KWA Engineers, LLC
Structural Engineering Consultants

May 2, 2019

Charlie Otero
Otero Engineering, Inc.
13902 North Dale Mabry Highway
Suite 230
Tampa, Florida 33618

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RE: Sutton Place Condominium – Slab and Seawall Erosion
1701 Castle Rock Road
Tampa FL 34612
KWA Opportunity #19RT-0275

Dear Mr. Otero:

As requested, a representative from KWA Engineers LLC (KWA) was present at Sutton Place Condominiums on April 08, 2019 to inspect the reported erosion at the existing concrete seawalls and underside of patio slabs. It is KWA's understanding that soil has washed away causing settlement and cracking in existing concrete walls and slabs. KWA was asked to perform an inspection to help determine the probable cause of the erosion and recommend remedial repairs in order to restore the structural integrity of the existing walls and slabs and help prevent future erosion.

While on-site KWA in conjunction with Otero Engineering made visual inspections of the existing seawall at the pond adjacent to the building as well as the concrete patios and their related foundations. All of KWA's observations were solely visual in nature and no excavation or destructive testing was performed during our site visit. KWA made the following observations while on-site.

Concrete Sea Wall

1) The existing seawall at the pond consists of sloped, stepped cast-in-place concrete along the south side of the pond. It appears that the wall was installed to control erosion of the pond bank and prevent damage to the nearby building.
2) In general the seawall appears in relatively good condition. There were minimal signs of concrete spalling and cracking.
3) KWA noted that the wall section at the west end of the pond has settled due to undermining of supporting soil. KWA measured an approximately 16" deep void under the wall. It appears that the erosion may have been caused by a nearby drainage outlet pipe.
4) KWA noted that at the concrete apron slabs at the drainage pipes near the center of the seawall and west end were cracked and settled due to erosion of supporting soil.
5) KWA also noted a large tree growing directly between two sections of the wall. The tree roots appear to be causing the wall to be moved towards the pond

Patio Slabs and Foundations

1) At the north elevation of the building, it appears that some unit owners over time have added patios. The patios consist of a concrete slab on grades which extent from the exterior wall of the units out to a wood fence that runs the entire length of the building. The fence is support by a small continuous cast-in-place concrete footing. Unit owners have also added concrete pavers at several locations to make patios.
2) KWA noted multiple areas which the soil has eroded from under the patio slabs and fence foundation resulting in unsupported slabs and cracking. It appears that the fence footing may have been added to control erosion. However, it was not deep enough to properly hold back the exiting soil

Based on observations, it is KWA's professional opinion that the erosion and settlement at the west end of seawall is due to water outflow from the adjacent drainage pipe. The cracking and settled apron slabs at the drainage pipes can also be contributed to water outflow over time. It is KWA professional opinion that the erosion at the patios and the fence footing can be contributed to an improperly designed footing/retaining wall. The wall was not constructed in a manner to properly hold back the existing soil.

In order to restore the existing seawall and slab on grade patios and prevent future erosion, KWA recommends the following repairs be implemented.

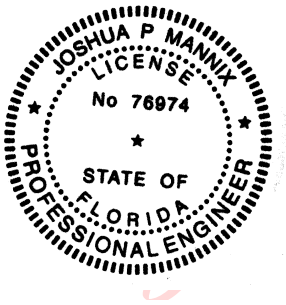
1) The settled western section of seawall near the drainage pipe should be raised via chemical grout injection. The grout injection will fill in existing voids under the wall section and should raise the section to near pre-settlement conditions. The seawall directly east of the settled section should also be injected to ensure all voids are filled. Following injection any remaining gaps between the wall sections should be filled with a commercial grade repair mortar
2) The apron slabs at both drainage pipes should be demoed and replaced with new cast-in-place concrete slabs. The new slabs should extend into the pond therefore temporary de-watering will be needed during construction.
3) Due to it's proximately to the existing seawalls and resultant damage caused by it, the existing tree should be removed. Prior to removal the Board should check whether any special permits are required to remove the tree. The Association may also need to hire an Arborist to inspect the tree to identify its specie.
4) The pond should be cleaned to remove any overgrowth and debris. If left unaddressed, over time the overgrowth may damage the existing seawall.
5) To restore and the support of the existing patios, KWA recommends that the existing fence and its foundation be removed and replaced with a new code compliant concrete footing and small retaining wall. The new wall should extend the entire length of the building. Following proper curing of the new retaining wall, KWA recommends that the voids under the existing patios be filled via chemical grout injection. If desired, after repairs are completed a new wood or aluminum picket railing can be installed on top of the retaining wall in order maintain its current appearance and separate the patios from the pond area

Based on the scope of the recommended repairs and costs of similar projects, KWA roughly estimates that the cost of construction would be $175,000 to $200,000. Note that this is just a rough estimate and actual cost will not be known until code compliant plans are issued and bids are obtained from licensed qualified contractors.

KWA would be happy to assist in the design and detailing of the above mentioned repairs. Given the structural nature of the work, all work should be permitted through the local building department and be performed by a licensed general contractor who specialized in earthwork and soil stabilization.

If you have any questions, please contact Josh Mannix at our Tampa office at your earliest convenience.

Sincerely,
KWA Engineers LLC
(FL Cert of Authorization #30466)



Digitally signed by Josh Mannix
DN: c=US, st=Florida, l=Sarasota, o=Karins Engineering Group, Inc., cn=Josh Mannix, email=jmannix@kwa-eng.com
Date: 2019.05.07 11:04:07 -04'00'

Joshua P Mannix, P.E.
Tampa Branch Manager
FL PE #76974

This Item has been electronically signed and sealed by **Joshua P Mannix, PE# 76974** on the date indicated above using a Digital Signature

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Representative Photos

Overview of Sewall and Fence at North Elevation of Building

Settled Wall Section at West End

Void under Settled Section of Wall

Tree Growing next to Seawall causing Damage

Existing Fencing supported by Concrete Footing

Voids under Existing Fence Footing

Void under Existing Patio Slab

Void under Existing Patio Slab