



April 19, 2016

Board Of Directors

**C/o: Three Thousand South Condominium Association, Inc.**

3000 South Ocean Blvd.

Boca Raton, FL 33432

Re: Seawall Investigation (South Section by Pool)

Inspection Date: 3-30-16

Dear Board Members:

We have inspected the south end of the seawall for concrete damage and structural integrity. The wall was inspected from the beach access stairs to the southern corner and around to the south facing wall. We observed severe concrete damage all along the length of the wall. The seawall acts as a retaining wall for the pool deck and the pool.

The seawall consists of a concrete cap (12"x 24") that holds in place reinforced concrete panels. In between panels there are 'king' piles evenly spaced. The wall panels are estimated to be 8 to 10 inches thick. Behind the wall is sand and pavers and the concrete pool shell. The seawall cap and approximately 2 ft of wall were exposed for inspection on the ocean side.

We observed severe corrosion damage and concrete spalling on the seawall cap, piles, and panels. The concrete was weakened and easily broke off. Exposed rebar was corroded with significant loss of thickness.

It is recommended that the seawall be repaired as soon as possible. The strength of the wall has weakened significantly. The wall acts as a retaining wall holding the weight of the sand and pavers and the weight of the pool.

Repairs will most likely extend through the thickness of the concrete panels all the way through to the back side. This will require the back side of the wall to be exposed by removing pavers and sand. The pool shell is approximately 8 to 10 ft from the wall at its nearest point. It is likely that the pool shell will be affected by the repair work. The trench needed for repairs will be 7 to 9 feet deep and that wide. The pool shell would be exposed on two sides or 50% and may shift due to the likely sand settling and shifting during the excavation process. The pool will also have to be emptied.

Additionally, the pool concrete shell after 45 years of use most likely has corrosion damage from exposure to chlorinated water and the salt air environment. The pool equipment and plumbing are outdated and require upgrades due to its advance age. The pool has already

## BUNKER ENGINEERING AND CONSTRUCTION SERVICES, INC.

---

*"To provide quality engineering with integrity and commitment to the client."*

experienced some settling and shifting as described by Mr. Steven M. Sinclair's PE (SEECO) in his June 10, 2015 report.

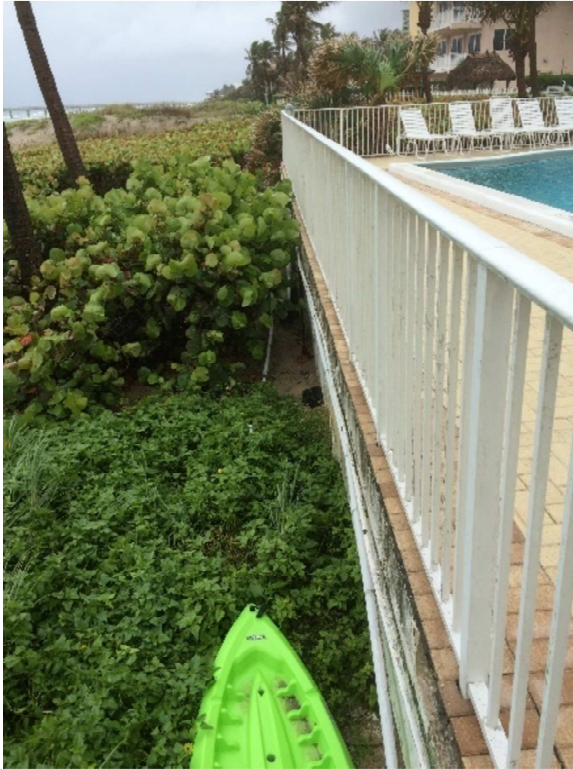
With all the above in mind I concur with Mr. Sinclair's report that the pool should be replaced.

If you have any questions or require additional information, please let me know.

Sincerely,  
*Edgar V. Duenas, P.E.*  
Edgar Duenas, P.E.

**THREE THOUSAND SOUTH CONDOMINIUM**

Seawall Restoration  
Investigation Photos



South End of Seawall by the Pool



Severe corrosion damage and concrete spalling on both the seawall cap and panels



Large piece of concrete had fallen off seawall panel.



Concrete spalling on the seawall cap.