



Station Cortez Pier Recapitalization

Civil Engineering Senior Design Project 2011

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Problem Statement:

Station Cortez's small boat pier has reached the end of its service life and is in need of structural repair. In addition, the station's small boat allowance now includes newer and larger assets. As a result, Station Cortez's new pier must be recapitalized to adequately support their operational needs.

Project Objectives:

- ❖ Perform basic planning & assessment of the future pier requirements
- ❖ Develop conceptual design alternatives
- ❖ Meet operational needs
- ❖ Within AFC-43 budget threshold



Figure 2: Aerial View of Station Cortez Waterfront (Source: Appledore Marine Engineering Inc. Assessment Report)

Existing Conditions



Timber Pile with Severe Marine Borer Damage



Corroded Connection and Weathered Guide Pile



Concrete Pile Cap with Closed Corrosion Spalls



Severely Corroded Connections

Figure 1: View of Current State of Pier Structural Elements (Source: Appledore Marine Engineering Inc. Assessment Report)

Design:

- ❖ Combination of fixed and floating pier
- ❖ Fully capable of supporting two 45 ft RB-M, two 25 ft RB-S and 24 ft SPC
- ❖ Utilizes section of existing pier

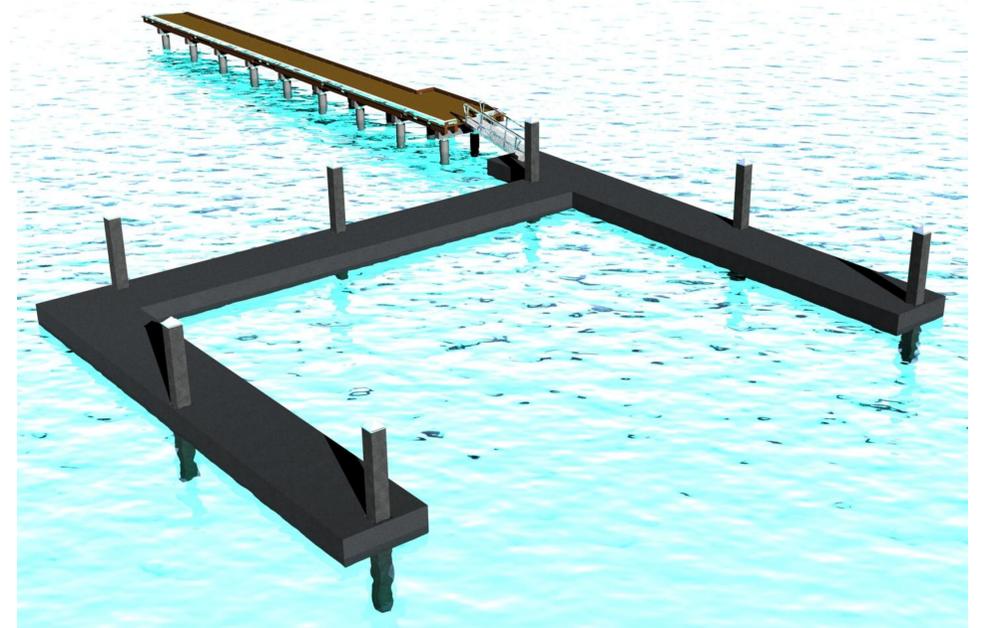
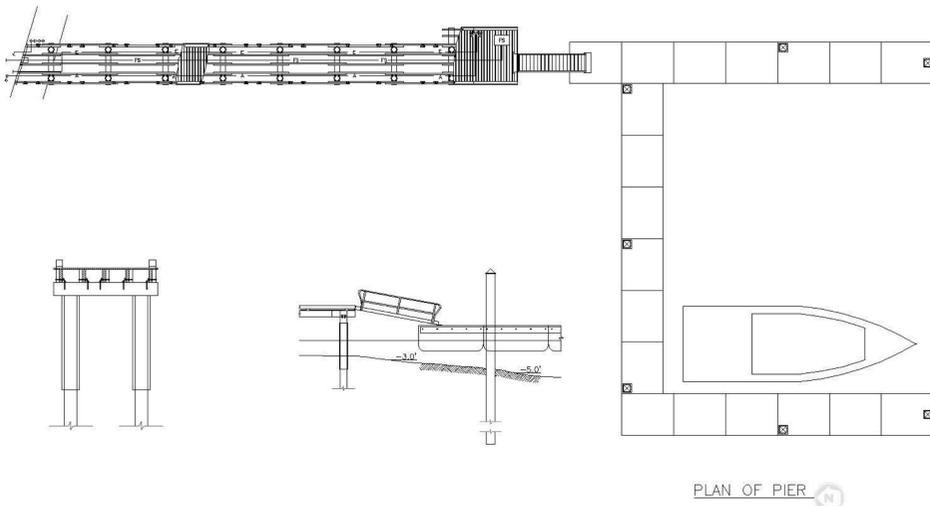


Figure 3: A 3D Rendering of Proposed Pier Design

Design Package Includes:

- ❖ Construction drawings
- ❖ Contract specifications
- ❖ Cost estimation
- ❖ Design calculations



PLAN OF PIER

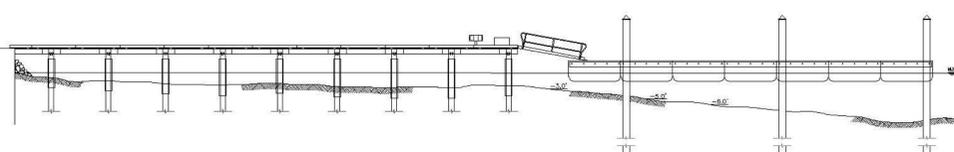


Figure 4: New Proposed Pier Design

Estimated Project Cost:

\$735,000