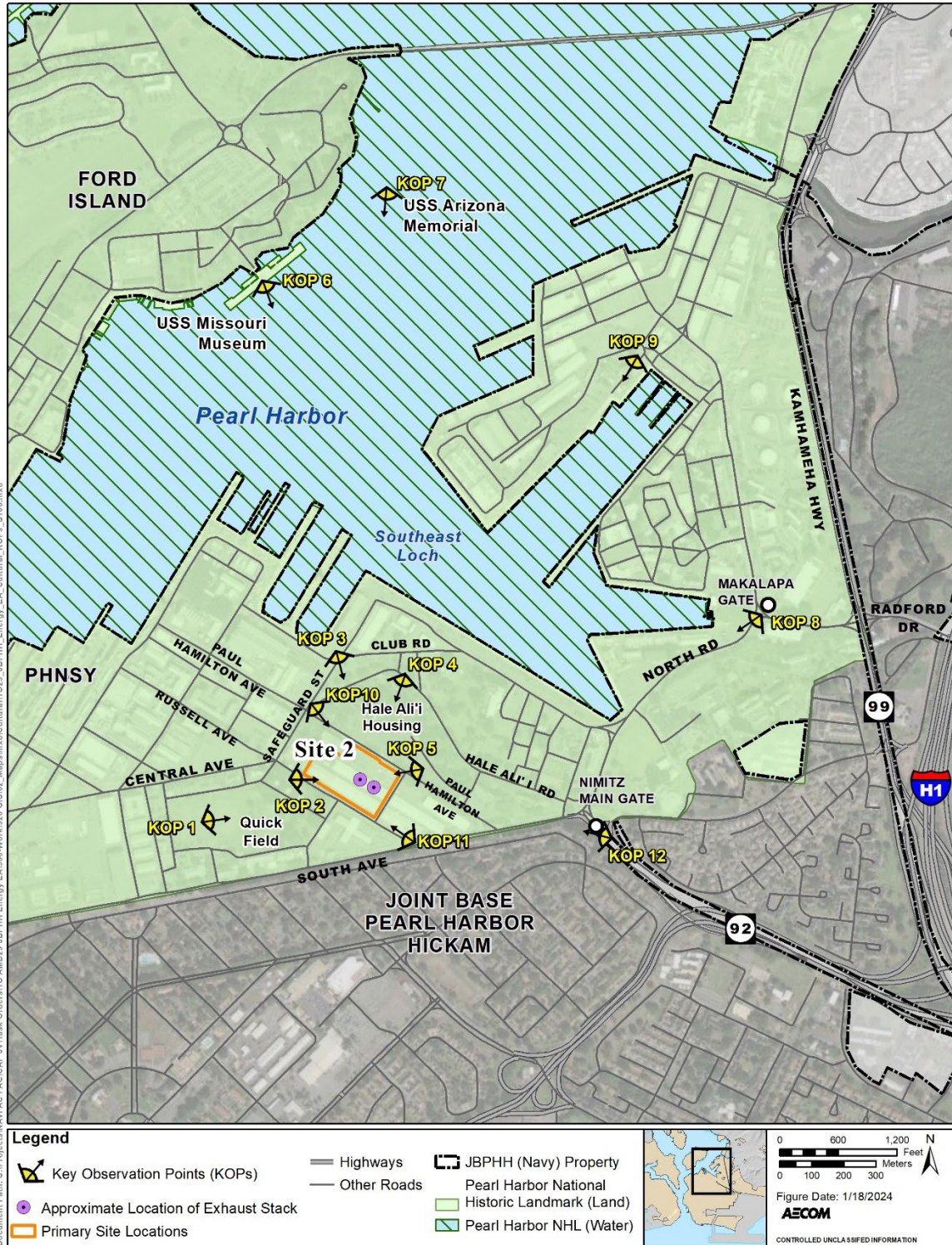


Figure 9. Visual Assessment Key Observation Points



**Table 3 Visual Assessment Summary from Key Observation Points**

<i>Key Observation Point</i>	<i>Visual Characteristics</i>	<i>Relationship to Project</i>	<i>Visual Impact</i>
1: Quick Field	This KOP is located at Quick Field and represents views from within the historical Marine Barracks area of the PHNHL.	<ul style="list-style-type: none"> <li>• 1,700 feet from project in view facing east-northeast - Limited views facing east toward existing warehouses to be demolished</li> <li>• Existing trees would provide visual screening and block views of Site 2</li> <li>• New uses for warehouses to west would not alter exteriors</li> </ul>	No visual changes would occur at this KOP that would diminish the PHNHL’s integrity of setting, feeling, or association.
2: Russell Avenue (west)	This KOP represents close views to the project site from the tree-lined section of Russell Avenue and the historic Marine Officers’ Quarters within the PHNHL.	<ul style="list-style-type: none"> <li>• 700 feet from project in view facing east-northeast</li> <li>• View to Marine Officers’ Quarters and warehouses would change when warehouses are demolished</li> </ul>	Minor visual changes would be visible in the foreground from this KOP that would alter setting, feeling, and association.

**Table 3 Visual Assessment Summary from Key Observation Points**

<i>Key Observation Point</i>	<i>Visual Characteristics</i>	<i>Relationship to Project</i>	<i>Visual Impact</i>
3. Club Road at Safeguard Street	This KOP represents views from a major roadway intersection in the NHL, Safeguard Street and Club Road. Located north of the project site, it features views to the south of the historic Hale Alii Officers' Quarters area. To the north and northeast, views include the warehouses along the repair basins and the Southeast Loch waterfront; and to the west, the eastern entrance to the industrial shipyard area.	<ul style="list-style-type: none"> <li>• 1,300 feet from project in view facing south</li> <li>• View to the south includes park area north of Hale Alii Officers' Quarters along Hale Alii Road, and associated trees. These foreground features block views to the project elements.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.
4. Hale Alii Officers' Quarters	This KOP represents views from the Hale Alii historic housing area. Views from this KOP feature Hale Alii Officers' Quarters and their yards to the south; to the north and northeast, views include adjacent park areas and more distantly, the warehouses along the repair basins and the Southeast Loch waterfront; and to the west, the eastern entrance to the industrial shipyard area.	<ul style="list-style-type: none"> <li>• 1,120 feet from project in view facing south-southwest</li> <li>• Views of the Hale Alii Officers' Quarters would not be noticeably altered by the removal of warehouses and addition of proposed project elements, which are hidden behind buildings and trees in the foreground. Exhaust stacks would not be taller than existing vegetation from this vantage point.</li> <li>• Views of other characteristics would not change</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.

**Table 3 Visual Assessment Summary from Key Observation Points**

<i>Key Observation Point</i>	<i>Visual Characteristics</i>	<i>Relationship to Project</i>	<i>Visual Impact</i>
5. Paul Hamilton Avenue (east)	This KOP located along Paul Hamilton Avenue features close views of the project site. It features the historic warehouses on and to the south of the project site, and views to a non-historic parking lot on the opposite side of the street to the north of the project site.	<ul style="list-style-type: none"> <li>• 500 feet from project in view facing southwest</li> <li>• Site 2 is located directly along this historic roadway, within cluster of warehouses</li> </ul>	Visual changes would alter the PHNHL's historical setting, feeling, and association at this KOP.
6. USS Missouri Museum	This KOP is located on the quarterdeck of the battleship, an individually listed NHL located approximately 1 mile from the project site. The KOP features interpreted views of the Pearl Harbor shipyard waterfront. Battleship Row, parts of Ford Island, the USS Arizona Memorial, and the harbor waters are also visible from the vicinity of this KOP.	<ul style="list-style-type: none"> <li>• 5,200 feet from project in view facing south</li> <li>• Project views are across Pearl Harbor waters and beyond shipyard waterfront features at a distance of 1-mile.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.
7. USS Arizona Memorial	This KOP is a publicly accessible location at the USS Arizona Memorial, and individually listed NHL. It features interpreted and commemorative views of the Pearl Harbor shipyard waterfront. Ford Island, the USS Missouri, and the harbor waters are also visible from this KOP.	<ul style="list-style-type: none"> <li>• 6,000 feet from project in view facing south</li> <li>• Project views are across Pearl Harbor waters and beyond shipyard waterfront features at a distance of more than 1 mile.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.

**Table 3 Visual Assessment Summary from Key Observation Points**

<i>Key Observation Point</i>	<i>Visual Characteristics</i>	<i>Relationship to Project</i>	<i>Visual Impact</i>
8. Makalapa Gate	This KOP is at Makalapa Gate, a heavily used entrance to the Pearl Harbor installation. The KOP features views to the southwest into the PHNHL, Millican Field, and North Road.	<ul style="list-style-type: none"> <li>• 4,400 feet from project in view facing southwest</li> <li>• Project elements would be obscured by distance and intervening features.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.
9. Hurt Avenue	This KOP is along Hurt Avenue within the Kūāhua Peninsula Naval Supply Depot area, and represents a view from another location within the NHL. The KOP features views of Pearl Harbor, Magazine Loch, and distant Main Base areas, warehouses, Sierra Wharves, and the Submarine Base area.	<ul style="list-style-type: none"> <li>• 5,100 feet from project in view facing southwest</li> <li>• Project elements would be obscured by distance and intervening features.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL's integrity of setting, feeling, or association.
10. Paul Hamilton Avenue (west)	This KOP located at the intersection of Safeguard Street and Paul Hamilton Avenue features close views to the southeast of the project site. It encompasses historic warehouses on and to the northwest of the project site, and views to a non-historic parking lot on the opposite side of the street to the northeast of the project site, as well as views to the edges of the Shipyard and Hale Alii officers' quarters.	<ul style="list-style-type: none"> <li>• 900 feet from project in view facing southeast.</li> <li>• Close views to the southeast of the project site would be changed by the removal of the existing warehouses and addition of proposed project elements.</li> </ul>	Visual changes would be visible in the foreground from this KOP that would alter setting, feeling, and association of the PHNHL.



**Table 3 Visual Assessment Summary from Key Observation Points**

<i>Key Observation Point</i>	<i>Visual Characteristics</i>	<i>Relationship to Project</i>	<i>Visual Impact</i>
11. Russell Avenue (east)	This KOP located at the intersection of Russell Avenue and South Avenue features close views of the project site. It encompasses historic warehouses on and to the south of the project site, and views towards Marine Barracks and Marine Officers’ Quarters on the west side of the street.	<ul style="list-style-type: none"> <li>• 700 feet from project in view facing northwest.</li> <li>• This view would be altered by the demolition of existing warehouses and introduction of new project elements that are along the west side of Russell Avenue.</li> </ul>	Changes would be visible in the foreground from this KOP that would alter setting, feeling, and association of the PHNHL.
12. Nimitz Gate	This KOP is at Nimitz Gate, a heavily used entrance to the Pearl Harbor installation. The KOP features views of Bloch Arena, Ward Field, the Southeast Loch waterfront and Bravo docks, and the Administration Building	<ul style="list-style-type: none"> <li>• 2,355 feet from project in view facing west.</li> <li>• Views to the west towards the project are obscured by buildings, vegetation, and distance across level terrain.</li> </ul>	No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.

**Auditory Effects to Historic Properties**

Two groups of NHL-contributing historic housing stand near the proposed Site 2 energy plant: the Marine Officers’ Quarters and the Hale Alii Officers’ Quarters. Construction activities from the project would employ a noise mitigation and management plan to reduce construction noise to the surrounding area. Short-term intermittent noise from construction-period activities such as pile driving would be temporary and would not result in adverse effects to historic properties.

Plant operations have the potential to affect these historic houses. The noise technical study in Appendix B of the EA analyzed sensitive receptor sites including the Hale Alii Officer’s Quarters. The study showed that the project could increase operational noise in this area and result in a subjective response that is “quite noticeable” during the daytime and “twice as loud” at night. Daytime and nighttime noise would be above maximum permissible sound levels for residential areas, according to criteria established by Hawaii Administrative Rules Title 11, Chapter 26 Community Noise Control. Critically, the proposed project must incorporate design approaches and best management practices reduce noise levels from the facility to conform with the HAR 11-46 criteria for criteria for Class A zoning districts. Potential auditory mitigation measures include sound walls, interior insulation, and

similar actions. Given the requirement to incorporate mitigations to comply with HAR 11-46, the operational noise is not expected to adversely affect historic properties.

#### Resolution of Adverse Effects

Consistent with 36 CFR 800.6, the Navy will consult to resolve adverse effects to historic properties in an agreement document. The project would also incorporate measures to avoid and minimize effects to historic properties. The project would include on the design team an experienced Historical Architect (HA) to help ensure compliance with the Secretary of the Interior's Treatment Standards for Preservation, Rehabilitation and on compatible infill of new structures. Key avoidance measures anticipated:

- Visual screening at street level using features such as compatible building forms at the perimeter of the project area or walls that block views and noise and help retain adjacent historic residential areas' character. Additional measures include preserving and maintaining existing vegetative screening and mature plantings and augmenting vegetation where there are gaps to help block views along the adjacent streets to provide visual screening and minimize visual impacts. Locally appropriate vegetation could be planted, and a drip irrigation system installed, to allow the vegetation to grow along or on the wall or fence for added visual screening.
- Visibility and glare reductions by painting new facilities to blend into their surroundings and employing low sheen paints or other glare reduction methods.
- Reduce new facilities to the lowest feasible height while also ensuring adequate exhaust dispersal to meet all applicable Codes and Standards. Grouping vertical elements and reducing the number of vertical elements.
- Minimize site function and security lighting to reduce change in the area. Luminaire color temperatures compatible with the warmer lighting used for the housing areas. Lighting fixtures with full-cutoff luminaires to minimize light spill and light pollution, as well as use of timers or motion sensors to reduce unnecessary illumination.
- Sound reduction measures to minimize effects to residents and users of adjacent historic properties.

#### Potential Measures to Resolve Adverse Effects

Potential resolutions for discussion in consultations include:

- Rehabilitation of facilities that contribute to the PHNHL, for example:
  - The World War II-era wood structure Marine Barracks building for continued use as Base Security/Police Station.
  - The Pre-World War II-era wood structure warehouse in the PHNHL to house Shipyard mechanical equipment and cooling towers.
- Preservation planning activities (to be determined)
  - Deconstruct, rather than demolish, the warehouses to be removed; this could be conducted by a local Hawaii-based charitable organization, and the historic redwood interior framing retained and reused in other buildings.
- Historical documentation

- Develop site interpretation to support preserving the history of the buildings and site to be deconstructed as part of the project. This may include photographing the structures and/or producing informational plaques with historic and current photos and verbiage describing the use of the buildings and site over time to interpret the historic use of the buildings. This could include photos and verbiage linking the site’s historic contribution to the mission of the Navy with the project’s contribution in providing energy resiliency to the Navy.
- Prepare and install interpretive signage for the World War II Pacific Fleet & Naval Air Station Ford Island flagpole and courtyard. The Navy recently rehabilitated the site as an augmentation project to the Ford Island Historical Trail and the interpretive node displays a historical view of Battleship Row.
- Document any warehouses to be deconstructed.

**Conclusion**

The Navy concludes that the proposed undertaking will adversely affect contributors to the NHL, while also altering the NHL itself. Removal of contributing warehouses would adversely affect the PHNHL. Localized adverse effects to the PHNHL near project Site 2 would occur through alteration of visual characteristics that convey the PHNHL’s setting, feeling, and association at KOP 2 (Russell Avenue), KOP 5 (Paul Hamilton Avenue [east]), KOP 10 (Paul Hamilton Avenue [west]), and KOP 11 (Russell Avenue [east]).

The Navy plans to continue consultations with SHPO, NPS, and other consulting parties to resolve adverse effects of the proposed undertaking.

**Table 4 Summary of Project Effects to Historic Properties**

<i>Historic Property</i>	<i>Project Effect</i>
Warehouse YA	Adverse. Removal of building.
Warehouse YB	Adverse. Removal of building.
General Warehouse (Facility 244)	Adverse. Removal of building.
Storehouse General NSC/X02 (Facility 393)	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Battery Shop (Facility 394)	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Sorting Assembly Warehouse (Facility 452K)	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Warehouse 226	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Warehouse 283 (Maintenance Shop)	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Warehouse 284 (Storehouse)	Not Adverse. Introduction of new use with relocation of tenants from Site 2 buildings with minor interior alterations.
Shipyard railway system remnants	None. Rail tracks along Russell Avenue at Site 2 are not in area of disturbance for FRG Plant construction.

PHNHL	Adverse. Demolition of three contributing resources and addition of new construction. Impacts from new construction reduced by proposed new facility's massing and scale being comparable to nearby warehouses and the industrial character of the Shipyard area. Visual changes from 3 KOPs would alter the NHL's setting, feeling, and association. Existing vegetation would continue to screen visibility from Marine Barracks and Hale Alii housing areas.
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In closing, thank you for your consideration of this important undertaking. Please contact me at (808) 864-6336 or by email at [william.r.manley4.civ@us.navy.mil](mailto:william.r.manley4.civ@us.navy.mil) if you have any questions on this matter.

Sincerely,

William R. Manley  
Environmental Director  
Navy Region Hawaii  
By Direction

Copies via email:

Kiersen Faulkner, Historic Hawaii Foundation  
Betsy Merritt, National Trust for Historic Preservation  
Elaine Jackson-Retondo, National Park Service  
Shad Kane, O'ahu Council of Hawaiian Civic Clubs  
Kehaulani Lum, President, Ali'i Pauahi Hawaiian Civic Club

Attachments:

A: References  
B: Visual Analyses



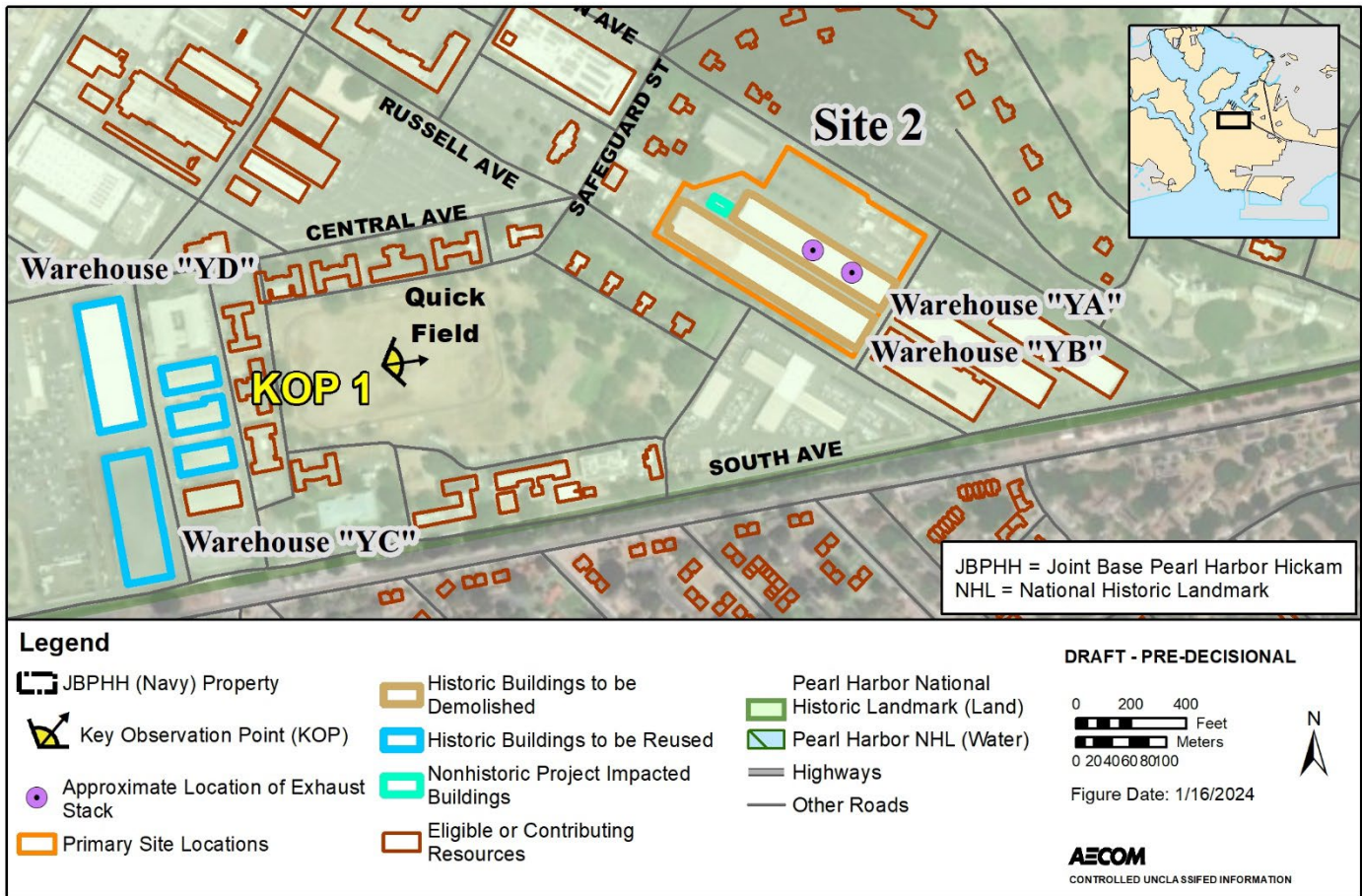
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## Attachment B: Visual Analyses

### Key Observation Point 1: Quick Field

Key Observation Point (KOP) 1 is located at Quick Field and represents views from within the historical Marine Barracks area of the PHNHL. The KOP is 1,700 feet from the project Site 2, and the view to the project area is east-northeast. An analysis of the KOP's setting, the PHNHL and contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.





**Existing Conditions, view facing project area (Site 2) from KOP 1**



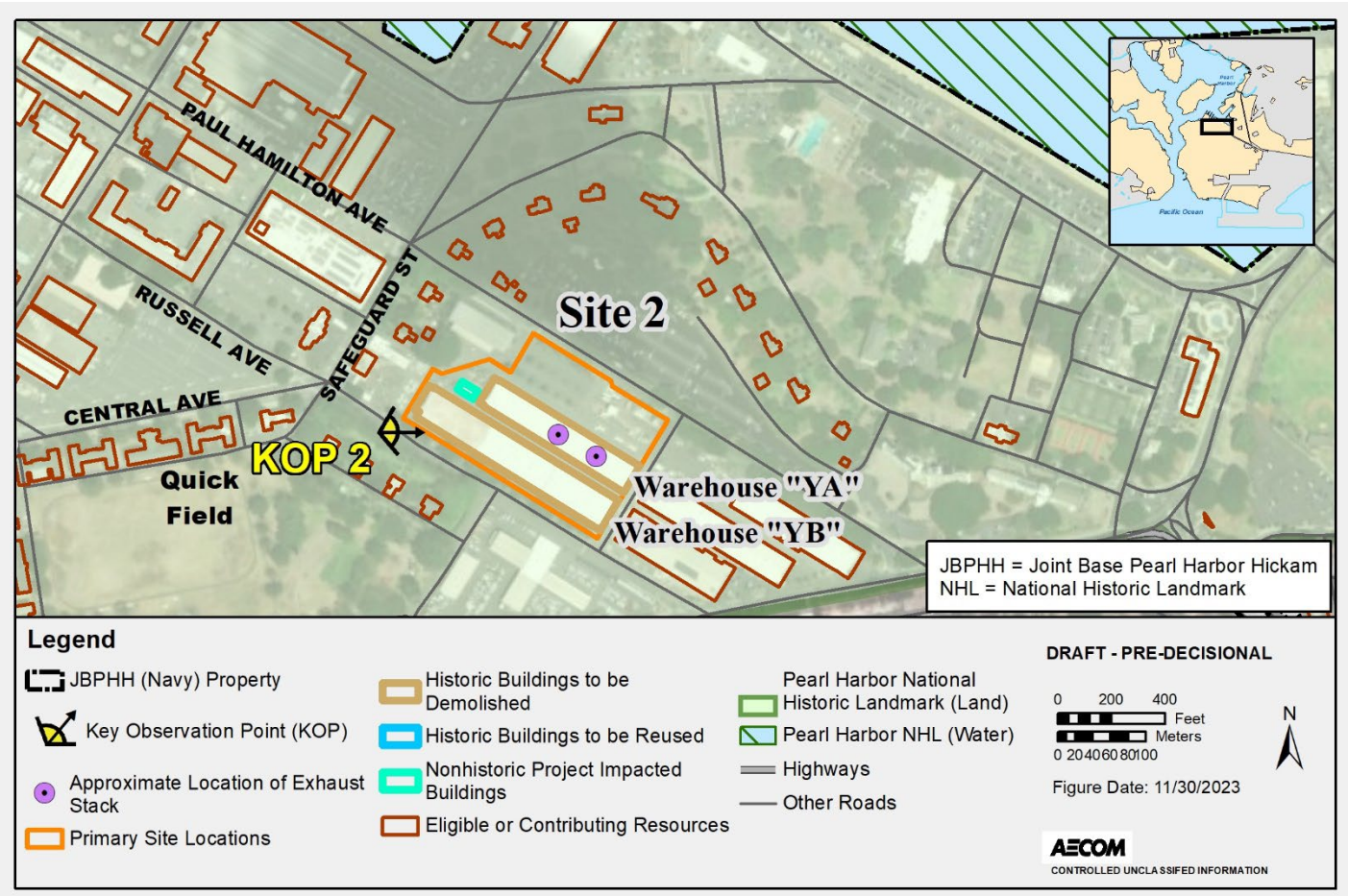
**Proposed Conditions, view facing project (Site 2) from KOP 1**

<b>Analysis of Characteristics and Project Impacts – KOP 1</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Marine Barracks features including Quick Field parade ground and surrounding buildings: Puller Hall, barracks	KOP is located within Quick Field, 1,700 feet west of project site. View to project site is partly blocked by Marine Officers’ Quarters and vegetation.	No proposed project changes would occur within Marine Barracks. Limited views of existing warehouses to the east would change when warehouses are demolished and replaced with proposed project components that are larger in scale. Existing trees would remain to provide visual screening.
Marine Officers’ Quarters and associated carports associated trees and hedges in yards	KOP is west of Marine Officer Quarters, which stand between KOP and project site.	Existing warehouses on the project site in the background of the view to Marine Officers’ Quarters are barely visible. This view would change slightly when warehouses are demolished and replaced with proposed project components; top of highest exhaust stack would be slightly visible above existing trees and buildings. Existing trees would remain to provide visual screening.
Hickam housing areas and water tower	View to the south of Hickam housing and water tower from KOP is mostly blocked by Puller Hall.	Views to the south would remain unchanged by the proposed project.
Shipyard buildings to north of Central Avenue	View to this area from KOP is mostly blocked by barracks and trees along north side of Quick Field.	Views to the north would remain unchanged by the proposed project.
Warehouses to the west of Marine Barracks along south end of Royal Street including Warehouses YD and YC and a cluster of wood-frame warehouses along east side of street	View from KOP to this area is partly blocked by barracks and characterized by large wood frame warehouses and a lack of vegetation.	Views to the west would remain unchanged by the proposed project; new uses proposed for the two warehouses would not alter the exteriors.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 2: Russell Avenue (west)**

This KOP is located at the tree-lined section of Russell Avenue and represents views from within the historical Marine Officers' Quarters in the PHNHL. The KOP is 700 feet from the project Site 2, and the view to the project area is east-northeast. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that minor visual changes would alter the PHNHL's historical setting and feeling at this KOP, but not alter the association.





Existing Conditions, view facing project area (Site 2) from KOP 2





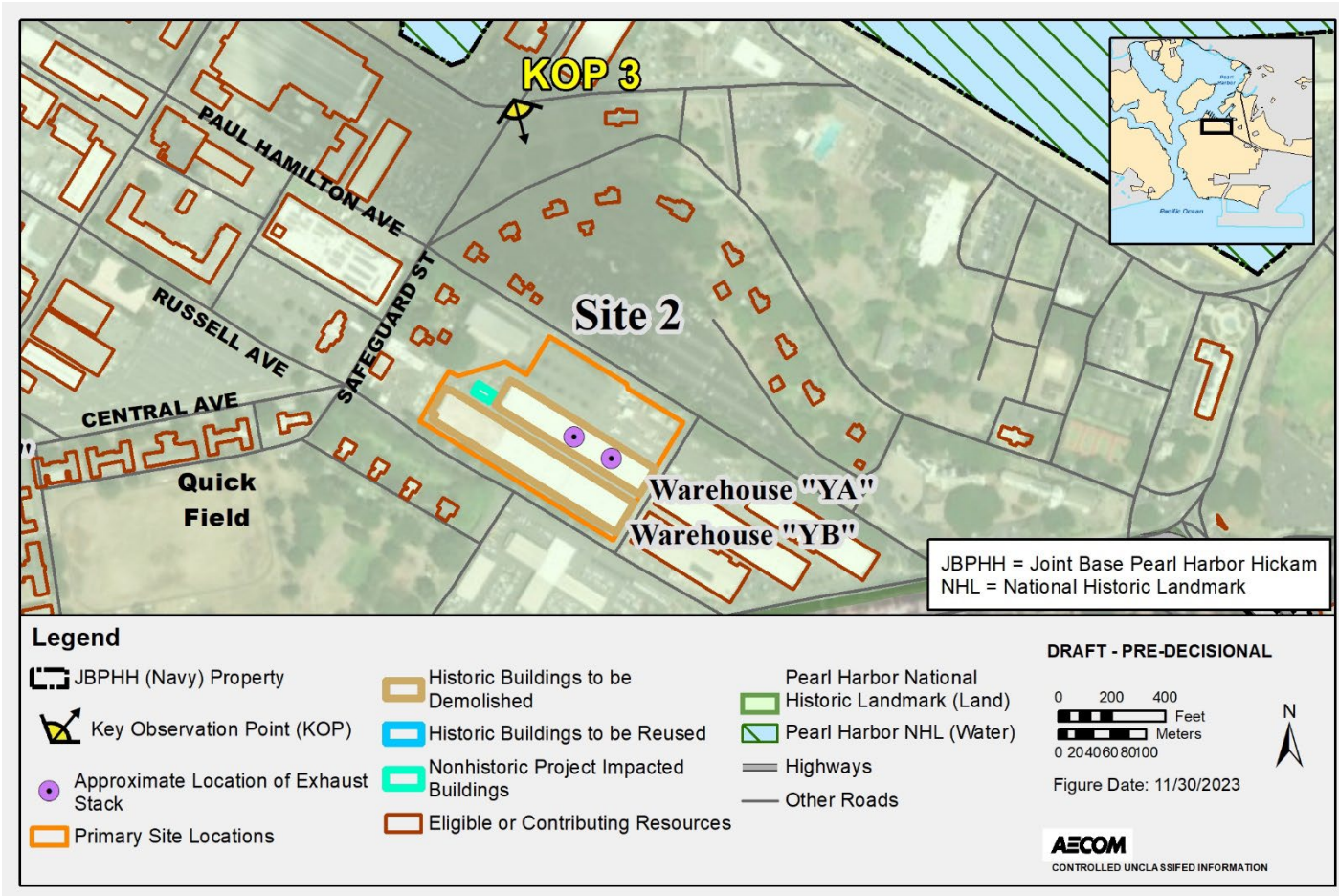
**Proposed Conditions, view facing project area (Site 2) from KOP 2**

<b>Analysis of Characteristics and Project Impacts – KOP 2</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Russell Avenue and associated street trees	KOP is located directly on the western edge of the project site. View is currently of existing warehouses, partially screened by Russell Avenue’s street trees.	This KOP’s foreground views of the existing warehouses to the east and southeast would change when the warehouses are demolished and replaced with proposed project components. Existing trees would continue to provide partial visual screening for new vertical elements.
Marine Officers’ Quarters and associated yard plantings (hedges, trees)	KOP is directly east of Marine Officer Quarters. View to Officers’ Quarters is partly blocked by tall hedge and trees.	Foreground view to Marine Officers’ Quarters would change when warehouses are demolished and replaced with proposed project components. Existing trees and hedge will remain to provide visual screening.

Bombproof switching station	KOP features a foreground view to this historic switching station.	Views to the northeast would remain unchanged by the project.
Shipyards north of Central Avenue	View to this area from KOP is partly blocked by buildings along south side of Central Avenue. Little of the shipyard area is visible, mostly parking areas.	Views to the north would remain unchanged by the project.
<p><b>Overall project impact to KOP:</b> Minor visual changes would be visible in the foreground from this KOP that would alter setting, feeling, and association.</p>		

### Key Observation Point 3: Club Road at Safeguard Street

This KOP is located at a major roadway intersection in the PHNHL, Safeguard Street and Club Road, and represents views of the Hale Alii Historic Officers' Housing Area to the south and industrial shipyard to the north. The KOP is 1,300 feet from the project Site 2, and the view to the project area is south. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.







**Existing Conditions, view facing project area (Site 2) from KOP 3**



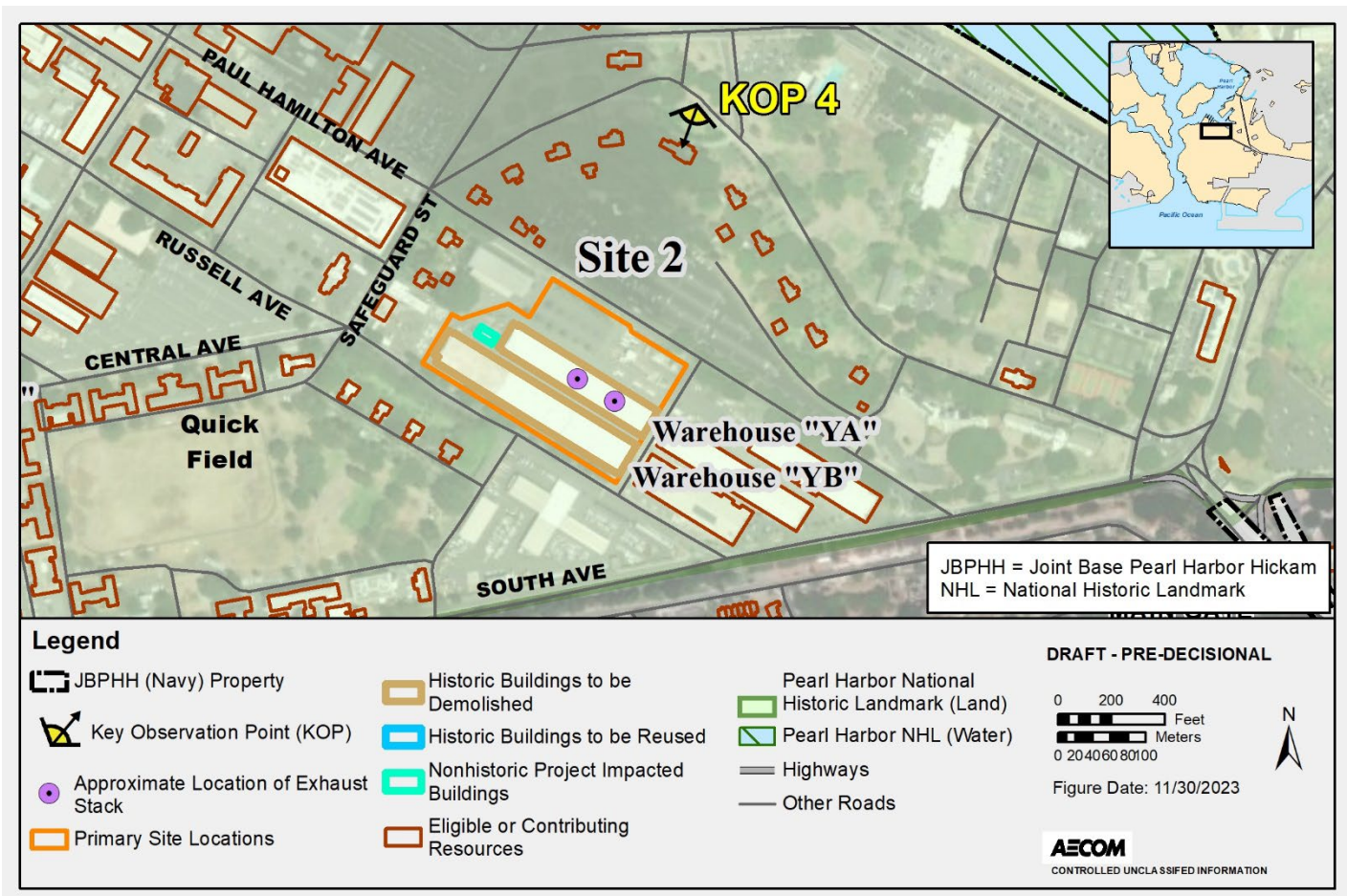


**Proposed Conditions, view facing project area (Site 2) from KOP 3**

<b>Analysis of Characteristics and Project Impacts – KOP 3</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Hale Alii officers’ quarters and associated lawns and tree plantings	KOP is 1,300 feet north of the project site. View to the south includes park area north of Hale Alii officers’ quarters along Hale Alii Road, and associated trees. These foreground features block views to the project elements.	This KOP’s views of the historic Hale Alii housing area would not be altered by the project elements, which are in the background and would remain hidden behind buildings and trees.
Park grounds and bandstand	KOP is within parklike landscape and bandstand is foreground; the project Site 2 would be further in the distance	Views of these characteristics would not be impacted.
Historic industrial shipyard buildings and associated bridge crane	View to the north toward the shipyard area do not include proposed project elements.	Views to the north would remain unchanged by the project.
Safeguard Street	No project elements are proposed along Safeguard Street.	Views to the southwest would remain unchanged by the project.
Bravo Docks	View to the north toward the Bravo Docks do not include proposed project elements	Views to the north would remain unchanged by the project.
Views to the northeast of Southeast Loch, Harbor, Battleship Row	Views do not include proposed project elements.	Views to the northeast would remain unchanged by the project.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		

**Key Observation Point 4: Hale Alii Officers' Quarters**

This KOP is along Hale Alii Avenue and represents views from within the Hale Alii Historic Officers' Quarters area of the PHNHL. The KOP is 1,120 feet from the project Site 2, and the view to the project area is south-southwest. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.







**Existing Conditions, view facing project area (Site 2) from KOP 4**



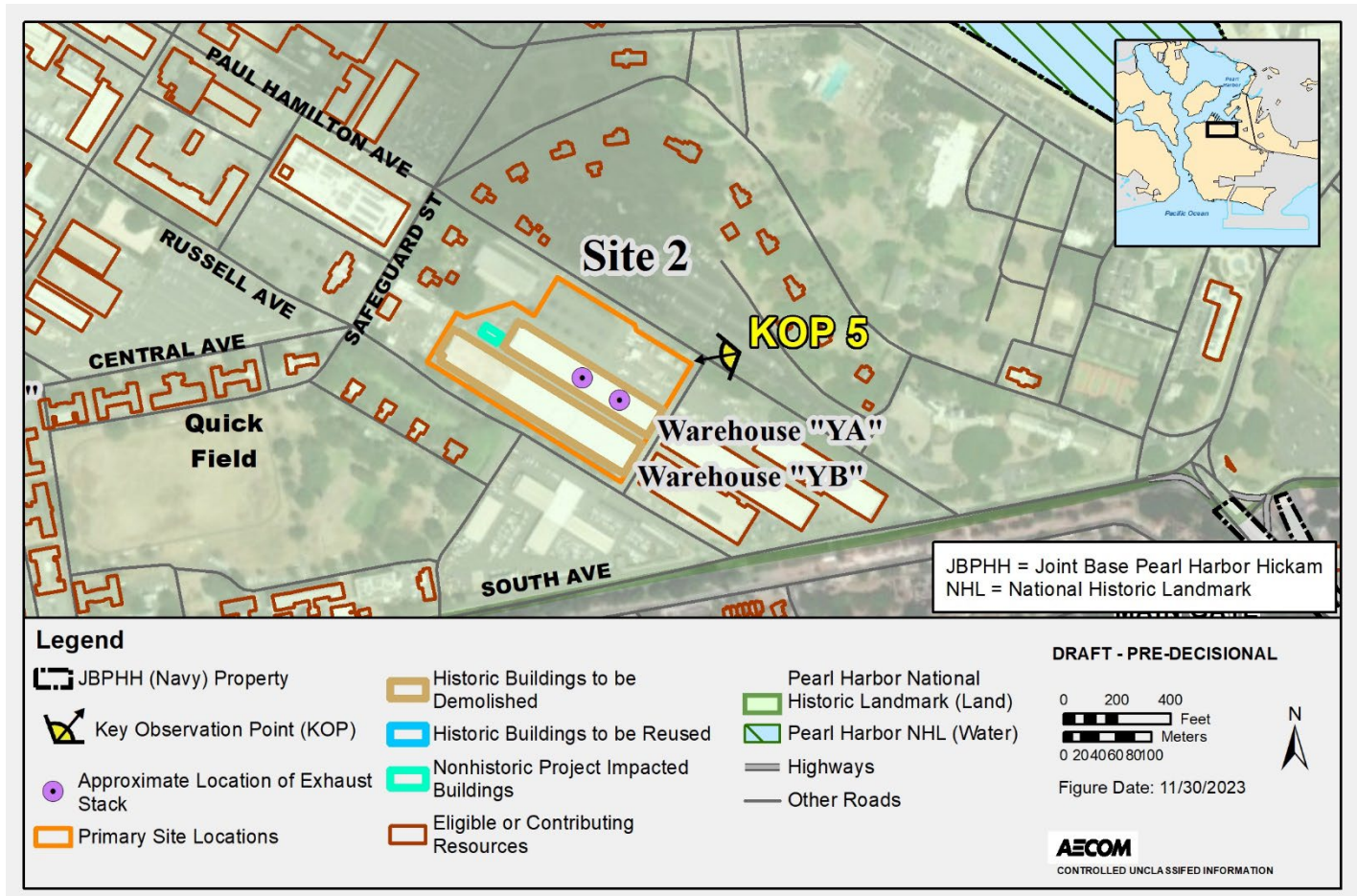
**Proposed Conditions, view facing project area (Site 2) from KOP 4**

<b>Analysis of Characteristics and Project Impacts – KOP 4</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Paul Hamilton Avenue	Site 2 is located directly along this historic roadway, 500 feet from the KOP.	This KOP’s foreground views would be changed by removal of the warehouses and addition of project elements.
Historic warehouses on project site	KOP is located directly east of the warehouses on the project site.	This KOP’s foreground views would be changed by removal of the warehouses and addition of project elements.
Historic warehouses adjacent to project site to the south	This area does not include any proposed project elements.	Views to the adjacent warehouses would remain unchanged by the project.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 5: Paul Hamilton Avenue (east)**

This KOP is located along Paul Hamilton Avenue east of the project Site 2 and represents close views of the project area from nearby industrial warehouses in the PHNHL. The KOP is 500 feet from the project Site 2, and the view to the project is southwest. An analysis of the KOP’s setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.







**Existing Conditions, view facing project area (Site 2) from KOP 5**



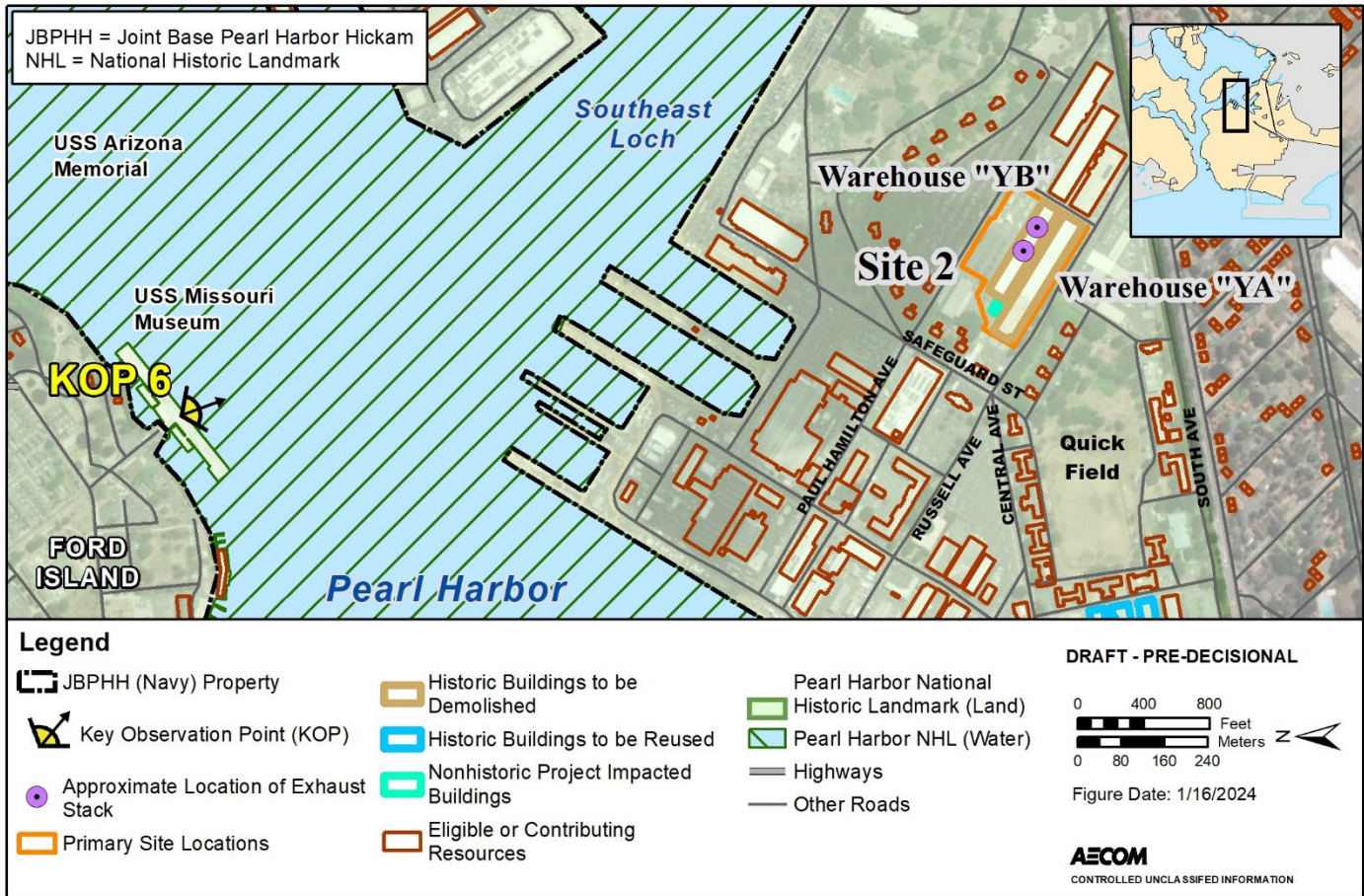
**Proposed Conditions, view facing project area (Site 2) from KOP 5**

<b>Analysis of Characteristics and Project Impacts – KOP 5</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Paul Hamilton Avenue	Site 2 is located directly along this historic roadway, 500 feet from the KOP.	This KOP’s foreground views would be changed by removal of the warehouses and addition of project elements.
Historic warehouses on project site	KOP is located directly east of the warehouses on the project site.	This KOP’s foreground views would be changed by removal of the warehouses and addition of project elements.
Historic warehouses adjacent to project site to the south	This area does not include any proposed project elements.	Views to the adjacent warehouses would remain unchanged by the project.
<b>Overall project impact to KOP:</b> Visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.		



**Key Observation Point 6: USS *Missouri* Museum**

This KOP is located at the USS *Missouri* Museum and represents views from this individually listed NHL and from Ford Island within the PHNHL. The KOP is 5,200 feet (approximately 1 mile) from the project Site 2, and the view to the project area is south. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.







**Existing Conditions, view facing project area (Site 2) from KOP 6**



**Proposed Conditions, view facing project area (Site 2) from KOP 6**

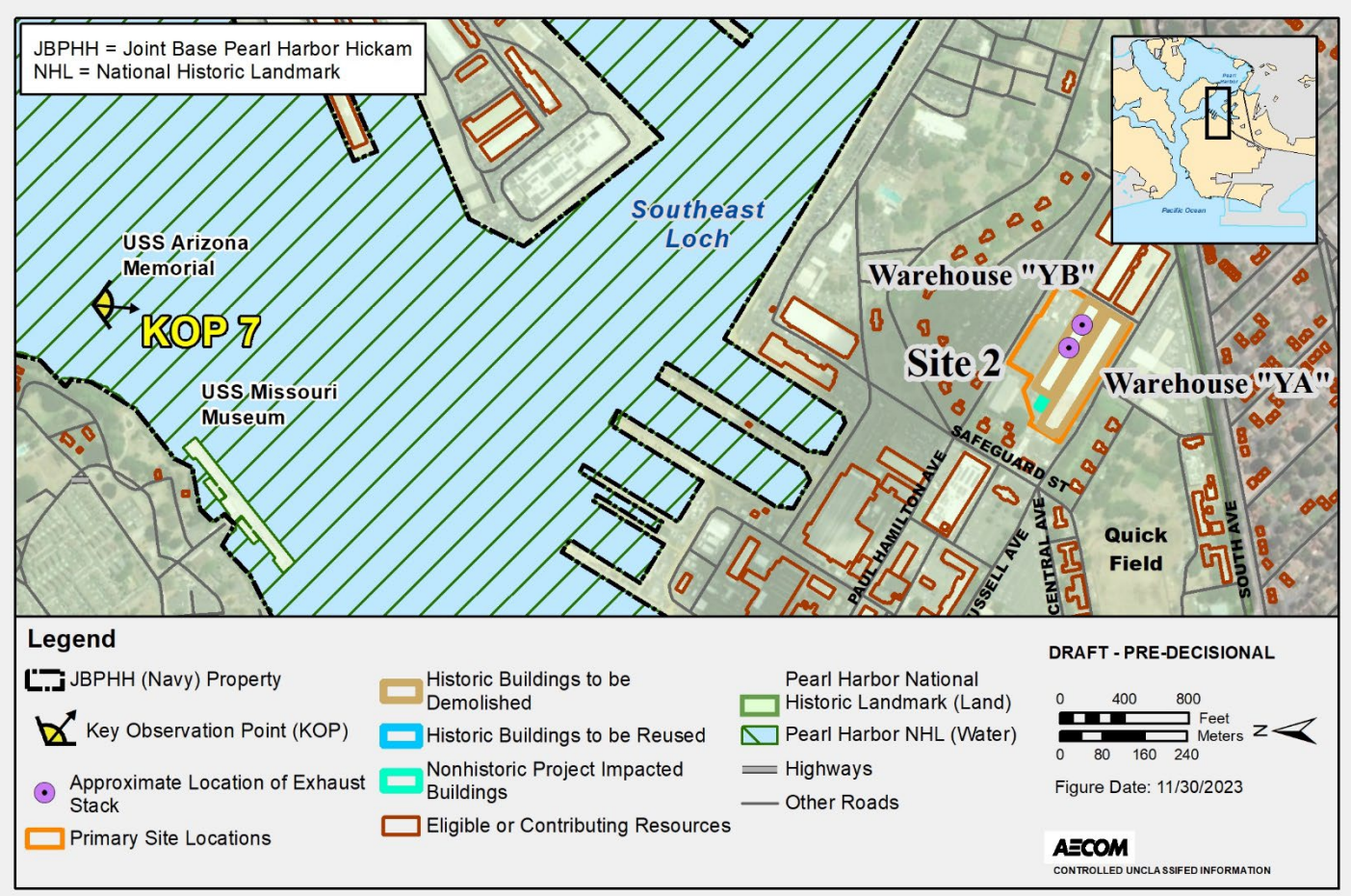


<b>Analysis of Characteristics and Project Impacts – KOP 6</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
USS Missouri Museum	KOP is located on the quarterdeck of the battleship, an individual listed NHL located approximately 1 mile from the project site.	No proposed project activities would be on or in the vicinity of the battleship.
Views of Pearl Harbor and shipyard waterfront, including distinctive shipyard facilities such as the Port Ops Signal Tower, large shop buildings, and dry docks	KOP is located across Pearl Harbor and the shipyard to the north of the project site. The shipyard waterfront is interpreted in these public views. Views to the project site from this KOP are beyond shipyard waterfront features and at an approximately 1-mile distance.	This KOP’s foreground views of the harbor waters and distant views of the shipyard waterfront would not be altered by the project elements, which are obscured by distance and intervening features. The top of one exhaust stack may be slightly detectable in the background beyond the shipyard.
Views to Battleship Row, parts of Ford Island, and USS Arizona Memorial	KOP provides interpreted views of surrounding areas; all are more than a mile from the project site.	No proposed project activities would occur in these areas.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 7: USS Arizona Memorial**

This KOP is located at the USS *Arizona* Memorial and represents views from this individually listed NHL and from the harbor waters off Ford Island within the PHNHL. The KOP is 6,000 feet from the project Site 2, and the view to the project area is south. An analysis of the KOP’s setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.





**Existing Conditions, view facing project area (Site 2) from KOP 7**



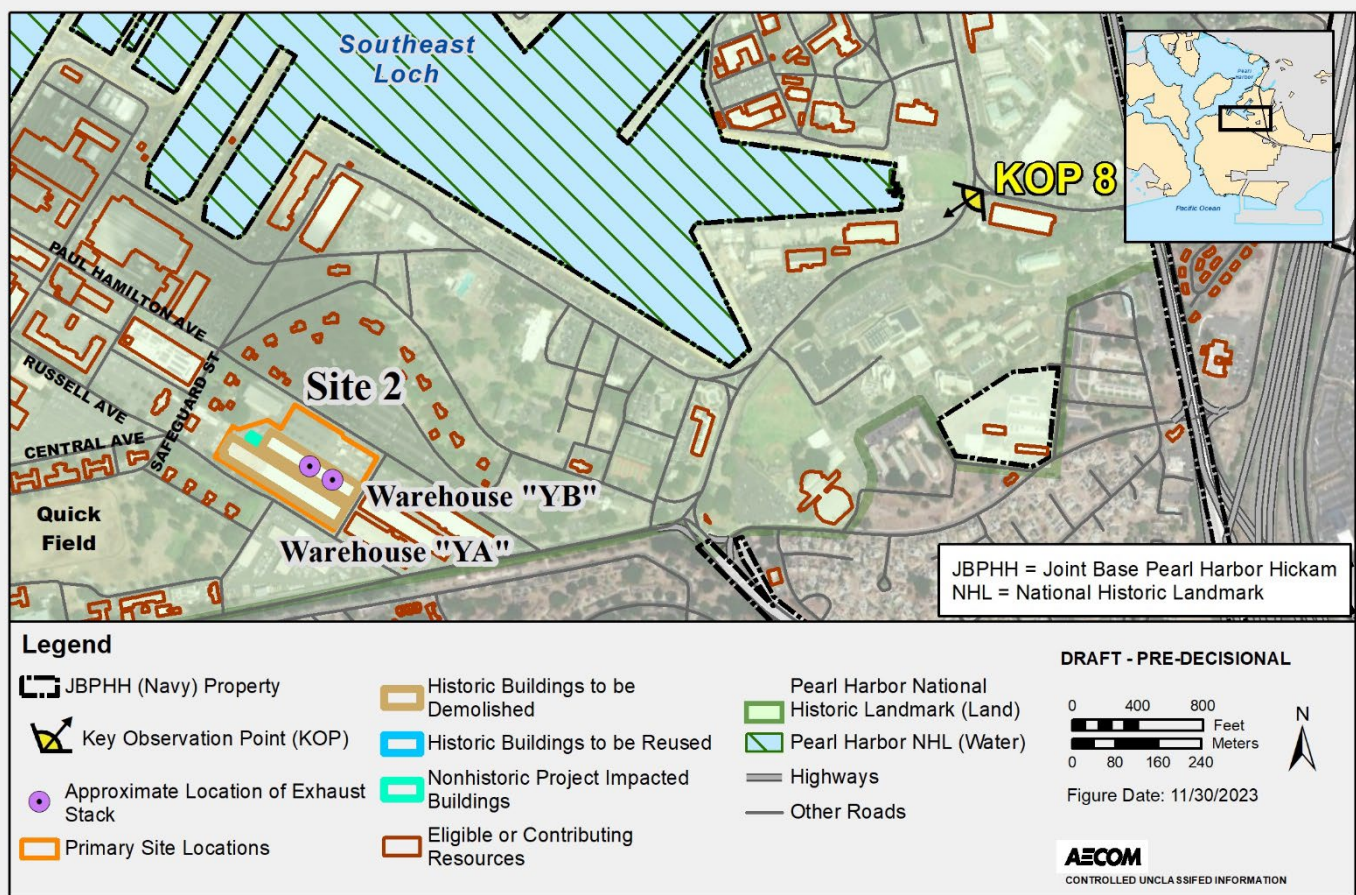
**Proposed Conditions, view facing project area (Site 2) from KOP 7**

<b>Analysis of Characteristics and Project Impacts – KOP 7</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Views of Pearl Harbor and shipyard waterfront, including distinctive shipyard facilities such as the Port Ops Signal Tower, large shop buildings, and dry docks	KOP is located across Pearl Harbor and the shipyard to the north of the project site. The shipyard waterfront is interpreted in these public views. Views to the project site from this KOP are beyond shipyard waterfront features and at more than 1-mile.	This KOP’s foreground views of the harbor waters and distant views of the shipyard waterfront would not be altered by the project elements, which would be obscured by distance and intervening features. The top of one exhaust stack may be slightly detectable in the background beyond the shipyard.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 8: Makalapa Gate**

This KOP is located at Makalapa Gate and represents views from this heavily used entrance to the Pearl Harbor installation in the PHNHL. The KOP is 4,400 feet from the project Site 2, and the view to the project area is southwest. An analysis of the KOP’s setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.





**Existing Conditions, view facing project area (Site 2) from KOP 8**



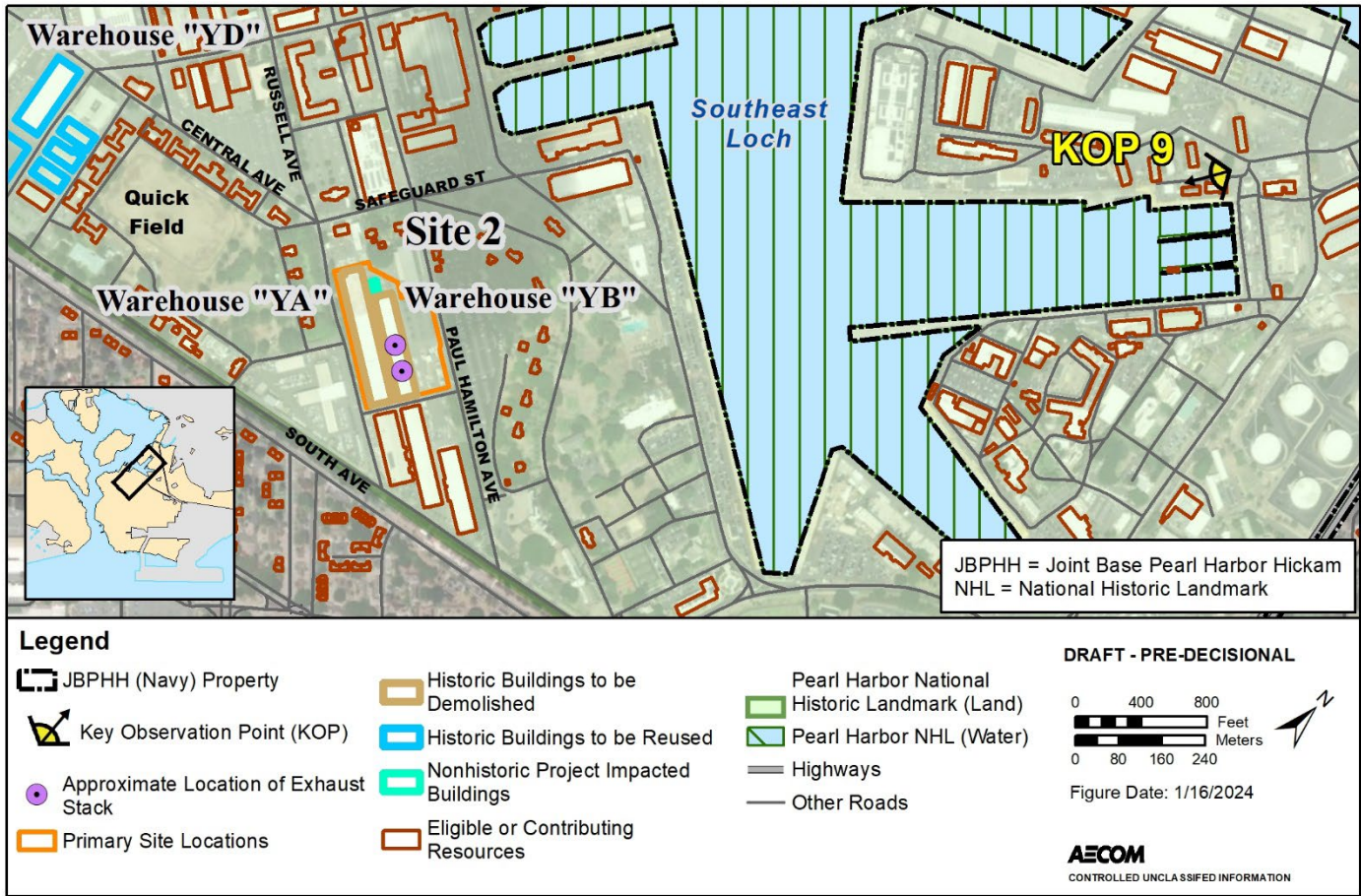
**Proposed Conditions, view facing project area (Site 2) from KOP 8**

<b>Analysis of Characteristics and Project Impacts – KOP 8</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Views to southwest into the PHNHL	Views to the project site from this KOP are obscured by buildings, vegetation, and a nearly 1-mile distance across level terrain.	This KOP’s views would not be altered by the project elements, which are obscured by distance and intervening features.
Makalapa Gate	The historic gate location is at a nearly 1-mile distance from the project site.	No proposed project activities would occur in or near this area or are visible from it.
Millican Field	Directly west of Makalapa Gate, this historic ballfield is within the view corridor between the gate and the project site but is distant from the project site.	No proposed project activities would occur in or near this area or are visible from it.
North Road	Directly west of Makalapa Gate within the view corridor from the KOP towards the project site, this main road connects areas including Submarine Base, Merry Point, and Kūāhua Peninsula, traveling north-south along the eastern side of the Harbor. It is located far from the project site.	No proposed project activities would occur along this road or in adjacent areas.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 9: Hurt Avenue**

This KOP is located along Hurt Avenue and represents views from the Kūāhua Peninsula Naval Supply Depot area within the PHNHL. The KOP is 5,100 feet from the project Site 2, and the view to the project area is southwest. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.





**Existing Conditions, view facing project area (Site 2) from KOP 9**



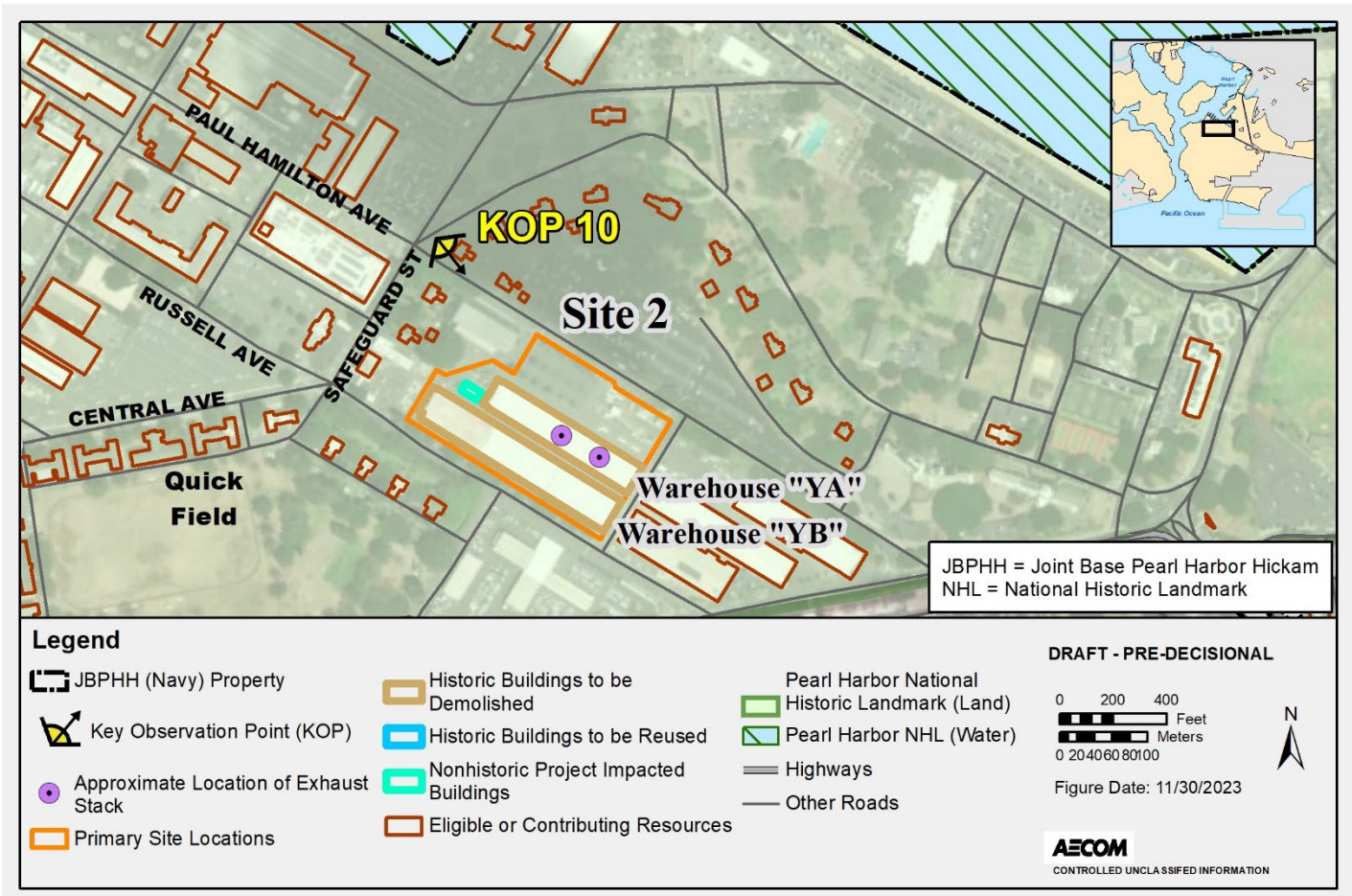
**Proposed Conditions, view facing project area (Site 2) from KOP 9**

<b>Analysis of Characteristics and Project Impacts – KOP 9</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Views to Pearl Harbor and distant Main Base areas	Views to the project site southwest of this KOP are obscured by buildings, vegetation, and a nearly 1-mile distance.	This KOP’s views would not be altered by the project elements, which are obscured by distance and intervening features.
Magazine Loch and waterfront features including Sierra Wharves 4-21	The Magazine Loch waterfront is in the foreground of this area and only slightly overlaps with the views in the direction of the project site.	No proposed project activities would occur in these areas.
Views to Submarine Base Dive Tower	The views to the dive tower to the south of this KOP are in a different direction than the project site.	No proposed project activities would occur in this area.
Cluster of small World War II-era buildings	Located north of Hurt Avenue, these buildings are in the opposite direction and far away from the project site.	No proposed project activities would occur in this area.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		



**Key Observation Point 10: Paul Hamilton Avenue (west)**

This KOP is located at the intersection of Paul Hamilton Avenue and Safeguard Street west of the project Site 2 and represents close views of the project from nearby industrial warehouses in the PHNHL. The KOP is 900 feet from the project Site 2, and the view to the project area is southeast. An analysis of the KOP’s setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.





**Existing Conditions, view facing project area (Site 2) from KOP 10**



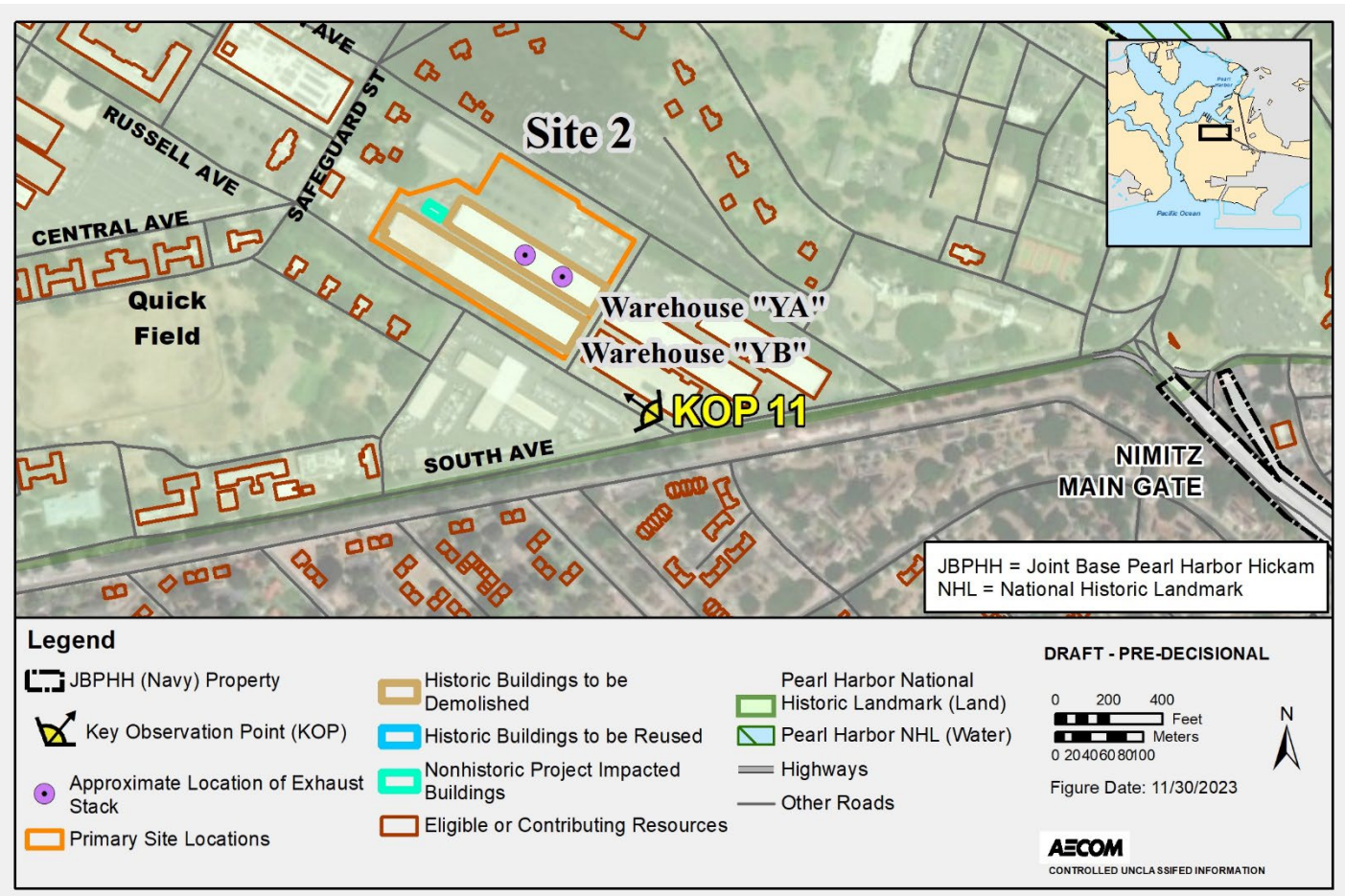
**Proposed Conditions, view facing project area (Site 2) from KOP 10**

<b>Analysis of Characteristics and Project Impacts – KOP 10</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Paul Hamilton Avenue	KOP is located 900 feet southeast of the project site.	This view would be changed by the removal of the existing warehouses and addition of proposed project elements.
Historic warehouses on project site	KOP is located just north of the warehouses along Paul Hamilton Avenue.	This KOP’s foreground views would be changed by removal of the warehouses and addition of project elements.
Heavy Ordnance Storehouse	KOP is located adjacent to this storehouse just north of the project site.	Background of this view of the storehouse would be altered by this project.
Open laydown and storage areas adjacent to warehouses	KOP has a close view of several open laydown and storage areas near warehouses	These areas would be altered by construction of the project, which would occur on some of the currently open laydown spaces.
Tool House	KOP is located adjacent to this building northeast of the project site.	The Tool House vicinity would not be directly altered by construction of the project, but its setting would be changed.
<b>Overall project impact to KOP:</b> Visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.		



**Key Observation Point 11: Russell Avenue (east)**

This KOP is located at the intersection of Russell Avenue and South Avenue and represents close views of the project from nearby industrial warehouses in the PHNHL. The KOP is 700 feet from the project Site 2, and the view to the project area is northwest. An analysis of the KOP’s setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.





**Existing Conditions, view facing project area (Site 2) from KOP 11**



**Proposed Conditions, view facing project area (Site 2) from KOP 11**

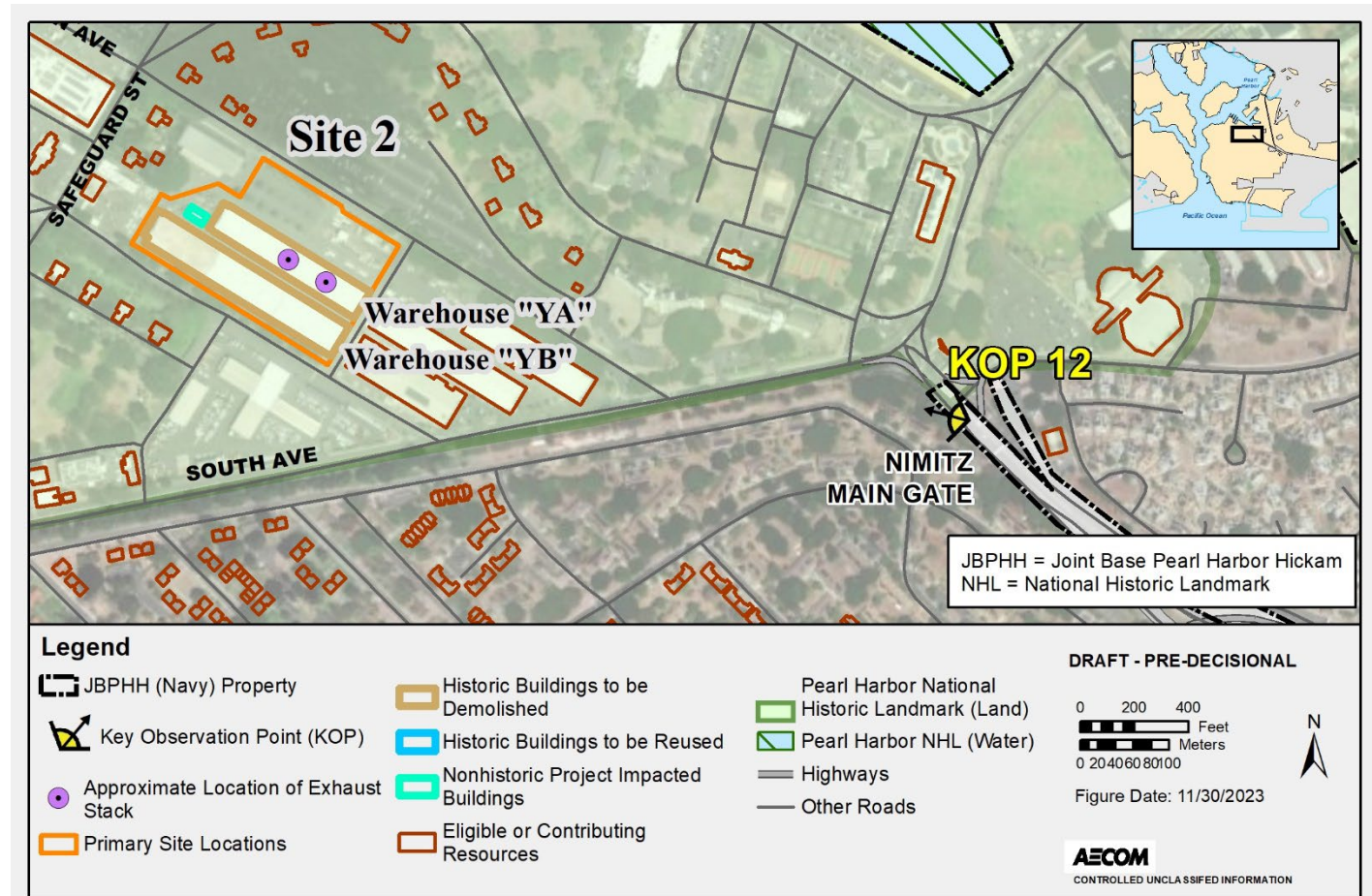
**Analysis of Characteristics and Project Impacts – KOP 11**

<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Russell Avenue	KOP is located along Russell Avenue.	This view would be altered by the demolition of existing warehouses and introduction of new project elements that would be along the west side of Russell Avenue.
South Avenue	KOP is located along South Avenue.	No proposed project activities would occur along South Avenue.
Warehouses on project site	KOP is located directly southeast of the project site.	This view would be altered by the demolition of the warehouses and addition of new project elements.
Marine Barracks	KOP view to the west does not include any proposed project elements.	Views to the west would remain unchanged by the project.
<p><b>Overall project impact to KOP:</b> Visual changes would alter the PHNHL’s historical setting, feeling, and association at this KOP.</p>		



**Key Observation Point 12: Nimitz Gate**

This KOP is located at Nimitz Gate and represents views from this heavily used entrance to the Pearl Harbor installation in the PHNHL. The KOP is 2,355 feet from the project Site 2, and the view to the project area is west. An analysis of the KOP's setting and PHNHL-contributing resources, existing and proposed conditions, and views to the project indicate that no visual changes would occur to the PHNHL at this KOP that would diminish the historical setting, feeling, or association.





**Existing Conditions, view facing project area (Site 2) from KOP 12**



**Proposed Conditions, view facing project area (Site 2) from KOP 12**

<b>Analysis of Characteristics and Project Impacts – KOP 12</b>		
<b>Characteristics of KOP</b>	<b>Relationship to Project</b>	<b>Visual Impacts</b>
Nimitz Gate	Views to the west towards the project site from this KOP at the gate area are obscured by buildings, vegetation, and a distance across level terrain.	The gate area views would not be altered by the project elements, which are obscured by distance and intervening features.
Bloch Arena	The arena is located east of and adjacent to the gate, at more than 0.5 mile from the project site to the west.	Views to the east would remain unchanged by the project.
Ward Field	Ward Field is located north of the gate, at more than 0.5 mile from the project site to the west.	Views to the north would remain unchanged by the project.
Administration Building (Fac. 150)	The Administration Building is located north of the gate, at more than 0.5 mile from the project site to the west.	Views to the north would remain unchanged by the project.
Southeast Loch waterfront/Bravo Docks	Southeast Loch waterfront/Bravo Docks are north and northwest of the gate, at more than 0.5 mile from the project site to the west.	Views to the north and northwest from this KOP would remain unchanged by the project.
<b>Overall project impact to KOP:</b> No visual changes would occur to the PHNHL from this KOP that would diminish the NHL’s integrity of setting, feeling, or association.		