US Army Corps of Engineers
Honolulu District
BUILDING STRONG®

Public Notice of Application for Permit

Regulatory Office
230 Otake Street
Fort Shafter, Hawaii 96858-5440

Public Notice Date: December 8, 2022
Expiration Date: January 9, 2023
DA File No.: **POH-2020-00043**

Interested parties are hereby notified that an application has been received by the U.S. Army Corps of Engineers, Honolulu District (Corps) for a Department of the Army (DA) permit for certain work in waters of the United States (U.S.) as described below and shown on the attached drawings.

APPLICANT: U.S. Navy, Captain Mark D. Sohaney, Joint Base Pearl Harbor Hickam, 850 Ticonderoga Street, Suite 100, Pearl Harbor, HI 96860.

AGENT: U.S. Navy, Steven H. Christiansen, Joint Base Pearl Harbor Hickam, 850 Ticonderoga Street, Suite 100, Pearl Harbor, HI 96860.

LOCATION: Various locations at the U.S. Navy, Joint Base Pearl Harbor-Hickam (JBPHH), including the Pearl Harbor Naval Shipyard Dry Docks, Waipio Peninsula, Pearl City Peninsula, Ford Island, Bishop Point, Loko Paaiau Fishpond at McGrew Point, and the South Oahu Ocean Dredged Material Disposal Site (SOODMDS) offshore of the Island of Oahu, Hawaii. See the attached maps and figures for additional information regarding the project location.

PROPOSED ACTIVITY: The applicant proposes to conduct dredging, including transporting dredged material for ocean disposal; and removing structures and installing new structures in navigable waters of the U.S. The applicant also proposes to discharge dredged and fill material into waters of the U.S. for the construction of a new dry dock and waterfront production facility. Ongoing operations and maintenance would include periodic dredging at the proposed channel approach. The applicant further proposes to install compensatory mitigation measures to offset unavoidable adverse impacts to waters of the U.S. resulting from the proposed dry dock project. The implementation of the applicant's proposed mitigation activities would involve dredging in navigable waters of the U.S. and the discharge of fill material into waters of the U.S. to restore and enhance aquatic ecosystems. While the proposed compensatory mitigation activities

would result in net increases in aquatic resource functions and services, such activities occur in waters of the U.S. and therefore, require DA authorization.

See “Additional Information” section below for details regarding the project scope.

AUTHORITY(S): This permit application will be reviewed under Section 404 of the Clean Water Act (“CWA”; 33 USC § 1344), Section 10 of the Rivers and Harbors Act of 1899 (“RHA”; 33 USC § 403) and Section 103 of the Marine Protection, Research and Sanctuaries Act, as amended (“MPRSA”; 33 USC § 1413).

EVALUATION FACTORS: The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. In addition, the impact of the proposed activity on the public interest will include application of the criteria established under the authority of Section 102(a) of the MPRSA of 1972, as amended (40 CFR Parts 220 to 229).

The Corps is soliciting comments from the public, federal, state, and local agencies and officials, Native Hawaiian organizations, and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, essential fish habitat, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The U.S. Navy (applicant) is the designated lead federal agency under the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.) for evaluating and considering the environmental consequences of its proposed action on the quality of the human environment. In doing so, the U.S. Navy prepared an environmental impact statement (EIS) for the *Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY & IMF) Dry Dock and Waterfront Production Facility* project. Based on the Corps’ jurisdiction by law and special expertise, the U.S. Navy invited the Corps to serve as a cooperating agency on the development of the EIS with the intent of the

Corps to adopt the Final EIS for ensuring its independent compliance with NEPA for carrying out the Corps' federal actions (i.e., the DA permit decision).

The Final EIS considers the environmental consequences of the applicant's preferred alternative as well as three other build alternatives, plus the No Action alternative. Additional information about the Navy's Final EIS may be found at https://www.pearlharbordrydockeis.org/. As of the date of the publication of this public notice, the U.S. Navy's Notice of Availability of the Final EIS was published in the *Federal Register* on October 14, 2022, for a 30-day wait period that closed on November 14, 2022 (87 FR 62407). The U.S. Navy intends to issue its Record of Decision at least 30 days following the Final EIS wait period, on or around December 16, 2022. Any public comments submitted to the U.S. Navy on their Final EIS and/or in response to this public notice will be considered by the Corps as part of our public interest review process and final DA permit decision-making.

ADDITIONAL INFORMATION: The PHNSY & IMF is located on Pearl Harbor at JBPHH, Island of Oahu, Hawaii, and is strategically positioned between the U.S. West Coast and the Far East. The PHNSY & IMF serves as the home port for the Pacific fleet of fast-attack submarines. PHNSY & IMF is the only shipyard (i.e., commercial or naval) in the Pacific Islands capable of conducting emergent and planned maintenance of fast-attack submarines. PHNSY & IMF has been assigned by the U.S. Navy to accommodate depot maintenance of these vessels and has existing capability and expertise to operate nuclear-certified dry docks. Accordingly, the PHNSY & IMF's mission is to repair, maintain, and modernize Navy fast-attack submarines and surface ships.

PROJECT PURPOSE AND NEED

Applicant's Project Purpose and Need Statement: The U.S. Navy's stated purpose for the proposed action is to provide appropriate dry dock capability at PHNSY & IMF no later than January 2028 to meet submarine depot maintenance mission requirements, as well as build and operate a properly sized and configured waterfront production facility to enable efficient submarine maintenance.

The proposed action is needed because the existing Dry Dock 3 (DD3) at PHNSY & IMF does not have the necessary length or floor strength to accommodate current and future class fast-attack submarines. Additionally, an appropriately sized and adjacent waterfront production facility is needed to reduce lost operational days by increasing collaboration and efficiency among the work force. The culmination of a replacement dry dock and new waterfront production facility would ensure that the U.S. Navy achieves necessary efficiencies and is capable of fulfilling scheduled maintenance requirements. The mission need date of January 2028 is driven by current projected fleet maintenance schedules. The U.S. Navy is proposing improvements at PHNSY & IMF because the location:

- Supports the Pacific Fleet submarine concentration area.

- Is the home port for the fast-attack submarines, has been assigned to accommodate depot maintenance of these vessels, and has existing capability and expertise to operate nuclear-certified dry docks.

- Is the only shipyard (i.e., commercial or naval) in the Pacific Islands capable of conducting emergent and planned maintenance.

- Is strategically located between the U.S. West Coast and the Far East, in the heart of the Pacific Ocean, and about a week's travel time closer than the U.S. West Coast to East Asia.

Corps' Basic and Overall Project Purpose Statement: The *basic project purpose* is defined by the Corps and is used to determine whether a project is "water dependent" and requires access or proximity to, or siting within, a special aquatic site[1] in order to fulfill its basic purpose. An activity that is not water dependent (that is, it does not require siting in a special aquatic site) may still be authorized as long as the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines ("404(b)(1) Guidelines") presumption against such discharges is successfully rebutted, the discharge meets other criteria of the 404(b)(1) Guidelines, the activity is not contrary to the public interest, and the proposed action satisfies all other statutory and regulatory requirements. Specific to the proposed PHNSY & IMF project, the basic project purpose is "*infrastructure for military readiness*", a non-water dependent activity because it does not require siting in a special aquatic site (e.g., a coral reef or wetland).

The *overall project purpose* serves as the basis for the Corps' 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives to be analyzed. The overall project purpose is used to evaluate less environmentally damaging practicable alternatives and applies to all waters of the U.S., not just special aquatic sites. The Section 404(b)(1) Guidelines state that an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. The Corps has generally concurred with applicant's stated project purpose (above) and as such, has determined the overall project purpose for evaluation of alternatives under the Section 404(b)(1) Guidelines is as follows:

> *To provide appropriate dry dock capability at PHNSY & IMF to meet submarine depot maintenance mission requirements, as well as build and operate a properly sized and configured waterfront production facility to enable efficient submarine maintenance*.

[1] Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes (40 CFR Parts 230.40-45).

PROPOSED ACTIVITY REQUIRING DA AUTHORIZATION

The U.S. Navy is proposing to replace the existing Dry Dock 3 (DD3) and associated facilities with a new graving dry dock and waterfront production facility capable of servicing newer, larger fast-attack submarines in the Pacific Island Region. A graving dry dock is a narrow basin constructed on a navigable waterbody that can be flooded to allow large watercraft to be floated in, then drained to allow the watercraft to come to rest on a dry platform. Dry docks are used for the maintenance and repair of ships, boats, submarines, and other watercraft.

In addition to a new dry dock, a new waterfront production facility would be constructed in adjacent uplands to support the dry dock repair and maintenance activities at both the new Dry Dock 5 (DD5) and the existing Dry Dock 2 (DD2). Construction and operation of DD5 and the waterfront production facility would occur in two distinct stages: Stage 1 would occur first and comprise construction of an uncovered DD5, followed by Stage 2 which includes the construction of the upland waterfront production facility.

Construction-related activities in jurisdictional waters of the U.S. that require DA authorization would include the demolition of in-water structures, dredging, ocean disposal of suitable dredged materials, discharge of dredged and fill material, installation of new temporary and permanent in-water structures, and implementation of compensatory mitigation projects that are proposed to offset the unavoidable adverse impacts to waters of the U.S. (WOTUS). These in-water construction activities would occur at the Pearl Harbor shipyard, as well as multiple construction support facilities located on JBPHH, including the Waipio Peninsula, Pearl City Peninsula, Ford Island, Bishop Point and the Loko Paaiau Fishpond at McGrew Point. The regulated construction activities in waters of the U.S., including wetlands and navigable waters of the U.S. (tidally influenced waters), are described in greater detail below.

Removal of Existing Structures in Navigable Waters of the U.S. (Section 10 of the RHA)

Proposed activities in navigable waters of the U.S. include the demolition and removal of existing structures at DD5 prior to dredging and in advance of installing new structures (Table 1). To remove such structures, work in navigable waters of the U.S. would also be required to include dredging of soft sediments for gaining access to one of the structures that requires removal. The following four major structures would be removed from navigable waters of the U.S.

Marine Railway. An existing marine railway, including a rail structure and pile caps, would be removed to accommodate DD5 construction activities. The railway consists of iron crane rails (partitioned into square sections) and concrete pile caps that run the length of the railway. The marine rail covers 0.337 acre of submerged seafloor. Under the pile caps are timber piles that reach 20 to 60 feet down into the substrate. Some wood piles in the shallower part of the marine railway slope would be removed,

but other piles would be left in place where they do not conflict with construction and fill material can be placed on top of them. The U.S. Navy's construction contractor would excavate around the pile caps and cut off piles that would remain in place. Removal of the marine railway would also require dredging in approximately 0.94 acre of soft sediment that occurs on top and around the marine rail to gain access to the structure.

Crane Maintenance Area (Crane Rail Pier). The existing crane maintenance area (also referred to as the crane rail pier) would be demolished and removed prior to commencing dredging activities. On the west side of the pier, wooden fender piles and a line of 18-inch square concrete piles would be completely removed. Wooden piles that are in the water would be cut off at the mudline. On the east side of the pier, concrete piles would remain in place, but the concrete column and pile caps on top of the piles would be removed. The concrete footing for the east side of the crane maintenance area would also be removed.

Building 1446/Pier 1233. A small platform and pier east of the crane maintenance area, referred to as Pier 1233, would be demolished and removed. Approximately 0.002 acre of the platform (pier) is in/over navigable waters of the U.S.

Mooring Platform. A mooring dolphin and walkway at the DD3 quay wall along the west face of DD3 would be demolished and removed to allow for construction of a new quay wall located east of the proposed DD5. Deteriorated timber fender piles at the DD3 quay wall would be removed and replaced with new precast concrete fender piles.

Table 1: Removal of Structures at Proposed Dry Dock 5

Structure to be Removed	Aquatic Resource Type	Impact Duration[1]	Area (acre) of Impact to Navigable WOTUS
Marine Railway	Harbor/Ocean	Temporary	0.337 acre
Crane Maintenance Area (Crane Rail Pier)	Harbor/Ocean	Temporary	0.004 acre
Building 1446/Pier 1233	Harbor/Ocean	Temporary	0.002 acre
Mooring Platform	Harbor/Ocean	Temporary	0.004 acre

[1] While the removal of the structures would be permanent, the work that occurs in navigable waters of the U.S. to remove the structures is considered a temporary impact.

Installation of New Structures in Navigable Waters of the U.S. (Section 10 of the RHA)

Structures proposed by the applicant for installation in navigable waters of the U.S. include steel H-piles, steel pipes, a caisson, trestles, shoring walls, quay walls and anchor walls. Many of these structures would be placed temporarily in navigable waters of the U.S. and then removed following construction, whereas other structures would be installed on a permanent basis. The structures that would be installed in navigable

waters of the U.S. are described in the subsections that follow and summarized in Tables 2 and 3.

Dry Dock 5 Offloading Pier. A temporary, T-shaped pier would be constructed over the southern half of the proposed DD5 rock revetment to facilitate offloading of materials from other construction support facilities. The proposed pier would consist of a 0.689-acre terminal platform supported by 75, 36-inch steel pipe piles and a 0.062-acre access walkway (trestle) supported by 10 piles. Approximately 0.709 acre of the pier and 79 piles would be located in/over navigable waters of the U.S. After completion of the proposed DD5 construction, the offloading pier would be removed, including the extraction of piles. The offloading pier could be rebuilt for the waterfront production facility construction and removed a second time.

Pile driving using pre-drilling, vibratory, or impact methods would be required for the installation of structures at the proposed DD5. Pile driving would be accomplished through pile drivers operating from land, barges, or on-water platforms. Pile driving activities would occur during productive daylight hours, seven (7) days per week, for approximately 14 months (but could extend longer if unusual site conditions are encountered).

Table 2: Piles and Structures to be Installed at the Proposed Dry Dock 5

Structure to be Installed	# of Piles	Pile Type	Installation Method	Aquatic Resource Type	Impact Duration
DD5 Offloading Pier[1]	79	36-inch Steel Pipe	Vibratory/Impact Hammer	Harbor/Ocean	Temporary
Quay Walls	653	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Quay Walls	117	20-inch, concrete	Pre-Drilling/Impact	Harbor/Ocean	Permanent
Quay Deadman	482	42×18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Shoring Wall-West	395	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Shoring Wall-East	462	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Anchor Wall-East	76	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Anchor Wall-West	141	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Trestle-East	145	24-inch, Steel Pipe	Vibratory/Impact	Harbor/Ocean	Temporary
Trestle-West	175	24-inch, Steel Pipe	Vibratory/Impact	Harbor/Ocean	Temporary
Pumphouse Walls	140	42 × 18-inch, Steel H-piles/King Piles	Vibratory/Impact	Harbor/Ocean	Permanent
Pumphouse Floor Slab	58	18 x 18-inch Steel H-Pile	Vibratory/Impact	Harbor/Ocean	Permanent

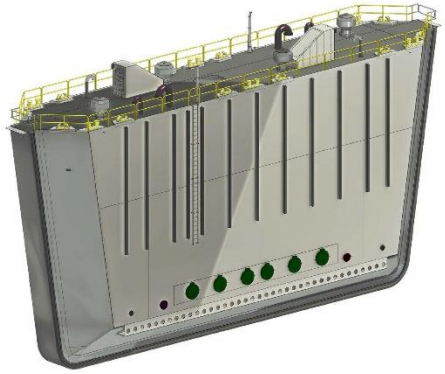
[1] Only 4 of the 10 piles associated with the access walkway/trestle are proposed below the mean high water line.

Following completion of construction activities for the proposed DD5, piles used for the construction support facilities would be removed (extracted) using vibratory methods. Extraction would require up to approximately 25 days at the PHNSY & IMF project area. A portion of piles used to provide structural stability during construction of the proposed DD5 would also be removed, requiring up to approximately 107 days. A realistic scenario is that more than one pile driving rig would be driving piles at the same site and at the same time.

Graving Dry Dock. The U.S. Navy is proposing to construct a new graving dry dock in/over approximately 1.81 acres of navigable waters of the U.S. The proposed DD5 floor would be constructed using both tremie concrete (i.e., concrete that is poured under water) and precast sections. Tremie concrete would be placed using a gravity-fed hopper through a vertical pipe that extends from above the water surface to the underwater floor. Underwater concrete could also be placed by pumping from a pump placed above water through a hose to the placement location in the floor. Precast concrete sections would be placed using a construction crane and flotation tanks to control the buoyancy of the precast units. The dry dock walls would be constructed in a dry environment after dewatering the dry dock basin. Ongoing dewatering (focused discharge) to Pearl Harbor to manage seepage (primarily seawater) during construction would be anticipated at a rate of 5,000,000 gallons per day per conditions of a National Pollutant Discharge Elimination System (NPDES) construction permit.

Dry Dock Caisson. The proposed DD5 would be equipped with a caisson (i.e., watertight chamber that allows in-water work, refer to Figure 1 below) measuring approximately 119 feet x 60 feet x 22 feet at the proposed DD5 entrance. The caisson would be a formed-welded, steel plate assembly that when placed would provide a watertight seal, allowing the dry dock to be emptied and flooded with seawater as required for operations. Flooding of the proposed DD5 would be done using pumps and flood-through tubes within the caisson, providing superflood capability inside DD5. The caisson would be delivered to the project site via a special, heavy-lift vessel. When not in use, the caisson would be moored along the quay wall adjacent to the proposed DD5 entrance.

Figure 1: Example of a Dry Dock Caisson



Trestles. Trestles are elevated structures with an open cross-braced framework underneath and consist of steel pipe piles that would be driven in-water. These trestles would be constructed and used to temporarily support the pile driving rigs that would drive the H-piles for the shoring walls for the proposed DD5. The trestles would be removed after the fill material is placed. The east trestle would consist of 145, 24-inch steel piles, and the west trestle would have 175, 24-inch steel piles.

Shoring Walls. Shoring walls that consist of interlocking H-piles would be installed in/over 0.07 acre of navigable waters of the U.S. around the perimeter of the dry dock and pump house pump well. The piles that would form the north wall, which would cover the dry dock entrance, would be extracted after the proposed dry dock has been built. The other piles would be encased in or attached to the concrete walls of the dry dock.

Quay Walls. Two quay walls would be constructed in/over approximately 0.05 acre of navigable waters of the U.S. along the north portion of the proposed DD5. The west quay wall would be approximately 349 feet in length and would connect with the new DD5 entrance structure at the east end and the new sloped revetment at the west end. The east quay wall would be approximately 318 feet in length and would connect with the new DD5 entrance structure at the west end and the existing DD3 quay wall at the east end.

Anchor Walls. One pair of anchor walls (also known as “tie-back” walls) would be located immediately behind the quay wall on both east and west sides and would be driven in-water. The H-piles of the quay walls would be attached to the anchor walls using tie rods. The anchor walls would act as a “deadman” or stationary anchor that resists movement and helps maintain the integrity of the quay wall or dry dock shoring walls.

Waipio Peninsula Material Offloading Pier and Ramp for Precast Offloading. A temporary construction support facility would be located on the southeastern end of Waipio Peninsula. Positioned just across the main channel from PHNSY & IMF, the Waipio Peninsula support facility would be used as an area for dewatering and processing dredged material, staging and storing construction materials, fabricating concrete elements of DD5, construction crew parking, and a loading dock for materials and personnel going to the PHNSY & IMF construction site. Temporary structures that would be installed as part of the Waipio Peninsula support facility in navigable waters of the U.S. include a construction material offloading pier and ramp for precast offloading.

The temporary offloading pier would consist of a pile-supported terminal platform with two access piers from the land that lead to a long pier positioned parallel to the Pearl Harbor main channel. Approximately 0.33 acre of the structure would be located in/over navigable waters of the U.S. This structure would be used to service barges and delivery ships for transport of dredge spoils and construction materials on and off Waipio Peninsula and would be removed after DD5 construction is complete.

Finger Piers. The U.S. Navy is also proposing to install finger piers in/over approximately 0.09 acre of navigable waters of the U.S. at end of the precast offloading ramp.

Pearl City Peninsula L-Shaped Pier. The Pearl City Peninsula would be used as an area for staging and storing construction materials, construction crew parking, and a loading dock for materials to be transported to the PHNSY & IMF construction site. Temporary structures, such as a pier, would be constructed on the east shoreline of the peninsula and would remain in place for several years. The temporary L-shaped pier would be a pile-supported structure placed in navigable waters of the U.S. jutting east from the land that makes a 90 degree turn above the northwest corner of the dredged channel in Upper East Loch of Pearl Harbor. Vessels docked at the L-shaped pier would be loaded from the crane on the bulkhead and/or from the pier.

Ford Island Cluster Piers. Up to seven temporary cluster piers would be installed in approximately 0.08 acre of navigable waters of the U.S. at Ford Island to support construction activities and then be removed when the proposed action is completed. Up to nine barges could be moored overnight for the storage of dredged sediment and construction materials. Longer stays would be anticipated but would be based on weather and construction progress. The number and size of the pile clusters would be dependent on the U.S. Navy's contractor needs and equipment sizes; and would be determined after the construction contract is awarded.

Table 3: Piles and Structures to be Installed at the Construction Support Facilities

Structure	# Piles[1]	Pile Type	Installation Method	Aquatic Resource Type	Impact Duration
Waipio Peninsula Material Offloading Pier	168	36-Inch Steel Pipe	Vibratory/Impact Hammer	Harbor/Ocean	Temporary
Waipio Peninsula Precast Offload Finger Piers	209	36-Inch Steel Pipe	Vibratory/Impact Hammer	Harbor/Ocean	Temporary
Pearl City Peninsula L-shaped Pier	41	36-Inch Steel Pipe	Vibratory/Impact Hammer	Harbor/Ocean	Temporary
Ford Island Cluster Piers	126	Concrete	Vibratory/Impact Hammer	Harbor/Ocean	Temporary

[1] All reported pile quantities include a 15 percent increase over design specifications.

Barge Mooring Buoys. For the duration of the proposed action (i.e., 65 months), up to 50 barges would be used to transport and store materials, thus requiring overnight moorings. Various locations throughout Pearl Harbor would accommodate the mooring of these barges. The Middle Loch of Pearl Harbor would be used for barge mooring during construction of the proposed action, with up to 48 barges using six newly installed mooring buoys. In addition, in the West Loch of Pearl Harbor the U.S. Navy would remove and replace six contractor-owned barge mooring buoys to support barges during construction. Similarly, one additional contractor-owned mooring buoy would be removed and replaced in the East Loch of Pearl Harbor to support barge

mooring during construction.

Dredging in Navigable Waters of the U.S. (Section 10 of the RHA)

Dry Dock 5. Dredging at the proposed DD5 would occur in two phases (not to be confused with the "stages" of construction). Phase I would include dredging of sediments in approximately 7.37 acres of navigable waters of the U.S., including the areas designed for a new approach channel, rock revetment, marine railway, and graving dry dock/pumpwell. Phase II would include dredging of sediments in approximately 2.02 acres of navigable waters of the U.S. at the graving dry dock, cofferdam, and pumpwell, noting that the Phase II dredge area would involve deepening areas that would already be impacted during the Phase I dredging (1.86 acres of the total 2.02 acres). As a result, only 0.16 acre of additional dredge area would be impacted outside the Phase I dredge footprint during Phase II dredging.

The type of material that would be dredged at the proposed DD5 falls into two categories: soft unconsolidated and native. The majority of the soft unconsolidated material is categorized as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sediments and has a moderate to high potential to contain munitions and explosives of concern (MEC). This material would be disposed in accordance with CERCLA regulations and is not subject to Corps permitting under Section 404 of the CWA or Section 10 of the RHA. The second sediment type is deep native material located below the soft sediment and is composed of tuff-like material, loose to dense coralline sands and gravels, and limestone/calcium carbonate rock. As a result of the nature and depth of this material, it does not have the potential to contain MEC or contaminants of concern.

At the proposed DD5, the dredging of soft sediments would occur 24 hours per day, seven days per week, except for areas of soft sediment where dredging would occur for up to a 12-hour duration at night due to the potential to encounter MEC. The total duration of dredging would be up to approximately 15 months. The applicant and its contractor(s) would perform the majority of dredging at the proposed DD5 using an environmentally sensitive closed clamshell-style bucket (also referred to as mechanical dredging). The estimated dredge volume during Phases I and II at the proposed DD5 is 264,500 cubic yards (cy) and would directly impact approximately 7.53 acres of navigable waters of the U.S. The specific dredge areas in and around the proposed DD5 are broken down and described in greater detail below and summarized in Table 4.

Marine Railway. Approximately 0.94 acre of soft sediment on top and around the marine rail would be dredged to gain access to the structure for demolition and removal.

Approach Channel at DD5. Approximately 8,820 cy of material would be dredged for creating a 100-foot-wide by approximately 300-foot-long approach channel to a depth of -47 feet mean lower low water (includes 2-foot overdredge). The dredged soft sediments/MEC would be transported to the U.S. Navy's upland Confined Disposal

Facility (CDF) Cell 1 and/or Cell 4 at the Waipio Peninsula for processing. After the material is cleared of MEC, the remaining dredged sediments would be disposed of at PVT Landfill (capacity reserved) or transported via scow for ocean disposal, if the sediments are determined suitable.

Rock Revetment. The U.S. Navy is proposing to dredge 2.42 acres of material in navigable waters of the U.S. for the foundation toe for a revetment/berm. The leading 50 feet of the revetment toe would be dredged; soft sediments would be removed to ensure revetment stability. Dredging the soft sediment/MEC material within the footprint of the revetment toe would mitigate the risk of settlement and long-term slope failure of the western backfill area during seismic activity. Portions of the dredge footprint would be both inside and outside the CERCLA boundary. After cleared of MEC, the remaining dredged sediments would be disposed of at PVT Landfill (capacity reserved) or via ocean disposal, if determined to be suitable.

Graving Dry Dock/Pumpwell. Approximately 3.01 acres of soft sediment would be dredged in navigable waters of the U.S. to facilitate construction of the graving dry dock and pumpwell.

Table 4: Dredging Areas and Volumes at Dry Dock 5

Location	Area (acres)	Volume (cubic yards)	Disposal Site(s)[1,2]
Construction Phase I			
Approach Channel	1.00 ac	--	SOODMDS or PVT Landfill
Revetment Area	2.42 ac	--	SOODMDS or PVT Landfill
Marine Railway	0.94 ac	--	SOODMDS or PVT Landfill
Graving Dry Dock/Pumpwell	3.01 ac	--	SOODMDS or PVT Landfill
SUBTOTAL:	7.37 ac		
Construction Phase II			
Graving Dry Dock	1.81 ac (0.15 ac new)	--	SOODMDS or PVT Landfill
Pumpwell	0.09 ac (0.00 new)	--	SOODMDS or PVT Landfill
Cofferdam	0.12 ac (0.01 ac new)	--	SOODMDS or PVT Landfill
SUBTOTAL:	2.02 ac (0.16 ac new)		
DD5 TOTAL[3]:	**7.53 ac**	**264,500 cy**	
Future Maintenance Dredging			
Future Maintenance[4]	1.00 ac	860 cy	SOODMDS or PVT Landfill
TOTAL:	**1.00 ac**	**860 cy**	
CDF = Confined Disposal Facility (upland)			

[1] Prior to disposal at either SOODMDS or PVT Landfill, dredged soft sediments/MEC would be transported to the Navy's upland CDF Cell 1 and/or CDF Cell 4 at Waipio Peninsula for processing to ensure the material is cleared of MEC prior to final disposal.

[2] Disposal options for the U.S. Navy to transport dredged materials to the SOODMDS have not been finalized nor approved by the U.S. EPA pursuant to 40 CFR 227. Sediment sampling, analysis, and

interpretation of the results is ongoing and ocean disposal would occur only for those sediments determined by the U.S. EPA to be suitable for placement at the SOODMDS.

[3] Includes area of Phase I plus additional NEW acreage (0.16 acre) dredged outside Phase I during Phase II.

[4] The exact volume of accumulated sediments that would require periodic future maintenance dredging at the approach channel to DD5 is unknown. The future maintenance volume is estimated based on an assumption of 10 years of 0.06-centimeter annual deposition rate across the 1-acre approach channel. Maintenance dredging is not anticipated for at least 10 years following initial construction completion.

Waipio and Pearl City Peninsulas. Dredging may also be required at Waipio Peninsula and Pearl City Peninsula to provide adequate draft for support vessels to access the temporary construction support facilities. However, the yet-to-be-selected U.S. Navy construction contractor may develop a design plan that does not require dredging at these two construction support facilities or may require less dredging than what was identified by the U.S. Navy in its conceptual engineering design. This public notice uses a conservative approach by assuming there could be dredging at both locations and that the dredging would occur to the maximum extent identified by the proposed dredge footprints and depths, as evaluated in the U.S. Navy's Final EIS and reported in the DA permit application submitted to the Corps.

According to the U.S. Navy's permit application, the estimated dredge footprints for the Waipio Peninsula and Pearl City Peninsula would not exceed 4.16 and 8.14 acres, respectively (Table 5). The dredging of soft sediments at Waipio Peninsula (15,000 cy) and Pearl City Peninsula (40,000 cy) would occur seven days a week for up to a 12-hour duration at night due to the potential to encounter MEC. Once that is completed, dredging would occur 24 hours a day, seven days a week. The total duration of dredge activity would be approximately two months. Maintenance dredging during operations would also occur on an as-needed basis to remove any accumulated soft sediment.

The U.S. Navy's proposed action also includes the implementation of compensatory mitigation measures that would necessitate dredging at an historic fishpond located along the shoreline of McGrew Point (see MITIGATION discussion below for more details). The applicant estimates 50,000 cy of sediments would be dredged from tidally influenced waters at the fishpond to restore and enhance the tidal regime, including the associated habitat, for fisheries and other aquatic resource functions and services.

Table 5: Dredging Areas and Volumes at Waipio Peninsula, Pearl City Peninsula and Fishpond

Location	Area (acres)	Volume (cubic yards)	Disposal Site(s)
Waipio Peninsula	4.16 ac	15,000 cy	PVT Landfill
Pearl City Peninsula	8.14 ac	40,000 cy	PVT Landfill
Loko Paaiau Fishpond	4.6 ac	50,000 cy	SOODMDS or PVT Landfill

TOTAL:	**16.9 ac**	**105,000 cy**	

Transportation of Dredged Material for Ocean Disposal (Section 103 of the MPRSA)

Of the 264,500 cy of material to be dredged from navigable waters of the U.S. at the proposed DD5, the U.S. Navy estimates 35,420 cy would be removed as part of a separate CERCLA remediation project. Activities carried out in navigable waters of the U.S. under CERCLA are approved by the U.S. Environmental Protection Agency (EPA) and are not subject to DA permitting under Section 404 of the CWA or Section 10 of the RHA. Once the sediments are cleared of MEC, then the remaining 229,080 cy of non-CERCLA material would be used for fill at the DD5, disposed of at PVT Landfill or transported to the EPA-designated South Oahu Ocean Dredged Material Disposal Site (SOODMDS) for ocean disposal if the sediments are determined suitable.

In addition, approximately 50,000 cy of accumulated sediments would be dredged from the proposed Loko Paaiau Fishpond mitigation site for restoration of fisheries and benthic intertidal habitat as part of the U.S. Navy's proposed compensatory mitigation. These dredged sediments would also be disposed of at the SOODMDS if the materials are determined by EPA to be suitable for ocean disposal.

In coordination with EPA and the Corps, the U.S. Navy initiated sediment testing and analysis of these non-CERCLA soft sediments and native materials. The results are still pending and therefore, it is not known whether or how much of the non-CERCLA soft sediments would be suitable for ocean disposal. For purposes of public disclosure, a conservative approach is being taken which assumes the maximum potential of dredged sediments that could be transported to the SOODMDS for ocean disposal which would include approximately 163,300 cy from DD5 and an additional 50,000 cy from the fishpond (total of 213,300 cy). Any dredged materials that do not meet EPA's suitability criteria would be transported to the PVT Landfill for disposal.

Ocean disposal of dredged material may only occur if beneficial uses of the dredged material and/or upland alternatives are not available, and such disposal complies with specific ocean disposal criteria and conditions set forth in 40 CFR part 227. If the U.S. Navy successfully demonstrates there are no upland disposal alternatives or beneficial reuse alternatives available for the dredged sediments and the sediments are found to be suitable based on the results of the pending sampling and analysis plan(s), then the material would be transported by tugboat-towed scows to the SOODMDS. The SOODMDS is located about four miles south of the Pearl Harbor in Mamala Bay. Each scow would be loaded to approximately 85% capacity, or approximately 1,300 cy of material. Based on the maximum potential volume of dredged sediments identified for possible ocean disposal, there would be up to approximately 202 roundtrips from the PHNSY & IMF project area to the SOODMDS.

Prior to the Corps issuing a final DA permit decision under Section 103 of the MPRSA, the applicant must receive concurrence from EPA for the use of the ocean

disposal site. As of the publication date of this public notice, the applicant has not received a suitability determination nor final approval from EPA regarding the disposal of dredged sediments at the SOODMDS.

Discharge of Dredged and/or Fill Material into Waters of the U.S. (Section 404 of the CWA)

Approximately 336,600 cy of dredged and fill material would be discharged into waters of the U.S. that would result in the permanent impact to approximately 8.0 acres of open water classified as estuarine subtidal and estuarine intertidal and 0.1 acre of adjacent wetlands consisting of estuarine scrub shrub in association with the construction of DD5 (Table 6). The following subsections describe specific proposed project features that would involve the discharge of dredged or fill material into waters of the U.S., including wetlands.

Graving Dry Dock 5. The proposed DD5 would require multiple operations involving the discharge of dredged and fill material into waters of the U.S. to complete the construction of the dock. Any dredged material that is deemed acceptable for use as structural fill at the dry dock would be used as such. Additional fill material would be sourced from locations on and off the Island of Oahu.

As described above, the proposed DD5 floor would be constructed using both tremie concrete (concrete that is poured under water) and precast sections. Tremie concrete would be placed using a gravity-fed hopper through a vertical pipe that extends from above the water surface to the underwater floor. Underwater concrete could also be placed by pumping from a pump placed above water through a hose to the placement location in the floor. Precast concrete sections would be placed using a construction crane and flotation tanks to control the buoyancy of the precast units. The dry dock walls would be constructed in a dry environment after dewatering the dry dock basin.

The grade elevation surrounding DD5 would be raised from seven feet to 11 feet above mean sea level (MSL) to account for flooding and long-term sea level rise. To achieve this elevation and establish a consistent grade, structural fill would be used to fill the area around the DD5 walls and the peninsula west of DD5. Approximately 3,038 stone columns would need to be installed within the fill areas to the north and south. The columns would be placed to depths ranging from 6 feet to 60 feet. The columns would be installed to mitigate the liquefaction of the soil during a seismic event by dissipating pore water pressure. The columns would be installed by drilling a hole in the ground with an auger drill, placing the column in the pre-drilled hole, and then backfilling with gravel.

Following Phase II dredging and construction of the revetment, the U.S. Navy would discharge reclamation fill, which would include dredged material approved for in-water disposal and/or upland sourced fill that is also approved for in-water placement, in approximately 4.1 acres of open water and 0.09 acre of wetlands to bring the site

around the proposed DD5 to base grade (+5.0 MSL). The placement of fill material would progress slowly to support construction activities, but the final activities involving the discharge of fill material closest to the shoreline (compacted fill) would occur once the rock revetment, quay wall, and DD5 walls were in place.

Quay Walls. The proposed installation of the two quay walls on the east and west sides of the DD5 would serve to armor and retain fill material placed up to the final finished grade. The proposed quay walls would impact approximately 0.05 acre of waters of the U.S. consisting of unconsolidated seabed.

Rock Revetment and Berm. Approximately 101,600 cy of fill material would be discharged into 2.12 acres of waters of the U.S. (excluding 0.07 acre of overlap between the revetment and berm) for the construction of a rock revetment and berm. The structure would be constructed to protect the backfill that would be placed along the western flank of the proposed DD5. The structure would be stabilized by an inner core composed of a stone dike. The dike would be essentially a mound of fine materials with a gentle seaward slope to reduce wave runup and the erodible effect of the waves. Filter fabric and the finer-grained portions of the containment dike would keep fill material from passing through and contacting the harbor waters. The outer portion of the revetment would be a sloping surface of quarried rock that further stabilizes and protects the shoreline, absorbs waves and boat wakes, and reduces erosion of the shoreline.

Cofferdam. Approximately 2,162 cy of fill material would be discharged into waters of the U.S. for the construction of a cofferdam that would temporarily impact 0.02 of waters of the U.S. The temporary cofferdam would consist of a cantilevered north wall, braced east and west walls, and a tremie concrete cutoff plug and would be constructed after the dredging has been completed and all of the precast concrete dry dock monoliths have been floated-in and set in place. The cofferdam would be constructed by first driving the king pile combi-wall into the ground along the entire alignment, tying into the permanent dry dock cofferdam. The existing grade would be then dredged on the inboard side of the cofferdam down to final grade. Tremie concrete infill would be placed in the voids within the cofferdam, and initial seals would be installed in the two corners of the cofferdam. After the tremie concrete cutoff plug has reached its specified design strength, the DD5 work area would be dewatered. Steel bulkheads would then be installed at the two corners of the cofferdam, and tremie concrete infill would be placed to create final seals at these corners. The temporary cofferdam would be in place for the duration of construction, about five years.

Table 6: Discharge of Dredged and Fill Material at Dry Dock 5

Location of Discharge Site	Aquatic Resource Type(s)	Area (acres)	Volume (cubic yards)
Rock Revetment/Berm	Harbor/Ocean	2.12 ac	101,600 cy
Quay Walls, Graving Dry Dock, Pumpwell, & Reclamation/Compacted Fill	Wetland and Harbor/Ocean	5.98 ac	265,000 cy

TOTAL:		**8.1 ac**	**366,600 cy**

Waipio Peninsula Precast Offloading Ramp. Approximately 11,700 cy of fill material would be placed in 1.3 acres of waters of the U.S. in association with the construction of a precast offloading ramp (Table 7). The ramp would be installed at grade and would consist of a rock foundation with a concrete surface. As well, the U.S. Navy is proposing to install finger piers (0.09 acre) in navigable waters of the U.S. at the end of the precast offloading ramp and conduct some dredging of the channel from the end of the ramp to ensure adequate draft.

Ford Island Cluster Piers. Up to seven cluster piers would be installed by driving clusters of five to 18 precast piles into sediment. The cluster piers are assumed to measure approximately 25 feet in diameter. The close nature of the piles would constitute approximately 85,903 cy of fill over 0.08 acre of waters of the U.S. (Table 7).

Pearl City Peninsula. Approximately 2,266 cy of fill material would be discharged into waters of the U.S. that would impact 0.05 acre of wetlands in association with the construction of an access road and laydown area at the Pearl City Peninsula construction support facility (Table 7).

Table 7: Discharge of Fill Material at the Construction Support Facilities

Location of Discharge Site	**Aquatic Resource Type(s)**	**Area (acres)**	**Volume (cubic yards)**
Waipio Peninsula Precast Offloading Ramp	Wetland	0.1 ac	11,700 cy
Waipio Peninsula Precast Offloading Ramp	Harbor/Ocean	1.2 ac	
Ford Island Cluster Piers	Harbor/Ocean	0.08 ac	85,903 cy
Pearl City Peninsula	Wetland	0.05 ac	2,266 cy
TOTAL:		**1.43 ac**	**99,869 cy**

Table 8: Summary of All Impacts to Waters of the U.S. at PHNSY & IMF, Including Construction Support Facilities

Activity	Impacts to Waters of the U.S.			
	Permanent Impacts		Temporary Impacts	
	Acres, Linear Feet, or # of Structures	Cubic Yards	Acres, Linear Feet, or # of Structures	Cubic Yards
Section 10 RHA – Placement of Structures and Work In/Over/Under Navigable WOTUS				
Dredging at Dry Dock 5: Phase I				
Approach Channel	--	--	1.0 ac	--
Marine Railway	--	--	0.94 ac	--
Rock Revetment	--	--	2.42 ac	--
Graving DD5 and Pumpwell	--	--	3.01 ac	--
Subtotal:	0.00	0.00	7.37 ac	264,600 cy
Dredging at Dry Dock 5: Phase II				
Graving DD5	--	--	1.81 ac (0.15 ac new)	--
Pumpwell	--	--	0.09 ac (0.0 ac new)	--
Cofferdam	--	--	0.12 ac (0.01 ac new)	
Subtotal:	0.00	0.00	0.16 ac[1]	--
Dredging at Waipio Peninsula and Pearl City Peninsula				
Dredging to support vessel access at Waipio	--	--	4.16 ac	15,000 cy
Dredging to support vessel access at PCP	--	--	8.14 ac	40,000 cy
Subtotal:			12.30 ac	55,000 cy
Dredging at Loko Paaiau Fishpond and Kalauao Stream Mouth (proposed mitigation)				
Dredging pond to a depth of 6 feet	--	--	4.6 ac	50,000 cy
Subtotal:	--	--	4.6 ac	50,000 cy
TOTAL DREDGING AREA AND VOLUME:	**0.00**	**0.00**	**24.43 ac**	**369,500 cy**
Installation of Piles and other Structures at DD5				
Trestles	--	--	320 piles	--
DD5 Offloading p=Pier	--	--	79 piles	--
Quay Walls	770 piles	--	--	--
Quay Deadman	482 piles	--	--	--
Shoring Walls	857 piles	--	--	--
Anchor Walls	217 piles	--	--	--
Pumphouse Walls	140 piles	--	--	--
Pumphouse Floor Slab	58 piles			
Subtotal:	2,526 piles	N/A	399 piles	N/A
Installation of Piles and Other Structures at Waipio Peninsula, Pearl City Peninsula & Ford Island				

Activity	Impacts to Waters of the U.S.			
	Permanent Impacts		Temporary Impacts	
	Acres, Linear Feet, or # of Structures	Cubic Yards	Acres, Linear Feet, or # of Structures	Cubic Yards
Waipio Peninsula Material Offloading Pier	--	--	168 piles	--
Waipio Peninsula Precast Offload Finger Piers			209 piles	
Pier and bulkhead at Pearl City Peninsula	--	--	41 piles	--
Ford Island Cluster Piers			126 piles	
New Mooring Buoys (Middle Loch)	--	--	6 buoys	--
Replace Existing Mooring bouys (West Loch)	--	--	6 buoys	--
Replace Existing Mooring buoy (East Loch)	--	--	1 buoy	--
Subtotal:	0.00	N/A	544 piles 55 buoys	--
TOTAL # OF STRUCTURES:	**2,526 piles**	**N/A**	**943 piles 13 buoys**	**N/A**
Removal of Existing Structures at DD5				
Crane Rail Pier	--	--	0.004 ac	--
Marine railway	--	--	0.337 ac	--
Building 1446 (Pier 1233)	--	--	0.002 ac	--
Mooring Platform	--	--	0.004 ac	--
Section 404 CWA – Discharge of Dredged and/or Fill Material into WOTUS				
Discharge of Fill Material at DD5				
Rock revetment	1.58 ac	101,600 cy	--	--
Berm	0.61 ac			
Cofferdam	--	--	0.02 ac	2,162 cy
Quay Walls	0.05 ac	--	--	--
Shoring Walls	0.07 ac	--	--	--
Pumpwell	0.11 ac	--	--	--
DD5	1.81 ac	265,000 cy	--	--
Reclamation Fill	4.19 ac		--	--
Compacted Fill	0.03 ac		--	--
Subtotal:	8.1 ac[2]	366,600 cy	0.02 ac	2,162 cy
Discharge of Fill Material at Pearl City Peninsula, Waipio Peninsula & Ford Island				
Waipio Peninsula Precast Offloading Ramp	1.3 ac	11,700 cy	--	--
Ford Island cluster piers (structural fill)	0.08 ac	85,903 cy		
Pearl City Peninsula (access road, walkway and laydown area)	0.05 ac	2,266 cy		
Subtotal:	1.43 ac	99,869 cy	--	--
Discharge of Fill Material at Proposed Mitigation Sites				
Pearl City Peninsula Wetlands	2.00 ac[3]	--	--	--
Fishpond Rock Wall	0.13 ac	300 cy	--	--
Subtotal:	0.13 ac		0.02 ac	2,162 cy

Activity	Impacts to Waters of the U.S.			
	Permanent Impacts		Temporary Impacts	
	Acres, Linear Feet, or # of Structures	Cubic Yards	Acres, Linear Feet, or # of Structures	Cubic Yards
TOTAL DISCHARGE OF FILL:	**9.66 ac**	**466,769 cy**	**0.02 ac**	**2,162 cy**
Section 103 MPSRA – Transportation of Dredged Material for Ocean Disposal				
DD5 Dredged Sediments (includes all DD5 dredge areas) for ocean disposal	--	--	--	163,300 cy
Fishpond dredged sediments for ocean disposal	--	--	--	50,000 cy
TOTAL VOLUME:	**N/A**	**N/A**	**N/A**	**213,300 cy**

[1] Excludes 1.86 acres of Phase II dredge area within Phase I footprint.
[2] Excludes 0.07-acre Berm and Revetment Overlap, 0.2-acre Berm and Reclamation Fill Overlap, and 0.08-acre Revetment and Reclamation Fill Overlap.
[3] The discharge of fill material into 2.0 acres of WOTUS is necessary for constructing the wetland mitigation site and therefore, is not counted towards the unavoidable impacts to WOTUS for purposes of compensatory mitigation requirements. Consequently, these 2.0 acres of fill are not included in the subtotal or total area of fill.

CONSTRUCTION SCHEDULE AND METHODOLOGY

The construction of the proposed DD5 is estimated to take approximately 65 months and be organized into four phases: (1) mobilization, installation of dry dock shoring walls, and dredging; (2) marine works, placing concrete (precast and tremie) (3) placement of the dry dock caisson and construction of the quay wall; and (4) land facility work. Dredging would occur in two phases for DD5 (not to be confused with the "stages" of construction). Phase I would include dredging the DD5 approach channel, rock revetment area, and marine railway. Phase II would include dredging of the dry dock and pumpwell. Refer to the attached construction drawings and Final EIS for greater details regarding construction methodology.

MITIGATION

The applicant's proposed mitigation may change as a result of comments received in response to this public notice, the applicant's response to those comments, and/or the need for the project to comply with applicable public interest review factors. In consideration of the above, the proposed mitigation sequencing for the proposed project is summarized as follows:

Avoidance and Minimization. The U.S. Navy has implemented design modifications to avoid and minimize adverse environmental impacts through a number of ways, including, but not limited to:

- Utilizing existing utility easements around PHNSY & IMF wherever feasible to minimize new disturbance;

- Utilizing existing roadways at Waipio Peninsula and Pearl City Peninsula wherever feasible to minimize new disturbance areas;

- Using pre-developed areas without cultural significance at Ford Island (FI) for parking, staging, and contractor access from water to avoid new disturbance and minimize cultural impacts;

- Eliminating use of the existing runway (a cultural resource) at FI for materials storage and parking;

- Eliminating use of existing seaplane ramp at FI (a cultural resource) for contractor access and ferry landing; and

- Only locating new open water moorings in Middle Loch where bottom disturbance had previously occurred as a result of recent dredging.

Additionally, the applicant would utilize and implement best management practices(BMPs) to further avoid and minimize adverse impacts to waters of the U.S., federally listed threatened and endangered species, historic properties and other environmental resources. An Environmental Monitoring and Management Plan (EMMP) has been prepared by the applicant's remediation contractor to address BMPs specific to conducting in-water and landside construction activities to ensure that the terrestrial and aquatic environments are protected during implementation of activities to remediate contaminated sediments in Pearl Harbor (CAPE Environmental Management, Inc., 2021). The EMMP describes BMPs, standard protocols, and monitoring plans to help minimize adverse effects on the environment. These measures include but are not limited to turbidity controls that would be utilized during barge loading; water quality monitoring procedures; spillage precaution; equipment inspection and maintenance to prevent leaks; water quality monitoring; and biological monitoring and wildlife conservation strategies. Other BMPs that the U.S. Navy would implement to avoid and minimize adverse impacts from the proposed action, include, but are not limited to, the following measures:

- Installation of turbidity curtains around activities with the potential to produce turbidity during construction.

- Ensure all project materials and equipment that will be placed in wetlands, special aquatic sites, and waters are free of invasive plant and animal species.

- Any temporary tethering, anchoring, mooring, or similar in-water structural components must be placed to avoid direct physical impact to coral and seagrass beds during installation and throughout the duration of its use in wetlands, other special aquatic sites and other waters.

- Any temporary in-water structures must be removed of, in their entirety, upon completion of the work in or affecting wetlands, other special aquatic sites, and other waters of the U.S.

- Unless specifically authorized, stockpiling of project-related materials or unsuitable materials in or in close proximity to wetlands, other special aquatic sites, and other waters of the U.S. such that the stockpiled materials could be carried into such waters by wind, rain, or high surf would be prohibited.

- Upland containment areas sited in uplands near wetlands, other special aquatic sites, and other waters of the U.S. for construction purposes would be bounded by impermeable material to prevent return flows of dewatered effluent into such waters.

Compensation. The U.S. Navy has considered all forms of mitigation throughout the NEPA process and its interagency consultations under applicable federal environmental laws and regulations. For unavoidable adverse impacts to waters of the U.S., including wetlands and navigable waters of the U.S., the U.S. Navy proposes to provide permittee-responsible compensatory mitigation measures that would offset the loss of aquatic resources functions and services resulting from proposed activities in waters of the U.S. The U.S. Navy is currently developing a permittee-responsible draft compensatory mitigation plan (CMP) in accordance with the Corps' 2008 *Final Rule for Aquatic Resources Compensatory Mitigation* (33 C.F.R. § 332). The permittee-responsible CMP will address the unavoidable impacts to the aquatic ecosystems as a result of activities in waters of the U.S. and must be approved by the Corps prior to issuance of a final DA permit decision. The CMP proposes both in-kind and out-of-kind compensatory mitigation. The U.S. Navy has preliminarily identified five permittee-responsible compensatory mitigation projects within JBPHH, with the following conceptual compensatory mitigation goals and measures for each site:

Restore and Enhance Tidal Regime and Wetland Mudflats at Loko Paaiau Fishpond at McGrew Point

At McGrew Point, the U.S. Navy is proposing to restore and enhance a degraded fishpond (known as the Loko Paaiau Fishpond) and associated tidal wetland mudflats for increased fisheries and aquatic resources functions to help offset unavoidable adverse impacts to navigable waters of the U.S. Compensatory mitigation activities at this site would involve dredging and grading the 4.6-acre fishpond to a maximum depth of six feet, resulting in the removal of 50,000 cy of sediments. Restoration work would include reconstructing the historic perimeter rock wall, extending the perimeter rock wall along the shoreline, and removing invasive plant species and rootballs within the fishpond area. Lastly, native plant species would be planted within the tidal wetland mudflats and along the fringe of the fishpond. The site would be monitored and managed in accordance with a Corps-approved CMP.

Re-Establish Wetlands Adjacent to the Loko Paaiau Fishpond

The U.S. Navy is also proposing to re-establish wetlands adjacent to the Loko Paaiau fishpond. Restoration of the adjacent area would require the excavation of approximately 1.1 acres of fill material from an historic wetland that was filled prior to the enactment of the Clean Water Act. The excavation of the site would result in the removal of approximately 26,000 cy of fill on landside areas (uplands) to convert the land back to tidal wetlands. Once excavated, dredging would occur to restore the tidal action of the wetland and prepare the site for revegetation with native wetland plant species. The site would be monitored and managed in accordance with a Corps-approved CMP.

Enhance Estuarine Habitat at Mouth of Kalauao Stream

At the mouth of Kalauao Stream, the U.S. Navy is proposing to clear trash and plant debris from an approximately 2.5-acre area around the mouth of Kalauao Stream where it confluences with Pearl Harbor near the Loko Paaiau Fishpond. The site would be monitored and managed in accordance with a Corps-approved CMP.

Tidal Wetland Restoration at Pearl City Peninsula

At the Pearl City Peninsula, the U.S. Navy is proposing to restore approximately two acres of tidal fringe wetlands, which would involve grading and modifying the existing site with heavy construction equipment to establish proper site conditions for revegetation with native species. Prior to the revegetation activities, invasive species would be removed manually and/or through the application of herbicides. Additionally, predator control measures would be implemented to protect federally listed Hawaiian waterbirds from mammalian predators. The site would be monitored and maintained for a minimum of five years and until the site attains the ecological performance standards established in a Corps-approved CMP.

Remove Aquatic Invasive Species and Rehabilitate Benthic Substrate at Ford Island

At Ford Island, the U.S. Navy is proposing to rehabilitate approximately 0.5 acre of harbor floor. The compensatory mitigation measures at this site would include the consideration of tidal currents and wave activity, removal of scattered debris, the addition of locally sourced limestone boulders to encourage habitat complexity, and removal of the invasive gorilla ogo (*Gracilaria salicornia*) algae. The removal of the invasive algae would be accomplished by scientific divers over the course of approximately one to two weeks with up to five removal events in a two- to three-year period. Removal methods may include reduced nitrification, manual control (e.g., large marine vacuum mounted on a barge), and/or natural predator species translocations. Once the removal is complete, the site would be monitored and managed in accordance with a Corps-approved CMP.

Removal of Invasive Soft Coral at Bishop Point

At Bishop Point, the U.S. Navy is proposing to remove soft coral (*Unomia stolonifera*) on approximately 9 acres. Removal of this species would occur in conjunction with the removal of gorilla ogo at Ford Island. Scientific divers would use the same methods and duration described for the gorilla ogo removal. Monitoring and management of the 9 acre site after the removal of the soft coral would occur in accordance with a Corps-approved CMP.

Table 9: Proposed Permittee-responsible Compensatory Mitigation Plan (Preliminary)

Mitigation Site/Project	Method of Mitigation	Type of Impact to WOTUS	Impacts to WOTUS[1]
Loko Paaiau Fishpond – Rock Wall Reconstruction	Restoration	Discharge of fill material and placement of structure	0.13 ac / 300 cy
Loko Paaiau Fishpond – Dredging and Wetland Restoration	Rehabilitation	Dredging in waters to re-establish appropriate water depths	4.6 ac / 50,000 cy
Loko Paaiau Fishpond – Adjacent Tidal Wetlands	Re-establishment	Excavating and dredging in waters to reestablish appropriate elevations and depths	1.1 ac / 26,000 cy
Kalauao Stream Mouth	Enhancement	Dredging and debris removal	2.5 ac
Pearl City Peninsula – Coastal Fringe Wetlands	Restoration	Discharge of fill material associated with clearing, grubbing and grading site to prepare for revegetation	2.0 ac
Ford Island – Invasive Species Removal and rehabilitation of benthic substrate	Enhancement and Rehabilitation	Work in waters to remove invasive species and the discharge of fill material to create habitat complexity	0.5 ac
Bishop Point – invasive species removal	Enhancement and Preservation	Work in waters to remove invasive species	9.0 ac

[1] Impacts to WOTUS are considered beneficial impacts.

WATER QUALITY CERTIFICATION

Pursuant to Section 401 of the Clean Water Act (Public Law 95-217), the U.S. Navy submitted a Section 401 water quality certification (WQC) request to the State of Hawaii, Department of Health-Clean Water Branch (DOH-CWB) and the Corps concurrently on October 13, 2022. The 401 WQC application has been reviewed by the Corps and determined the request contains all requirements (40 CFR 121.5(b)). Accordingly, in a letter dated October 18, 2022, the Corps notified the DOH-CWB of the reasonable period of time for granting (with or without conditions) or denying the 401

certification. The reasonable period of time was established as 182 days, or April 12, 2023. The Section 401 WQC will be considered waived if the DOH-CWB does not act on the certification request by this date.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION

Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended ("CZMA"; 16 U.S.C. 1456(c)(3)), requires federal agencies to certify that proposed activities affecting land or water uses in the coastal zone comply with the State's Coastal Zone Management (CZM) Program.

The U.S. Navy determined the proposed action is not subject to individual coastal consistency review because the proposed action was determined to be consistent with the de minimis list of activities under the CZMA that is used for Navy and U.S. Marine Corps projects involving new construction and that require preparation of an environmental assessment or EIS under NEPA. Specifically, the U.S. Navy, in cooperation with the State of Hawaii, Coastal Zone Management Program, developed a list of de minimis activities that can be excluded from federal consistency review because the activities, with corresponding mitigation measures, are expected to have negligible coastal effects. Written notification of the U.S. Navy's reliance upon the de minimis list of activities for complying with the CZMA was provided to the State of Hawaii CZM Program Office in an email dated June 8, 2022, and in a follow-up, email dated October 28, 2022. The CZM Program concurred with the Navy's determination of compliance. The Corps has reviewed the U.S. Navy's documentation and believes no further action is required.

HISTORIC PROPERTIES & CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations at 36 CFR Part 800 requires federal agencies to take into account the effects of their undertakings on historic properties, consult with the State Historic Preservation Officer (SHPO) when appropriate, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings.

The U.S. Navy established the area of potential effect (APE) to encompass the areas of JBPHH and PHNSY & IMF and determined the proposed undertaking to demolish structures, dredge, and discharge dredged and fill material for the construction of the PHNSY & IMF project would have an "adverse effect" on historic properties, including National Historic Landmarks. Accordingly, the U.S. Navy consulted with the SHPO, ACHP, Native Hawaiian organizations and other interested parties for the proposed undertaking.

In 2013 a programmatic agreement (PA), titled "*Programmatic Agreement Among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer Regarding Undertakings*

Associated with the Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility Facilities Modernization Plan" (herein "2013 PA") was executed in accordance with 36 CFR Part 800.14(b)(3) to ensure the U.S. Navy took into account potential effects on historic properties when implementing the PHNSY & IMF Facilities Modernization Plan (FMP). More recently and in light of the proposed undertaking, the U.S. Navy has reviewed the 2013 PA and considered updating the document to address the passage of time and current U.S. Navy policies; to address Congressionally mandated shipyard modernization to improve performance of fleet requirements; and to ensure effects on historic properties continue to be taken into account. As a result of this effort and to address the adverse effects to historic properties within the APE for the proposed PHNSY & IMF project, the U.S. Navy, in consultation with SHPO, ACHP, NHOs and other consulting parties, developed a superseding PA that replaces the 2013 PA. Detailed documentation related to the U.S. Navy's Section 106 consultation process is provided in the PHNSY & IMF Final EIS (dated October 2022) and the May 2022 PA.

The Corps has reviewed the U.S. Navy's documentation and determined the APE is inclusive of the Corps' permit area and the executed PA for the undertaking adequately addresses the effects of the Corps' federal actions. Therefore, no further action is required of the Corps pursuant to Section 106 of the NHPA.

ENDANGERED SPECIES

Section 7(a)(2) of the Endangered Species Act of 1973, as amended ("ESA"; 16 U.S.C. 1536(a) (2)), requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. When a federal agency's action "may affect" a listed species or its designated critical habitat, that agency is required to consult formally with the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (USFWS), depending upon the endangered or threatened species, or designated critical habitat that may be affected by the action (50 CFR 402.14(a)). Federal agencies are exempt from this general requirement if they have concluded that an action "may affect but is not likely to adversely affect" endangered species, threatened species or their designated critical habitat, and NMFS and/or USFWS concur with that conclusion (50 CFR 402.14 (b)).

The U.S. Navy considered the effects of the proposed action on federally listed species known to occur or have the potential to occur within the project's action area and their designated critical habitat. The U.S. Navy determined the proposed project would adversely affect three listed species and may affect but would not likely adversely affect nine other listed species that could potentially occur in the action area. The table below lists the species that were considered by the U.S. Navy in its biological assessments.

Species Common Name	Species Scientific Name	U.S. Navy's Determination of Effect
Threatened & Endangered Species Under NMFS Jurisdiction		
Hawaiian Monk Seal	*Monachus schauinslandi*	May Affect, NLAA
Hawaiian green sea turtle	*Chelonia mydas*	May Adversely Affect
Hawksbill sea turtle	*Eretmochelys Imbricate*	May Adversely Affect
Designated Critical Habitat		
Hawaiian monk seal critical habitat	N/A	No Adverse Modification
Threatened & Endangered Species Under USFWS Jurisdiction		
Hawaiian petrel	*Pterodroma sandwichensis*	May Affect, NLAA
Band-rumped storm petrel	*Oceanodroma castro*	May Affect, NLAA
Newell's Townsend's shearwater	*Puffinus auricularis newelli*	May Affect, NLAA
Hawaiian stilt	*Himantopus mexicanus knudseni*	May Adversely Affect
Hawaiian coot	*Fulica americana alai*	May Affect, NLAA
Hawaiian gallinule	*Gallinula galeata sandvicensis*	May Affect, NLAA
Hawaiian duck	*Anas wyvilliana*	May Affect, NLAA
Newell's shearwater	*Puffinus auricularis newelli*	May Affect, NLAA
Hawaiian hoary bat	*Lasiurus cinereus semotus*	May Affect, NLAA
NLAA = Not Likely to Adversely Affect		

The U.S. Navy further determined the proposed transportation of dredged sediments from the PHNSY & IMF project area, should the materials be deemed suitable for ocean disposal, would be eligible for coverage under the EPA-NMFS-USFWS "*ESA and EFH Consultation for Five Existing Hawaii Ocean Dredged Material Disposal Sites"* (dated January 2021) and therefore, no additional analysis or consultation under Section 7 of the ESA is required for the transport of dredged material for ocean disposal.

Based on the determinations of effect, the U.S. Navy submitted its biological assessments and initiated formal consultations with NMFS and USFWS on August 5, 2022, and July 22, 2022, respectively. On November 12, 2022, the NMFS issued its final biological opinion (BO) on the effects of the proposed action on the threatened Central North Pacific green sea turtle (*Chelonia mydas*) and the endangered hawksbill sea turtle (*Eretmochelys imbricata*). The NMFS BO concluded that the U.S. Navy's proposed action to construct and operate a dry dock and waterfront production facility in Pearl Harbor is not likely to jeopardize the continued existence of the green sea turtle or hawksbill sea turtle. In doing so, NMFS issued an incidental take statement pursuant to Section 9 of the ESA and provided non-discretionary reasonable and prudent measures that are necessary to minimize the impact of the amount or extent of incidental take. The reasonable and prudent measures will be achieved by the U.S. Navy implementing specific terms and conditions outlined in Section 9.3 of the BO (NMFS File No. PIR-2020-03728, Reference No. I-PI-20-1891-AG).

Similarly, on October 4, 2022, the USFWS issued its BO on the effects of the proposed action on the Hawaiian stilt (*Himantopus mexicanus knudseni*). The other

species, referred to as the Hawaiian seabirds, for which the U.S. Navy determined the proposed action may affect, but would not likely adversely affect were reviewed by the USFWS and concurred on in an appendix to the final BO. The USFWS BO concluded that the project action, as proposed, is not likely to jeopardize the continued existence of the Hawaiian stilt. In doing so, the USFWS issued an incidental take statement and provided two non-discretionary reasonable and prudent measures that are necessary to minimize the impact of the amount or extent of incidental take of Hawaiian stilt. These measures will be achieved by the U.S. Navy implementing specific terms and conditions identified in the BO (USFWS Reference No. 2022-0078055-S7).

The Corps has reviewed and concurred with the U.S. Navy's determinations of effect, and determined the formal consultations conducted by the U.S. Navy under Section 7 of the ESA adequately address the Corps' federal actions. Therefore, no further action is required of the Corps pursuant to Section 7(a)(2) of the ESA.

ESSENTIAL FISH HABITAT

The proposed action was evaluated by the U.S. Navy for potential direct, indirect and cumulative effects to essential fish habitat (EFH) pursuant to Section 305(b)(2) of the Magnuson Stevens Fishery Conservation and Management Act of 1996 ("MSA"; 6 U.S.C. § 1801 et seq.) and associated federal regulations found at 50 CFR Part 600, Subpart K. The marine water column from the surface to a depth of 1,000 meters from the shoreline to the outer boundary of the Exclusive Economic Zone (200 nautical miles), and the seafloor from the shoreline out to a depth of 700 meters around Hawai'i have been designated as EFH. Within the Pacific Islands Region, EFH is designated for all federally managed species, referred to as Management Unit Species (MUS). These MUSs include bottomfish, pelagics, precious corals, and crustaceans.

The U.S. Navy prepared an EFH assessment (EFHA) that determined the proposed action would adversely affect EFH and concluded the impacts would be substantial. The U.S. Navy further determined that the portion of the proposed action involving the transportation of dredged materials for ocean disposal, should the sediments be deemed suitable for ocean disposal, would be eligible for coverage under the EPA-NMFS-USFWS "*ESA and EFH Consultation for Five Existing Hawaii Ocean Dredged Material Disposal Sites"* (dated January 2021) and therefore, no additional consultation would be needed for this specific activity pursuant to Section 305(b)(2) of the MSA.

On June 24, 2022, the U.S. Navy submitted its EFHA to NMFS requesting initiation of consultation. Based on review of the EFHA, NMFS provided a response to the U.S. Navy that included nine conservation recommendations (CRs) to ensure the proposed action would avoid and minimize potential adverse effects on EFH (refer to NMFS letter dated August 26, 2022). The NMFS CRs also included measures to offset the loss of approximately 3,162 corals within the action area. As required by the implementing regulations, the U.S. Navy prepared a letter responding to the CRs issued

by NMFS, thereby concluding the formal EFH consultation process on September 23, 2022.

The Corps has reviewed the U.S. Navy's documentation prepared pursuant to Section 305(b)(2) of the MSA and determined the consultation conducted by the U.S. Navy and NMFS adequately considers the Corps' federal actions. Therefore, no further action is required of the Corps pursuant to Section 305(b)(2) of the MSA.

PUBLIC HEARING

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings must state clearly and concisely, the reasons and rationale for holding a public hearing.

COMMENT AND REVIEW PERIOD

Conventional mail or e-mail comments on this public notice received during the comment period will be made part of the record and considered in determining whether it would be in the public interest to authorize this proposed action. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and Corps file number **POH-2020-00043**.

All electronic comments should be emailed to:

Susan.a.meyer@usace.army.mil.

Conventional mail comments should be sent to:

U.S. Army Corps of Engineers
Honolulu District, Attn: CEPOH-RO, Susan Gayagas
230 Otake Street
Ft. Shafter, Hawaii 96858-5440

Both conventional mail and e-mail comments must reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Susan A. Meyer Gayagas at (808) 835-4599 for further information concerning this notice.

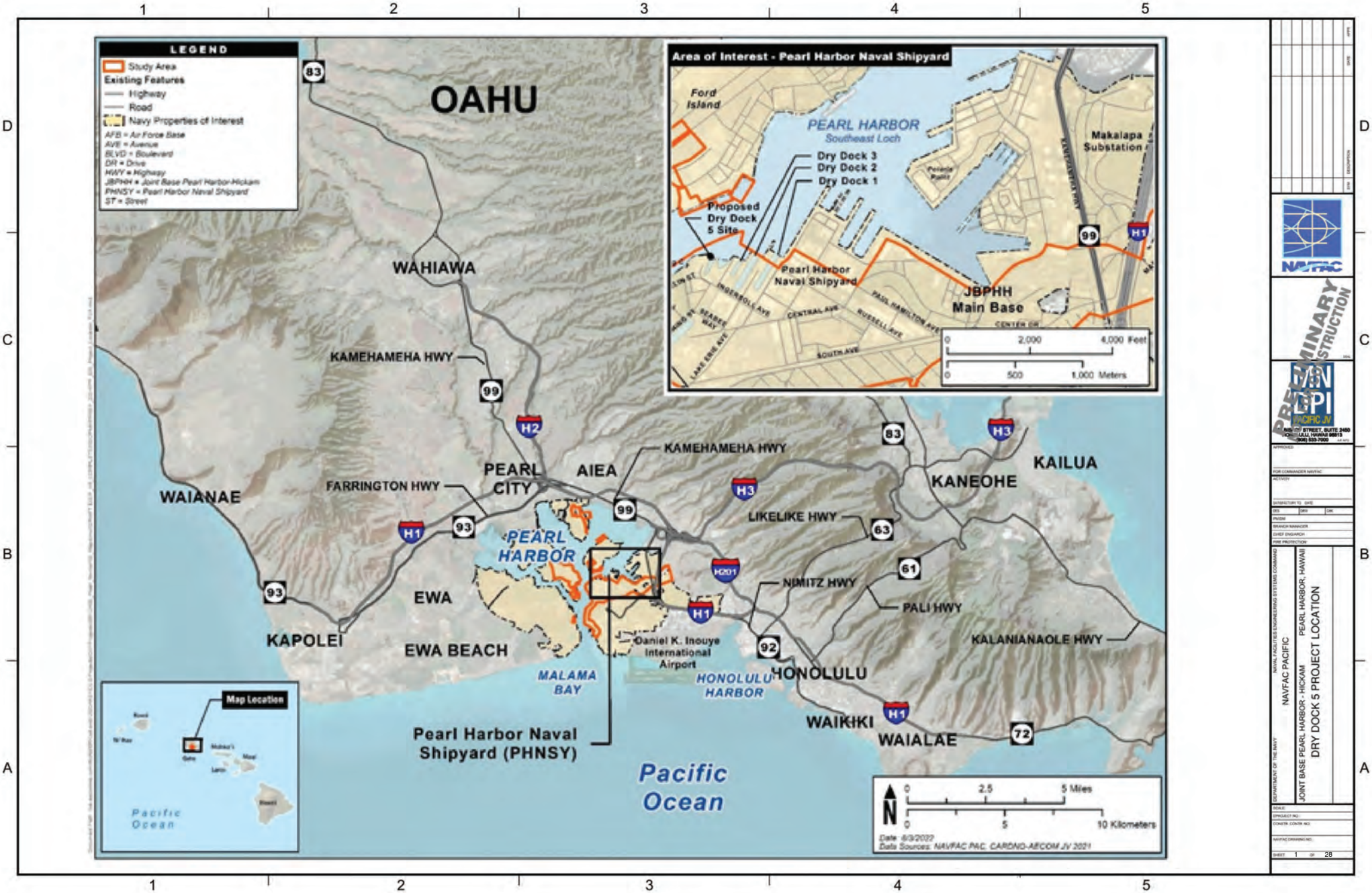
This public notice is issued by the Chief, Regulatory Office.

Attachment

Attachment

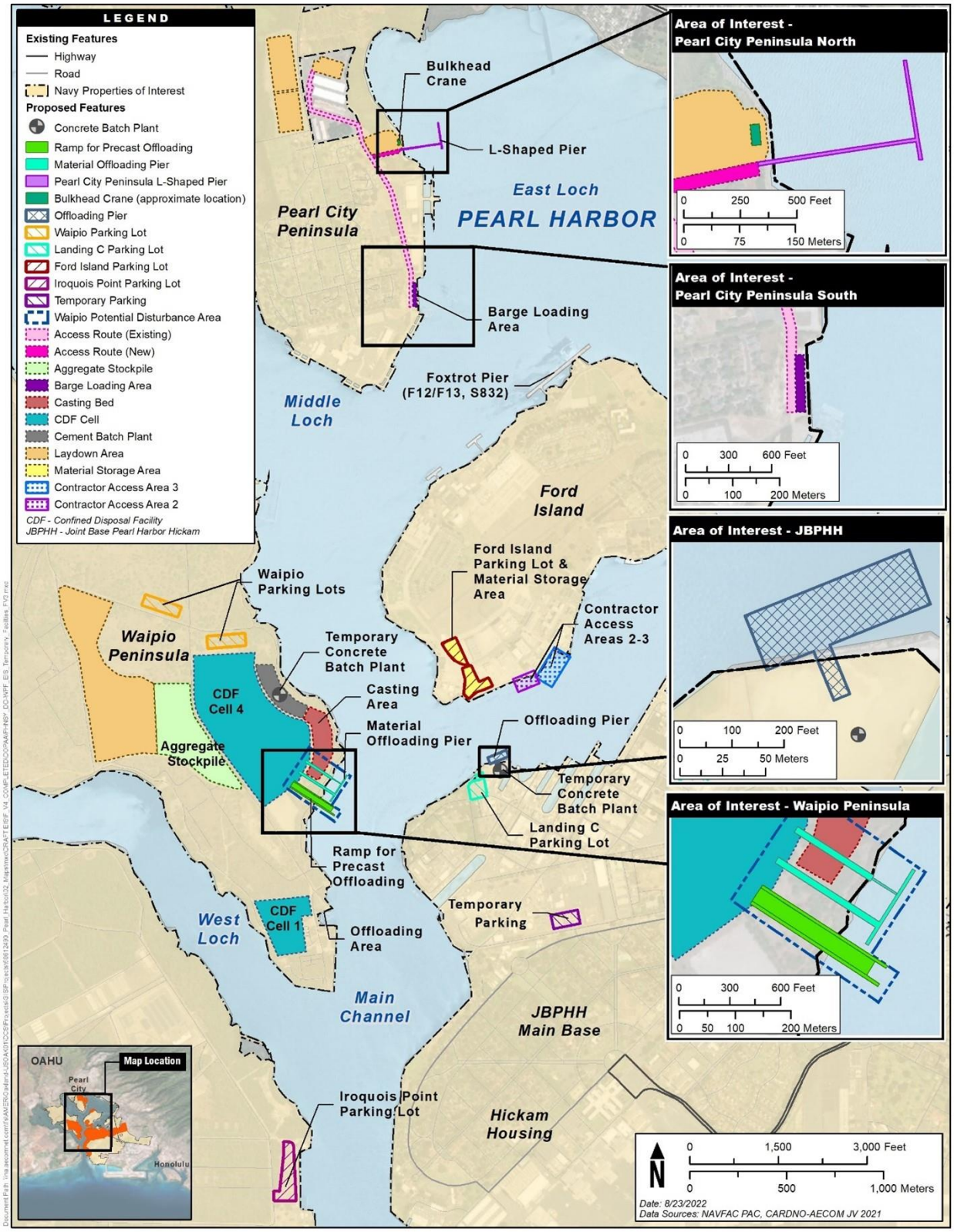
Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility Dry Dock and Waterfront Production Facility Project

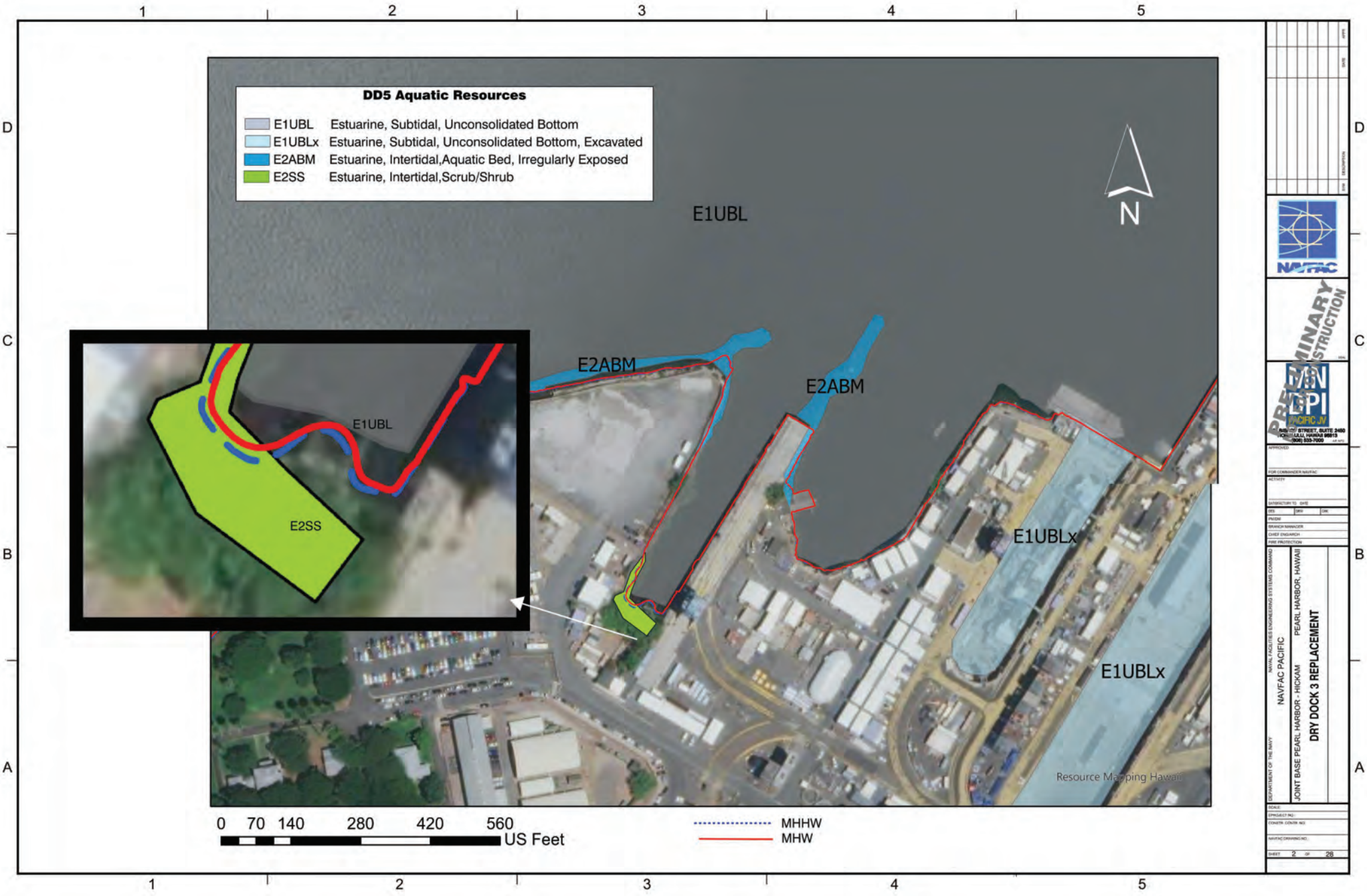
DA File No. POH-2020-00043



Attachment 1: Figures and Maps
DA File No. POH-2020-00043

Construction Support Facilities





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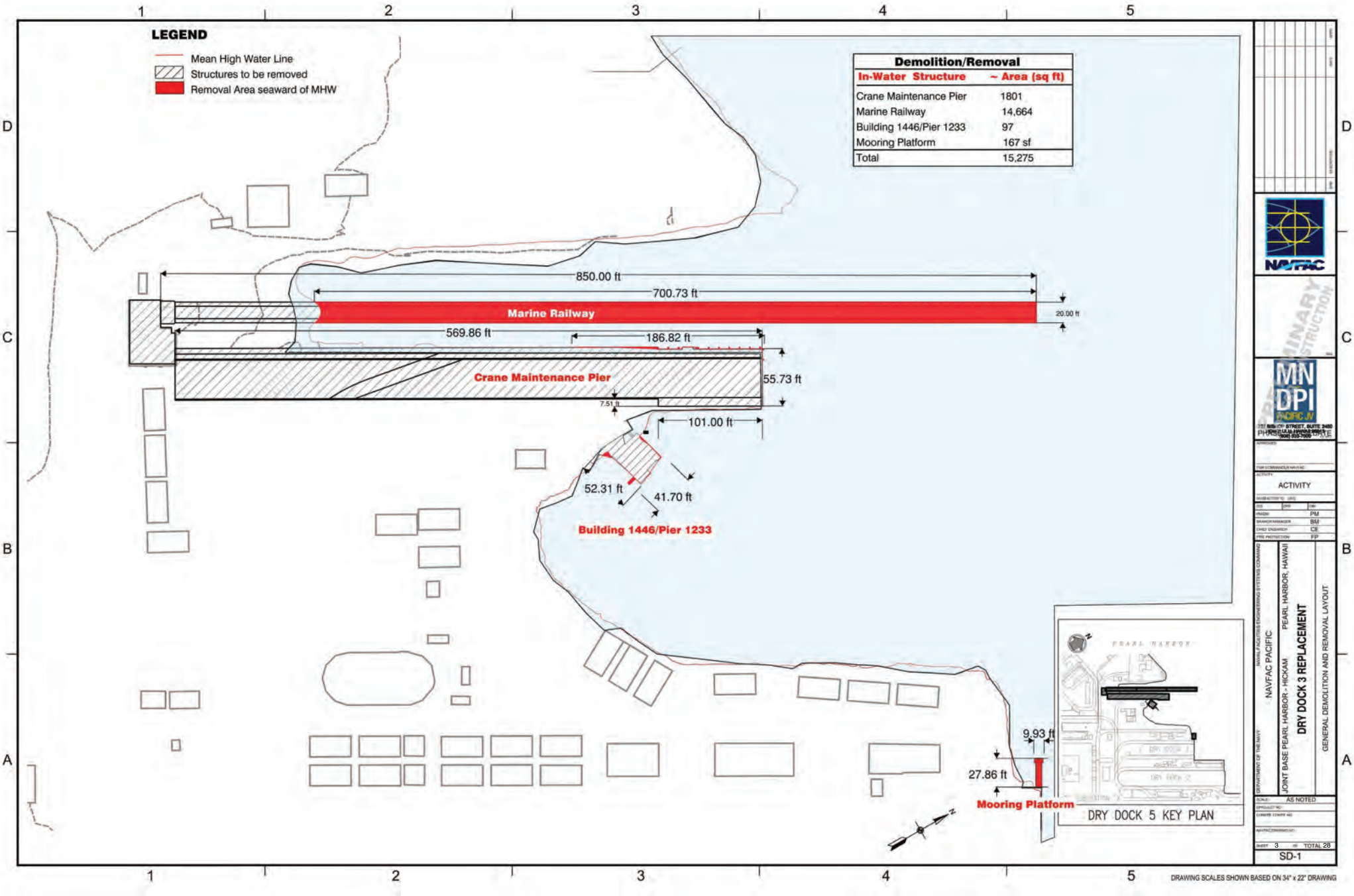

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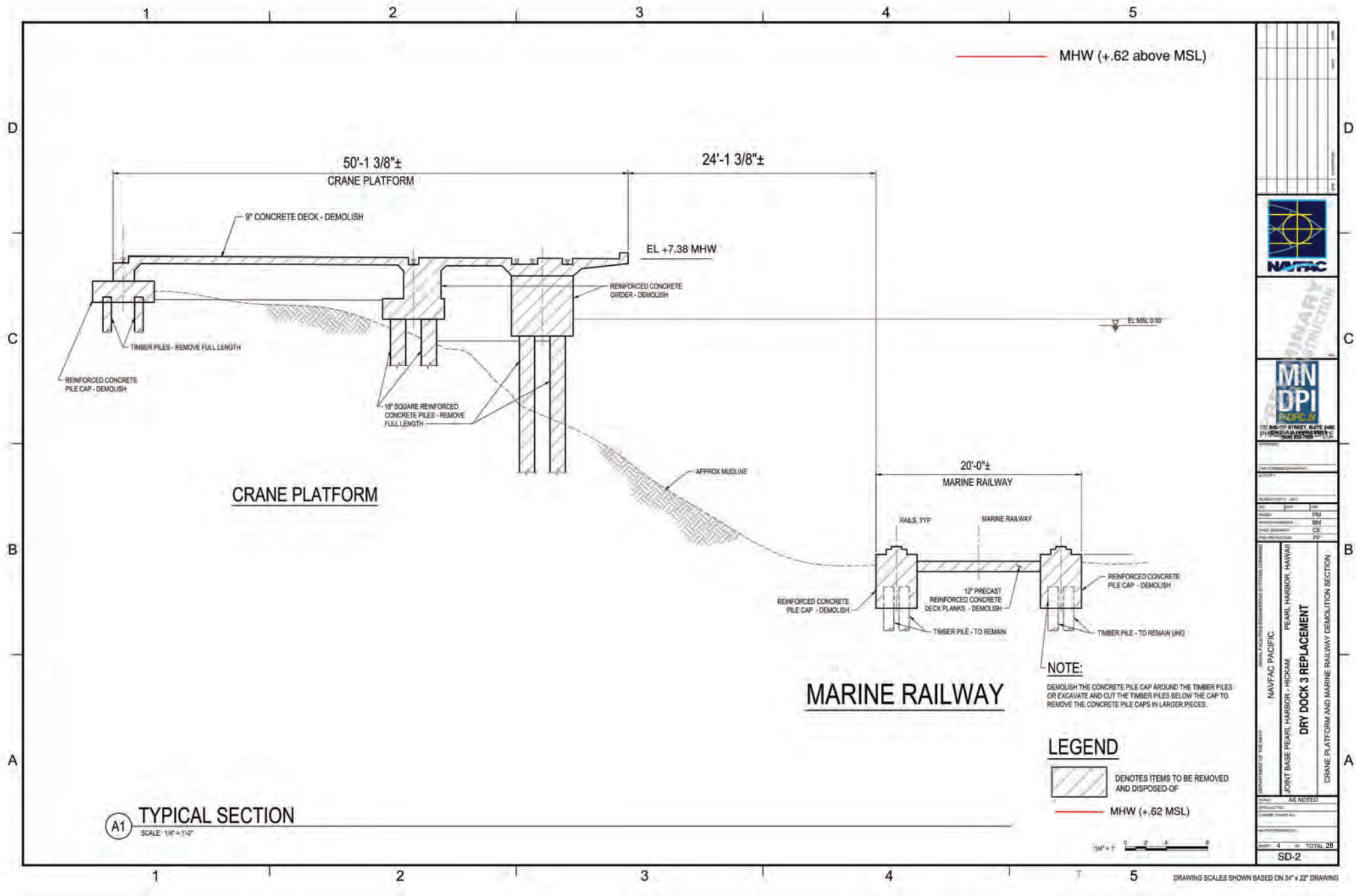

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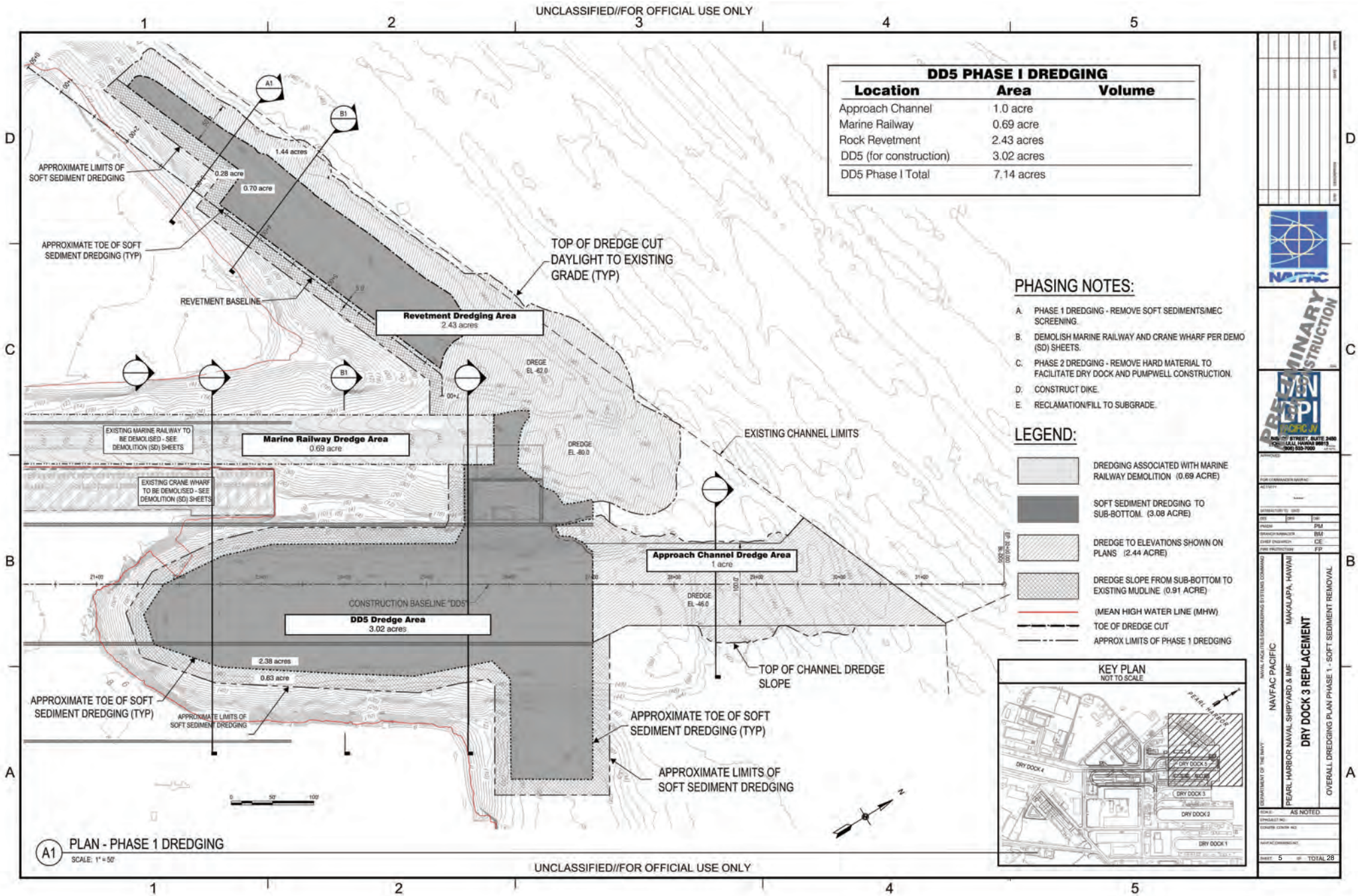

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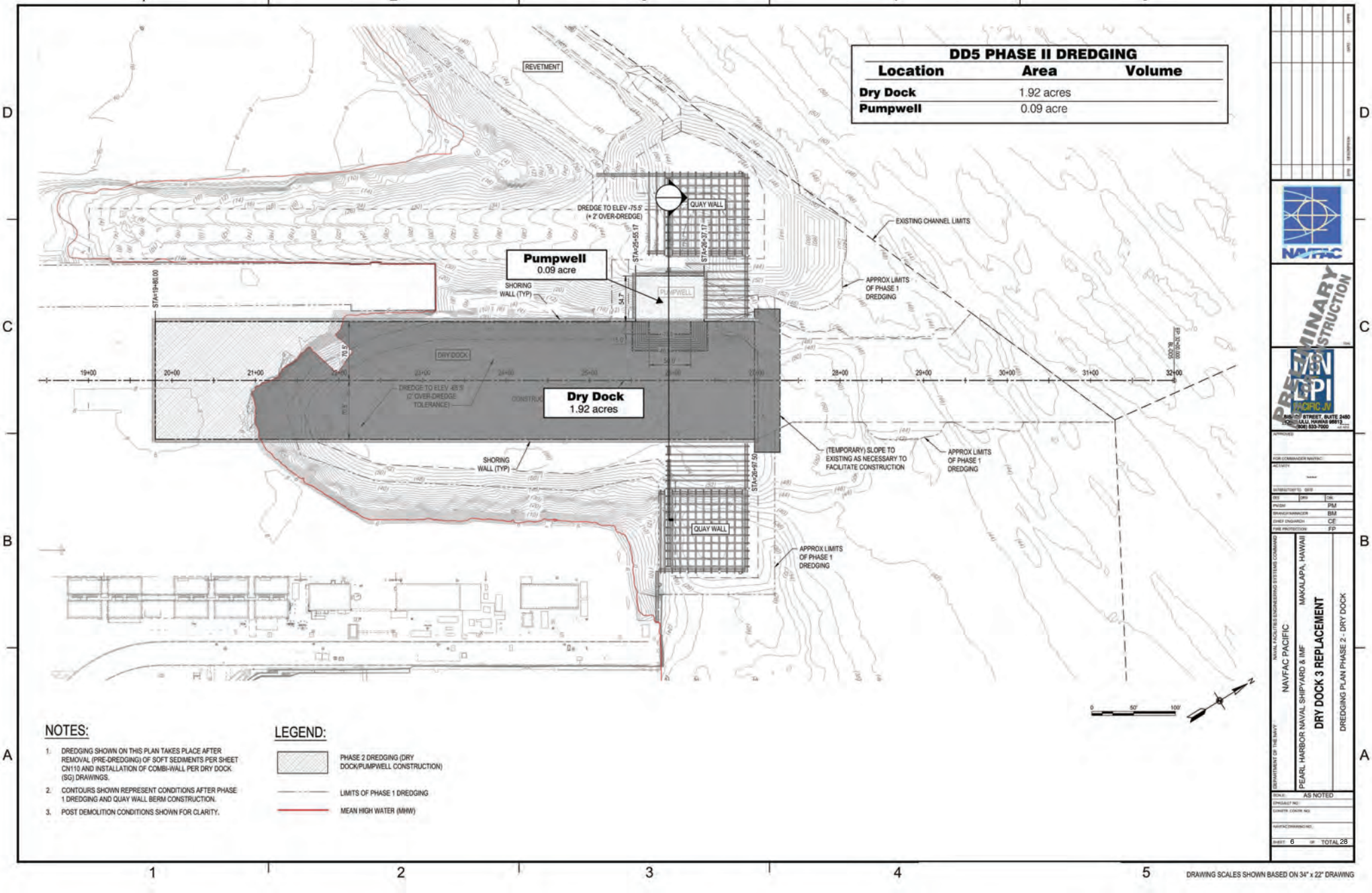

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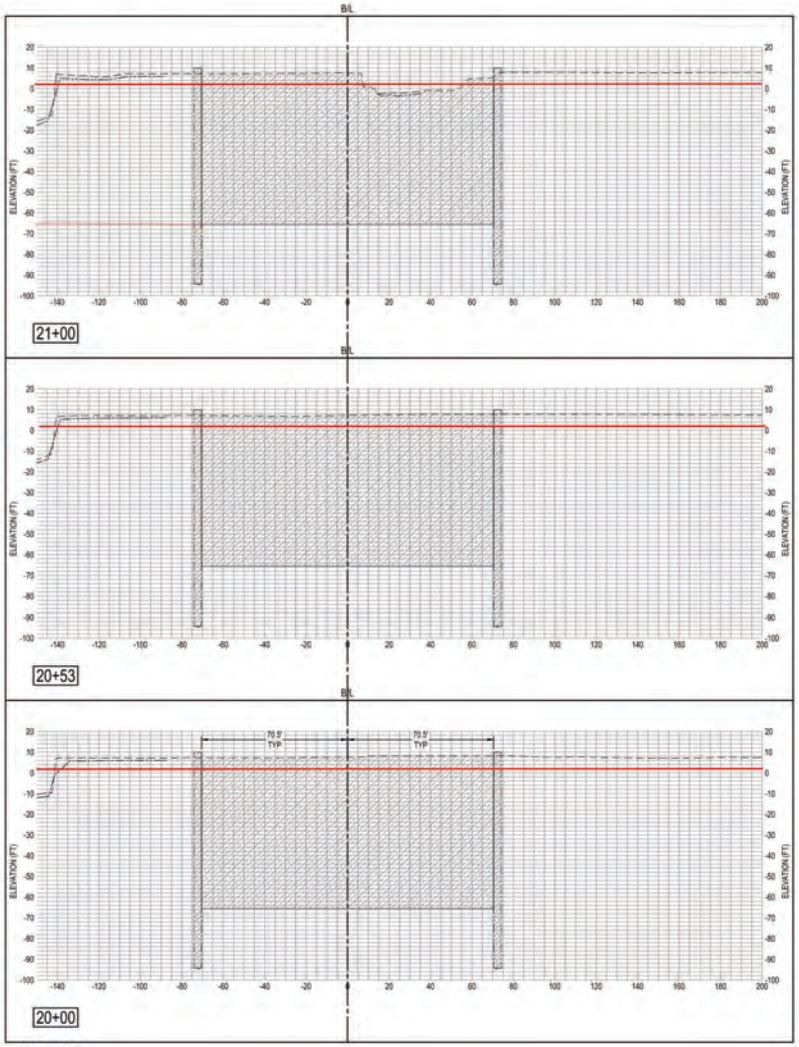
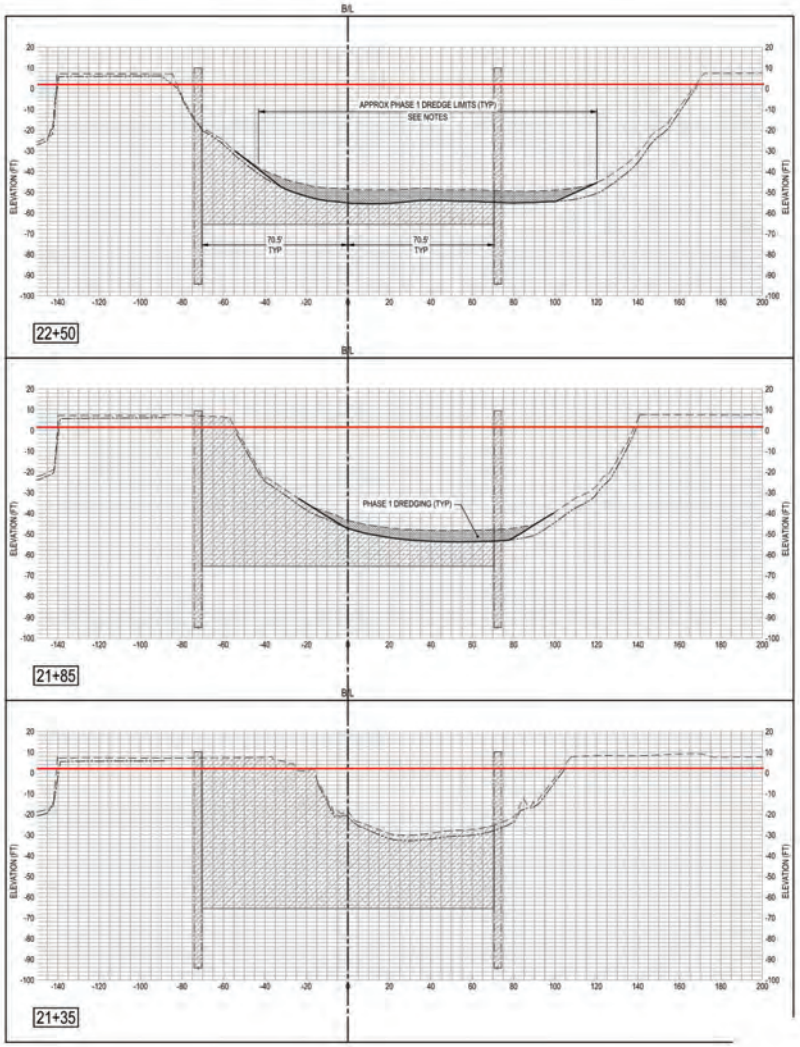




NOTES:

1. PHASE 1 DREDGE LIMITS SHOWN ARE APPROXIMATE AND WILL BE DEPENDENT ON CONDITIONS AT TIME OF CONSTRUCTION. INTENT IS TO REMOVE SOFT SEDIMENTS TO THE EXTENT POSSIBLE WITHOUT UNDERMINING SHORELINE ADJACENT TO BUILDINGS AND FACILITIES TO REMAIN IN OPERATION.
2. OVER-DREDGE NOT SHOWN ON THIS SHEET. SEE TYPICAL DREDGE SECTIONS FOR OVER-DREDGE CRITERIA.

LEGEND:

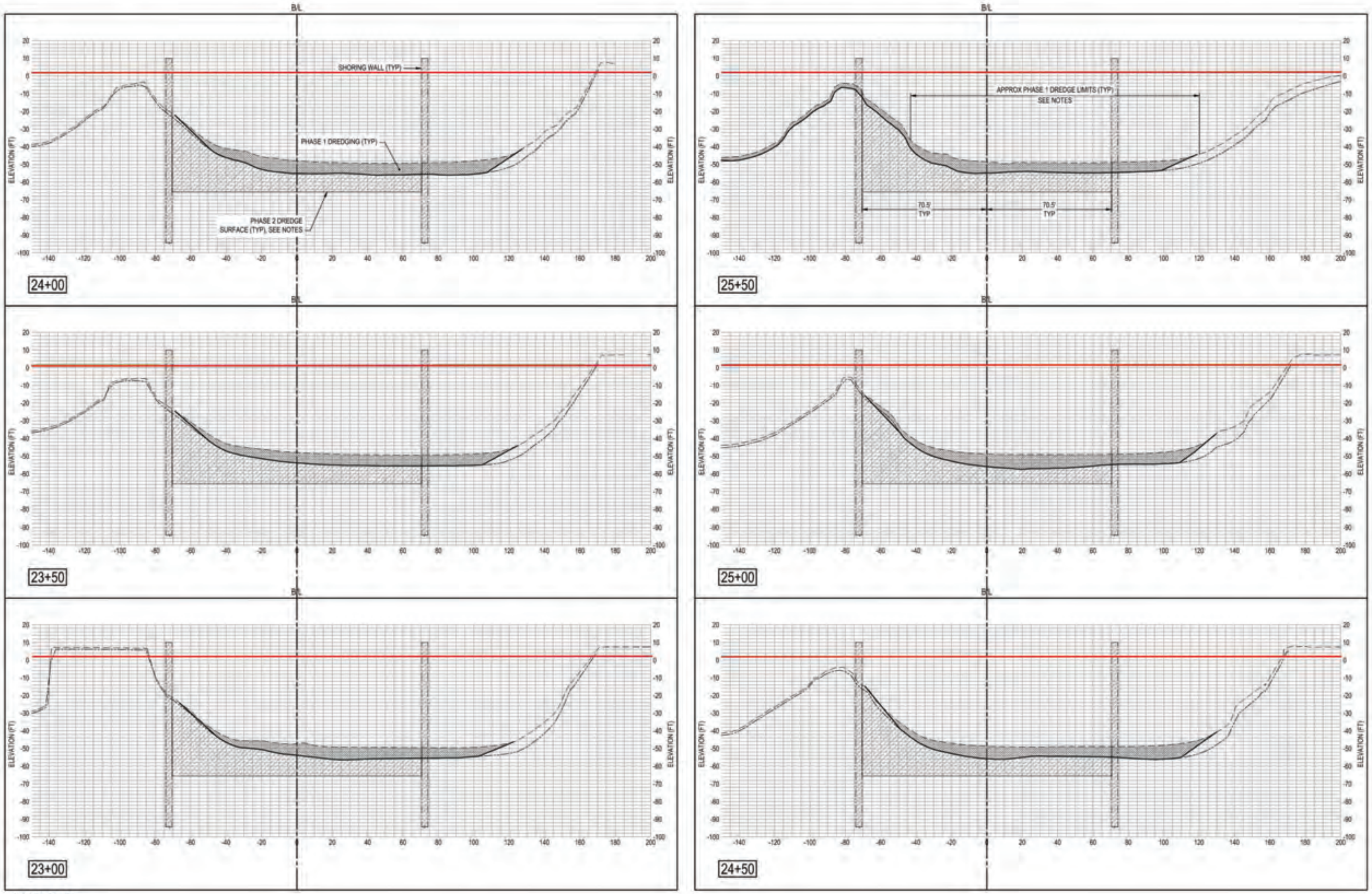
- PHASE 1 DREDGING
- PHASE 2 DREDGING
- SUB-BOTTOM SURFACE
- EXISTING GRADE
- Approx MHW (+.62 MSL)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
DREDGING SECTIONS @ DRY DOCK AND CHANNEL (1 OF 4)

SCALE: AS NOTED
SHEET 7 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

Attachment 1: Figures and Maps
DA File No. POH-2020-00043



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- PHASE 2 DREDGING
- SUB-BOTTOM SURFACE
- EXISTING GRADE
- Approx MHW (+.62 MSL)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
MAKALAPA, HAWAII
PEARL HARBOR NAVAL SHIPYARD & IMF
DRY DOCK 3 REPLACEMENT
DREDGING SECTIONS @ DRY DOCK AND CHANNEL (2 OF 4)

MN DPI PACIFIC JV
737 BISHOP STREET, SUITE 2450
HONOLULU, HAWAII 96813
(808) 533-7000

PRELIMINARY CONSTRUCTION

SCALE: AS NOTED
SHEET 8 OF TOTAL 28

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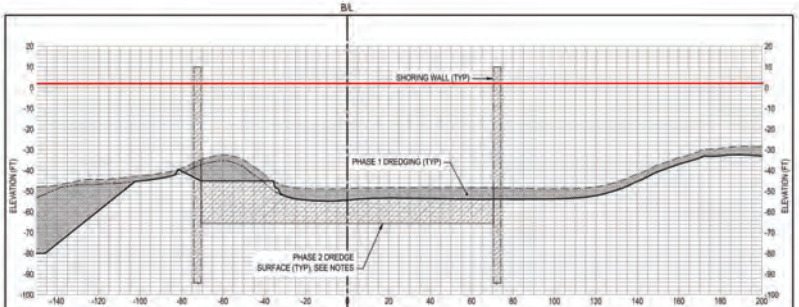
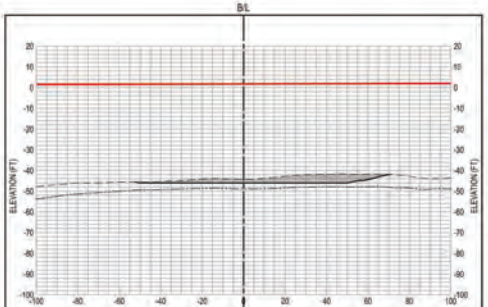
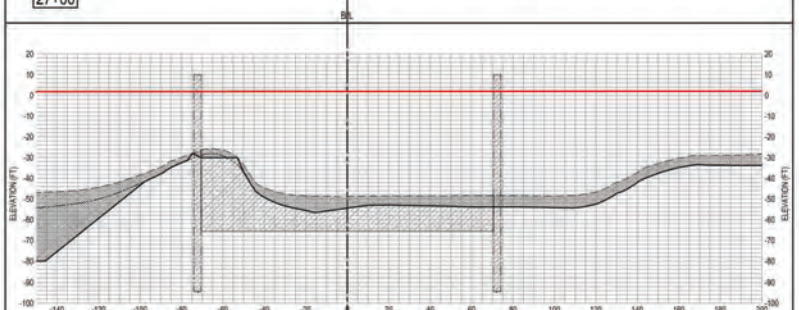
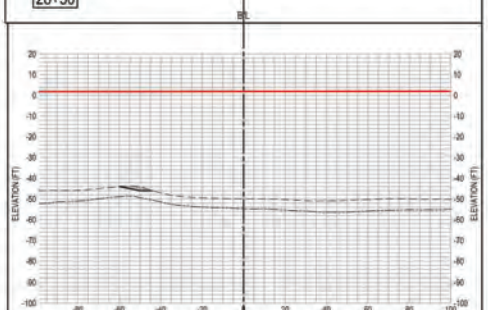
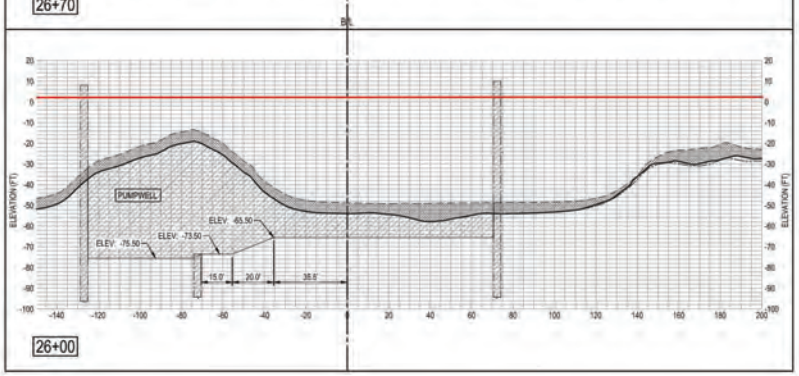
DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

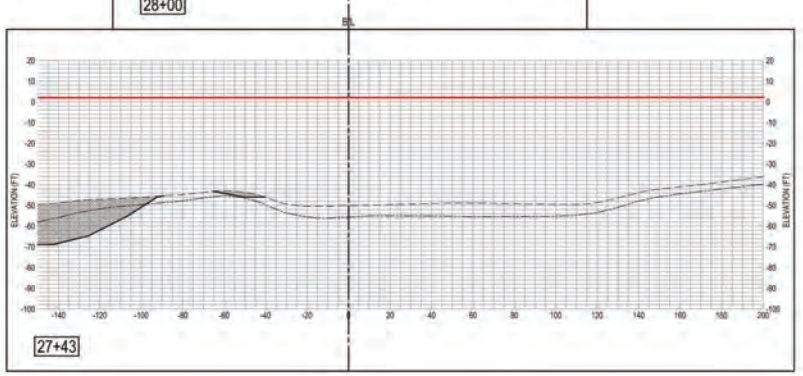












NOTES:

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2. OVER-DREDGE NOT SHOWN ON THIS SHEET. SEE TYPICAL DREDGE SECTIONS FOR OVER-DREDGE CRITERIA.

LEGEND:

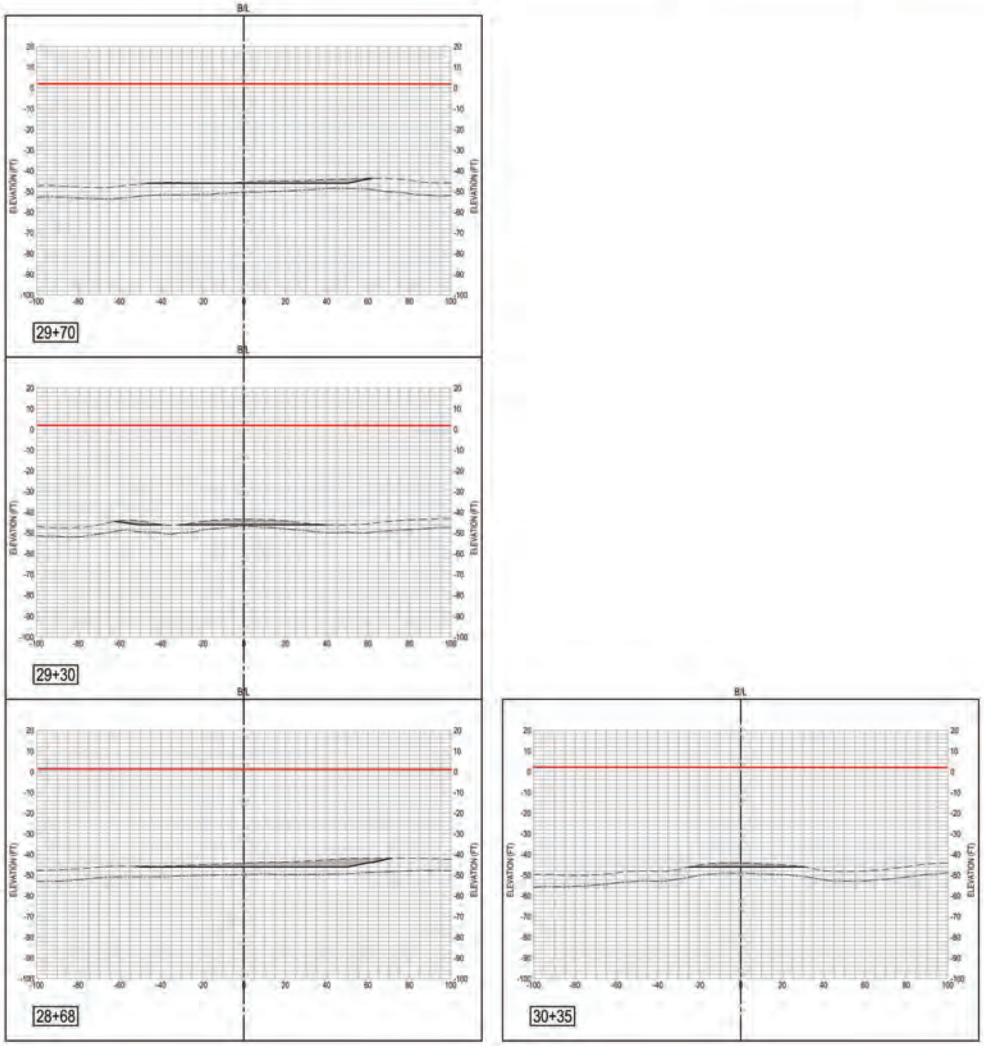
- PHASE 1 DREDGING
- PHASE 2 DREDGING
- SUB-BOTTOM SURFACE
- EXISTING GRADE
- Approx MHW (+.62 MSL)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
DREDGING SECTIONS @ DRY DOCK AND CHANNEL (3 OF 4)
SCALE: AS NOTED
SHEET 9 OF TOTAL 28

MN DPI PACIFIC JV
737 BISHOP STREET, SUITE 2480
HONOLULU, HAWAII 96813
(808) 533-7000

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

Attachment 1: Figures and Maps
DA File No. POH-2020-00043



LEGEND:

PHASE 1 DREDGI

PHASE 2 DREDGING

EXISTING GRADE

Approx MHW (+.62 MSL)

NOTES:

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2. OVER-DREDGE NOT SHOWN ON THIS SHEET. SEE TYPICAL DREDGE SECTIONS FOR OVER-DREDGE CRITERIA.

PRELIMINARY NOT FOR CONSTRUCTION

MN DPI PACIFIC JV

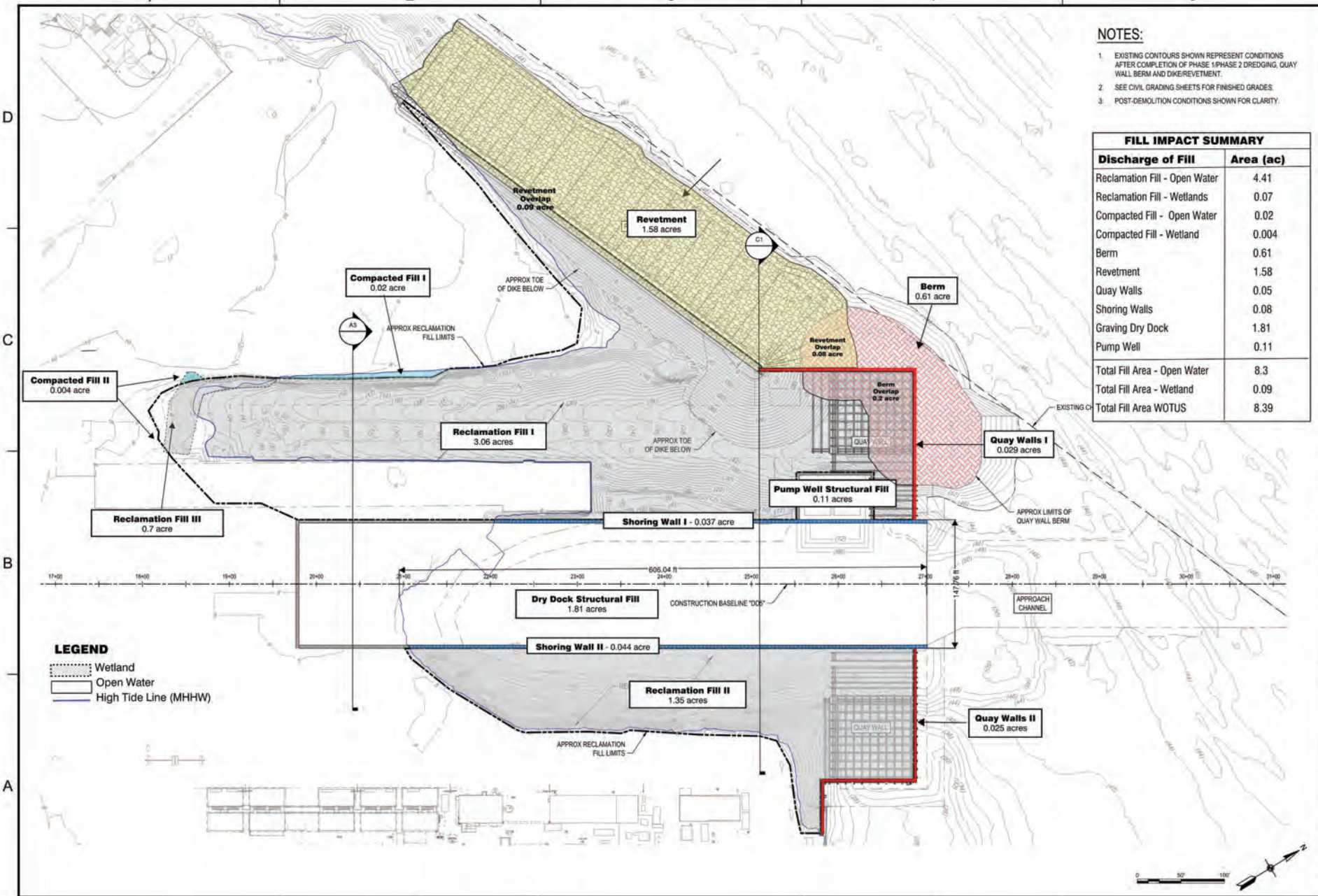
PM
BM
CE
FP

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
DREDGING SECTIONS @ DRY DOCK AND CHANNEL (4 OF 4)

SCALE: AS NOTED

SHEET 10 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING



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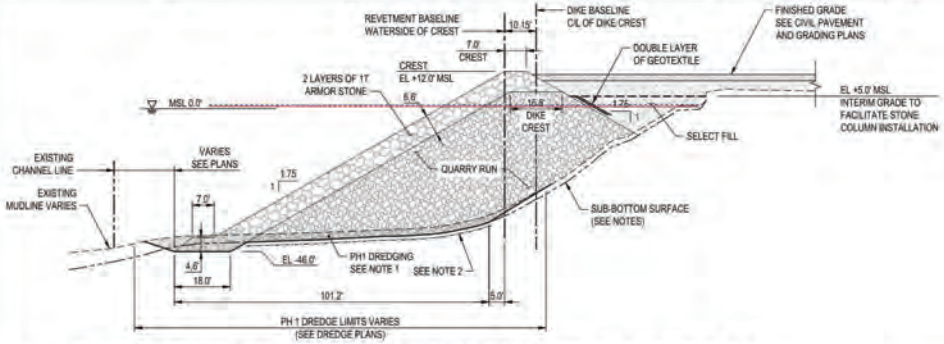
Attachment 1: Figures and Maps
DA File No. POH-2020-00043



C1 SECTION - REVETMENT AND DIKE (STA 4+22 TO 4+62 ALONG REVETMENT TOE)

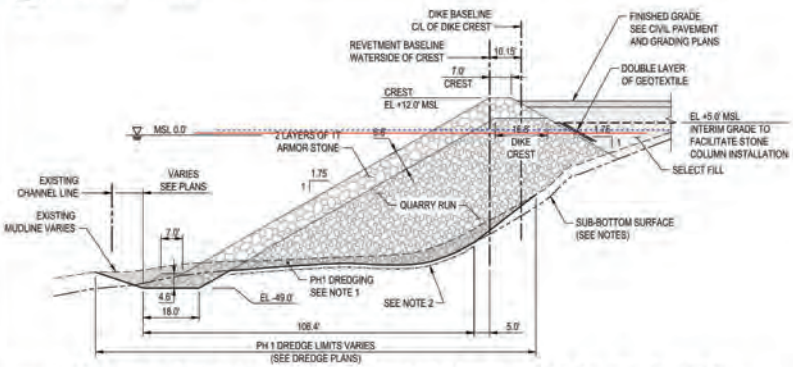
SCALE: 1" = 20' CN125

MHHW (+1.08 MSL)

MHW (+.62 MSL)

NOTES:

1. SOFT SEDIMENT REMOVAL TO TAKE PLACE PRIOR TO CONSTRUCTION OF DIKE AND REVETMENT TOE. SEE ENLARGED PH 1 DREDGING PLAN ON SHEET CN111 FOR DETAILED DREDGE GRADES AND ELEVATIONS.
2. FOR DREDGING OF SOFT SEDIMENTS OUTSIDE LIMITS OF THE QUAY BERM AND DIKE/REVETMENT STRUCTURES, AN OVER-DREDGE ALLOWANCE OF 1.0' MAX AND UNDER-DREDGE ALLOWANCE OF 0.5' MAX IS ALLOWED.



B1 SECTION - REVETMENT AND DIKE (STA 3+75 TO 4+11 ALONG REVETMENT TOE)

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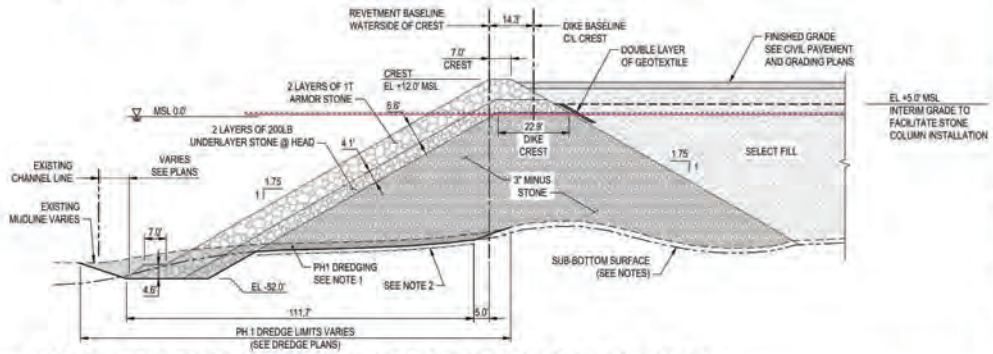

B3 SECTION - REVETMENT AND DIKE (STA 6+54 TO 7+08 ALONG REVETMENT TOE)

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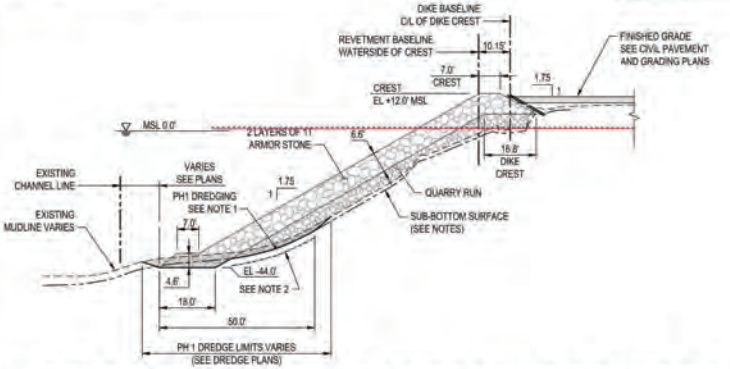
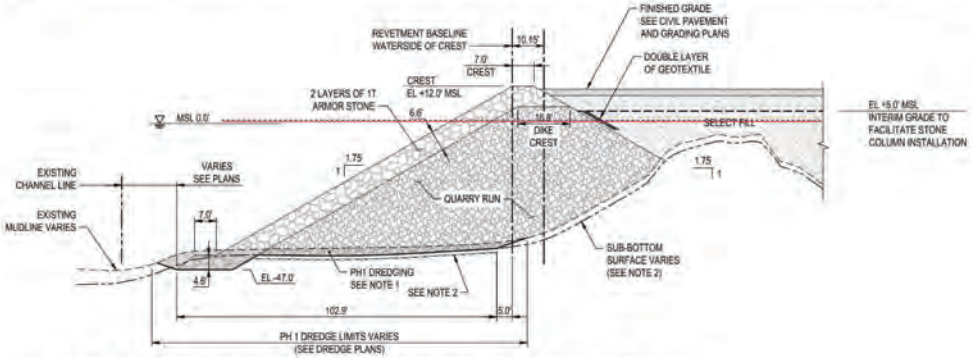


A1 SECTION - REVETMENT AND DIKE (STA 1+60 TO 3+35 ALONG REVETMENT TOE)

SCALE: 1" = 20' CN125



A3 SECTION - REVETMENT AND DIKE (STA 4+77 TO 6+27 REVETMENT TOE)

SCALE: 1" = 20' CN125

NAVFAC PACIFIC

MAKALAPA, HAWAII

PEARL HARBOR NAVAL SHIPYARD & IMF

DRY DOCK 3 REPLACEMENT

TYPICAL REVETMENT SECTIONS (1 OF 2)

AS NOTED

SHEET 12 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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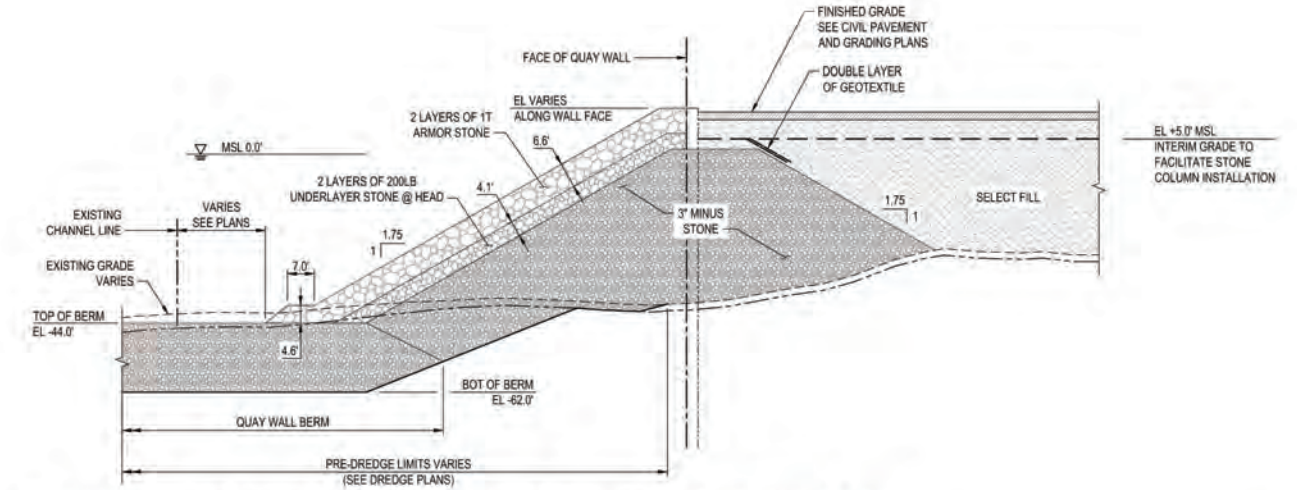
Attachment 1: Figures and Maps
DA File No. POH-2020-00043



A3 SECTION - REVETMENT AND DIKE (STA 7+36 TO 7+88 ALONG REVETMENT TOE)

SCALE: 1" = 20' CN125

0 10' 20' 40'

NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
TYPICAL REVETMENT SECTIONS (2 OF 2)

AS NOTED

13 TOTAL 28

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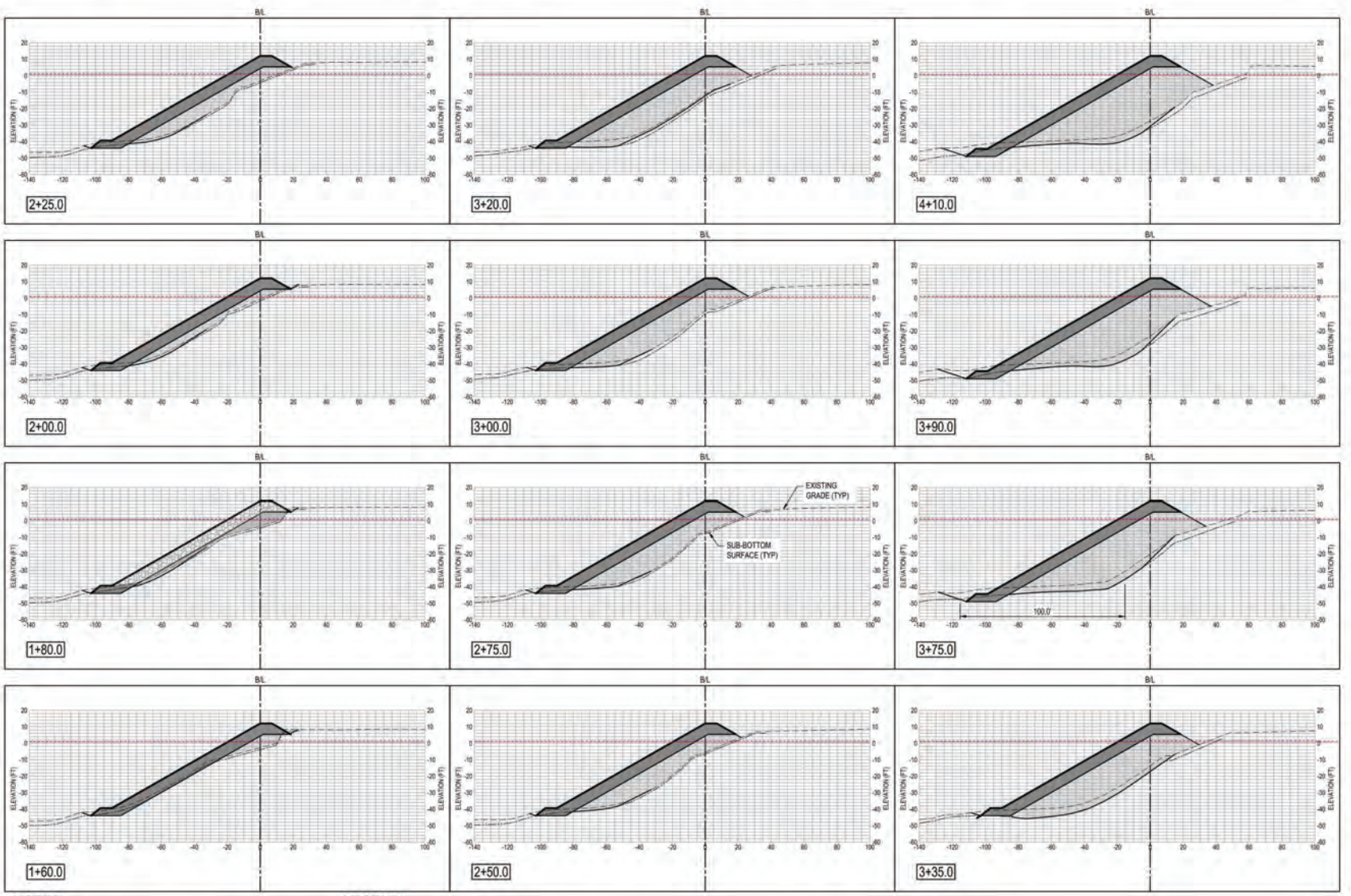

NOTES:

1. SEE SHEETS CN330 TO CN332 FOR DETAILED REVETMENT SECTIONS AND ASSOCIATED DIMENSIONS/STONE SIZES.
2. SEE SHEET CN125 FOR DIKE PLAN/PROFILE.
3. SEE SHEET CN126 FOR REVETMENT PLAN/PROFILE.
4. SEE SHEETS CN301 - CN302 FOR PH 1 TYPICAL DREDGE SECTIONS.

LEGEND:

ARMOR STONE

UNDERLAYER STONE

CORE STONE (SIZE VARIES - SEE NOTE 2)

MHHW (+1.08 MSL)

MHW (+.62 MSL)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
REVETMENT SECTIONS (1 OF 3)

SCALE: AS NOTED

SHEET: 14 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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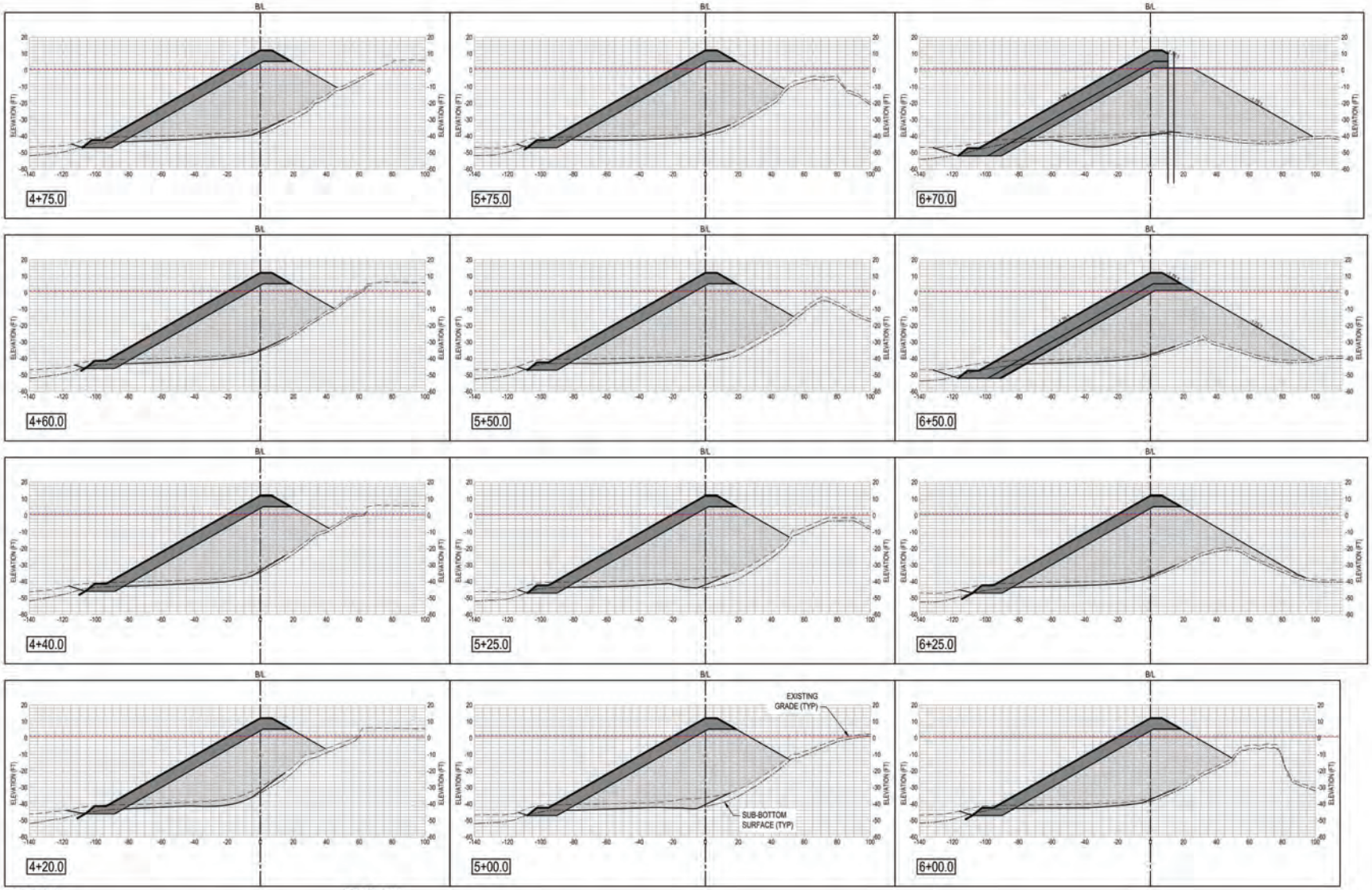

NOTES:

1. SEE SHEETS CN330 TO CN332 FOR DETAILED REVETMENT SECTIONS AND ASSOCIATED DIMENSIONS/STONE SIZES.
2. SEE SHEET CN125 FOR DIKE PLAN/PROFILE.
3. SEE SHEET CN126 FOR REVETMENT PLAN/PROFILE.
4. SEE SHEETS CN301 - CN302 FOR PH 1 TYPICAL DREDGE SECTIONS.

LEGEND:

ARMOR STONE

UNDERLAYER STONE

CORE STONE (SIZE VARIES - SEE NOTE 2)

MHHW (+1.08 MSL)

MHW (+.62 MSL)

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
REVETMENT SECTIONS (2 OF 3)

SCALE: AS NOTED

SHEET 15 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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Attachment 1: Figures and Maps
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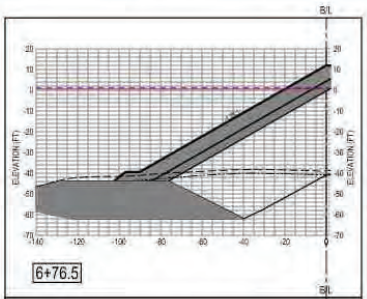

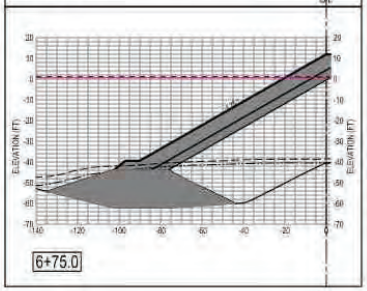

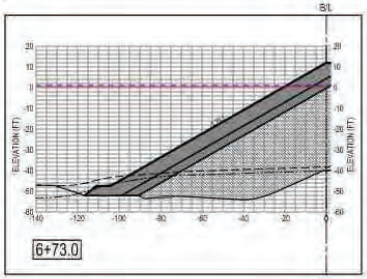

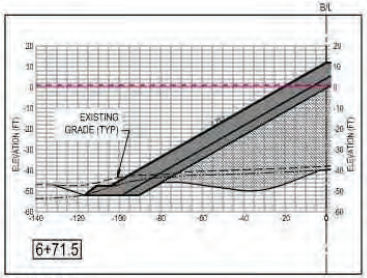

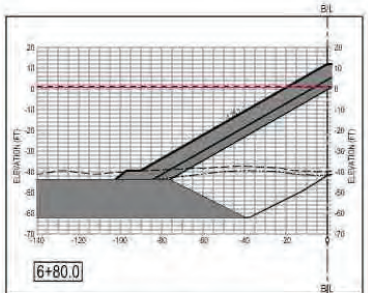

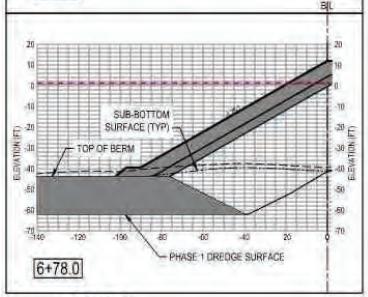

MHHW (+1.08 MSL)

MHW (+.62 MSL)

NOTES:

1. SEE SHEETS CN330 TO CN332 FOR DETAILED REVETMENT SECTIONS AND ASSOCIATED DIMENSIONS/STONE SIZES.
2. SEE SHEET CN125 FOR DIKE PLAN/PROFILE.
3. SEE SHEET CN126 FOR REVETMENT PLAN/PROFILE.
4. SEE SHEETS CN301 - CN302 FOR PH 1 TYPICAL DREDGE SECTIONS.

LEGEND:

ARMOR STONE

UNDERLAYER STONE

CORE STONE (SIZE VARIES - SEE NOTE 2)

NAVFAC PACIFIC

PEARL HARBOR NAVAL SHIPYARD & IMF

MAKALAPA, HAWAII

DRY DOCK 3 REPLACEMENT

REVETMENT SECTIONS (3 OF 3)

AS NOTED

16 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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Attachment 1: Figures and Maps
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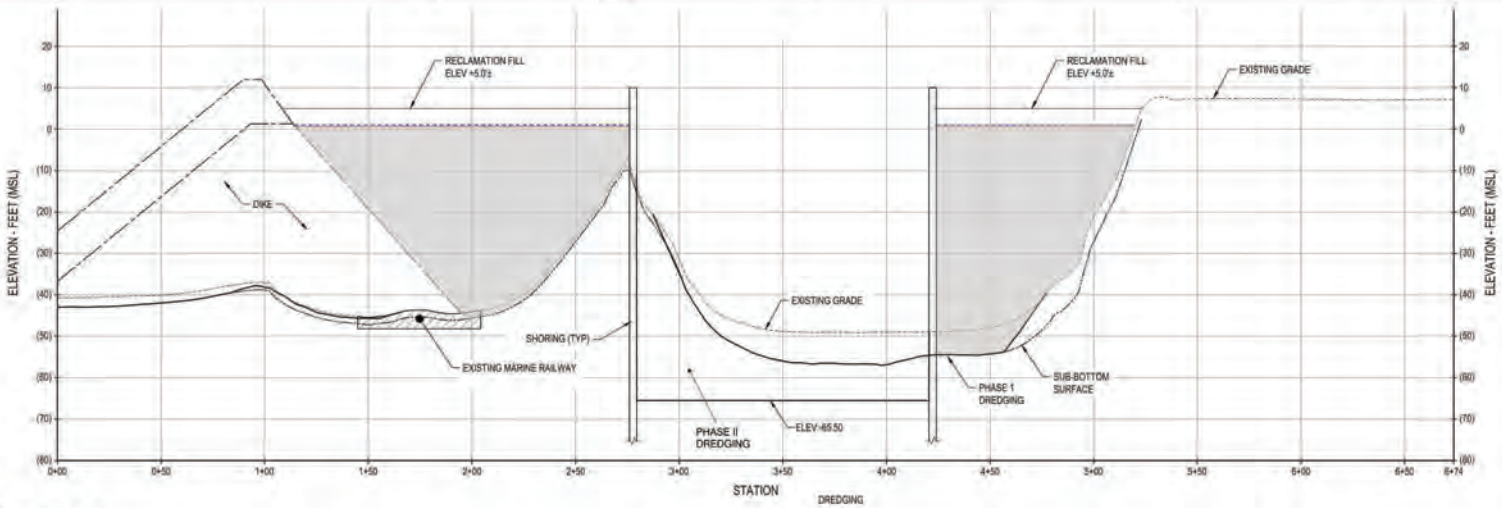


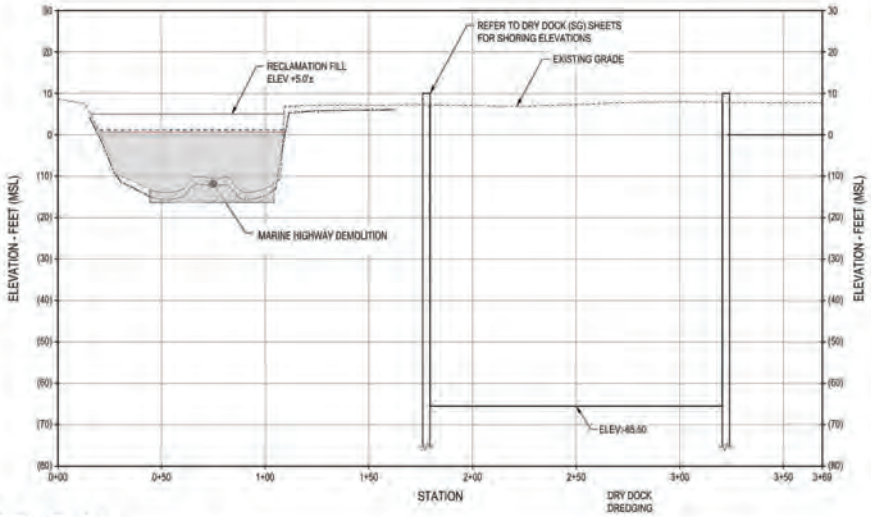
C1 PROFILE 02

SCALE: 1" = 30' CN130
VERT SCALE: 1"=15'

HOR 0 30' 60'
VERT 0 15' 30'

LEGEND

MEAN HIGH WATER (MHW)
HIGH TIDE LINE (MHHW)



A3 PROFILE 01

SCALE: 1" = 30' CN130
VERT SCALE: 1"=15'

HOR 0 30' 60'
VERT 0 15' 30'

NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
TYPICAL RECLAMATION FILL PROFILES - 1
AS NOTED
SHEET 17 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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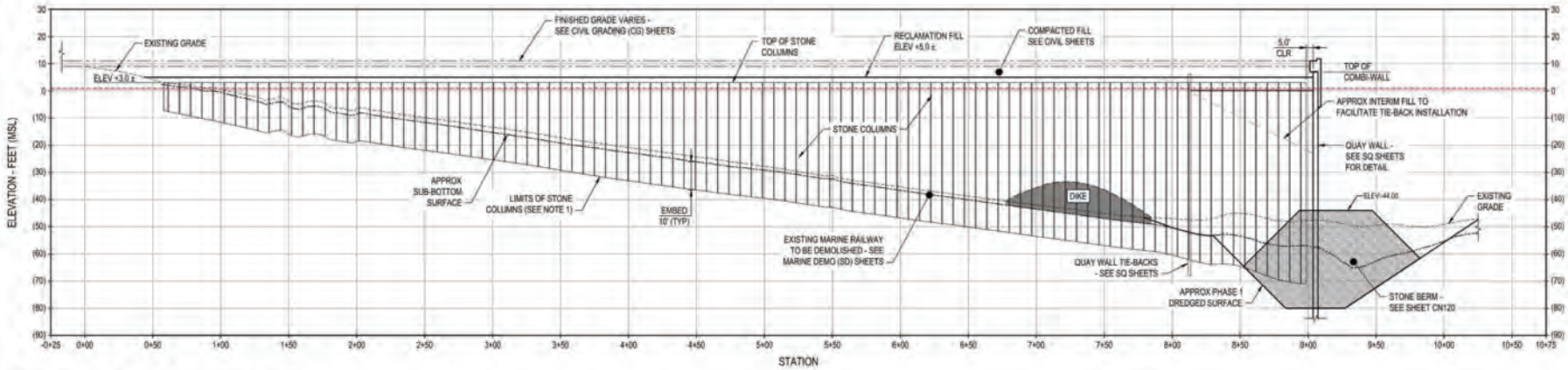
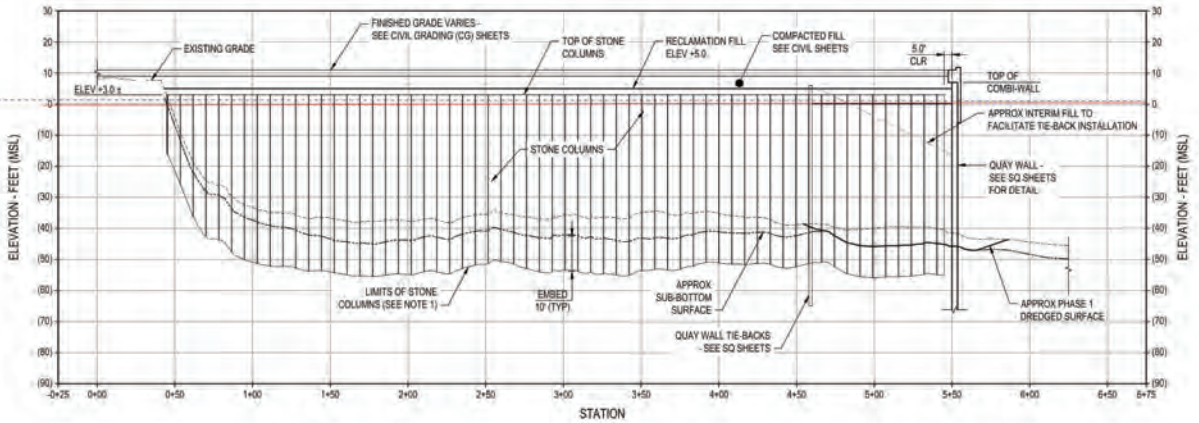
Attachment 1: Figures and Maps
DA File No. POH-2020-00043



C1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140
VERT SCALE 1"=20'

HOR 0 40' 80'
VERT 0 10' 20' 40'



MHHW (+1.08 MSL)
MHW (+.62 MSL)

A1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140
VERT SCALE 1"=20'

HOR 0 40' 80'
VERT 0 10' 20' 40'

NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
SOIL IMPROVEMENT PROFILES (1 OF 3)
AS NOTED
SHEET 18 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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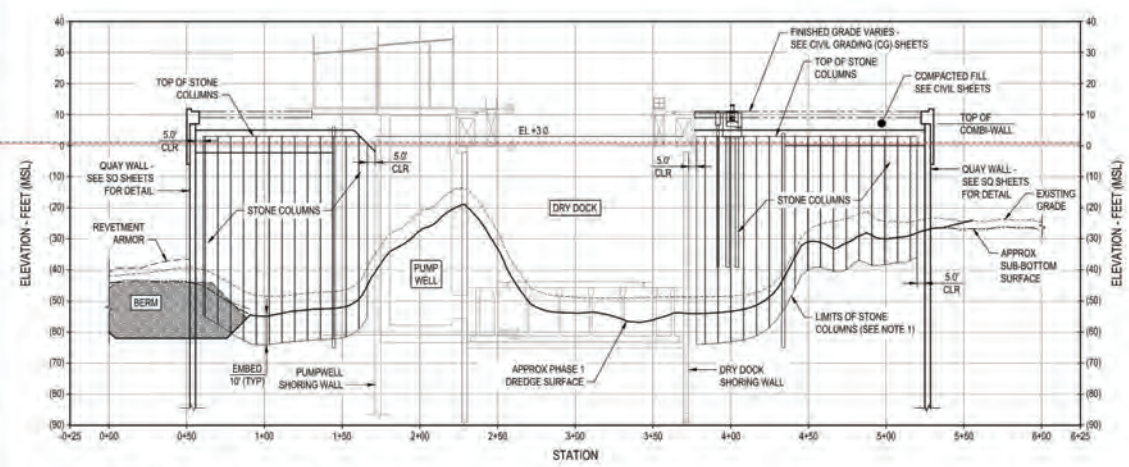
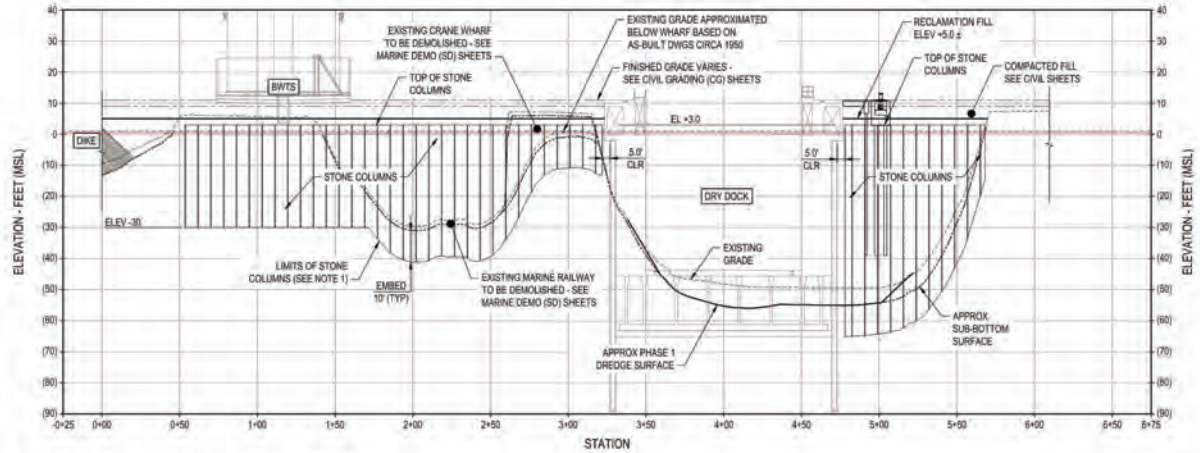
Attachment 1: Figures and Maps
DA File No. POH-2020-00043



C1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140
VERT SCALE 1"=20'



A1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140
VERT SCALE 1"=20'

NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
SOIL IMPROVEMENT PROFILES (2 OF 3)

AS NOTED

PM BM CE FP

19 TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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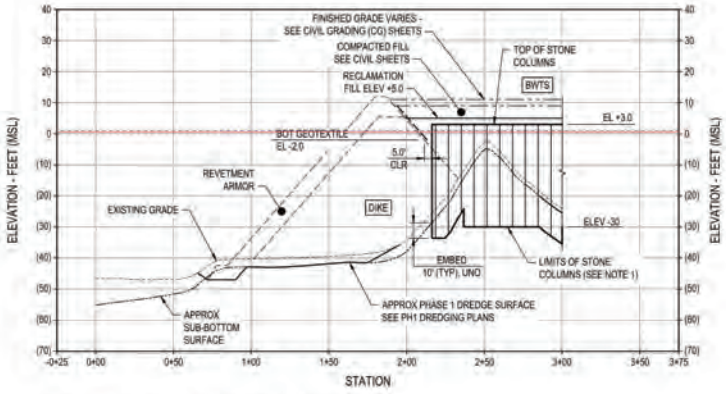
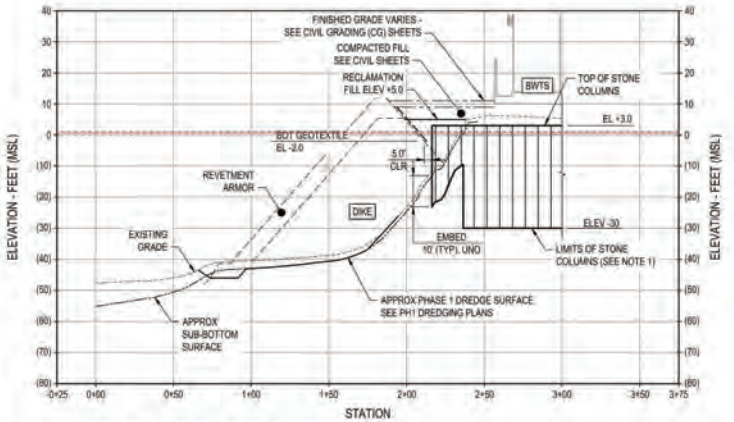


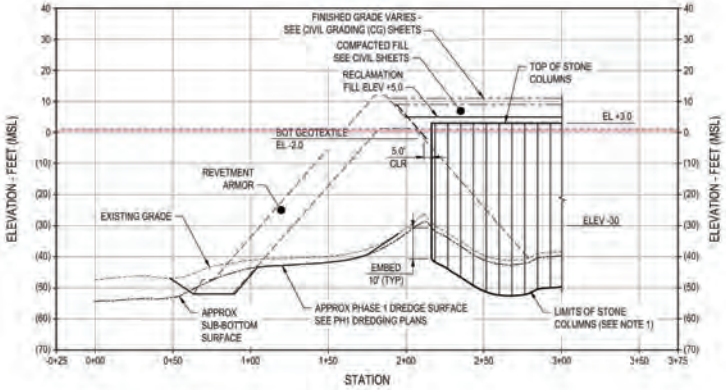
C1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140'
VERT SCALE 1"=20'



A1 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140'
VERT SCALE 1"=20'



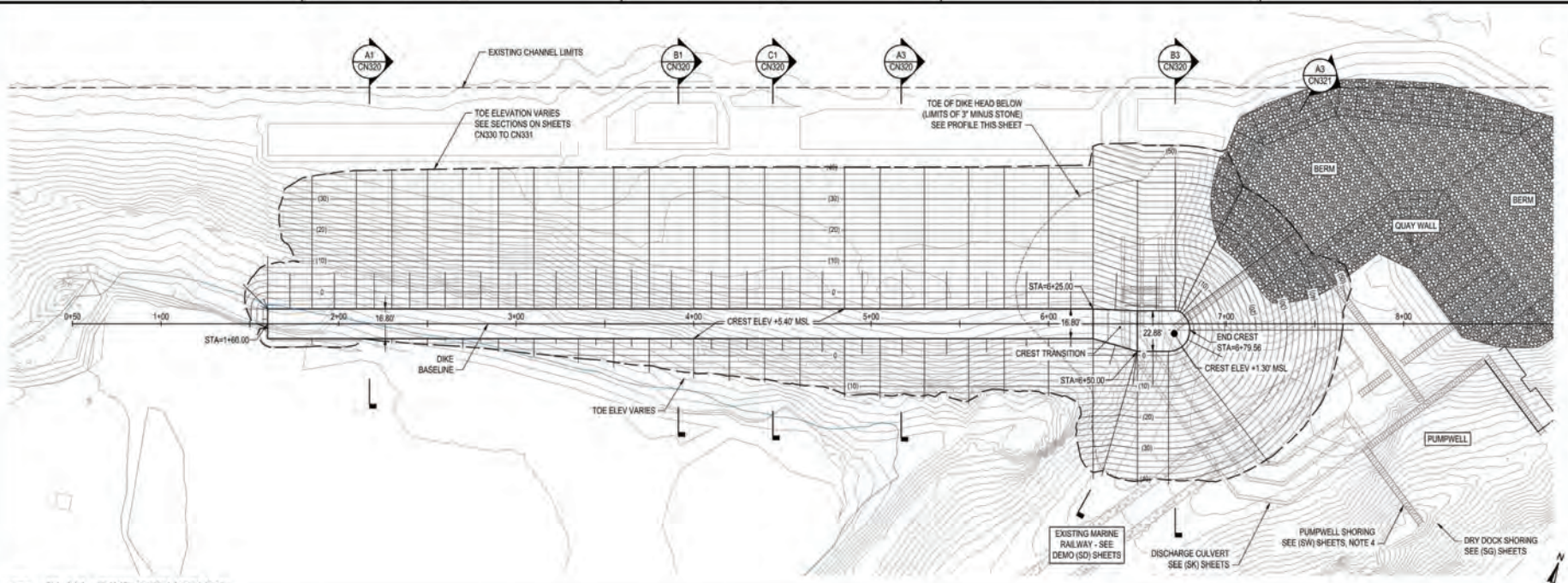
A3 PROFILE - SOIL IMPROVEMENTS

SCALE: 1" = 40' CN140'
VERT SCALE 1"=20'

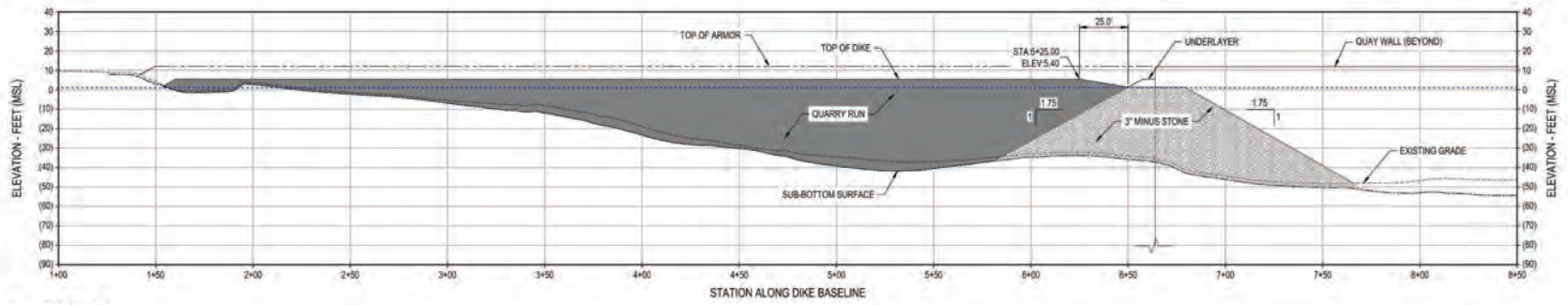
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
SOIL IMPROVEMENT PROFILES (3 OF 3)
AS NOTED
20 TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

Attachment 1: Figures and Maps
DA File No. POH-2020-00043



B1 PLAN - DIKE STRUCTURE
SCALE: 1" = 30'



A1 PROFILE
SCALE: 1" = 30'

MHHW (+1.08 MSL)

NOTES:

1. WORK SHOWN ON THIS PLAN TAKES PLACE AFTER REMOVAL (PRE-DREDGING) OF SOFT SEDIMENTS PER SHEET CN110 .
2. EXISTING CONTOURS SHOWN REPRESENT CONDITIONS AFTER COMPLETION OF PHASE 1 DREDGING AND CONSTRUCTION OF BERM AT QUAY WALL.
3. PROPOSED SITE PLAN CONDITIONS NOT SHOWN FOR CLARITY.
4. COORDINATE DIKE CONSTRUCTION WITH QUAY WALL INSTALLATION WHERE APPLICABLE.
5. DIKE FILL AT QUAY WALL SHALL NOT EXCEED A 10' VERTICAL DIFFERENTIAL BETWEEN INSIDE AND OUTSIDE OF QUAY WALL.
6. PROPOSED CONTOURS REPRESENT TOP OF DIKE (CORE) STONE.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
DIKE PLAN AND PROFILE
AS NOTED
SHEET 21 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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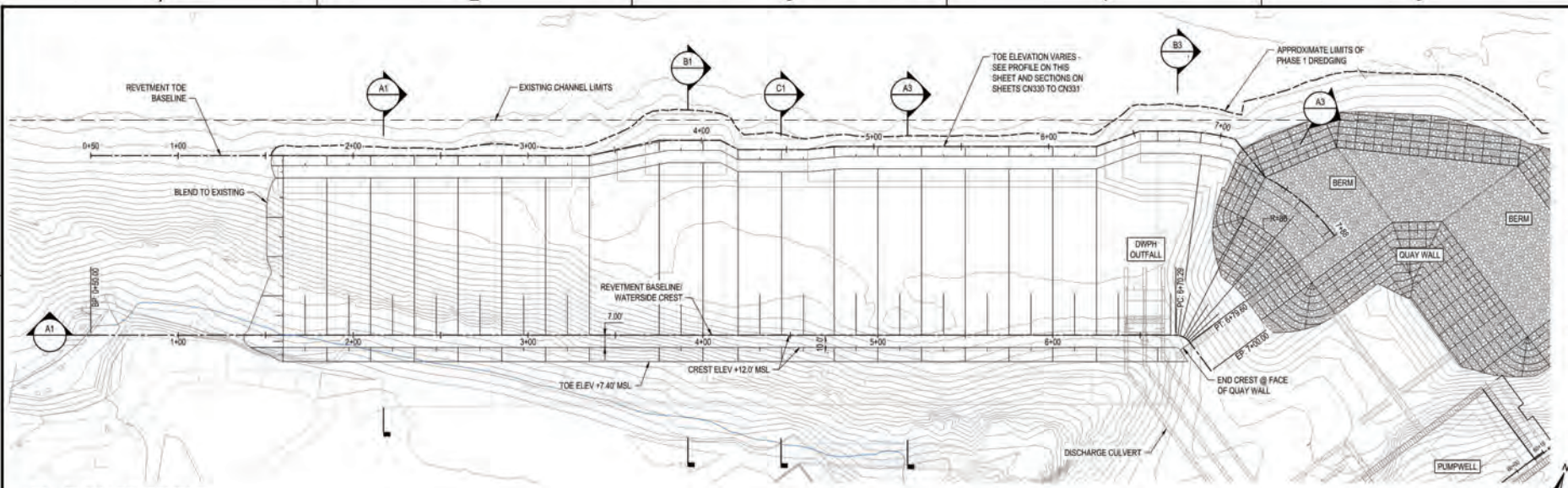
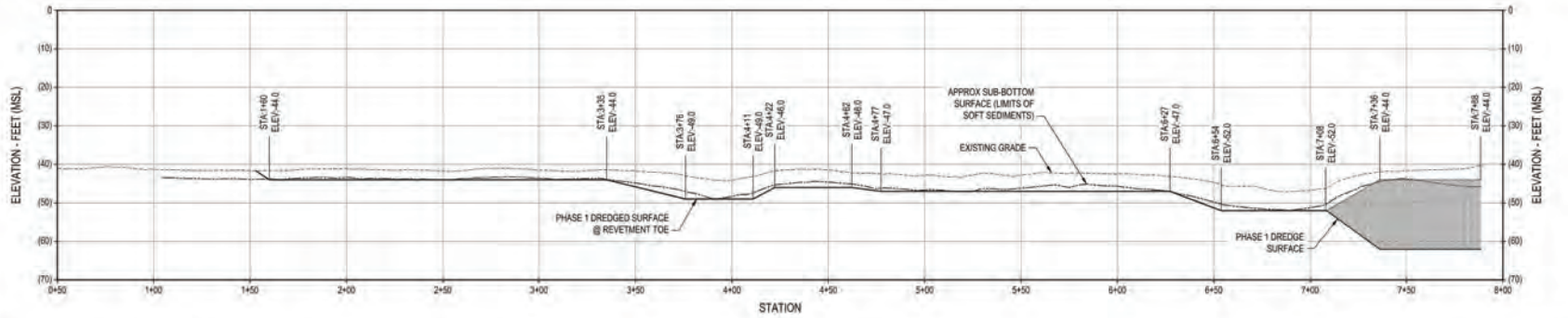


C1 PLAN - REVETMENT
SCALE: 1" = 30'



A1 PROFILE ALONG REVETMENT TOE
SCALE: 1" = 30' VERT 1" = 15'

NOTES:

1. WORK SHOWN ON THIS PLAN TAKES PLACE AFTER REMOVAL (PRE-DREDGING) OF SOFT SEDIMENTS PER SHEET CN110 .
2. EXISTING CONTOURS SHOWN REPRESENT CONDITIONS AFTER COMPLETION OF PRE-DREDGING AND QUAY WALL BERM CONSTRUCTION.
3. PROPOSED SITE PLAN CONDITIONS NOT SHOWN FOR CLARITY.
4. COORDINATE REVETMENT CONSTRUCTION WITH COMBI-WALL/SHORING INSTALLATION WHERE APPLICABLE.
5. REVETMENT STONE AT QUAY WALL SHALL NOT EXCEED A 10' VERTICAL DIFFERENTIAL BETWEEN INSIDE AND OUTSIDE OF QUAY WALL.
6. PROPOSED REVETMENT CONTOURS NOT SHOWN FOR CLARITY.
7. QUAY WALL TIE RODS NOT SHOWN FOR CLARITY.
8. REFER TO "SQ" SHEETS FOR QUAY WALL DESIGN.
9. REFER TO "SK" SHEETS FOR DISCHARGE CULVERT DESIGN.

NAVFAC PACIFIC
MAKALAPA, HAWAII
PEARL HARBOR NAVAL SHIPYARD & IMF
DRY DOCK 3 REPLACEMENT
REVETMENT PLAN AND PROFILE
AS NOTED
SHEET 22 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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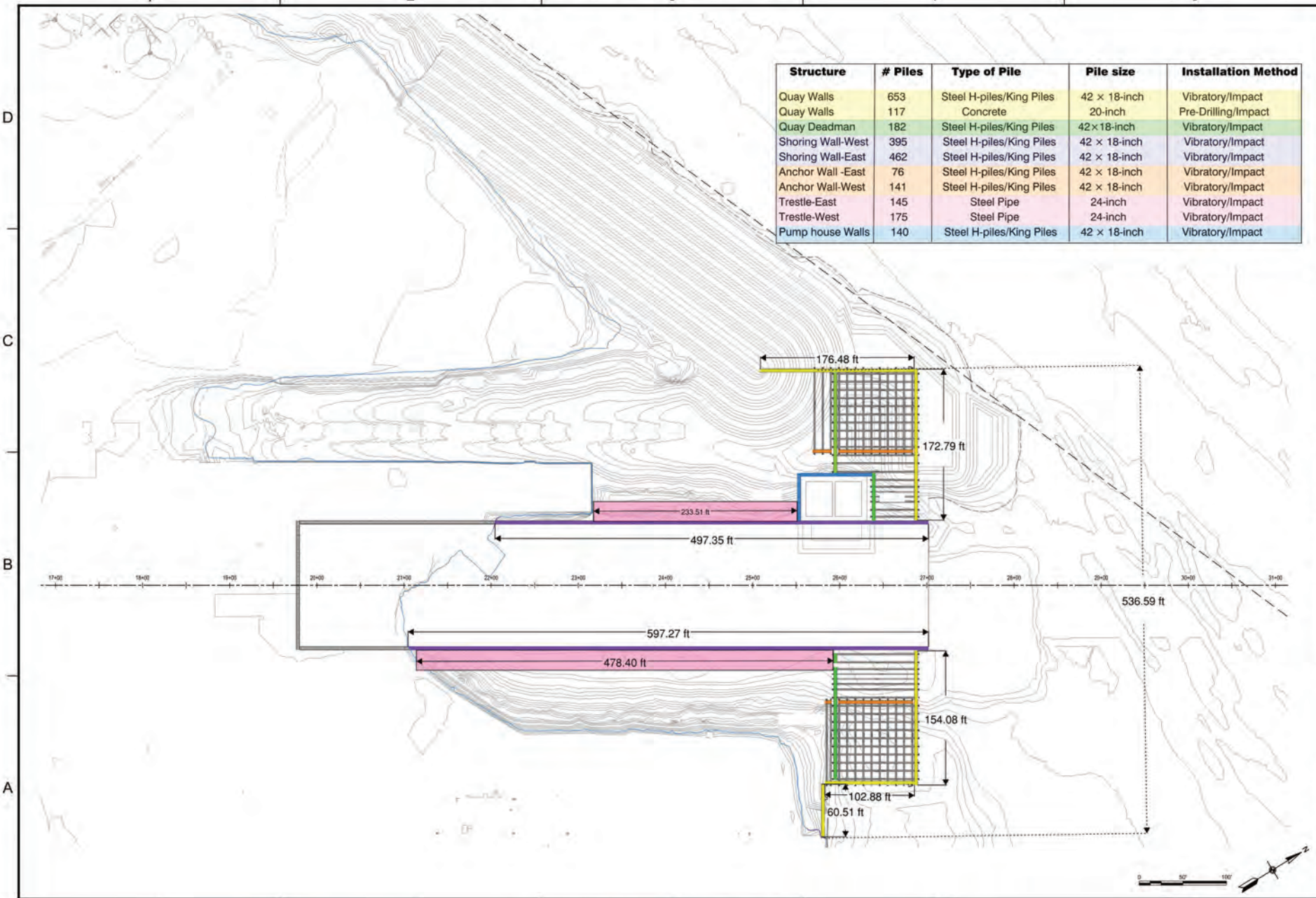
Attachment 1: Figures and Maps
DA File No. POH-2020-00043

Structure	# Piles	Type of Pile	Pile size	Installation Method
Quay Walls	653	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact
Quay Walls	117	Concrete	20-inch	Pre-Drilling/Impact
Quay Deadman	182	Steel H-piles/King Piles	42×18-inch	Vibratory/Impact
Shoring Wall-West	395	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact
Shoring Wall-East	462	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact
Anchor Wall -East	76	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact
Anchor Wall-West	141	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact
Trestle-East	145	Steel Pipe	24-inch	Vibratory/Impact
Trestle-West	175	Steel Pipe	24-inch	Vibratory/Impact
Pump house Walls	140	Steel H-piles/King Piles	42 × 18-inch	Vibratory/Impact



NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
DRY DOCK 3 REPLACEMENT
RECLAMATION FILL PLAN
AS NOTED
SHEET 23 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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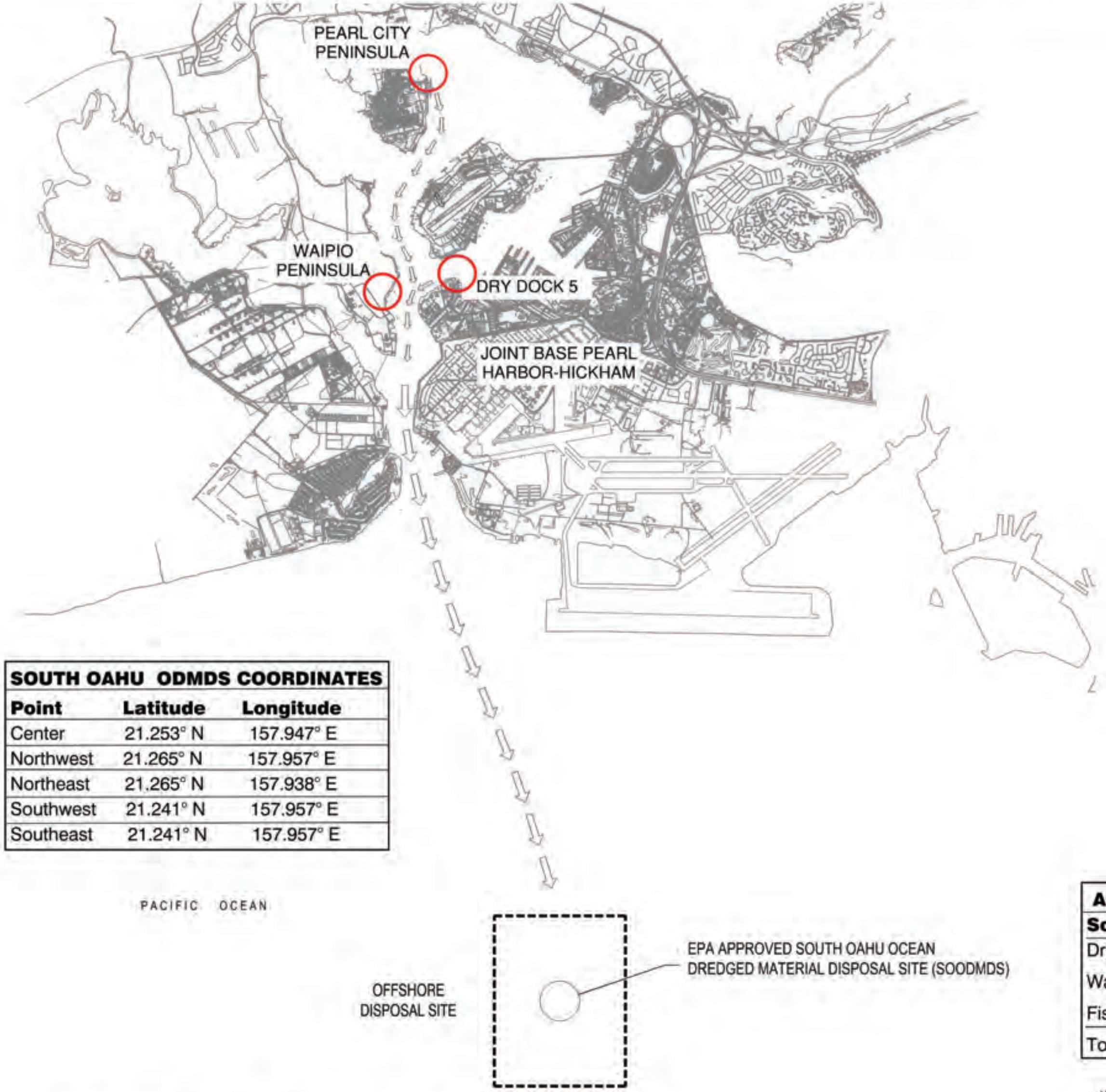
Attachment 1: Figures and Maps
DA File No. POH-2020-00043



SOUTH OAHU ODMDS COORDINATES

Point	Latitude	Longitude
Center	21.253° N	157.947° E
Northwest	21.265° N	157.957° E
Northeast	21.265° N	157.938° E
Southwest	21.241° N	157.957° E
Southeast	21.241° N	157.957° E

ANTICIPATED DREDGE MATERIAL FOR ODMDS

Source	Volume (Cubic Yards)
Dry Dock 5	71,000
Waipio Peninsula	8,000
Fishpond at McGrew Point	50,000
Total	129,000

A1 LOCATION PLAN - DISPOSAL SITES

SCALE: NTS

C4 VICINITY MAP

SCALE: NTS

NAVFAC

PRELIMINARY NOT FOR CONSTRUCTION

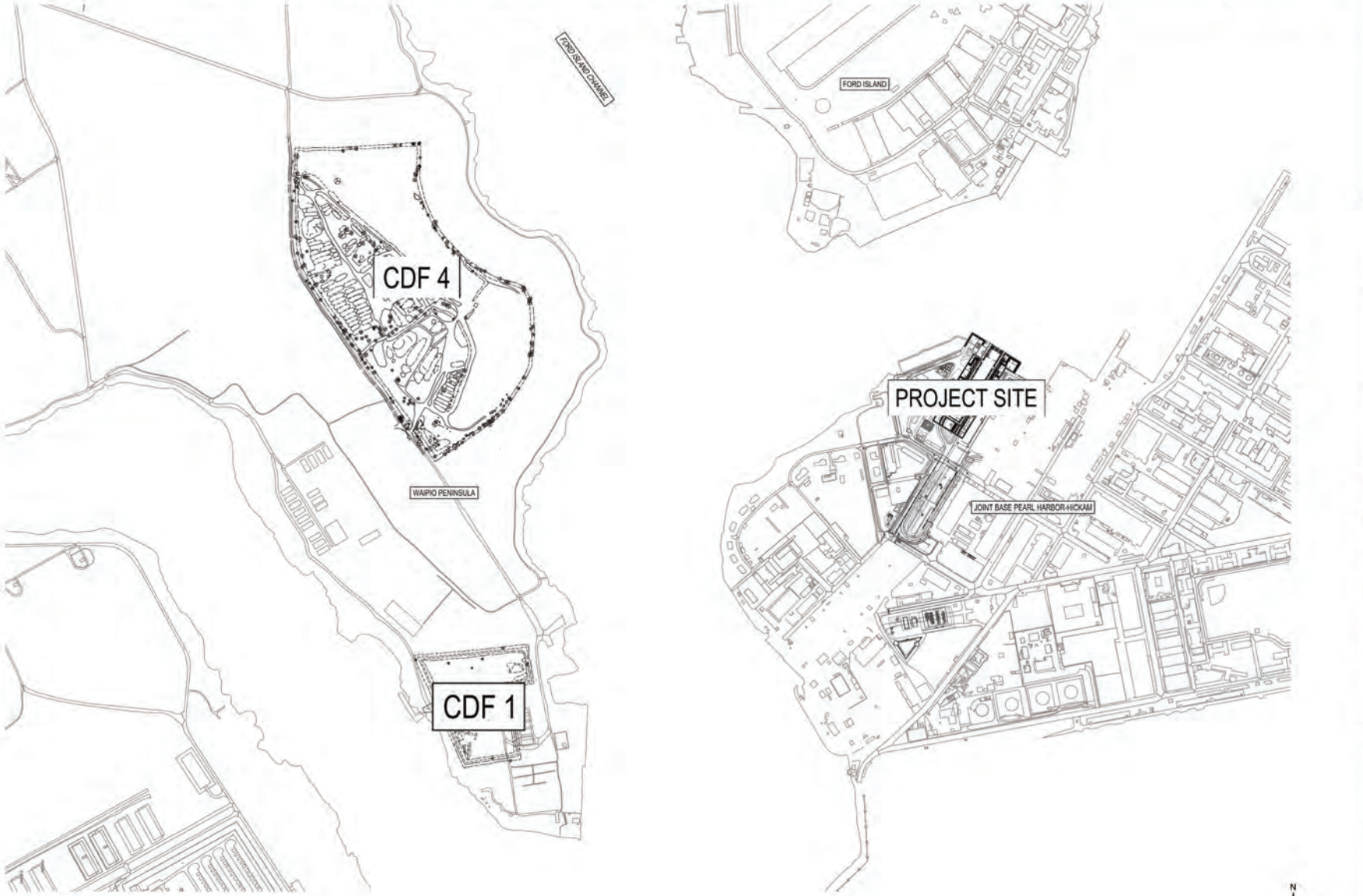
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF MAKALAPA, HAWAII
Transport Dredged Material for Disposal ODMDS

SCALE: AS NOTED

SHEET 24 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

Attachment 1: Figures and Maps
DA File No. POH-2020-00043



A1 LOCATION PLAN - CDF SITES
SCALE: NTS

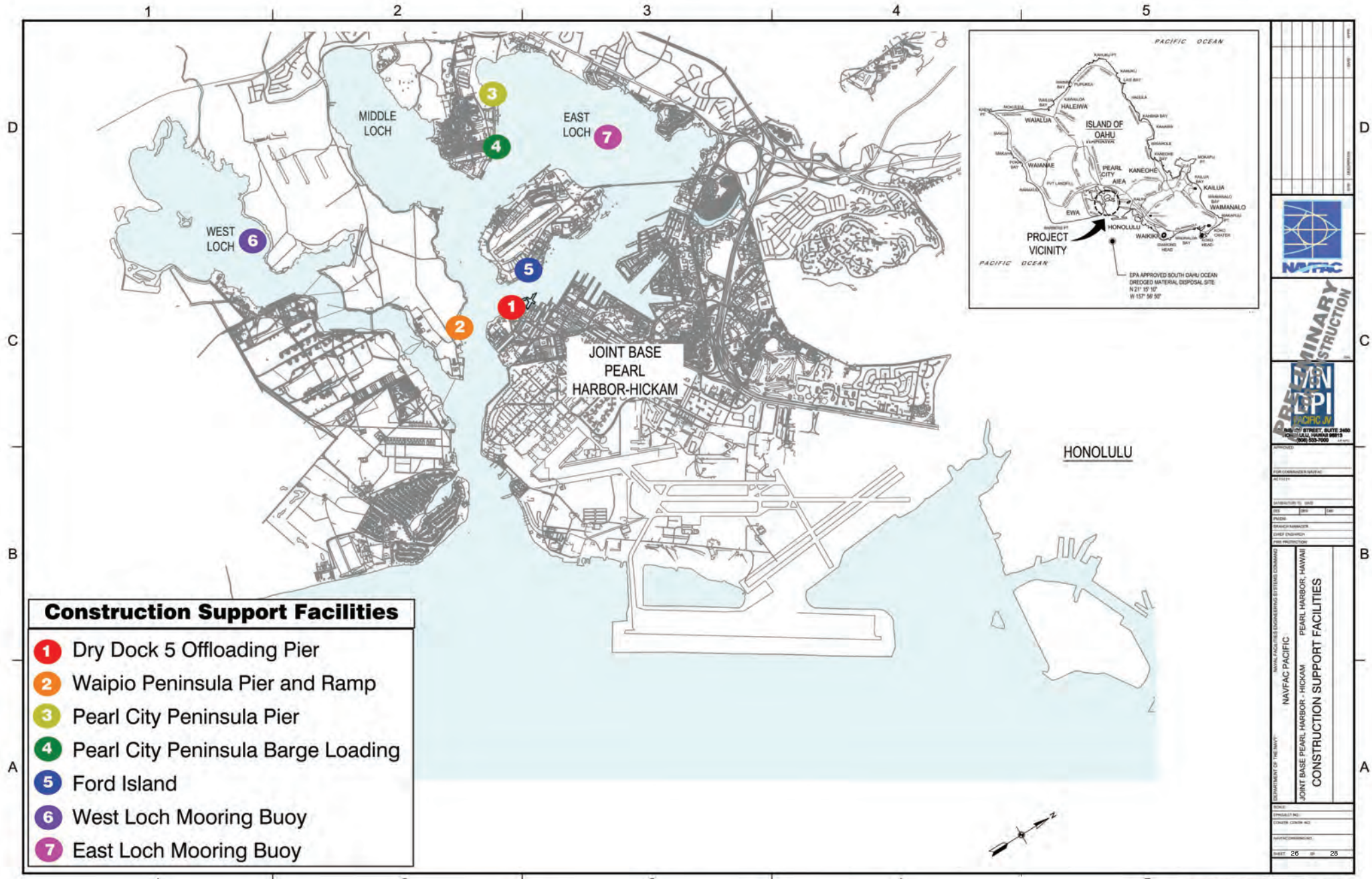
NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
CONFINED DREDGE FACILITIES

AS NOTED

SHEET 25 OF TOTAL 28

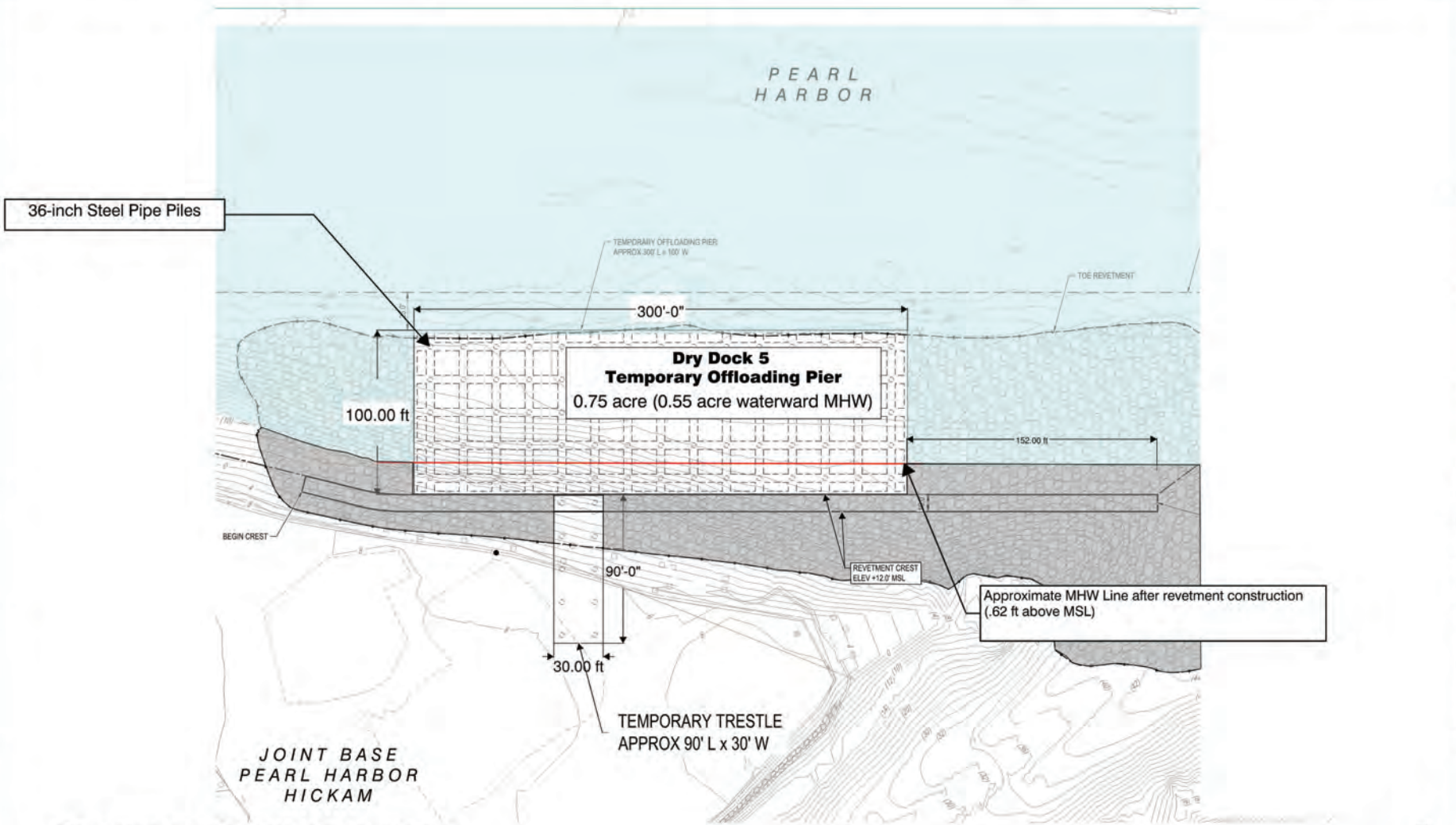
DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

Attachment 1: Figures and Maps
DA File No. POH-2020-00043



Attachment 1: Figures and Maps
DA File No. POH-2020-00043

Proposed Barge and Mooring Site Plan



A1 REVETMENT TEMPORARY OFFLOADING PIER
SCALE: 1" = 30'

PLAN NORTH

SCALE: 1"=30'

NAVFAC PACIFIC
PEARL HARBOR NAVAL SHIPYARD & IMF
MAKALAPA, HAWAII
AS NOTED
SHEET 27 OF TOTAL 28

DRAWING SCALES SHOWN BASED ON 34" x 22" DRAWING

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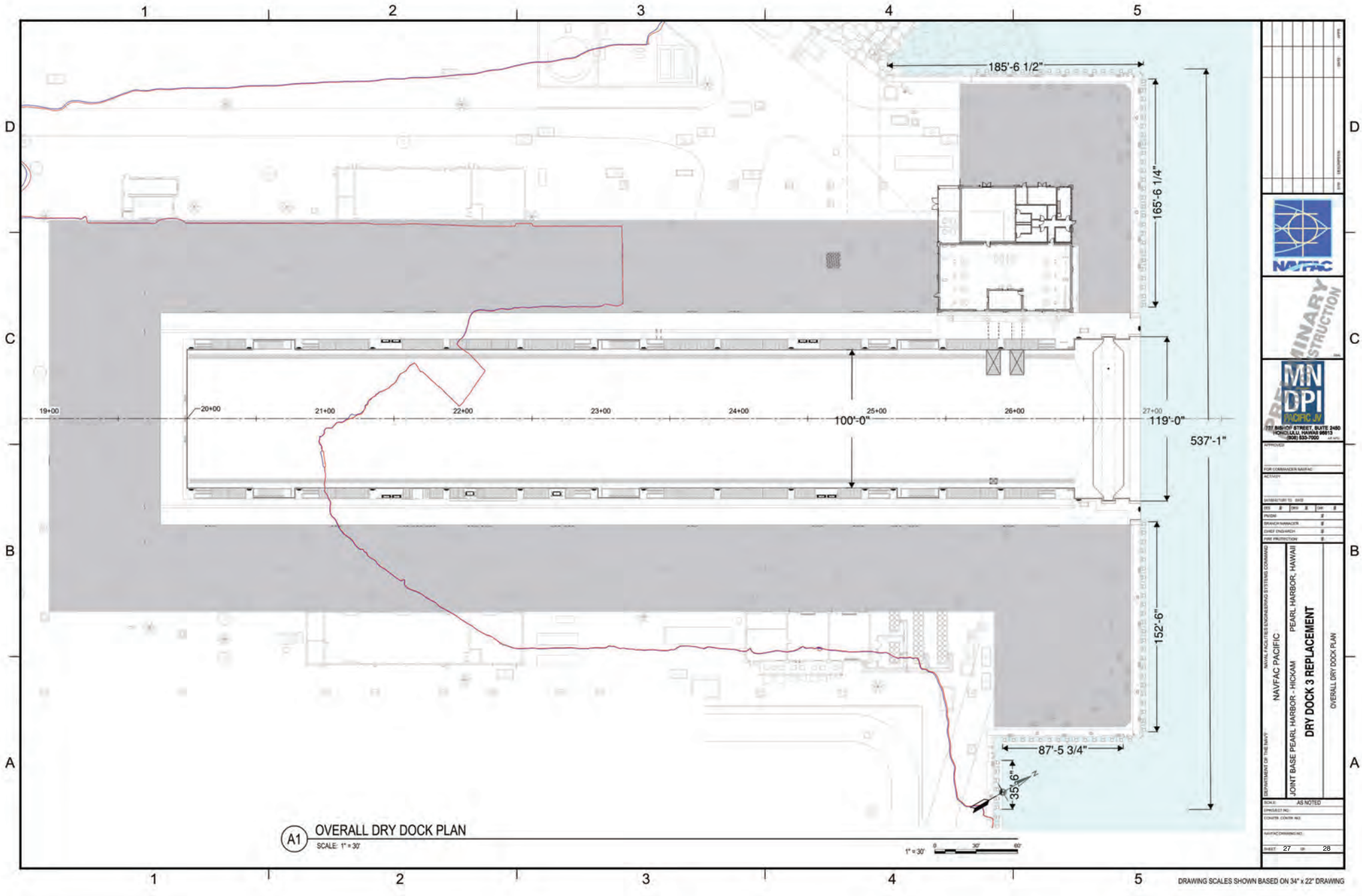

Attachment 1: Figures and Maps
DA File No. POH-2020-00043