BMA, INC.

JUPITER PLANTATION DOCK CONDITIONS ASSESSMENT REPORT

Jupiter Plantation Homeowners Association
825 Center Street · Jupiter, FL
September 19, 2023

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825 Center Street, Jupiter, FL
September 19, 2023

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EXECUTIVE SUMMARY

Visual inspections of the dock conditions at Jupiter Plantation were conducted on August 22 and August 24, 2023. A structural conditions assessment was performed on the existing fixed dock structure from both above and below the water surface. Following is a brief summary of findings for the main inspected components:

The existing dock was most likely constructed in the mid-1980's or earlier, putting the original structural components (concrete piles, timber framing) at nearly 40 years old. The dock is in overall poor condition; virtually all of the concrete piles are experiencing rust-bleeding and cracking, while many have advanced to the point of spalling (concrete delamination and failure). Most of the timber framing (pile caps and stringers) is in varying stages of deterioration, as is some of the corroding steel hardware. A majority of the deckboards are experiencing some form of degradation including rotting, splitting, and/or splintering.

The dock has exceeded its originally intended service life. Prior repair efforts helped to extend the service life, but any further rehabilitation efforts would not be cost-effective. Given its age and current conditions, a complete replacement of the dock structure and associated utilities should be planned and implemented within the next one to three years.

The above estimated timeframe does not take into account the possibility of accelerated damage from major storm events. Additionally, in the interim, continued inspections, maintenance, and repairs should be conducted as necessary.

Following are detailed descriptions of the dock conditions followed by a brief discussion of the regulatory permitting subject and a preliminary cost estimate. Typical, representative photographs and a typical dock cross section are attached at the end of the report, providing further detail and explanation of the findings and recommendations.

DOCK CONDITIONS ASSESSMENT

Visual inspections of the dock conditions at Jupiter Plantation were conducted on August 22 and August 24, 2023. A structural conditions assessment was performed on the existing fixed dock structure from both above and below the water surface.

The existing dock is approximately 8' wide by 200' long, with an 8' wide by 155' long terminal platform (L-head). Per documentation provided by the POA, the dock structure was permitted in 1991, and Google Earth imagery shows the structure in place in 1995. However, the development was initiated in 1980 and the 1985 Google Earth image shows a cloudy area, which appears to be the dock. The condition of the concrete piles also would indicate that the dock was constructed nearly 40 years ago.

Following are descriptions of the dock structure components. The descriptions below apply to the entire dock, as the conditions were found to be the same throughout the structure, excluding a small, repaired area at the northeast corner. At the end of the report are typical, representative photographs and a typical cross section, to further describe the conditions.

Concrete Piles

The existing concrete piles are in poor condition. Virtually all of the piles are experiencing rust-bleeding and cracking. The most common method of concrete failure in coastal waterfront structures is due to corrosion of the reinforcing steel within the concrete. Over time, the porous concrete will allow salt water and air intrusion into the concrete, resulting in corrosion of the internal steel. As the steel corrodes, the concrete will exhibit rust-bleeding and/or cracking. As the corrosion worsens, the steel will begin to expand and eventually cause the concrete to delaminate or spall. Depending on the degree of spalling and steel corrosion, the concrete will ultimately lose structural capacity and fail.

The Jupiter Planation dock piles are all showing evidence of rust-bleeding and cracking. Approximately one third of the piles have advanced into the stage of significant cracking and spalling. Aside from a select few piles at the northeast corner of the structure, all piles appear to be roughly the same age. Therefore, it is a fact that the piles showing rust-bleeding and early cracking will also continue to deteriorate to the point of spalling.

Timber Framing

The existing timber framing is in poor to fair condition. Pile caps and stringers have experienced dry rot due to constant exposure to the elements. The rot has resulted in isolated loss of structural capacity, with well over half of the framing members exhibiting some deterioration. Some of the hardware has been replaced over the years, but many of the nuts and bolts are experiencing corrosion due to saltwater inundation.

Timber Decking

The existing decking is in poor condition. Much of the decking is badly splitting and splintering. At some point, the decking was painted, which has helped to extend the life, but many deckboards have lost structural integrity due to dry rot over the years. Connection hardware is severely corroded and degraded.

Summary of Findings

In summary, virtually all of the concrete piles are in poor condition, while much of the framing and decking is in poor to fair condition. The potable water and electrical systems are also in poor to fair

condition and do not meet current building codes or industry standards. Given the dock's age and current structural conditions, a complete replacement of the dock and associated utilities should be planned and implemented within the next one to three years. This timeframe does not take into account the possibility of accelerated damage from major storm events. Additionally, in the interim, continued inspections, maintenance, and repairs should be conducted as necessary.

PERMITTING ASSESSMENT

Based on Town of Jupiter codes, any dock replacement at Jupiter Plantation would need to be reviewed and approved by the town council. State and federal regulatory approvals will also be required for any dock reconstruction and/or expansion. These details are discussed below:

Town of Jupiter Permitting

Based on industry knowledge, a dock reconstruction in the same exact footprint should be allowed by the town. If a different configuration (for example, dock expansion channelward) is desired by the community, it would be prudent to receive preliminary approval from the Town of Jupiter prior to submitting for regulatory approval.

It should also be noted that the Town of Jupiter may require a fire standpipe system to be installed throughout the dock during reconstruction, in order to bring the docking facility up to current NFPA (National Fire Protection Agency) codes.

State and Federal Permitting

Similar to the town guidelines, the state and federal agencies (Florida Department of Environmental Protection and US Army Corps of Engineers, respectively) will also permit a dock reconstruction in the same exact footprint. However, if an expansion is desired, additional issues will come into play, as discussed below.

The current dock sits on a submerged land lease from the state, which consists of 14,809 square feet of submerged bottom. Based on FDEP requirements for multi-family docking facilities, a maximum submerged land lease of 15,400 square feet could be approved at this location (determined by a 40:1 lease square feet to shoreline linear feet ratio). This means the dock could be expanded by approximately 600 square feet, which would allow for channelward expansion. If a larger submerged land lease increase were desired, the association would need to meet the criteria outlined in Florida Sovereignty Submerged Lands Management 18-21. These rules require multiple criteria to be met, with particular focus on the requirement that the lease should benefit "the public good." In this case, at a private development, this item is typically difficult to prove. Therefore, the 600 square feet of expansion should be considered the target.

Additional consideration for a dock expansion involves a benthic resource (seagrass) survey. State and federal regulations require that the seagrass survey be conducted between June 1 and October 1. If seagrasses are found, additional design features will need to be incorporated into the new dock such as higher deck elevations and the use of a grated decking product.

The dock is also situated in a state-determined Aquatic Preserve, which puts additional parameters on any dock construction. For example, in the case of a proposed expansion, the new dock would be required to meet the Aquatic Preserve guidelines, which include a maximum access dock width of six feet. However, this change could then provide an additional 400 square feet towards the submerged land lease.

In summary, a dock replacement in the exact footprint should be relatively straightforward, while a dock expansion effort will result in some restrictions on dock size and detailing, and will be closely scrutinized by the Town of Jupiter as well as the state and federal regulatory agencies.

PRELIMINARY ESTIMATE OF CONSTRUCTION COSTS

Following is a preliminary estimate of construction costs to replace the docking facility in its existing footprint. This cost estimate is based on similar recent marine construction projects in Palm Beach County.

- **Soft costs** ***$25,000***
  -permitting, construction drawings, bidding/construction admin services
- **Mobilization, demobilization** ***$10,000***
  -jobsite setup, bringing in equipment, site fencing, etc.
- **Fixed dock replacement, same footprint** ***$256,000***
  -demolition, new piles, framing, decking, stainless steel hardware
- **Potable water system** ***$20,000***
  -new potable water service to current codes
- **Electrical system and lighting** ***$75,000***
  -new electrical service and lighting to current codes
- **Fire suppression system** ***$25,000***
  -new fire standpipe system, if required
- **Site restoration (allowance)** ***$10,000***
  -allowance for miscellaneous landscape and hardscape repairs

TOTAL BUDGET **$421,000**

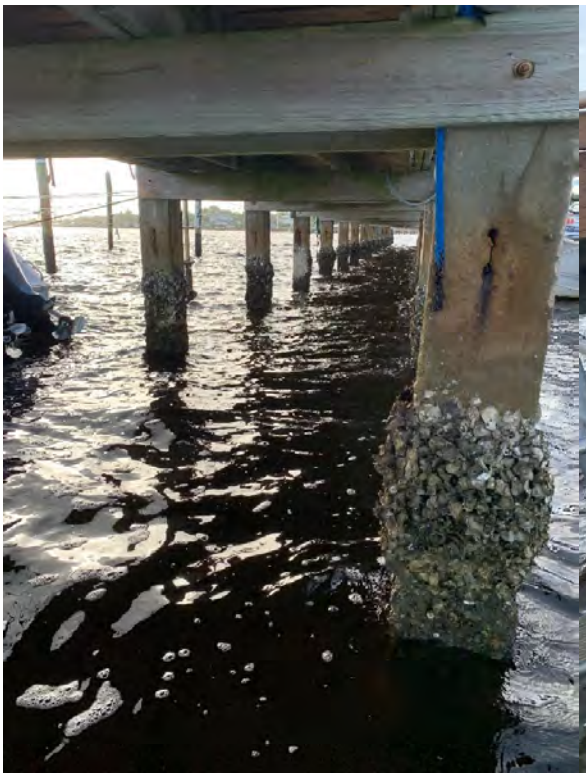
These numbers are based on a preliminary typical design section. It should be noted that marine construction costs have been difficult to estimate recently, due to high backlogs and limited availability of qualified marine contractors and materials. A bid process that allows the contractors as much of a window as possible in which to perform the work will typically lead to more competitive bids.

THE FOLLOWING PAGES CONTAIN:

TYPICAL, REPRESENTATIVE PHOTOS WITH DESCRIPTIONS

TYPICAL DOCK CROSS SECTION EXHIBIT

Any questions on the above report should be directed to Bolchoz Marine Advisors, Inc.



Rust-bleeding and cracking concrete piles

Rust-bleeding and severely cracking pile

Severely cracking pile

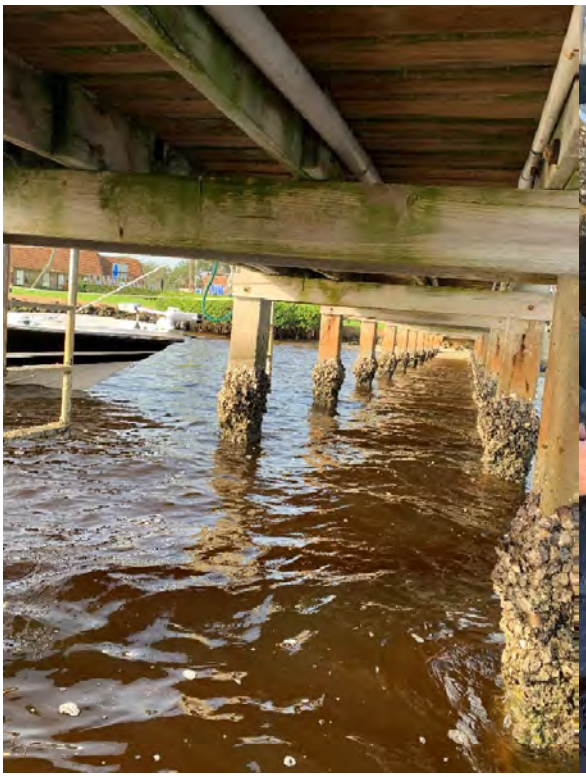
Severely cracking and rust-bleeding pile

Rust-bleeding and cracked pile

Spalling pile previously repaired

Dry-rotting, splintering and splitting deckboards

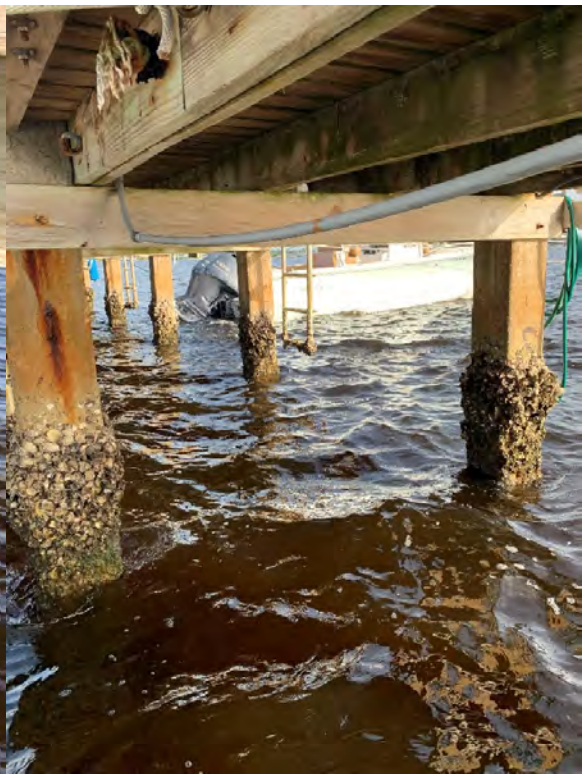
Cracked piles, framing showing signs of splitting, mildewing



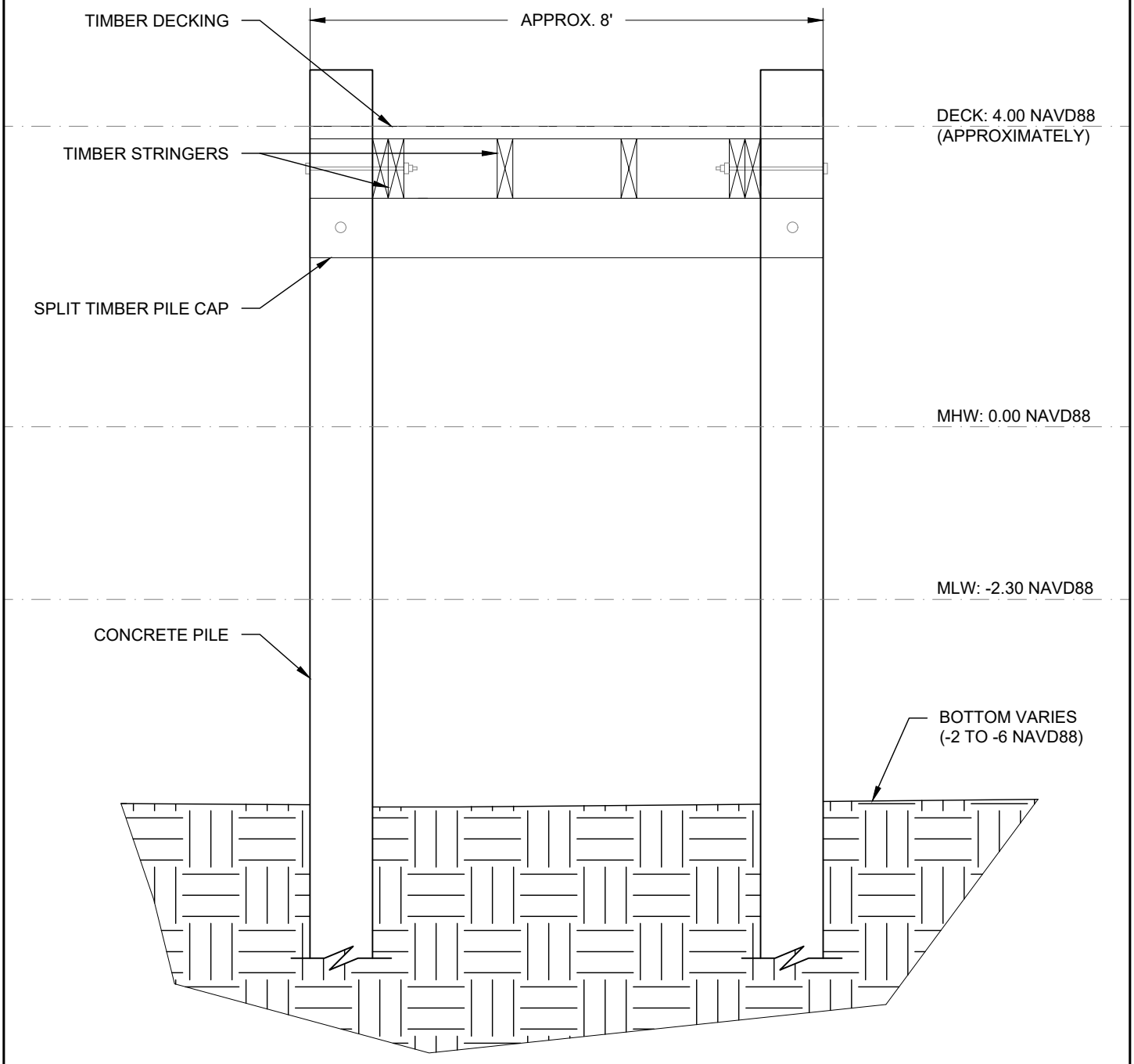
Splitting framing members, mildewing wood

Cracked pile, rotting pile cap framing

Newer hardware, splitting stringer



Electrical conduit, hanging, no hanger straps



TYPICAL CROSS SECTION
SCALE: 1" = 2'

Bolchoz Marine Advisors, Inc.

TYPICAL DOCK CROSS SECTION

JUPITER PLANTATION
HOMEOWNERS ASSOCIATION
825 CENTER STREET
JUPITER, FLORIDA

EXHIBIT 1