



**Real Property Committee**  
1:30 p.m., Monday, June 6, 2022  
1207 Palm Boulevard  
City Hall Council Chambers

**Public Comment:**

All citizens who wish to speak during the meeting must email their first and last name, address and topic to Nicole DeNeane, City Clerk, at [nicoled@iop.net](mailto:nicoled@iop.net) no later than **3:00 p.m. the day before the meeting**. Citizens may also provide written public comment here:

<https://www.iop.net/public-comment-form>

**Agenda**

1. **Call to order** and acknowledgment that the press and the public have been duly notified of the meeting in accordance with the Freedom of Information Act.
2. **Approval of previous meeting's minutes** – May 9, 2022
3. **Citizens' Comments** – All comments have a time limit of three (3) minutes.
4. **Marina Tenants Comments**
5. **Old Business**
  - a. Update on proposed public dock and greenspace at the IOP Marina
  - b. Update on ADA beach access improvements
6. **New Business**

Discussion of structural assessment report of the timber bulkhead at the IOP marina along the Intracoastal Waterway performed by Davis & Floyd
7. **Miscellaneous Business** - None
8. **Adjournment**



## **REAL PROPERTY COMMITTEE**

**1:30pm, Monday, May 9, 2022**

**1207 Palm Boulevard, Isle of Palms, SC 29451**

**and broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>**

### **MINUTES**

#### **1. Call to order**

Present: Council members Miars, Popson and Streetman

Staff Present: Administrator Fragoso, Director Kerr

#### **2. Approval of previous meeting's minutes – April 11, 2022**

**MOTION:** Council Member Popson made a motion to approve the minutes of the April 11, 2022 meeting and Council Member Miars seconded the motion. The motion passed unanimously.

#### **3. Citizens' Comments**

Mr. Matthew Leaird, speaking on behalf of VFW Post 3137, came before the Committee to thank them for the recent donation via the ATAX Committee. The \$15,000 of ATAX funds was used to build a permeable brick walkway and courtyard at the VFW. The project cost approximately \$60,000. There will be a grand opening celebration on Saturday, May 14 at 11am.

#### **4. Marina Tenant Comments -- none**

#### **5. Old business**

##### **A. Update on marina dock rehabilitation project**

Administrator Fragoso said this is nearly complete. Everything has been installed and tested. They are awaiting the final paperwork and permit for the potable water system from DHEC. It is functional and has been tested. They are also waiting for a final inspection of the pump out station by the Water & Sewer Commission. It, too, is fully functional. Two windows for the fuel hut will be installed upon receipt. Closeout procedures for this project are in process and it will likely not appear on the next agenda.

The as-builts are in process and will be delivered upon completion.

##### **B. Update on marina restaurant renovation by Marker 116, LLC**

Administrator Fragoso said this project is also done. Construction is complete and they are scheduling a final walkthrough with the Insight Group to ensure the property has been built

according to the plans submitted to the City. Committee members said residents seem excited about the opening.

**C. Update on the proposed public dock and greenspace at the IOP Marina**

Administrator Fragoso said construction for this project will begin after the season ends. The City has executed the contract with Davis & Floyd for the assessment of the bulkhead. She reported that there have been many people taking advantage of the dock. She shared the webpages on the City's website advertising the "Isle of Palms Explorer Series" the City is doing in conjunction with Coastal Expeditions. The schedule and details of each offering as well as the ability to sign up for those outings are on the City's website.

Committee members discussed the request for two handicap-designated spots at the public dock. Administrator Fragoso said the Police Department will look in their sign inventory for appropriate signage and will order some if they don't have any. Council Member Miars expressed concern that the spots would not be fully ADA-compliant and wondered if that put the City at risk for liability should someone get hurt. Director Kerr said the spots could be designated as handicap but did not have to be fully ADA-compliant until improvement work was done on the parking lot. Staff will create signage indicating the spots are reserved for handicap parking but are not yet fully compliant. The spots will be compliant following the work to the dock and greenspace area set for the fall.

**D. Update on ADA beach access improvements**

Administrator Fragoso reported the Greenbelt Funding Board has approved the beach access path at 34A along with two handicap spots along Palm Boulevard. This is a cost sharing project between the City and the Greenbelt Funds. The next step is to issue an RFP, secure a contractor, and then issue a Notice to Proceed for the fall.

The beach wheelchair program continues to be very popular. The program will be included in the advertising for the CARTA Beach Shuttle which will begin on Memorial Day weekend.

**E. Consideration of Noise Control Agreement with Marker 116, LLC**

Administrator Fragoso presented the changes to the noise control agreement proposed by Marker 116, LLC. Of note is that they are requesting for all three conditions be met rather than any one condition before they are expected to adjust the noise level of any amplified music. She said this change elevates the threshold of when action must be taken on their part. She noted that there are more outdoor spaces and speakers than Morgan Creek Grille had, therefore creating more opportunities for noise concerns. She reminded the Committee that in the restaurant planning process Marker 116 had said they were only going to have acoustic music.

Changes to the agreement have to be approved by City Council. The proposed changes are on the City's website for residents to review and provide their input.

**MOTION: Council Member Streetman made a motion to present both the original noise agreement and the proposed changes to City Council for full consideration. Council Member Popson seconded the motion. The motion passed unanimously.**

6. **New Business -- none**

7. **Miscellaneous Business**

The next meeting of the Real Property Committee will be held on Monday, June 6, 2022 at 1:30pm.

8. **Adjournment**

Council Member Poposon made a motion to adjourn and Council Member Miars seconded the motion. The meeting was adjourned at 2:08pm.

Respectfully submitted,

Nicole DeNeane  
City Clerk





**ISLE OF PALMS MARINA SITE CONCEPT & FURNISHINGS**

ISLE OF PALMS, SOUTH CAROLINA  
MARCH 30, 2022





IN-GROUND LUMINAIRES "RAVENNA" - HESS LIGHTING



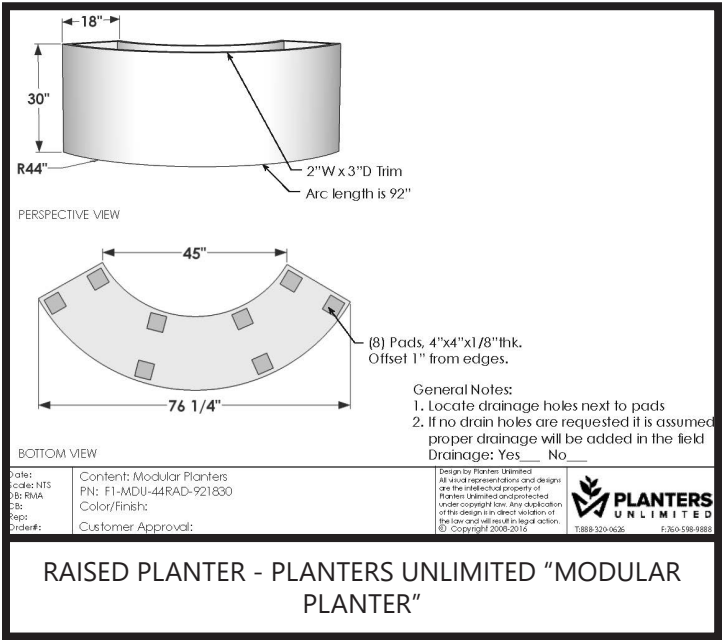
WOODEN BENCH



PERVIOUS PAVERS - LOWCOUNTY PAVERS "HYDRAPLANK"



BREEZY ACRES SWING STAND - THE PORCH SWING



WOODEN SWING BENCH

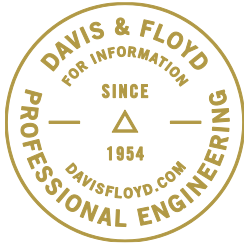


GRAVEL WALKWAY

## ISLE OF PALMS MARINA SITE SPECIFICATIONS

ISLE OF PALMS, SOUTH CAROLINA  
MARCH 30, 2022





# ***“TOP Marina Existing Bulkhead Structural Inspection” for City of Isle of Palms***

***Draft Report – May 26, 2022***

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## **Isle of Palms Marina Structural Inspection of Existing Bulkhead**

D&F Job No. 032000.01

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### **PREPARED FOR:**

City of Isle of Palms

Mr. Douglas Kerr

Director of Building, Planning, and Licensing

P.O. Drawer 508

Isle of Palms, SC 29451

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### **PREPARED BY:**

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## 1.0 – Introduction

In accordance with the Davis & Floyd, Inc. (D|F) proposal for professional services entitled “Isle of Palms Marina Structural Inspection of Existing Bulkhead” dated April 12, 2022, the structural inspection of the existing bulkhead is complete. The scope of work for this project consisted of performing a visual inspection of the existing timber bulkhead to assess its current structural condition and making general recommendations for repairs or replacement of deteriorated items observed during the inspection, if applicable.

This report presents the findings of the bulkhead’s structural inspection, opinion of its current structural condition, and general repair recommendations.

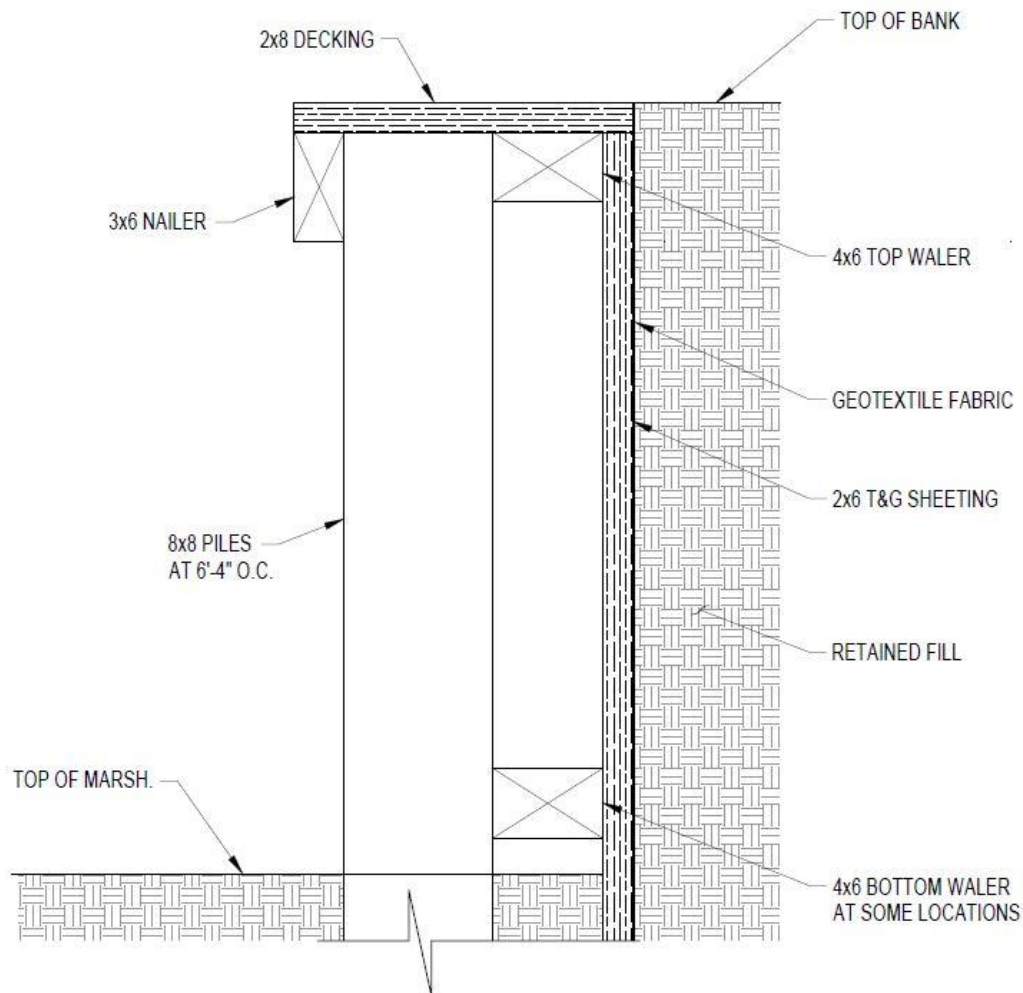
## 2.0 – Existing Bulkhead Description

The existing bulkhead is located along the North edge of the parking lot at the Isle of Palms Marina located at 50 41<sup>st</sup> Avenue, Isle of Palms, SC. The bulkhead, which is constructed from preservative treated timber, acts as a retaining wall to support the earth fill used to construct the parking lot along the edge of the marsh. An aerial of a portion of the marina showing the existing bulkhead can be seen in Figure 2.1 below. The bulkhead is approximately 330 feet in total length.



Figure 2.1. Aerial Showing Existing Bulkhead

The exact age of the bulkhead is not known, but it was probably constructed sometime in the 1990's which would make its estimated age to be between 25 and 30 years old. The bulkhead is constructed from 8x8 square timber piles spaced at 6'-4" on center. The piles act as vertical cantilever elements and provide stability to the bulkhead. The 8x8 piles support 4x6 timber walers which span between the piles. The walers support vertical 2x6 tongue and groove sheeting boards which retain the earth behind the wall. There is a layer of geotextile fabric between the sheeting boards and fill. The geotextile fabric keeps the fill from washing through the joints between the sheeting boards. There is a 3x6 timber nailer board fastened to the exterior face of the 8x8 piles. The 3x6 nailer board supports the edge of 2x8 decking on top of the wall. A typical section of the bulkhead is shown in Figure 2.2 below and a photo showing a portion of the front elevation of the bulkhead is shown in Figure 2.3.



**Figure 2.2. Typical Bulkhead Section**





**Figure 2.3. Front Elevation of Portion of Bulkhead**

### **3.0 – Structural Inspection Findings**

On May 10<sup>th</sup>, 2022, D|F personnel conducted a visual structural inspection of the existing bulkhead at low tide to assess its current structural condition. The inspection was performed by foot in front of the bulkhead using hip waders to walk along the edge of the marsh. The inspection revealed as a whole that the existing bulkhead is in fair structural condition, however there were a several items observed requiring repair that should be addressed. These items are discussed below.

#### **3.1 – Walers**

It was observed during the inspection that the top waler located at the west end of the bulkhead has collapsed (See Figure 3.1 and Figure 3.2).



**Figure 3.1. Collapsed Top Waler at West End of Bulkhead**



**Figure 3.2. Collapsed Top Waler at West End of Bulkhead**

It was also observed that the top waler is split in several locations along the western section of the bulkhead (See Figure 3.3 and 3.4).



**Figure 3.3. Split Top Waler Near West End of Bulkhead**





**Figure 3.4. Split Top Waler Along West End of Bulkhead**

### **3.2 – Nailer Boards**

It was observed during the inspection that several of the front 3x6 nailer boards are split. Figures 3.5 and 3.6 show two of these locations.



**Figure 3.5. Split 3x6 Front Nailer Near Middle of Western Section of Bulkhead**





**Figure 3.6. Split 3x6 Front Nailer Near Eastern End of Bulkhead**

The splitting of the boards is caused by their continued exposure to wetting and drying.

### **3.3 – Piles**

It was observed during the inspection that some of the 8x8 piles have some visible deterioration (See Figure 3.7).



**Figure 3.7. 8x8 Pile with Visible Deterioration Near Base at Mudline**

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The third pile from the pier near the east end has a large knot near its base at the mudline (See Figure 3.8). The pile does not appear to be rotten at this time, but the knot will eventually cause deterioration in the pile.



**Figure 3.8. Knot in Third Pile from Pier**

It was also observed that the first pile from the east side of the first pier is rotten at the mudline (See Figure 3.9).



**Figure 3.9. Rotten Pile at Base at Mudline**

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In addition, it was observed that there is some minor deterioration on the corner of the first pile from the second pier (See Figure 3.10).



**Figure 3.10. Minor Deterioration on Corner of Pile**

The fourth pile from the west end of the second pier has a large longitudinal split along its length (See Figure 3.11).



**Figure 3.11. Longitudinal Split in Pile**



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It was also observed that some of the piles have some minor deterioration in their tops (See Figure 3.12). Most of the piles are covered by the decking, so the total number of piles with this type of deterioration could not be observed during the inspection.



**Figure 3.12. Deterioration in Top of Pile**

### **3.4 – Decking**

It was observed that most of the decking on top of the bulkhead is in poor condition (See Figure 3.13). The decking is split and deteriorated due to its constant exposure to wetting and drying.



**Figure 3.13. Deteriorated Decking**

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Some of the decking along the bulkhead is also missing in several locations (See Figure 3.14).



**Figure 3.14. Missing Decking**

### **3.5 – Connections**

It was observed that the connections of the front 3x6 nailer to the piles consists of two or four nails (See Figure 3.15 and Figure 3.16) and that the nails are rusted and in poor condition.



**Figure 3.15. Connection with Two Rusted Nails**





**Figure 3.16. Connection with Four Rusted Nails**

#### **4.0 – Opinion of Current Structural Condition**

During the inspection, the dimensions, spacings, and configurations of the existing bulkhead framing elements were measured so that a preliminary structural evaluation could be performed to estimate if the existing structure in its current condition could be used as is to support a future boardwalk and hand railing. The items that were analyzed during the evaluation were the 3x6 nailer boards and the nailed connections connecting the nailer boards to the piles. The capacity of the piles could not be evaluated because the capacity of the soils and the embedment depth of the piles into the soil is not known. The lumber was assumed to be No. 2 Southern Yellow Pine for the purposes the evaluation and the corresponding allowable stresses were determined in accordance with 2018 Edition of the National Design Specifications for Wood Construction. It was also assumed that any split or deteriorated members or connections would be replaced. The 2018 IBC does not give specific criteria for the required vertical live load capacity of docks or boardwalks for commercial use, but it does provide a minimum required live load capacity of 60 pounds per square foot for Elevated Walkways. Common industry practice is to use a design live load of 50 pounds per square foot for docks or boardwalks in residential applications and 100 pounds per square foot in commercial applications. Therefore, a design vertical live load of 100 pounds per square foot was used in the evaluation. The 2018 IBC also requires that pedestrian guard rails be designed for the greater of a uniform load of 50 pounds per linear foot of railing or 200 pounds concentrated load in any direction and to transfer this load through the supports to the structure. A maximum rail post spacing of 5 feet on center was assumed for the evaluation, so a corresponding design load of 250 pounds in any direction was used in the evaluation.



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The evaluation of the existing bulkhead structure for wind or seismic loading is beyond the scope for this project and therefore was not performed.

The results of the structural evaluation indicated that the current 3x6 nailer boards were adequate for a vertical live load of 100 pounds per square foot but was found to be inadequate for the combined vertical live load and corresponding railing loads. These results also showed that the nailed connections do not have enough capacity for the combined loading.

Therefore, based on these results the existing structure as is not adequate to support a future boardwalk and hand railing without modification.

## **5.0– General Repair Recommendations**

The structural evaluation revealed that the capacity of the existing structure is not adequate to support a future boardwalk and railing without significant modification. Generally, modifications of the structure will involve the following:

- Removal of the existing deteriorated decking.
- The replacement of the existing 3x6 nailer beams with larger properly designed joists and bolted connections to the existing piles. Also, an additional support structure would need to be designed behind the existing bulkhead to support new floor joists and longer decking.
- Replace any split or deteriorated walers supporting the tongue and groove sheeting. Also, any deteriorated sheeting would need to be replaced.
- Replace any 8x8 piles that are damaged with new piles.
- The installation of new code compliant pedestrian railing bolted to the exterior joists with appropriate blocking between the joists to distribute the lateral railing loads.
- The installation of new wood or composite decking.

## **6.0– Conclusions**

The structural inspection revealed that the existing bulkhead structure as a whole is in fair condition for its age with several deteriorated items that need to be repaired. In addition, the results of the preliminary structural evaluation revealed that the capacity of the existing structure is not adequate as is to support a future boardwalk and railing without significant modification.

In addition to the recommendations made in this report, Davis & Floyd makes the following recommendations to the City of Isle of Palms:

1. Engage D|F to perform the design of the structural modifications to the existing structure outlined in this report and prepare conceptual plans for cost estimating purposes.

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2. A construction cost estimate of the structural modifications should be developed with the assistance of a local marine contractor, so that the magnitude of the anticipated construction costs can be accurately determined. This cost should also be compared to the cost of replacing the existing bulkhead considering that the existing structure may only have a 10 to 15 year remaining service life until it needs significant repair or replacement.

D|F appreciates the opportunity to be of service to the Town of Isle of Palms for this project and looks forward to the continued involvement during the other phases of this project. If there are any questions concerning the inspection findings and recommendations contained in this report, please contact us for further assistance.

End of Report