Reuben Clarson CONSULTING

July 13, 2023

Corey Palmer
Capri Isle Garden Apartments
280 126th Avenue
Treasure Island, FL 33706
Email: cpalmer@ameritechmail.com

Re: Seawall Inspection Report for Capri Isle Garden Apartments
280 126th Avenue, Treasure Island, FL 33706

Dear Mr. Palmer,

This letter provides a summary of the field inspection performed on June 26, 2023, of seawall located at the above referenced address. The following is a summary of findings and recommendations. Inspection started at Station 0+00 on the right (west) end of the property while facing the water.

Existing Seawall Conditions/Construction

- 388 LF +/- of seawall
- Section A Replaced Cast-In-Place concrete cap (9.5" high x 21" wide)
  - Section A is from Station 0+00 to 3+09
- Section A Replaced Cast-In-Place concrete cap (9.5" high x 21" wide)
  - Section A is from Station 3+09 to 3+88
- Original Pre-Cast concrete panels
  - 4 ft wide x 10± ft long slabs
- Sediments
  - Shell fragmented soils were encountered in front of the wall.
- Seawall exposed height from the top of the cap to the berm (mudline)
  - 95 inches / approximately 7.9 ft

Section A Seawall Cap Condition (Poor):

- 309 LF +/- of seawall cap.
- Longitudinal cracking observed in both the face and top of cap.
  - Longitudinal cracking in the face and top of the cap indicates the rebars inside the concrete are starting to rust from salt intrusion.
- Cap if visibly tilted back landward throughout majority of wall.
- Previous repairs evident in the cap.
- Spalling of the bottom front face of the cap was observed.

Section B Seawall Cap Condition (Poor):

- 79 LF +/- of seawall cap.
- Longitudinal cracking observed in both the face and top of cap.
    - Longitudinal cracking in the face and top of the cap indicates the rebars inside the concrete are starting to rust from salt intrusion.
- Cap if visibly tilted back landward throughout majority of wall.
- Previous repairs evident in the cap.

Stress Beam:

- At some point a stress beam was added for additional structural support of the wall.
- Stress beam is located 23" down from the top of the cap.
- A large gap between stress beam and vertical wall was observed throughout the length of the seawall. The gap indicates a loss of structural support from the stress beam and/or movement of the wall.
- Structural defects (horizonal/shear cracking and spalling) were observed in the stress beam indicating the rebars inside the concrete are starting to rust from salt intrusion.

Riprap:

- At some point a large riprap was added for additional structural support of the toe of the wall.
    - Riprap is in front of the wall from Station 0+00 to 2+82.

Seawall Slab Condition (Poor / Fair):

- The vertical slab penetration is currently 20%.
    - The slabs have less than the engineering design standard of 40% penetration in the sediment.
- Structural defects (horizontal/diagonal cracking) were observed in the vertical slabs during the inspection.
- Wall was observed to be leaning waterward indicating potential failure of slabs below the mudline.
- At some point, secondary anchors were added to vertical slabs for additional structural support.
    - The anchor plates/washers and nuts are in corroded/rusted condition indicating loss of structural support.
- Slab joints
    - Wellpoint drains were observed to relieve hydrostatic pressure or aid in removing water from behind the wall, however the slab joints are open and draining.
    - Slab joints grouted to the top of the stress beam; however extensive sediment loss behind the wall indicates that they may not be grouted to the mudline.

Seawall Recommendations

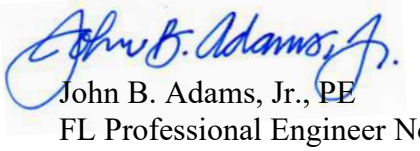
It should be noted that the typical useful life of a seawall on saltwater is approximately 50± years. Additional support and maintenance projects have extended the useful life of the subject seawall. The useful life of a stress beam is approximately 20± years and is nearing the end of its useful life. The stress beam therefore is limiting factor in the remaining life of the seawall. Since a significant gap has developed between the vertical wall and the horizontal stress beam, the support capacity of the stress beam is diminished.

Due to the age, condition, and limited slab penetration of the existing seawall system we recommend planning on replacement of the existing seawall system within the next 6 months to 1± year. Recommended specifications for a new seawall would include construction of a new vinyl corrugated seawall system with a new concrete cap and 1" diameter HDG PVC encased tieback rods to MR-SR manta ray anchors or deadmen. Well point drains should be installed through both walls at 6' on center and 5" above the barnacle line to relieve the hydrostatic pressure or aid in removing water from behind the wall. The existing wall would remain. Concrete filler would be applied between the two walls. The ballpark cost for this portion of wall in today's prices is approximately $329,800± with a useful life expectancy of 50 ± years.

If you should have any questions or comments, please do not hesitate to contact me. We appreciate the opportunity to provide this report.

Sincerely,

REUBEN CLARSON CONSULTING, INC.



John B. Adams, Jr., PE
FL Professional Engineer No. 53963

Photo #1- View of Large Gap Between Stress Beam and Vertical Wall.

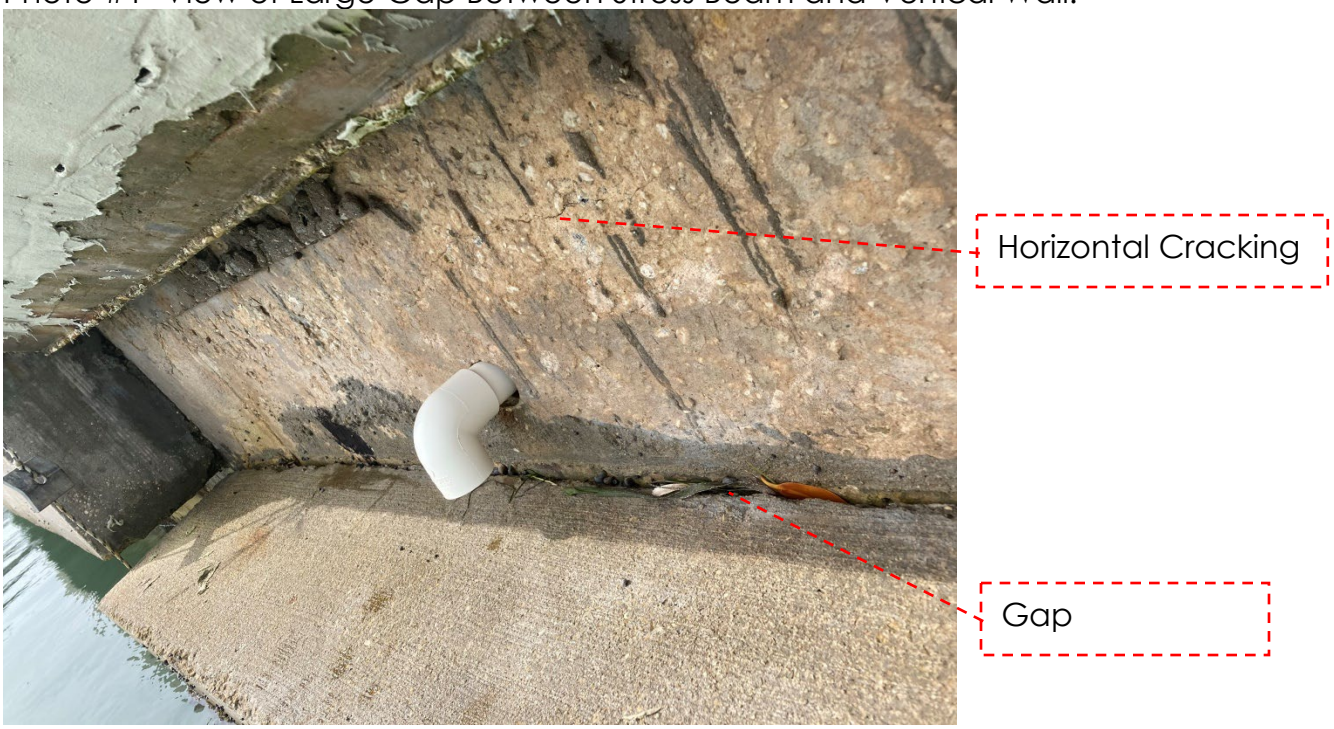


Photo #2 – View of Corroded Secondary Anchor Washers and Nuts.

Photo #3- View of Corroded Secondary Anchor Washers and Nuts.

Photo #4- View of Spalling Stress Beam.

Photo #5- View of Cracking in Top of Cap.

Photo #6- View of Spalling of Bottom Front Face of Cap.

Photo #7- View of Face of Seawall.

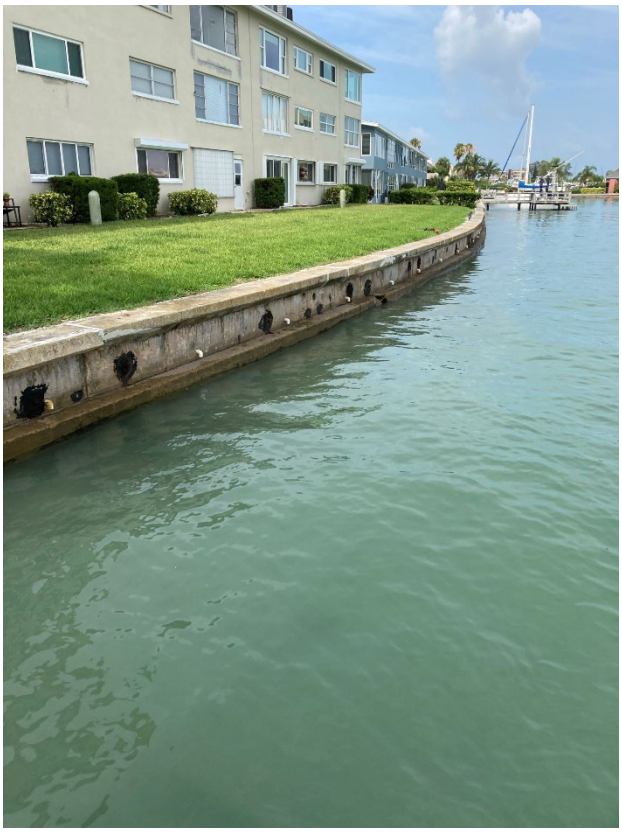


Photo #8- View of Face of Seawall.

Photo #9- View of Cracking in Vertical Slab.

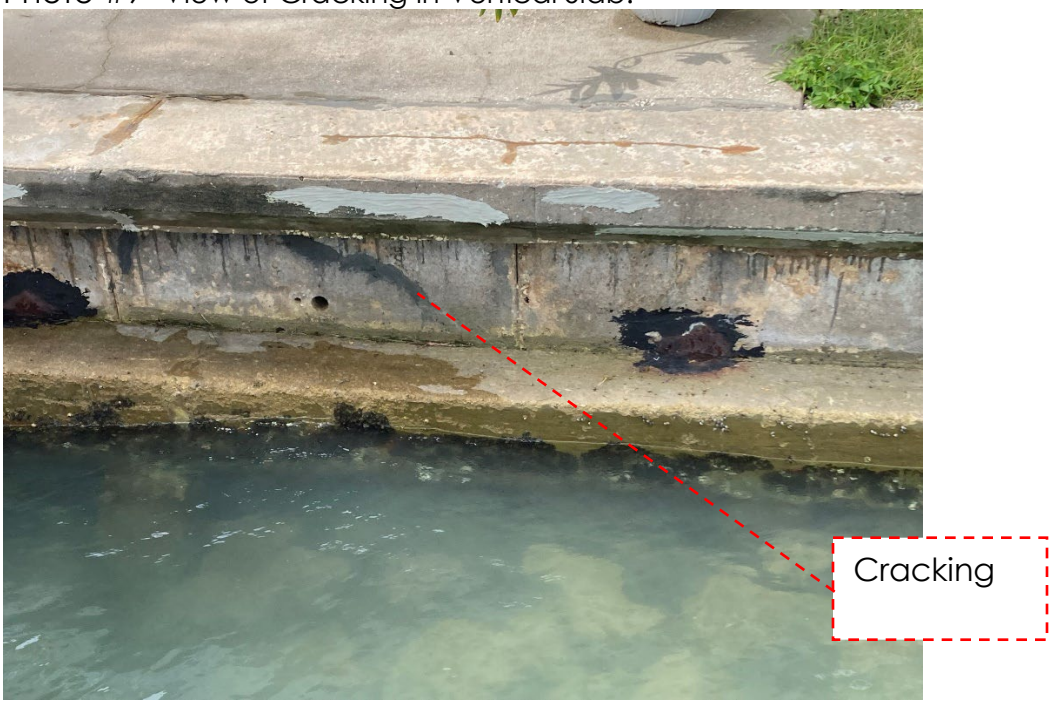


Photo #10- View of Cracking in Top of Cap.