



**US Army Corps
of Engineers®**

PUBLIC NOTICE

Applicant:
Edward Moon
Naval Base Guam

Published: April 24, 2025 HST
Expires: May 23, 2025 HST

**Honolulu District
Permit Application No. POH-2012-00114**

TO WHOM IT MAY CONCERN: The Honolulu District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) **and/or** Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403). The purpose of this public notice is to solicit comments from the public regarding the work described below:

APPLICANT: Edward Moon
Naval Base Guam (NBG)
PSC 455 Box 195
FPO AP 96540

AGENT: Jesse Cruz
Naval Base Guam (NBG)
PSC 455 Box 195
FPO AP 96540

WATERWAY AND LOCATION: The project would affect waters of the United States and navigable waters of the United States associated with the Philippine Sea. The project/review area is at the Glass Breakwater and in marine waters adjacent to Glass Breakwater at Apra Harbor, Guam (13.45845°, 144.62863°).

EXISTING CONDITIONS: The 2.8-mile long Glass Breakwater was originally built during the 1940's to protect Apra Harbor. The last major repair occurred in 2013. In May 2023, super typhoon Mawar caused severe damage, and subsequent smaller storm events exacerbated the damage. The Navy's engineering analysis determined there were failures along sections of the breakwater that were accelerating and at risk of catastrophic failure. An emergency repair was initiated on March 17, 2025, to stabilize the failing sections until a longer-term repair can be completed.

PROJECT PURPOSE:

Applicant's Project Purpose: Restore the typhoon damaged Glass Breakwater to Army Corps of Engineer breakwater standards, increase the breakwater effectiveness, and ensure long-term reliability and resiliency of the breakwater to continue protecting infrastructure in Apra Harbor and its shorelines.

Corps' Basic Project Purpose: vessel navigation, vessel mooring, and infrastructure

Corps' Overall Project Purpose: Reflect and dissipate wave energy to restore and maintain safe vessel access, vessel mooring, and shoreline and infrastructure protection within Apra Harbor.

PROPOSED WORK: NBG requests authorization to work and discharge fill material below the Mean Higher High Water to repair and the failing areas of the Glass Breakwater. Repairs would involve the phased placement of 25 to 50 ton concrete armor units (CAU) on the western 1.9 kilometers (1.2 miles) of deteriorated and/or failing areas of the breakwater. CAUs would be placed on the breakwater head section, along approximately 30 meters (100 linear feet) on the leeward (harbor) side, and along the entire ocean (Philippine Sea) side (1.9 kilometers), except for along the Luminao reef. The repair areas would extend from the breakwater crest up to approximately 49 meters (160 feet) seaward from the center of the crest road for the Outer Breakwater and up to 46 meters (150 feet) for the Inner Breakwater. Repair activities would potentially affect a maximum of up to 21.5 acres of underwater area (below the MLLW line) on the outer (Philippine Sea) side of the breakwater and head section. This includes the entire area from the waterline to the outer limit of the breakwater toe. Planned repairs would likely disturb up to 11.4 acres on the outer breakwater, and up to 0.2 acres of underwater area below the MLLW line on the leeward (harbor) side of the breakwater.

Site preparation:

Vegetation clearing and earthwork to create work and access areas on the breakwater crest to accommodate crane pads, construction equipment, and heavy truck traffic would be required prior to repair activities. Several construction laydown areas (including material loading and offloading, concrete casting, and material storage areas) would be utilized. The primary concrete casting yard would encompass the pre-cast yard, materials stockpile, and CAU storage. Contingent CAU and aggregate storage and an alternative concrete casting yard would be located at the old Cabras Quarry site, or the paved lot located across the street and approximately 700 feet southwest from the quarry entry along Highway 11.

The Hotel Wharf site along the inner side of the breakwater in the Outer Harbor would be the primary location for loading and unloading barges, personnel transports, supply boats, and push boats to shuttle workers, materials, equipment, and supplies to and from the breakwater work areas. Other wharves located in the Inner Harbor may also be used on a contingent basis for these purposes and to avoid forecasted typhoon conditions or tropical storms. On the leeward side of the breakwater, a spud/jack-up barge and temporary moorings (piles or anchors) would be used to position vessel for unloading CAUs and for other repair/construction support. The moorings would be supported by piles (up to 16 steel pipe piles). Any spuds or mooring piles installed would be placed only into soft sediment and would be removed following completion.

Temporary Removal of Existing Armor Layer and Toe Foundation:

To provide a stable foundation for placement of the CAUs, existing rock and CAUs along the slope, crest, and toe would be removed within the repair areas of the breakwater to be rebuilt. Removal would be down to the breakwater core for the slope and crest and approximately 6 meters (20 feet) deep along the toe section. The removed rock and CAUs would be used to rebuild the breakwater core, and some (up to 7,800 cubic yards (CY)) would be hauled off-site to be used for shoreline protection repairs within Apra Harbor, including at Sumay Point. Existing armor stone that has settled or fallen from the slope into the water, leaving voids along the breakwater, would be excavated and used to build a reinforcing base approximately halfway between the base of the slope and the outer limit of the existing toe.

The reinforcing base would be excavated to an elevation no deeper than 20 feet below the Mean Lower Low Water (MLLW) height to support the buildup of CAUs and/or CAUs and would serve to prevent settling or seaward movement of the CAUs, which would be placed from the reinforcing base up the slope to the crest. Repair and buildout of the breakwater could disturb approximately 11.4 acres of submerged area (below the MLLW line) inside the footprint of the existing toe on the outer (Philippine Sea) side and 0.2 acres of submerged area (below the MLLW line) within the footprint of the existing toe on the leeward (Apra Harbor) side of the breakwater.

Rebuilding the Core Foundation:

As necessary in each repair area, the breakwater's core would be graded and rebuilt to provide a stable foundation for placement of the CAUs. Imported, quarried aggregate material and stone that would be used for this work would be transported to Guam via barges.

Placement of Bedding Rock:

Up to 54,000 CY of bedding rock would be placed to create a stable underlayer for placement of the CAU. The bedding rock would be imported to the island via ship/barge and transported to the breakwater repair areas either via truck along the breakwater crest road or from a waterside barge.

Placement of Concrete Armor Units:

Approximately 20,100 large CAUs (25 to 50 tons each) would be placed along the toe, slope, and crest of the breakwater. The CAUs would be transported from the casting yard to the breakwater repair areas either via truck along the breakwater crest road or from a waterside barge. It is anticipated that 75 percent of the CAUs would be hauled to the breakwater repair site from the concrete casting yard via truck, and the remaining 25 percent would be hauled by barge to the Hotel Wharf site for transloading onto barge via crane. When fully laden, the barge would then transit to and moor against the pre-positioned spud barge leeward of the breakwater near the CAU-placing crane. CAUs would then be offloaded from the barge onto the breakwater by the CAU-placing crane.

Construction of Concrete Casting Yard:

It is anticipated that CAUs would be fabricated on the island at a concrete casting yard co-located with a construction laydown area. Concrete would be purchased from a local supplier's batching plant to the casting yard via mixer trucks and placed into armor unit molds.

Project figures enclosed.

AVOIDANCE AND MINIMIZATION, and COMPENSATORY MITIGATION: NBG provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

Impacts to the waters of the U.S. would be avoided and minimized by the use of industry standard Best Management Practices (BMP) for all phases of construction. A list of BMPs are provided in the publicly available draft Environmental Assessment (EA) for the Apra Harbor Waterfront Repairs (<https://pacific.navfac.navy.mil/About-Us/National-Environmental-Policy-Act-NEPA-Information/>).

BMPs include numerous measures to specifically avoid and minimize effects on/from:

- ESA-listed sea turtles, sharks, and corals
- ESA-listed and EFH
- Water Pollution
- In-Water Sedimentation
- Vessel Transits to Guam
- Work on the Inner Breakwater
- Fugitive Dust
- Noise
- Moorhen

Proposed mitigation includes coral translocation and replanting of sea grasses to offset the impacts to Endangered Species Act and Essential Fish Habitat. Mitigation options, with detailed descriptions, are listed the draft EA, Appendix C.

Additional measures may be incorporated by Special Conditions into a Department of the Army permit.

CULTURAL RESOURCES: NBG is the lead federal agency for ensuring the project complies with Section 106 of the National Historic Preservation Act (NHPA). NBG established the area of potential effect (APE) and determined the proposed undertaking would have "no adverse effect" on historic properties. The Corps will review NBG's APE and consultation with the Guam State Historic Preservation Officer to determine if it is inclusive of the Corps' permit area.

The Corps final determination relative to historic resource impacts may be subject to additional coordination with the State Historic Preservation Officer and other interested parties.

ENDANGERED SPECIES: NBG is the lead federal agency for ensuring the project complies with Section 7 of the Endangered Species Act (ESA). NBG determined the project may affect, but is not likely to adversely affect federally listed or proposed terrestrial and aquatic species and habitat, with the exception of one species. NBG determined the project would have adverse effects to *Acropora globiceps* colonies. Pursuant to Section 7 of the ESA, NBG is consulting with the National Marine Fisheries Service (NMFS) Protected Resources office and US Fish and Wildlife Service (USFWS), as applicable, in accordance with 50 CFR part 402. The Corps will review NBG's Biological Assessment and ESA consultations to determine if they are inclusive of the Corps permit area.

The Corps final determination relative to endangered species impacts may be subject to additional coordination with the NMFS Protected Resources office and/or USFWS.

ESSENTIAL FISH HABITAT: NBG is the lead federal agency for ensuring the project complies with Section 305(b)(2) of the Magnuson Stevens Fishery Conservation and Management Act (MSA). NBG determined the proposed action would adversely affect Essential Fish Habitat (EFH). Pursuant to Section 305(b)(2) of the MSA, NBG is consulting with the National Marine Fisheries Service in accordance with 50 CFR part 600.920. The Corps will review NBG's EFH Assessment and consultation with NMFS Habitat Conservation office to determine if it is inclusive of the Corps' permit area.

The Corps final determination relative to EFH impacts may be subject to additional coordination with the NMFS Habitat Conservation office.

NAVIGATION: The proposed structure or activity is not located in the vicinity of a federal navigation channel.

SECTION 408: The applicant will not require permission under Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408) because the activity, in whole or in part, would not alter, occupy, or use a Corps Civil Works project.

WATER QUALITY CERTIFICATION: Water Quality Certification may be required from the Guam Environmental Protection Agency (EPA). Pursuant to Section 401 of the Clean Water Act (Public Law 95-217), NBG will submit a water quality certification (WQC) request to the Guam EPA and the Corps. Once the WQC application has been reviewed and determined complete per 40 CFR 121.5(b), Guam EPA and the Corps will establish a reasonable period of time for granting (with or without conditions) or denying the WQC. The Section 401 WQC will be considered waived if the DEQ does not act on the certification request by end of the reasonable period of time.

COASTAL ZONE MANAGEMENT: The proposed activity may affect land, or water uses in the Coastal Zone. Under Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended by 16 U.S.C. 1456(c)(3), the Corps may not issue a permit for the described work until NBG obtains and provides to the Corps a Federal Consistency Concurrence from the Guam Coastal Management Program.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The geographic extent of aquatic resources within the proposed project area that either are, or are presumed to be, within the Corps jurisdiction has not been verified by Corps personnel.

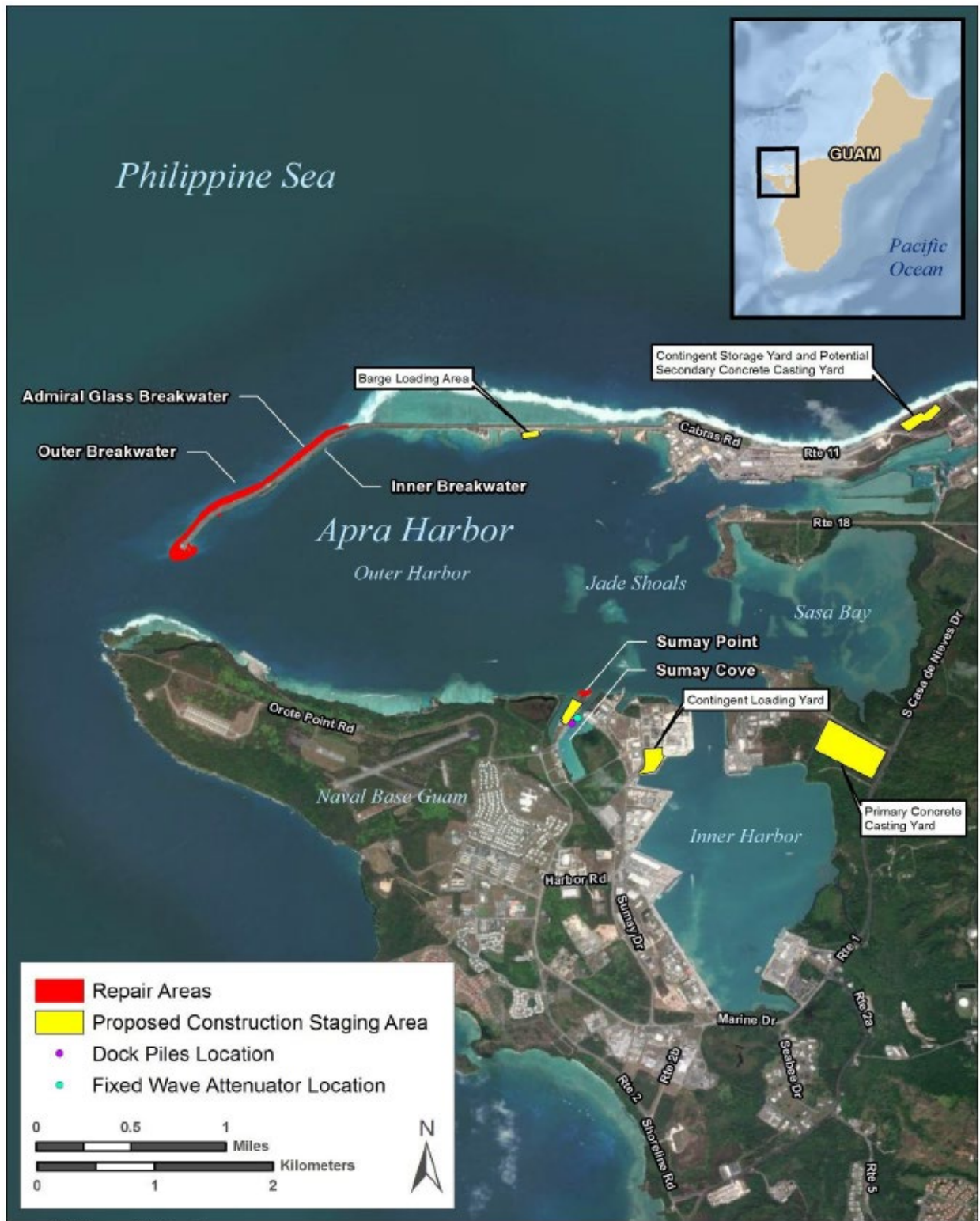
EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, 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 cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical 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. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

COMMENTS: The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The Honolulu District will receive written comments on the proposed work, as outlined above, until May 23, 2025 HST. Comments should be submitted electronically via the Regulatory Request System (RRS) at <https://rrs.usace.army.mil/rrs> or to Jason Brewer at Jason.d.brewer@usace.army.mil. Alternatively, you may submit comments in writing

to the Commander, U.S. Army Corps of Engineers, Honolulu District, Attention: Jason Brewer, PSC 455 Box 188, Santa Rita, Guam 96540. Please refer to the permit application number in your comments.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

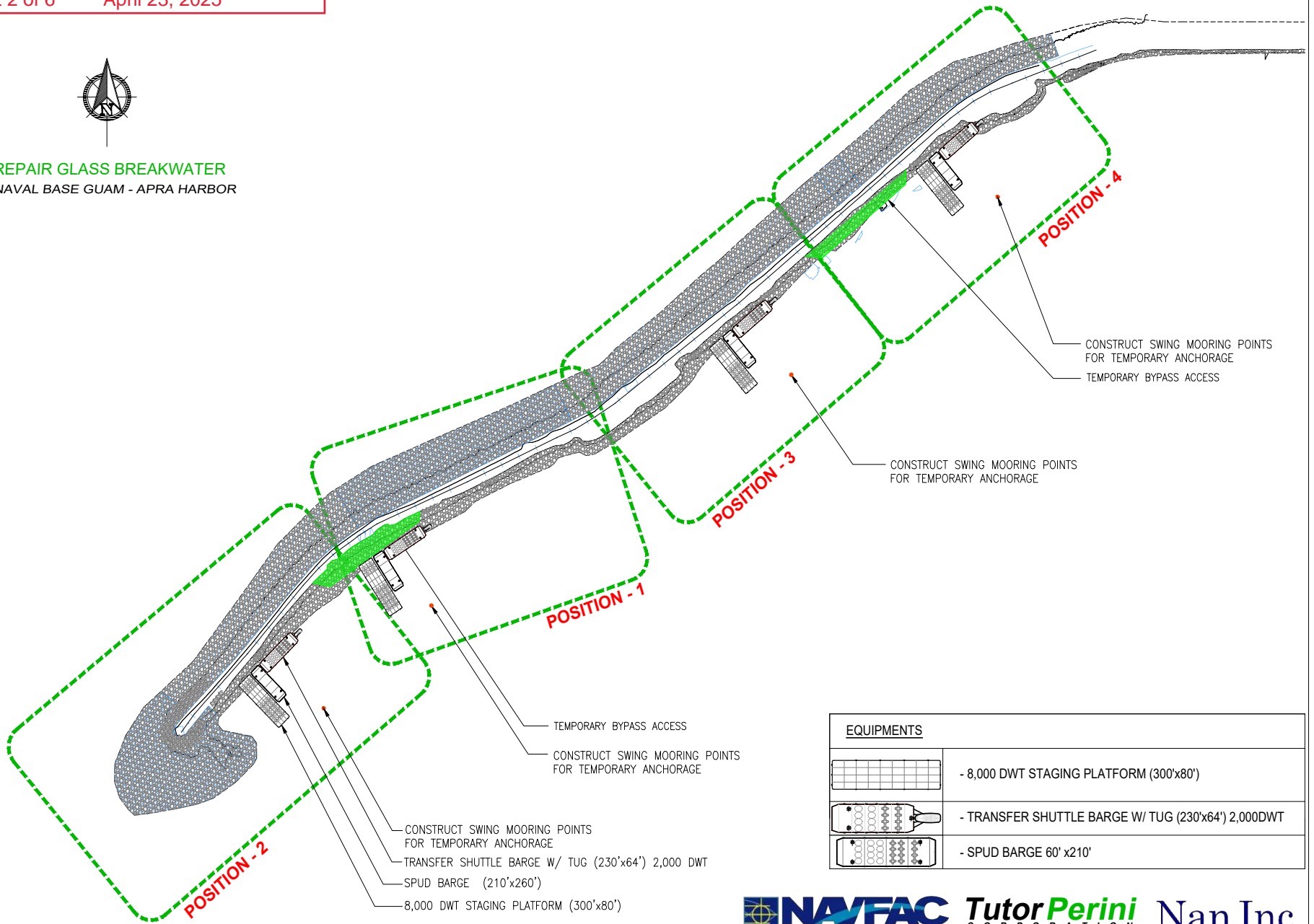


Map for Glass Breakwater repairs and associated construction areas, Apra Harbor, Guam.

POH-2012-00114 Glass Breakwater Repair
 Lat: 13.45845°, Long: 144.62863°
 Sheet 2 of 6 April 23, 2025



REPAIR GLASS BREAKWATER
 NAVAL BASE GUAM - APRA HARBOR

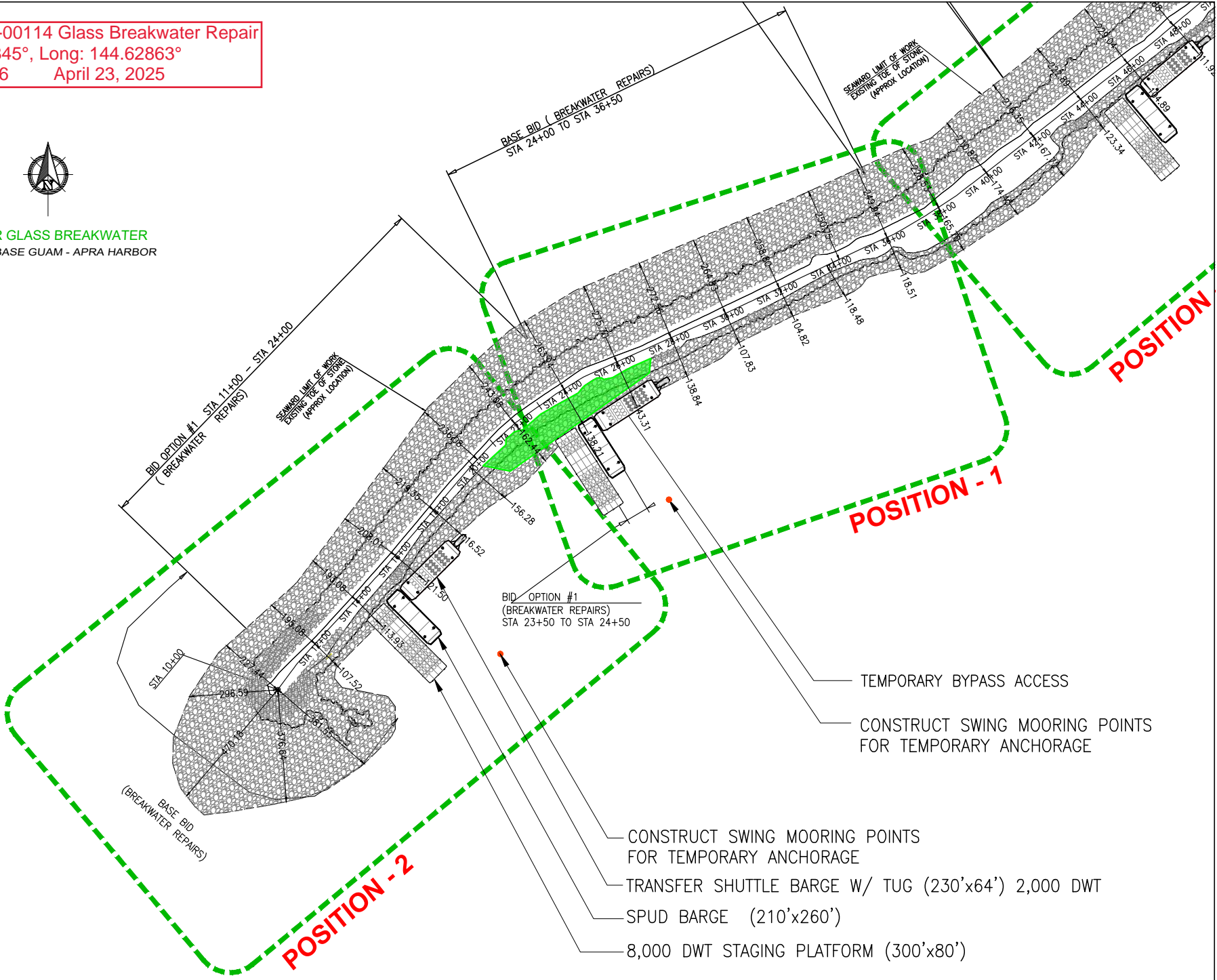


EQUIPMENTS	
	- 8,000 DWT STAGING PLATFORM (300'x80')
	- TRANSFER SHUTTLE BARGE W/ TUG (230'x64') 2,000DWT
	- SPUD BARGE 60' x210'

POH-2012-00114 Glass Breakwater Repair
 Lat: 13.45845°, Long: 144.62863°
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REPAIR GLASS BREAKWATER
 NAVAL BASE GUAM - APRA HARBOR

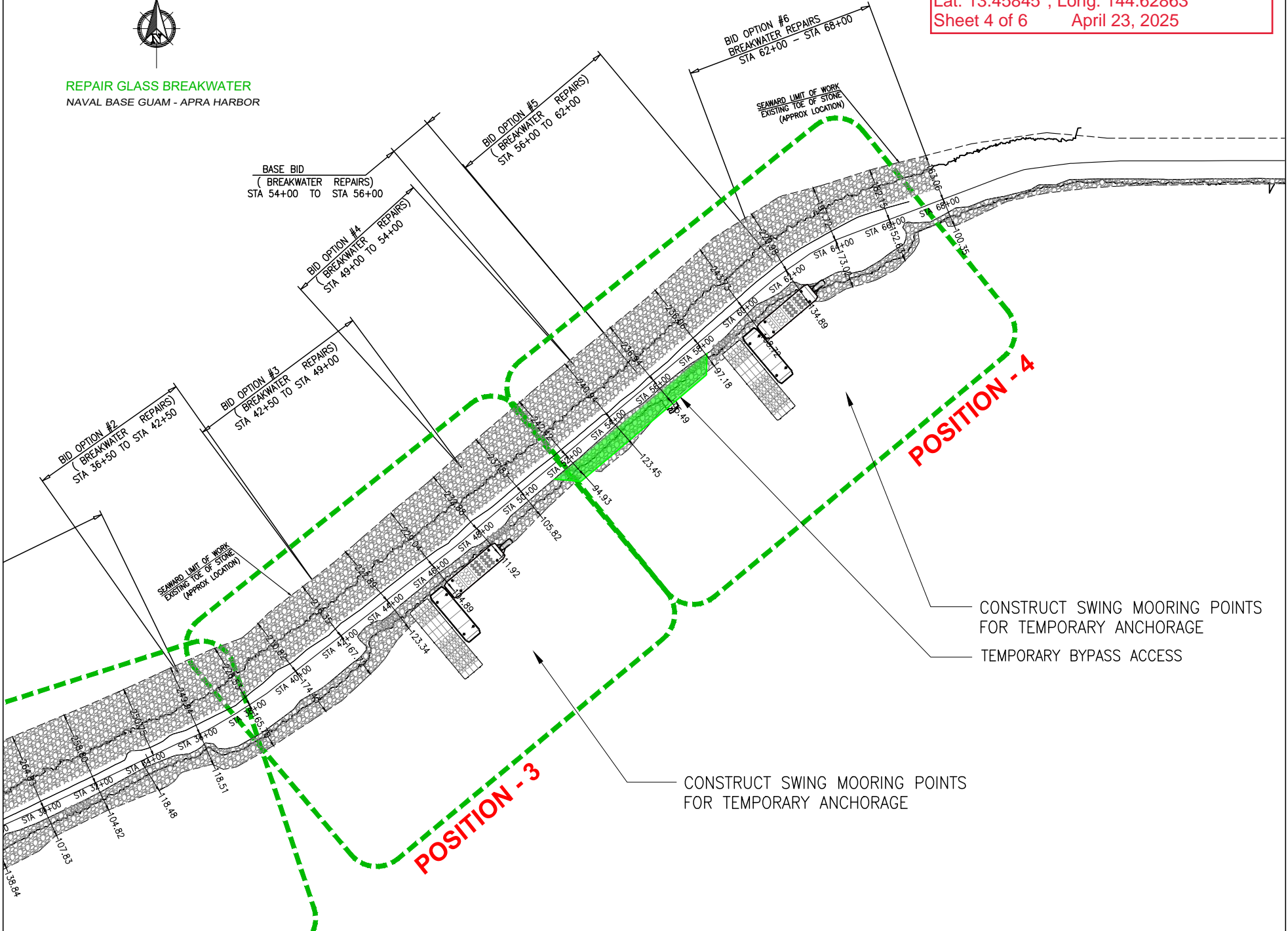


- TEMPORARY BYPASS ACCESS
- CONSTRUCT SWING MOORING POINTS FOR TEMPORARY ANCHORAGE
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- TRANSFER SHUTTLE BARGE W/ TUG (230'x64') 2,000 DWT
- SPUD BARGE (210'x260')
- 8,000 DWT STAGING PLATFORM (300'x80')



POH-2012-00114 Glass Breakwater Repair
Lat: 13.45845°, Long: 144.62863°
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REPAIR GLASS BREAKWATER
NAVAL BASE GUAM - APRA HARBOR



POSITION - 4

POSITION - 3

CONSTRUCT SWING MOORING POINTS
FOR TEMPORARY ANCHORAGE

TEMPORARY BYPASS ACCESS

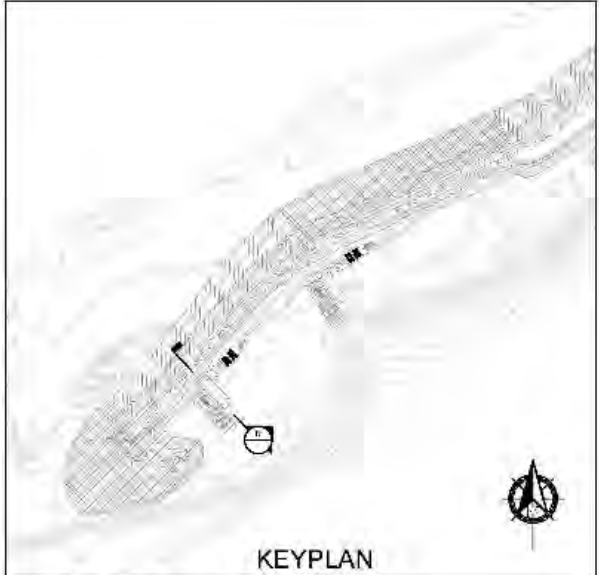
CONSTRUCT SWING MOORING POINTS
FOR TEMPORARY ANCHORAGE

Notional Cross-Section of Stone and CAU Transport and Placement for Glass Breakwater Repair

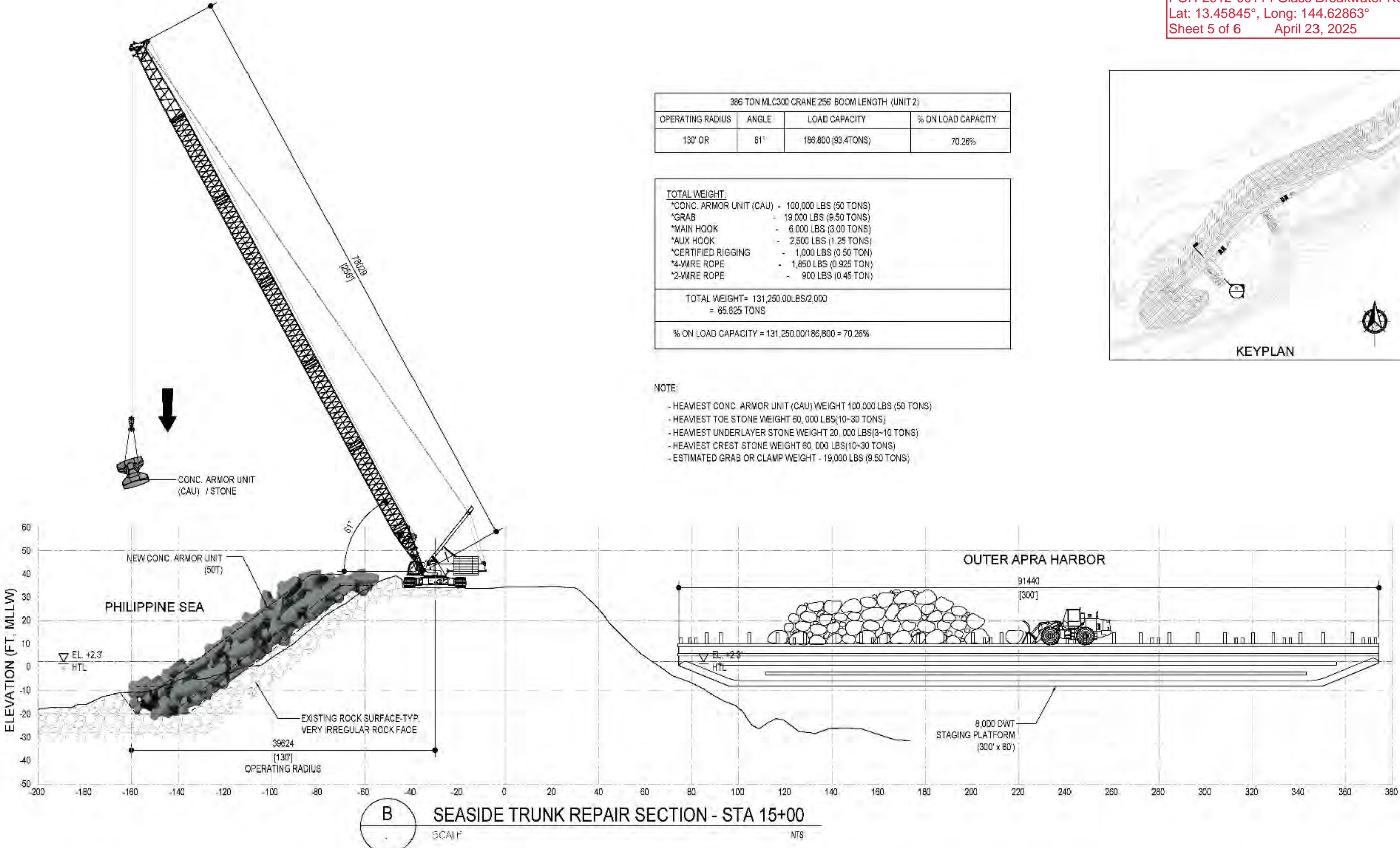
POH-2012-00114 Glass Breakwater Repair
 Lat: 13.45845°, Long: 144.62863°
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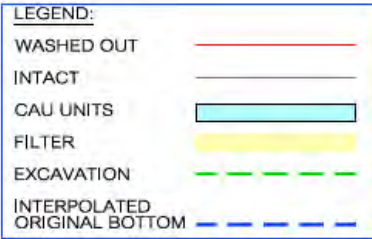
386 TON MLC300 CRANE 256 BOOM LENGTH (UNIT 2)			
OPERATING RADIUS	ANGLE	LOAD CAPACITY	% ON LOAD CAPACITY
130' OR	61°	186,800 (93.4 TONS)	70.26%

TOTAL WEIGHT:	
*CONC. ARMOR UNIT (CAU)	- 100,000 LBS (50 TONS)
*GRAB	- 19,000 LBS (9.50 TONS)
*MAIN HOOK	- 6,000 LBS (3.00 TONS)
*AUX HOOK	- 2,500 LBS (1.25 TONS)
*CERTIFIED RIGGING	- 1,000 LBS (0.50 TON)
*4-WIRE ROPE	- 1,850 LBS (0.925 TON)
*2-WIRE ROPE	- 900 LBS (0.45 TON)
TOTAL WEIGHT = 131,250.00 LBS / 2,000	
= 65.625 TONS	
% ON LOAD CAPACITY = 131,250.00 / 186,800 = 70.26%	



- NOTE:
- HEAVIEST CONC. ARMOR UNIT (CAU) WEIGHT 100,000 LBS (50 TONS)
 - HEAVIEST TOE STONE WEIGHT 60,000 LBS (10-30 TONS)
 - HEAVIEST UNDERLAYER STONE WEIGHT 20,000 LBS (3-10 TONS)
 - HEAVIEST CREST STONE WEIGHT 60,000 LBS (10-30 TONS)
 - ESTIMATED GRAB OR CLAMP WEIGHT - 19,000 LBS (9.50 TONS)





Notional Cross-Section – New Reinforcing Base within the Limit of Work (Blue Shaded Area) to Existing Toe of Glass Breakwater

