NAVFAC Naval Facilities Engineering Command
NAVFAC HAWAII

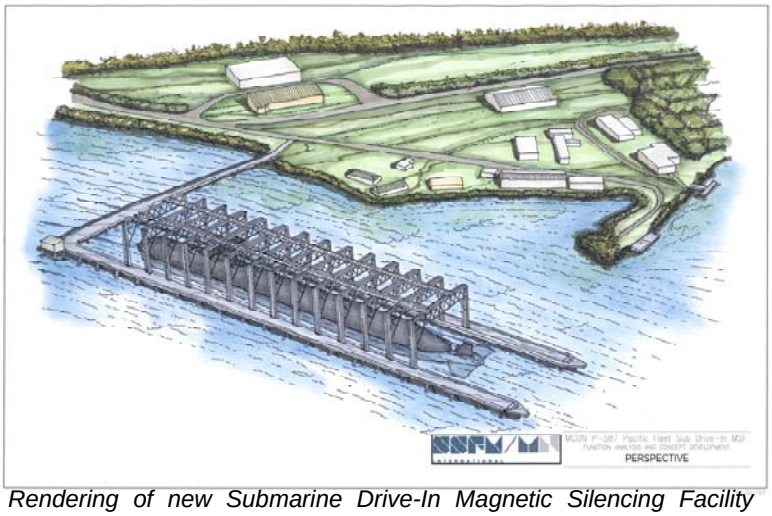
Fact Sheet

Submarine Drive-In Magnetic Silencing Facility (MSF)
Beckoning Point, Oahu, Hawaii

November 2008

The Naval Facilities Engineering Command (NAVFAC) Hawaii is the Navy's Administrative Contracting Officer (ACO) for the Submarine Drive-In Magnetic Silencing Facility (MSF), at Naval Station Pearl Harbor project. The plan provides for a new non-magnetic concrete drive-in deperming pier for submarines and new rectifier building located along the north shore of Waipio Peninsula near the entrance to Middle Loch at Beckoning Point, Pearl Harbor. Work includes replacement of the existing MSF which includes deperming pier and other landside support facilities. This project includes both Design/Bid/Build (DBB) (Parts A & C) and Design-Build (DB) (Part B) work.

- Part A = Waterfront facilities
- Part B = Upland facilities
- Part C = Magnetometer tubes



Rendering of new Submarine Drive-In Magnetic Silencing Facility (MSF).

Contract Award

NAVFAC Pacific awarded this $84,842.140 firm-fixed price contract on August 11, 2008, for the FY08 Military Construction (MCON) P-587, Submarine Drive-In (MSF), to Watts-Healy Tibbitts (joint venture), Honolulu, Hawaii. NAVFAC Hawaii's Public Works Department, Facility Engineering and Acquisition Division (FEAD), Pearl Harbor is administering the contract. The project is incrementally funded with the first increment of $42,421,000 allocated at the time of the award. The second increment will be funded in FY09 at $35,850,220. An additional, third increment will be funded in FY10 at $6,570,920. The contract also contains one exercised option, which if awarded, would increase the cumulative contract value to $86,062,140.

The estimated completion date for the project is October 2010 followed by installation and testing of MSF equipment by NAVSEA to be fully operational by October 2011.

Current Facility History

The Deperming Pier (S9) at Waipio Peninsula, across from Pearl City Peninsula, was constructed in 1942 as part of a Degaussing Station, also called the Magnetic Proving Grounds. Historically, the original S9 was an individual mooring platform of wood frame construction. Today, the MSF at Beckoning Point is a two story wooden facility.

The Deperming Pier is a consolidation of three mooring platforms. It services ships that are about 820-ft long (more than double its berthing length). To degausse ships, cables are brought from a shore-side storage facility. Floats are used to move the cables to the side of the ship where it is wrapped about the vessel. The work is extremely difficult, labor intensive and time consuming.

The decayed structure requires constant and expensive repair/maintenance.

In addition, the country's new SSN-774 VIRGINIA class submarines require a drive-in facility and cannot be depermed at the current structure at Beckoning Point. It also has other capability deficiencies and cannot accommodate other classes of submarines.

The demolition of the existing Magnetic Silencing Facility (MSF) and the construction of a new Submarine MSF at the same location will provide a cost savings to the Navy, offer a modern, demagnetizing pier that will meet operational commitments for years to come.

Photo of current MSF or Deperming Station at Beckoning Point, Pearl Harbor, Hawaii.

Project Overview/Specifics

The Design/Bid/Build portion is the construction of the waterfront facilities such as a new 700-ft non-magnetic concrete pier and an 85-meter access trestle, as well as demolition of the old structure and dredging work. Also included are fendering and mooring systems, submarine access booms, a pier equipment building, potable and wastewater collection system, fire protection system, and electrical utilities.

The Design-Bid portion, or upland work, includes site civil work, roadway, pavement, parking, site electrical, construction of a rectifier building, renovation of control building (Bldg. 54), a generator building, fencing and guardhouses.

Tentative Schedule

Navy and contractor personnel kicked off their post award meeting on Oct. 2, 2008, followed by a pre-construction meeting on Oct. 3, 2008.

The contractor plans to mobilize in November 2008 and begin "in water work" by driving 12 test piles to check for load capacity. The test pile driving is scheduled to begin on or about Nov. 17 and is expected to take approximately one month to complete. Some noise maybe noticed by civilians living around Pearl Harbor such as Navy housing residents on Ford Island, Magrew Point, Pearl City Peninsula, as well as other civilian areas along the waterfront. The noise maybe a little more noticeable since Navy mangrove trimming work has opened the shoreline and pile driving activities could be visible.

Part A or Phase 1 work will occur on and in the water side of the current deperming facility in January 2009. It will include dredging a new pier location and turnaround area which will involve the removal of approximately 68,000 cubic meter of material. This work will continue 24/7 for approximately one month. The dredged material will be taken to an Environmental Protection Agency (EPA) approved off shore disposal area.

The fabrication and driving of 173 permanent piles is expected to start in March 2009 and continue for about eight months. Due to the need for special nonmagnetic aggregates for the concrete, the permanent piles and other precast items will be fabricated on Guam and shipped to Hawaii.

Demolition of the current facility's piers is expected to begin in December 2008.

Part B (on shore facilities) design will be separated into a civil portion (underground unitilities) and a building portion. The design of the civil portion is expected to be completed in January 2009 and work started soon thereafter. The design of the building portion is expected to be completed and approved in March 2009 and construction to commend in April 2009. Part C is a pre-priced option to the contract and would involve the installation of VIRGINIA class sensor equipment.

Definitions

(1) Design/Bid/Build (DBB) work: Full plans and specifications are prepared for the construction contractor to review and submit a proposal to complete.

(2) Design/Build (DB) work: The contractor is given the design requirements for these facilities (in this case the land-based facilities). The contractor must prepare and submit detailed drawings of these facilities in accordance with the design requirements. The normal submittal consists of 60 percent and final submittal. The contractor cannot start on any project work until the DB phase has been completed. Normally this takes anywhere between six to eight months after the contract has been awarded.

(3) Magnetic Signature: Any sea-going metal-hulled ship or submarine develops a magnetic signature as it travels due to a magneto-mechanical interaction with the Earth's magnetic field. *(From Wikipedia, the free encyclopedia)*

(4) Deperming: This is a procedure that has been around for more than 50 years which erases permanent magnetism from ships and submarines to hide them from magnetic detection vessels and enemy marine mines. It eliminates the magnetic history of the vessel – wiping the slate clean – by producing high-intensity magnetic fields during the deperming treatment. The treatment uses "degaussing" coils which are wrapped around the hull of the vessel and a current is applied to change the magnetic signature. Usually, vessels are depermed about once a year.

(5) Rectifier: A rectifier is an electrical device that converts alternating current (AC) to direct current (DC), a process known as rectification. Rectifiers have many uses including as components of power supplies and as detectors of radio signals. Rectifiers may be made of solid state diodes, vacuum tube diodes, mercury arc valves, and other components. *(From Wikipedia, the free encyclopedia)*

(6) Magnetometer: A magnetometer is a scientific instrument used to measure the strength and/or direction of the magnetic field in the vicinity of the instrument. Magnetism varies from place to place and differences in Earth's magnetic field (the magnetosphere) can be caused by the differing nature of rocks and the interaction between charged particles from the sun and the magnetosphere of a planet. Magnetometers are often a frequent component instrument on spacecraft that explore planets. *(From Wikipedia, the free encyclopedia)*

(7) VIRGINIA Class Sensor Equipment: New "technologies" unique to deperming the VIRGINIA class submarine.

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