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August 8, 2017

Beachcomber I Condominium Association, Inc.
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15 Simmons Road
Atlantic Beach, Florida 32233

Balcony Observation Report
Beachcomber I Condominiums
Jacksonville Beach, Florida 32250

Construction Solutions, Inc. (“CSI”) was recently requested to perform an Exterior Observation of the subject condominium complex to determine the structural integrity of the individual unit balconies. As such, we visited the subject site on June 16, and again on June 20, 2017 to conduct observations of the referenced property.

Per your request, we are providing this Balcony Observation Report as an overview of our primary observations, findings, and recommendations. It should be noted this report is not intended as an exhaustive report, nor does it document all observed defects. Further written elaboration and/or technical clarification may be necessary to fully understand the topics and subject matter. We suggest meeting with the Board of Directors to discuss our findings and assist in planning the appropriate course of action.

Background

Beachcomber 1 Condominium is a multi-family complex building consisting of twelve units. The building is four stories with a ground level parking garage below the building. Although the original building plans are unavailable, we observed the structure is comprised of concrete columns on the ground level and a concrete slab on the second level floor. The second, third, and fourth levels are believed to be constructed of a steel moment frame, wood-framed infill walls, and wood-framed floor & roof systems. As we understand you experienced the collapse of Unit 201 ceiling from Unit 301 balcony above. Significant wood decay became apparent due to long term water intrusion. Therefore, the Association requested we investigate the remaining wood-framed balconies. The intent of this report is to memorializes our findings and provide general recommendations for repair.

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Observations & Findings

We investigated the current conditions of the balconies by removing sections of the ceiling below to observe the structural elements beyond the exterior finishes. Our observations discovered all of the wood-framed balconies are severely deteriorated due to long-term moisture intrusion on the 3rd and 4th levels of the building. **The wood framed elements are beyond repair. We consider this to be a risk to life-safety and personal property. These balconies should be shored up as soon as possible. Further, access to the balconies should be restricted until such remediation can be implemented.**

The composition of the wood-framed balconies on the 3rd and 4th levels consist of a concrete topping over plywood decking on 2x pressure treated joists with suspended stucco ceilings. The balconies on the second level have a reinforced concrete slab; which is common to the parking garage ceiling below.

The stucco ceiling failed on Unit 301 due to corrosion of the metal lath and supporting tie wires.

In addition, there are a couple of balconies that appear to have been repaired in the past as evidenced by the visibly newer plywood decking and/or joist supplementation, however, these too are showing signs of continued water intrusion.

The balcony guardrails were noted to be surface mounted, however, some were cast into the concrete topping. Also, the rails are showing signs of aging in the form of failing paint and material corrosion. Further, the rails do not meet the current life-safety requirements for picket spacing. The governing code requires the rails have a spacing less than and no greater to 4-inches. This is particularly important to protect small children and pets who could pass easily between the openings in the current rails. It should also be noted, any lodging property available to the public, such as hotels and/or rentals, is required to have a biannual guardrail inspection and submit the Certificate of Balcony Inspection to the State of Florida. And, the current conditions of the existing guardrails would not meet the requirements for approval.

Also, the concrete topping is cracking and failed in many locations on the 3rd and 4th level balconies. We believe this, along with failed sealants, handrail penetrations, insufficient waterproofing, and leaking sliding glass doors, is allowing water intrusion into the balcony assemblies.

Closer inspection of the steel support beams indicates advanced corrosion of the ferrous material; particularly the bottom flange and the bolted connections. Further evaluation will be necessary at time of construction to determine the appropriate repair. It is possible replacement of several of these beams may be necessary due to the existing building type and adjacent combustible materials; which would make field welding unfeasible.

Curiously, the balconies were framed as cantilever balconies without sufficient attachment or development at the exterior building wall. The joists were observed to run out from a perimeter rimboard framed below the sliding glass doors. Typically, cantilever elements will run back into the building or have connection hardware at the heel; which will affix the members sufficiently to carry the resultant load developed from the forces of the cantilever. The presence of the continuous rimboard indicates the joists do not run back into the building, nor did we witness any connections at the wall. Ultimately, this construction is flawed as currently installed because the balconies are solely relying on the weight of the exterior walls to hold down the rimboard. And, there is insufficient connection at the joist-to-rimboard interface.

Miscellaneous

Concrete: Numerous locations of required structural repair were observed on the concrete beams, columns, and overhead slab of the ground level parking garage. The necessary repairs will include removal and replacement of deleterious concrete and reinforcing within the structural elements.

Steel Stairs: The center stair structure is the main egress into the units. This structure has numerous locations of visible corrosion. This corrosion was observed to severe in most locations where the ferrous material is completely deteriorated. Further, the structural integrity of many locations, such as but not limited to, connections and support, are suspect for the ability to perform as intended. We believe the stairs are an eminent safety concern. Necessary repairs and/or full replacement is recommended at the earliest opportunity. Consideration should be given to full replacement option because the ferrous steel will also need to be properly maintained on a more frequent basis to prevent any further corrosion. Also, if the repair option is selected, further detailed investigation will be required to perform an in-depth survey determine all of the locations of deficiency to prepare a remediation plan. This will also likely require third party independent testing of the material for corrosion at several locations to adequately determine the current salvageable material thicknesses, prior to generation of the necessary repair details and/or implementation of any repair effort.

Stucco: The stucco was observed to be cracked and failing in many locations throughout the building. Further, the exterior wall assembly is comprised of stucco on lath over Grade D paper on gypsum wall board, stud framing, and interior drywall. It should be noted, the exterior wall assembly do not contain a suitable weather resistive barrier (WRB); which is required by today's standards. Water intrusion cannot be guaranteed without a suitable WRB and the installation of required flashings and drainage provisions.

Sealants & Coatings: The existing building sealants are either missing, failed, or insufficient. Numerous locations of inadequate joint sealants are readily visible, such as but not limited to, window & door perimeters, plane changes, inside corners, control and/or expansion joints, thru wall penetrations, dissimilar materials, etc. It is critical that these building sealants are properly installed and sufficiently maintained to prevent unwanted moisture intrusion. Many locations of damage to interior finishes were observed during our time onsite.

Doors & Windows: Many, if not most, of the window and door assemblies on property appear to be original, aging, and beyond their useful life.

Conclusions & Recommendations

Balconies – We recommend complete removal and replacement of the wood framed balconies on the 3rd and 4th levels (total 8 balconies). Although, it should be noted this work will significantly impact every unit. Not only will the construction process be noisy and intrusive, it is very likely access to each until will be required, as well as, to implement the necessary repairs work will also need to take place inside the unit. An Order of Magnitude estimate of \$100,000 is provided to assist in budgeting for these necessary repairs.

Concrete – Although we have not done an exhaustive survey on the quantities of concrete restoration, an Order of Magnitude estimate of \$75,000 is provided to assist in budgeting for these necessary repairs.

Steel Stairs – The steel stairs are recommended to be totally replaced, however, repairs may be likely but the full extent of repair remains unknown at this time. An Order of Magnitude estimate of \$80,000 is provided to assist in budgeting for complete replacement in kind. However, we recommend replacing the steel stairs with precast concrete. This will hold up much better to the oceanfront environment over time, and will have a greater longevity with less routine maintenance. Therefore, an alternate Order of Magnitude estimate of \$120,000 is provided to assist in budgeting for replacement with precast concrete.

Stucco – Many locations of stucco repair are required throughout the building exterior. Also, based on the damage seen, we would also like to point out that there will likely be further damage to the structure behind the wallboard and/or exterior cladding. This amount and extent of repair can only be determined through further discovery during the window removal. Consideration for complete removal and replacement of the stucco cladding should be given. Not only would this be the best possible approach, you would have the opportunity to provide new wall sheathing and a new WRB. An Order of Magnitude estimate of \$125,000 is provided to assist in budgeting for the full removal and replacement of the stucco. An additional \$75,000 should be budgeted to include the recommended new sheathing and WRB.

Sealants & Coatings – The missing and/or failed sealants should be supplemented and/or replaced. In addition, the building will need to be painted after the related work has been completed. An Order of Magnitude estimate of \$50,000 is provided to assist in budgeting for these necessary repairs.

Doors and Windows – Removal and replacement is recommended. Although we have not done a full survey of the windows and doors, an Order of Magnitude estimate of \$20,000 per unit is provided to assist in budgeting for these necessary repairs.

Lastly, it should be noted no repair work should be performed without first obtaining the necessary design documents for the remediation effort. Proper design documents will include the required project specifications and details to conduct the selected scope of work, and should be prepared by a qualified & licensed design professional.

CSI provides specialized engineering and project management solutions to commercial, multi-family, institutional, and high-end residential customers throughout the Southeast. We are proud to have thousands of satisfied customers in our over 20 year history. The Jacksonville Business Journal recently designated Construction Solutions, Inc. as one of the Top 50 Fastest Growing Private Companies in Northeast Florida.

We appreciate the opportunity to provide our professional services. Please contact us if there are any questions concerning this report.

Construction Solutions, Inc.

Jeffrey B. Sellers, PE, CGC, LEED AP
VP & Principal Engineer



Photograph 1: Unit #203, Observation hole cut in stucco ceiling.



Photograph 2: Unit #203, Bottom edge of floor joist stained and rotting due to water intrusion.



Photograph 3: Unit #203, Bottom edge of floor joists stained and rotting due to water intrusion.



Photograph 4: Unit #203, Bottom edge of floor joist severely rotted.



Photograph 5: Unit #203, Observation hole cut in stucco at structural I-beam. Felt paper stained due to water intrusion.



Photograph 6: Unit #203, I-beam delaminating in layers due to long term water intrusion.



Photograph 7: Unit #203, Wooden buck at I-beam saturated with water and decayed.



Photograph 8: Unit #203, I-beam fasteners severely corroded due to long term water intrusion.



Photograph 9: Unit #203, Guardrail picket spacing exceeds code requirement of less than 4 inches.



Photograph 10: Unit #203, Guardrail post corrosion (aluminum oxide).



Photograph 11: Unit #203, Sliding glass doors heavily corroded due to long term salt exposure.



Photograph 12: Unit #203, Rear dam at sliding glass door threshold does not meet code requirement for water infiltration.



Photograph 13: Unit #203, Acrylic coating on balcony topping slab failing.



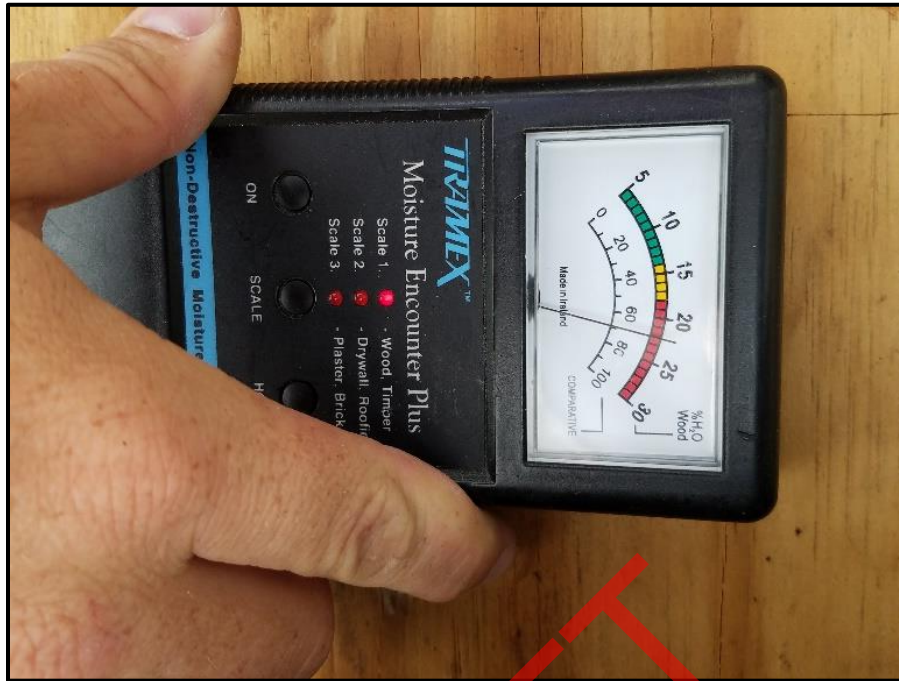
Photograph 14: Unit #203, Water intrusion under acrylic coating.



Photograph 15: Unit #204, Observation hole cut in stucco ceiling.



Photograph 16: Unit #204, new(er) plywood sheathing at balcony ceiling.



Photograph 17: Unit #204, Readings taken indicate high level of moisture contained in plywood sheathing.



Photograph 18: Unit #204, New joist attached to old joist indicating previous repair attempt.



Photograph 19: Unit #204, Interior view of ceiling cavity. Decayed decking.



Photograph 20: Unit #204, Interior view of ceiling cavity. Water intrusion. Damaged and/or decayed wood framing.



Photograph 21: Unit # 204, Rust stains at balcony edge indicating water intrusion.



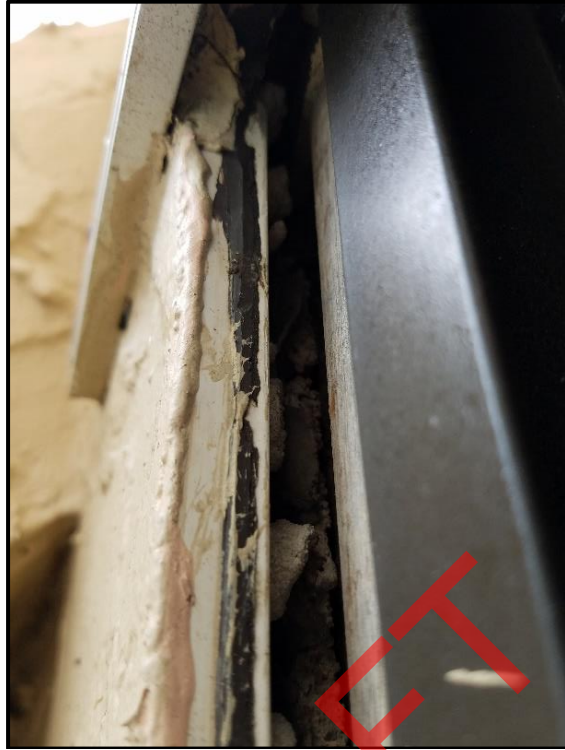
Photograph 22: Unit #204, Observation hole cut in stucco at structural I-beam.



Photograph 23: Unit #204, I-beam and wooden buck heavily deteriorated due to long term water intrusion.



Photograph 24: Unit #204, No sealant at sliding glass door to stucco.



Photograph 25: Unit #204, No sealant at sliding glass door to stucco.



Photograph 26: Unit #204, No sealant at sliding glass door to stucco juncture.



Photograph 27: Unit #402, Perspective view of balcony with tile.



Photograph 28: Unit #402, Leading edge of balcony cracked and beginning to spall.



Photograph 29: Unit #402, Grout at guardrail post delaminating due to expansion, contraction and water intrusion.



Photograph 30: Unit #402, Grout at guardrail post cracked, allowing water intrusion.



Photograph 31: Unit #402, Void in sealant at bottom right of sliding glass door noted as potential source of water intrusion.



Photograph 32: Unit #402, Corroded fasteners observed at sliding glass door threshold.



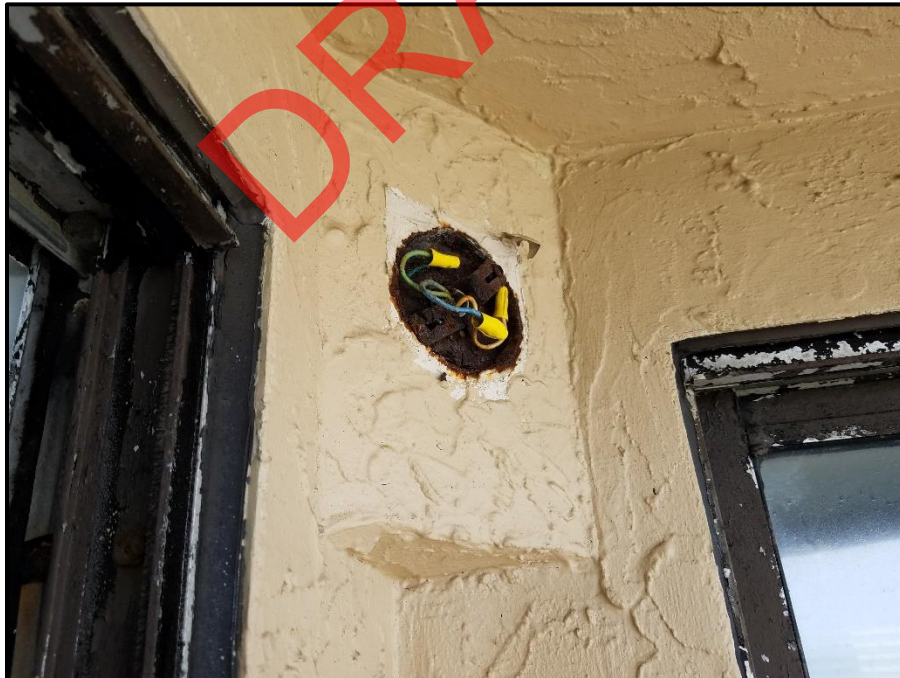
Photograph 33: Unit #402, Evidence of water intrusion noted at rear dam of sliding glass door.



Photograph 34: Unit #402, Sealant failure at sliding glass door and unit wall.



Photograph 35: Unit #403, Perspective view of balcony.



Photograph 36: Unit #403, Balcony light missing, leaving junction box exposed to potential water intrusion.



Photograph 37: Unit #403, Sliding glass doors heavily corroded.



Photograph 38: Unit #403, Sliding glass door fasteners heavily corroded and a potential source of water intrusion.



Photograph 39: Unit #403, Sliding glass door sealant failure.



Photograph 40: Unit #401, Perspective view of balcony.



Photograph 41: Unit #401, Leading edge of balcony cracked and spalling.



Photograph 42: Unit #401, Leading edge of balcony cracked and spalling at unit wall.



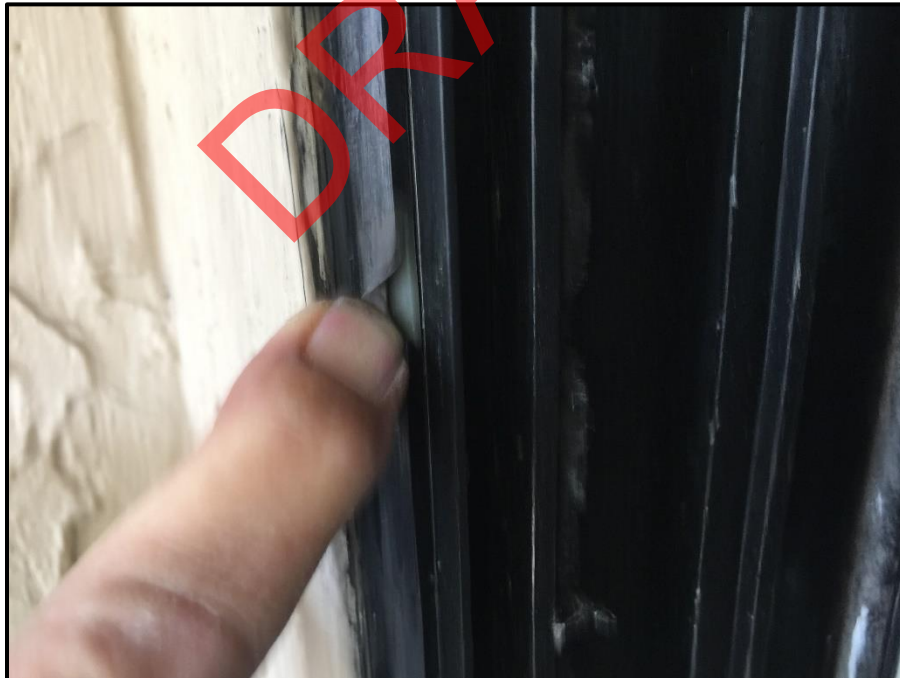
Photograph 43: Unit #401, Balcony light heavily corroded and is not sealed to the wall.



Photograph 44: Unit #401, Sealant failure at unit wall.



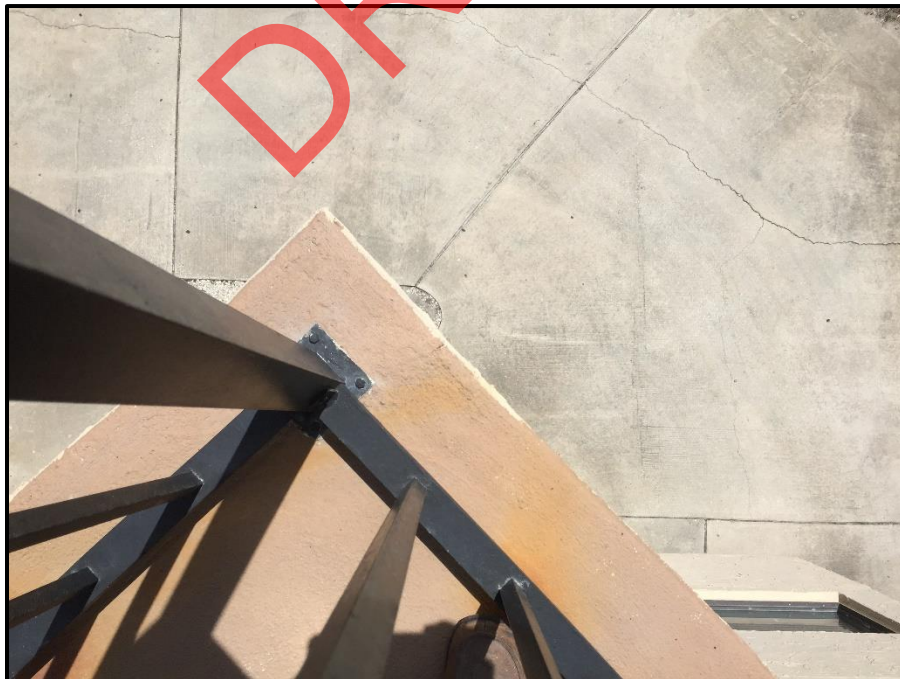
Photograph 45: Unit #401, Failed sealant at sliding glass door.



Photograph 46: Unit #401, Failed sealant at sliding glass door.



Photograph 47: Unit #404, Perspective view of balcony.



Photograph 48: Unit #404, Leading edge of balcony cracked.



Photograph 49: Unit #404, Sealant failure at unit wall.



Photograph 50: Unit #404, Heavily corroded fastener at storm shutter bracket.



Photograph 51: Unit #404, Sealant failure at sliding glass door.



Photograph 52: Unit #404, Close of previous photo.



Photograph 53: Unit #202, Observation hole cut in stucco ceiling.



Photograph 54: Unit #202, Readings taken indicate high level of moisture contained in plywood sheathing.



Photograph 55: Unit #202, Heavily corroded stucco lath observed.



Photograph 56: Unit #202, Heavily corroded fasteners observed.



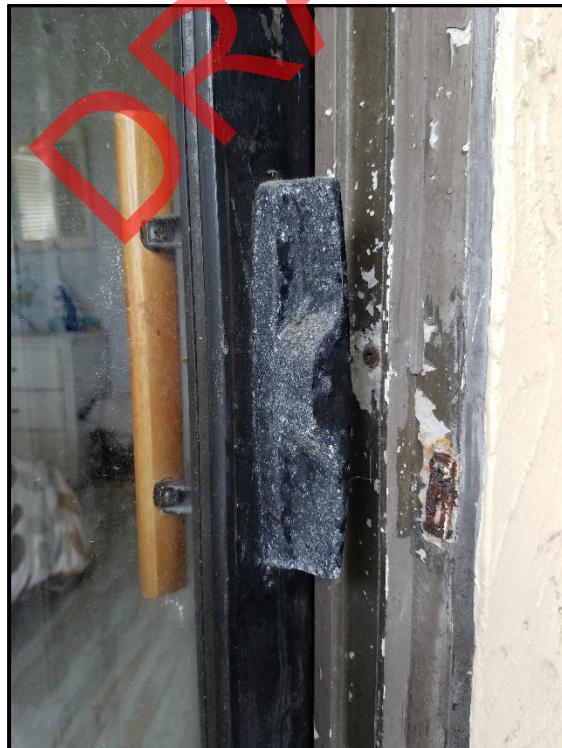
Photograph 57: Unit #202, Gyp board installed upon original construction saturated due to long term water intrusion.



Photograph 58: Unit #202, Same location as previous photo.



Photograph 59: Unit #202, Guardrail post completely deteriorated due to water intrusion and oxidation.



Photograph 60: Unit #202, Sliding glass door components heavily corroded.



Photograph 61: Unit #202, Sliding glass door fasteners heavily corroded and potential source of water intrusion.



Photograph 62: Unit #202, Sealant failure at unit wall perimeter.



Photograph 63: Unit #301, Balcony topping slab cracked down the middle.



Photograph 64: Unit #301, Balcony topping slab severely cracked at unit wall and leading edge.



Photograph 65: Unit #301, Balcony cracked and spalling at leading edge and unit wall.



Photograph 66: Unit #301, Observation hole cut in stucco ceiling, high levels of moisture indicated at plywood sheathing.



Photograph 67: Unit #301 Observation hole cut in stucco at Structural I beam.



Photograph 68: Unit #301, Felt paper at back side of stucco sample stained with rust due to long term water intrusion.



Photograph 69: Unit #301, I-beam corrosion observed.



Photograph 70: Unit #301, Corroded fasteners at sliding glass door thresholds observed.



Photograph 71: Unit #303, Observation hole cut at ceiling.



Photograph 72: Unit #303, New joist attached to old joist indicating previous repair attempt.



Photograph 73: Unit #303, Observation hole cut in stucco at I-beam location. Felt paper stained due to long term water intrusion.



Photograph 74: Unit #303, I-beam and fasteners beginning to corrode.



Photograph 75: Unit #303, I-beam corrosion close photo.



Photograph 76: Unit #303, Sliding glass door fasteners heavily corroded.



Photograph 77: Unit #303, Sealant failure at sliding glass door.



Photograph 78: Unit #303, Acrylic coating failure observed.



Photograph 79: Unit #303, Sealant failure at unit wall.



Photograph 80: Unit #303, Storm shutter fasteners heavily corroded and potential source of water intrusion.



Photograph 81: Unit #304, Observation hole cut at ceiling and I-beam location.



Photograph 82: Unit #304, Underside of deck sheathing stained and saturated due to water intrusion.



Photograph 83: Unit #304, The stucco in this previously repaired location was approximately 1/2 inch thick.



Photograph 84: Unit #304, Readings taken at the underside of the deck sheathing indicate high moisture levels.



Photograph 85: Unit #304, Crack in topping slab at unit wall.



Photograph 86: Unit #304, Crack at leading balcony edge.



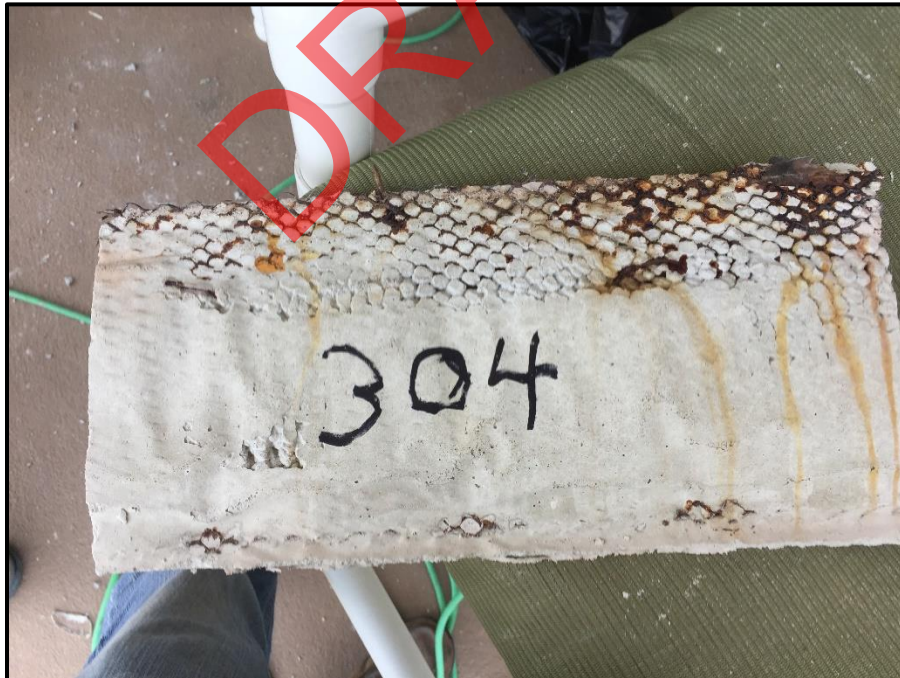
Photograph 87: Unit #304, Rusted fasteners at sliding glass door threshold.



Photograph 88: Unit #304, Balcony light broken and not sealed to unit wall.



Photograph 89: Unit #304, Observation hole cut at I-beam location, corrosion and staining due to long term water intrusion.



Photograph 90: Unit #304, Stucco lath and fasteners heavily corroded.