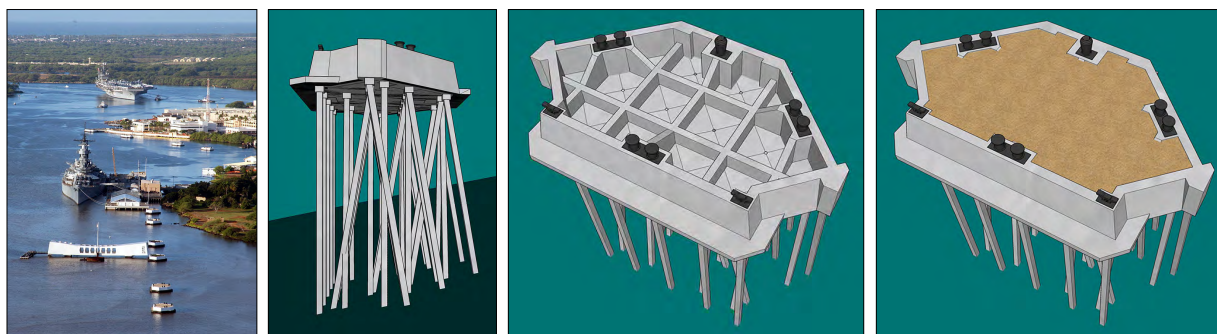




## Restoration of Pearl Harbor's Battleship Row Mooring Quays & Concrete/Construction Workforce Development

*Training military service members for workforce & management positions in the concrete and construction industries while preserving the site where America entered World War II*



The National Park Service (NPS) World War II Valor in the Pacific National Monument is teaming with Pacific Historic Parks (PHP) and the Concrete Preservation Institute (CPI), to save the Pearl Harbor Battleship Row mooring quays (see following pages for mooring quay history and photos). NPS is the lead for heritage preservation, CPI experts will complete the work while training active duty military service members for careers through their military Career Skills Program (CSP), and PHP will help fund and support the project as well as promote education about the project and site. The five-year project will restore the quays according to the concrete repair industry's highest standards and the US Secretary of the Interior's Standards for the Treatment of Historic Properties. It will involve input from many levels of cultural resource stakeholders. This important restoration effort, estimated to cost approximately \$5 million for the initial six quays, is a powerful public/private partnership between government, military, and non-profit organizations funded largely by corporate and individual donors and grants.

### **CPI Military Career Skills Program**

The Concrete Preservation Institute's Career Skills Program at Pearl Harbor is the first overseas CSP to be approved by the US Army and the only one to focus on concrete. Service members from any military branch may participate in the Pearl Harbor CSP program at no cost to the individuals thanks to program partnerships, generous donations, and grants. Active duty service members are eligible to participate in CSP's, and remain on active duty while assigned to the programs, during their last 180 days of service as part of a Department of Defense effort to help transitioning service members prepare for civilian jobs.

Active duty service members will participate in CPI's 12-week sessions (three sessions per year) for the Battleship Row mooring quay restoration project. They will learn hands-on about concrete, construction, and historic preservation while helping preserve one of the most important historical sites in the country, gain concrete industry certifications, and be connected by CPI to employers across the United States eager to hire them for jobs and internships in concrete, construction, business, and many related and other fields.

## Concrete/Construction Industry Workforce Development

Hawaii military bases transition nearly 5000 people from active service each year; nearly all seek employment in various locations across the US mainland.

While CSP eligibility is 180 days within transition and only by military permission and program acceptance, *all* military service members are required to complete the military's Transition Assistance Program (TAPS) beginning one year ahead of transition. CPI will train the active duty service members in their CSP program and connect them to employers; *they will also advise many more of the 5000 transitioning service members enrolled in Pearl Harbor TAPS programs about careers in the concrete and construction industries as well as connect them directly to employers seeking interns and full-time employees across the United States.*

For those transitioning service members who are college bound after CPI's CSP program and/or after TAPS, CPI can advise on choosing college programs, including the Concrete Industry Management (CIM) Bachelor of Science degree program offered at four universities across the US. CPI maintains connection with student veterans in CIM or other college programs to assist with internship and job placement during and following college.

CPI has a similar program at Alcatraz Island, focusing on military veterans and college students, in partnership with the National Park Service's Golden Gate National Recreation Area. Based on CPI's success there and in Hawaii with their preservation work and service member job connections, CPI plans to expand to other military bases/historic landmark sites in the future, thus helping preserve more historically significant cultural sites and training/connecting more service members to industry internships and jobs.

The Concrete Preservation Institute, a non-profit educational foundation, invites concrete and construction industries to participate in CPI's a network of employers standing ready to interview transitioning military candidates for internship and full-time positions across the United States. They also need companies and individuals to help support their preservation and workforce development efforts with ongoing sponsorships, targeted funding, and in-kind contributions. CPI has spent many years developing their unique program and earning the honor and trust of a partnership with the US National Park Service and the US military as a CSP program. CPI's ability to impact the workforce and management shortage in the industry is now only limited by the resources they have available to train and/or connect with hundreds, perhaps thousands, of candidates in TAPS in all service branches in Hawaii. As resources allow, CPI plans to expand with additional programs at other bases/NPS sites across the US. Our country's honored military veterans seek and deserve meaningful employment; please help CPI connect their career dreams with you and your company's workforce and management needs.

## Pearl Harbor Mooring Quay History & Current Conditions

2016 marks the 75<sup>th</sup> anniversary of the attack on Pearl Harbor, a time vividly impressed upon the American mind and heart. Standing solemnly in the Pearl Harbor channel alongside the USS *Arizona* memorial, the Battleship Row mooring quays serve as strong and quiet reminders of American strength and tenacity in the face of devastating loss following the surprise attack by Japanese Naval air forces on December 7, 1941.

The construction of the mooring quays was the result of a need for additional berthing space for the Pacific Fleet prior to WWII. Sixteen concrete mooring quays formed pairs designated F-1 through F-8, North and South (Example F-7N), located on Ford Island's southeast side. They are now known as the famed "Battleship Row".

“The vital need for additional berthing space for capital ships at Pearl Harbor necessitated the development of 16 fixed moorings to relieve congestion at the existing piers. The moorings are of the interrupted quay wall type and are the first of this kind constructed. They provide berths similar to those at a pier at a greatly reduced cost. They economize on space and provide practically double the berthing for an equal area as compared to anchored moorings, and consequently affect a material savings in dredging required. The total cost of the project was \$540,000, of which the sum of \$39,863.45 was utilized for force account projects including the pay of administrative employees, the provision of bow and stern mooring floats, and for miscellaneous district work and materials.” - *US Navy Document*.

The partial destruction of the Pacific Fleet on December 7<sup>th</sup> sent shock wave around the world. The sinking of the *Arizona* resulted in the largest loss of life suffered by a United States Navy warship in American history. Despite the devastation, the nation quickly responded with the mooring quays playing a significant role in post-attack salvage. From the quays, American salvage workers accomplished unprecedented feats in the recovery of sunken battleships. Workers raised the USS *California*, USS *West Virginia*, and righted and refloated the USS *Oklahoma*. Extensive salvage work was performed on the USS *Arizona*. The quays were the foundations of the recovery, which lead ships like the *West Virginia* fighting throughout the remainder of World War II.

Today, the Mooring Quays mark the location of the attack that ignited a social, political and economic change that still resonates in the 21<sup>st</sup> century. The USS *Arizona* Memorial serves as a reminder of the loss life and the failure of peace. Perhaps the mooring quays serve as symbolic tombstones to the ships that suffered horrific crew losses during the attack on Battleship Row.

President George Bush Jr. established World War II Valor in the Pacific by proclamation 8327 in 2008. The entire proclamation includes nine sites with significant historical connection to World War II in the Pacific theater. The site at Pearl Harbor encompasses the USS *Arizona*, USS *Utah*, and USS *Oklahoma* memorials, in addition to the mooring quays. Due to their historical significance, the mooring quays are also part of the Pearl Harbor National Historic Landmark District, on the National Register of Historic Places, and part of the National Monument, which represents the highest protections our nation bestows on cultural heritage.

Present day initial above and below water visual inspection has revealed that 1941 battle damage to the quays was somewhat minimal as a result of their strong design and buffering provided by the ships that received the brunt of the attack. Impact of the ships against the quays during the attack was minimized by the now extant quay bumper system that served to somewhat soften the blows. Larger damaged areas did occur as a result of impact by pieces of steel blasted from the *USS Arizona* when it exploded. After being included in the 2008 Presidential Proclamation, the National Park Service has systematically assessed the integrity of the concrete structures and performed basic maintenance as resources have allowed. Time and exposure to the aggressive, chloride-rich environment, however, has left the quays in need of full preservation treatment to halt further deterioration that could lead to structural compromise if not addressed. Further evaluation will confirm the extent of battle damage and subsequent deterioration and guide the mooring quay restoration effort set to begin in 2016.

*Images, drawings, and digital model images on following pages.*

## Images, Modern

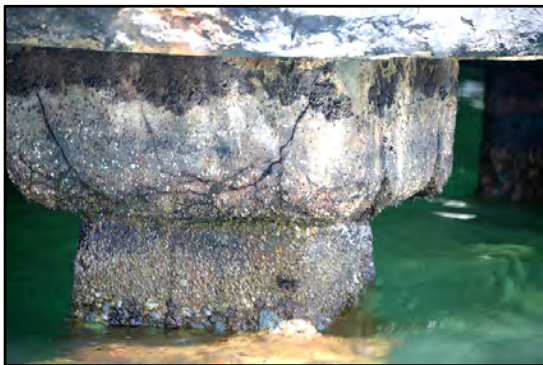
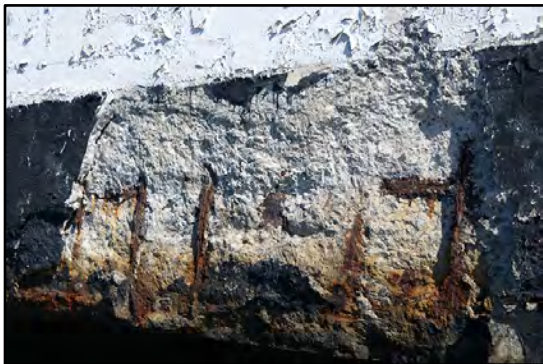




# Images, Historic

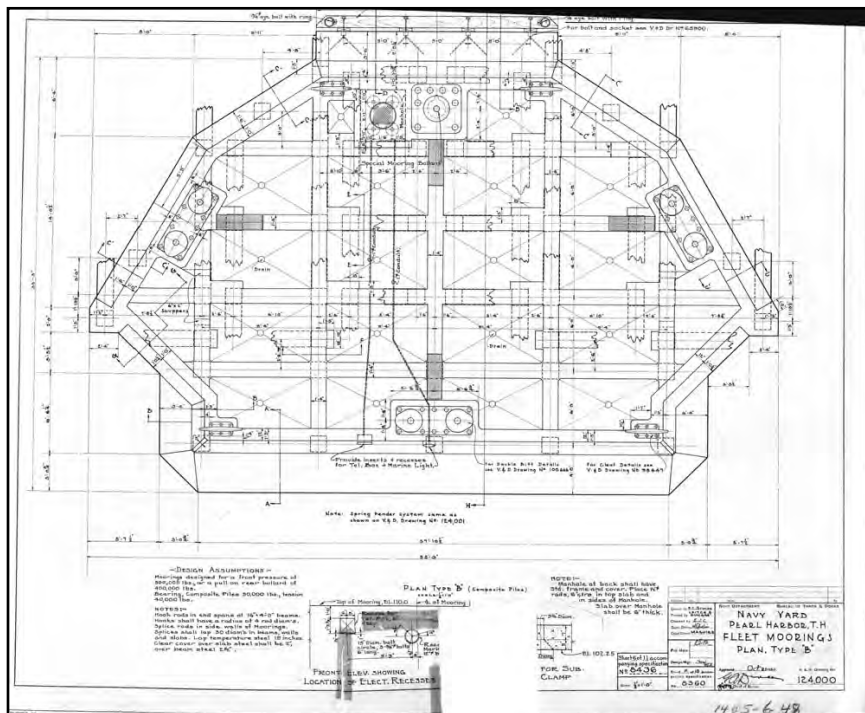
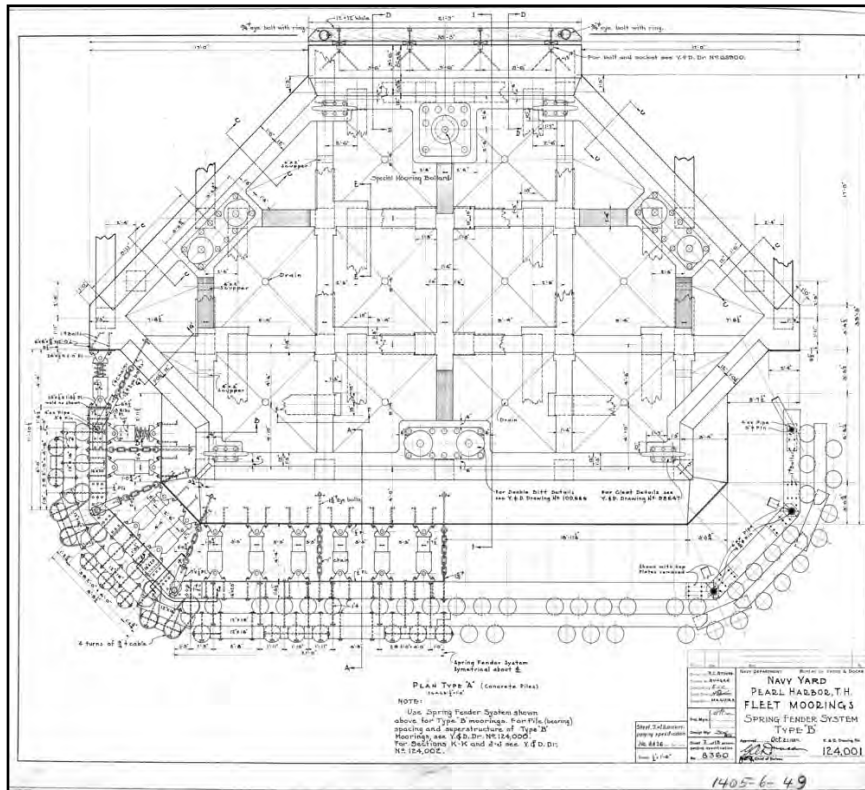


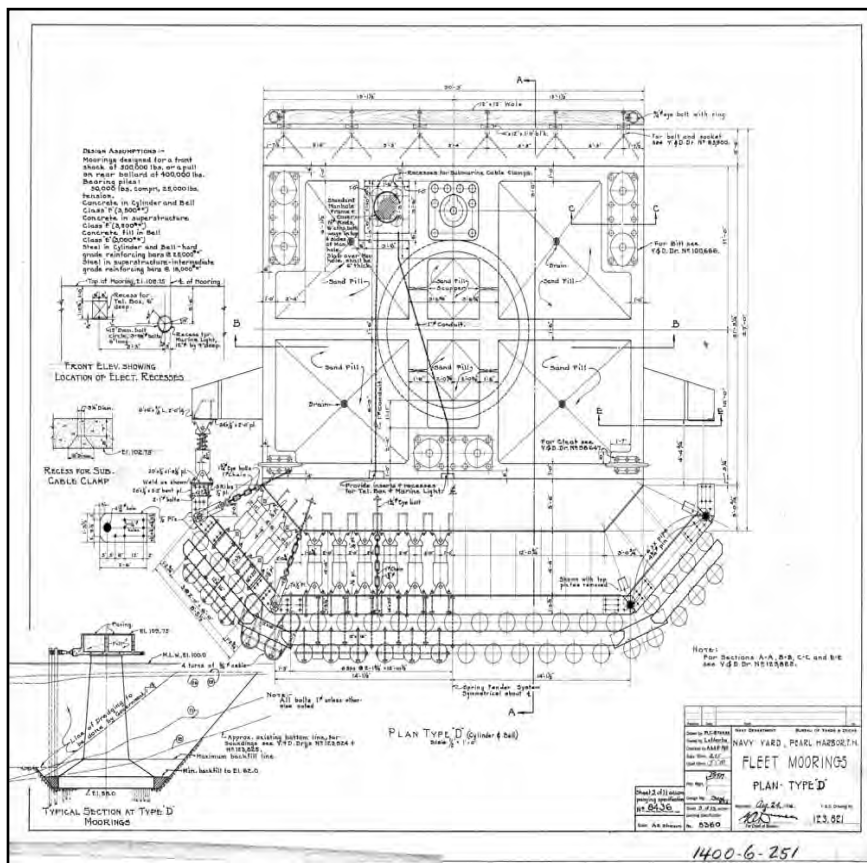
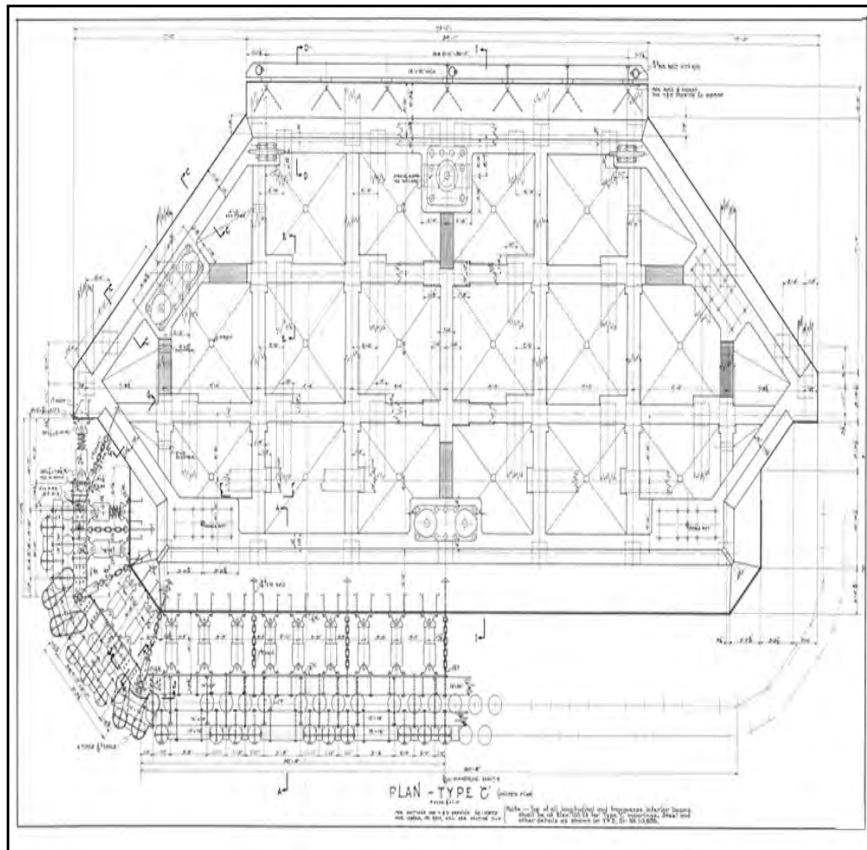
## Images, Current Conditions





# Original Construction Drawings





# Digital Model

