



VORTEX MARINE CONSTRUCTION, INC.

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Berths 23-26 & 30 Wharf & Embankment Strengthening Program



OWNER: Port of Oakland

LOCATION: Oakland, CA

CONTRACT VALUE:
\$20,300,000

VORTEX ROLE: Prime
Contractor

PROJECT SCHEDULE: July
2005 to November 2006.

Project Description

This project consisted of retrofitting 2820 lineal feet of existing concrete wharf to support larger container ships and increased container loads, with embankment strengthening to allow for greater dredging depth of the Berth. Additionally, the existing fender system was removed and upgraded. Mechanical systems were upgraded or replaced throughout.

Wharf Strengthening

161 prestressed 24" and 18" concrete piles, ranging in length from 97' to 112', were driven through 4'x 4' windows cut in the existing 2' thick heavily reinforced wharf deck. All rebar cut during demolition was butt weld spliced to restore continuity. At each pile location a new cast-in-place concrete girder was formed and poured, and was ultimately supported by the pile. Each girder required approximately 27 CY for a total quantity of 4000 CY.

Sheet Pile Bulkhead

4575 wall feet of underwater sheet pile were installed in 40' of water parallel to the wharf face to support the existing embankment and allow for deepened harbor dredging. This required the use of a 60' follower to be placed between the hammer and the driving head. Both impact and vibratory hammers were used successfully to install the sheets.

New Fender System & Mooring Bollards

The existing timber fender system was removed from the wharf face, and 52 new elastomeric fender units were installed on 75' centers. Additionally, the existing bollards were removed and new larger bollards of greater capacity were installed.

