



**PROJECT TITLE:** Pier 3 General Construction Project  
**CONTRACT NO.:** 4500176664  
**LOCATION:** Northrop Grumman Newport News, Newport News, Virginia  
**AWARD DATE:** November 2004      **COMPLETION DATE:** September 2007  
**FINAL VALUE:**  \$0-1 Mil     \$1-5 Mil     \$5-10 Mil     \$10-20 Mil  
 \$20-30 Mil     \$30-40 Mil     \$40-50 Mil     \$50+ Mil  
**TYPE OF CONTRACT:**  Fixed Price       Cost Reimbursable

### PROJECT DESCRIPTION:

W. F. Magann Corporation, aided by numerous subcontractors and suppliers, began work on the Pier 3 General Construction Project in November of 2004. The project consisted of the demolition of an existing 71 feet wide by 800 feet long concrete pier and substructure, demolition of two warehouse buildings, landside utility work, grading, paving, and construction of the new triple-decker pier. The new pier was constructed with over 42,000 cubic yards of concrete; its main deck is 130 feet wide by 1,036 feet long, while its third floor towers 41 feet above the water.

To support this massive structure, we drove 519 twenty-inch square concrete piles and 348 twenty-four-inch square concrete piles, totaling over 112,000 linear feet long and using over 14,000 cubic yards of concrete. The pier's decks and substructure were constructed using over 15,000 cubic yards of ready-mix concrete and over 13,000 cubic yards of precast concrete. The pier has a main floor deck for outfitting aircraft carriers, a second floor deck for offices, and a third floor loading deck complete with a portal whirler crane – that has a capacity of 30 tons at a 190 feet radius and 100 tons at a 65 feet radius.



Concrete cap construction

In addition to our self-performed work, we were responsible for managing all subcontractors associated with the project, with disciplines ranging from mechanical and electrical to architectural. The completion of the pier was marked by the installation of all marine hardware, capstans, 2,800 linear feet of timber curb, and 1,500 linear feet of timber fender system.

## Innovative Design



Concrete pile installation and precast cap placement

The following is an excerpt from the article, *Ribbons Cut: Covered Module Outfitting Facility and Pier 3 Open for Business*, as issued in the June 2007 publication of *YardLines* by Northrop Grumman Newport News:

[The pier's] systems are designed to support outfitting and testing for both carrier new construction and overhaul. Among its features are 28,000 square feet of material staging area, raised crane rails to improve material flow to the ship deck, 300 office spaces and passageways for personnel and vehicles.

"We designed this pier in much the same way we are designing CVN 21," says Bob Fallon, manager, Plant Engineering (041). "We used simulation software to figure out the absolute best spaces for everything on the pier, from mechanical systems to canteens."

In fact, this is the first 3D simulation model that looks at pier operations, says Sharon Callahan, production engineer (X51). "We can show personnel and vehicle movement, facility layout and material handling in the model," she says. "We developed a database from the personal knowledge of foremen, general foremen, suppliers, and the Navy – all stakeholders in the pier."

"Our focus for the design was on locating everything as efficiently as possible and improving quality of life issues for those who use the pier," adds Fallon. "We integrated lean principles into the design and have planned well in advance for its life cycle management."



Pier 3 stands its ground as the USS Carl Vinson sits docked (June 2007)