



Prepared for: South Hampton Property Owners Association
Prepared by: MUHLE Consulting
Date: 17 November 2019
Job number: 18-LTL-002
Property: South Hampton, Kingston Plantation
Subject: Storm Shutters – Structural Evaluation

Please consider this letter a follow-up to the letter submitted 27 September 2019. The following statement is included from the aforementioned letter:

The first and most concerning area is structural in nature. The penetrations made into the post-tensioned concrete slab comprising the balcony floor and ceiling in order to secure the track for the storm shutters should have only been made under the supervision of a licensed structural engineer. Additionally, were they deemed acceptable, ground penetrating radar equipment would have been required in order to ensure that no post-tensioned cables or supplementary reinforcing were located in the area of the penetration. To omit either of these steps risks compromising the structural integrity of the post-tensioned slab system. This compromise may not be seen immediately, as water infiltration around the slab penetration can cause corrosion, which, over time, can lead to degradation of reinforcing and spalling of concrete as the corroded metal expands.

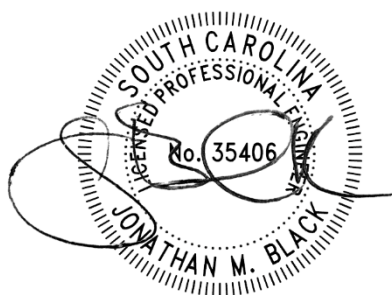
The hole depth and spacing were investigated on a balcony with recently removed storm shutters. The hole depth on the balcony floor was approximately three inches, spaced at approximately nine inches on-center. The balcony ceiling spacing was similar to the floor with a depth in excess of four inches into the six-inch-thick concrete slab.

Based on the depth and frequency of the holes placed into the post-tensioned concrete slab on the investigated balcony, it is likely that compromises have been made to the post-tensioned cable protective sleeves or the cables themselves. Further, the conventional reinforcing may have also been compromised.

As stated in the aforementioned letter, and further as a result of the ensuing investigation, all storm shutters should be removed to allow for an individual structural evaluation of each balcony where holes were placed into the post-tensioned concrete slab. Repair method(s) will be provided on a case-by-case basis based on hole depth and spacing.

If you have any questions or need any additional information, please do not hesitate to contact our firm at either of the contact methods listed below.

Respectfully,



Jonathan M. Black, PE