

Somerset Condominiums Elevated Walkway and Staircase Systems Renovations

INFORMATION ON EXPANDED OR ADJUSTED SCOPE OF PROJECT

Updated September 17, 2019

PROCESS

1. Somerset Condominiums Association engaged Anthem Structural Engineers (Anthem), a licensed structural engineering firm, to study the elevated walkway and staircase systems, provide recommendations for what was needed to maintain the safety and structural integrity of the systems, provide a report based on their study, and create engineering drawings for renovations that can be used by a construction general contractor.
2. Somerset Condominiums Association interviewed and hired PG Arnold Construction (PGAC), a general contracting firm, to carry out the planned renovations of the elevated walkway and staircase systems.
3. The City of Boulder issued building permits to conduct the renovations in compliance with the plans issued by the structural engineering firm.
4. As PGAC's renovations crews disassemble portions of the walkway systems (such as columns, beams, staircases, metal connectors, railings, etc.) additional problems with decay, decomposition, or imminent failure of other components are revealed.
5. PGAC documents these newly revealed conditions in writing and through photographs.
6. PGAC issues an RFI (request for information) to the structural engineering firm, Anthem, to determine best course of action and/or options for how to proceed.
7. Anthem responds to PGAC with their determination for mandatory departures from the approved engineering drawings and plans (or they provide recommendations for acceptable options).
8. PGAC sends the results of the RFIs, photographs and engineering drawing details, along with Anthem's determinations for mandatory revisions to scope of work and/or recommendations for modifying the scope of the project to Somerset Condominiums Association for decision-making & approval to proceed.
9. After PGAC receives decisions on RFIs from Somerset Condominiums Association, Change Orders to the renovations contract are drafted and sent to Somerset for ratification. Change Orders modify the original renovations contract to include the expanded scope and provide specifics on the additional costs associated with that expanded scope of the project.
10. Additional materials are ordered and additional work is scheduled by the general contractor.

Summary Record of RFIs

190805 **RFI01** was assigned to Anthem for response.

QUESTIONS: Per the structural drawing, the replacement steel connections shown in details 2 and 4 have a height of 0'-9" but the existing connections on site have a height of 1'-1 1/2". Should the replacement steel connections have the same height of 1'-1 1/2" as the current connections to allow for the holes to be located in the same locations in the beams rather than the specified 0'-9"?

RESPONSES: Reuse of the existing bolt holes where possible is preferred. The dimensions given are minimums.

190805 **RFI02** was assigned to Anthem for response.

QUESTIONS: Drawings S 1.02/reference #8 calls for the top half of the current column to be replaced and reconnected to the lower half of the column with two steel plates on the north and south faces shown in the attachment. After inspecting the current column and the connections located on this column, we recommend replacing the whole member which eliminates the need of the two steel plates which would interfere with the L5x5x1/4 brackets that are currently located on the column. Please note that the column also has existing holes drilled on the east side reducing the its structural integrity. Please confirm that the whole column shown in the attachment can be replaced.

RESPONSES: Replacement of the column in its entirety is acceptable. The new column should be a 5 1/8"x6" AYC Glulam. Contact Anthem during construction to verify base connection.

190805 **RFI03** was assigned to Anthem for response.

QUESTIONS: Please confirm that the steel connection at the top of the east stair (both main and upper level) can be replaced with a solid steel plate to allow for all components to be tied together and prevent bolts from going into end grain. See attachment for visual representation.

RESPONSES: New continuous steel plate is acceptable. Anthem recommends flashing or membrane (Vycor or similar) at the top edge to prevent water accumulating behind the plate.

190806 **RFI04** was assigned to Anthem for response.

QUESTIONS: There are four 6x13.5x1/4" plates on the main level that are rusting out and need replaced (shown in the attached pictures). Please confirm that we can go ahead and replace the shown steel plates.

RESPONSES: These particular plates are primarily acting as washers for the railing post connections. Replacement in kind is acceptable and will help prolong the life of the structure.

190814 **RFI04** was reassigned to Somerset for response.

Somerset Follow-up: Somerset confirms that PGAC should proceed with replacing the steel plates in kind, as shown in RFI #4.

190806 **RFI05** was assigned to Anthem for response.

QUESTIONS: There is a L5x5x1/4x13-1/2" rusting out on the main level shown in the attached photo that is not included on the drawing. Please confirm that PGAC should replace this steel bracket.

RESPONSES: As in RFI #4, replacement of the bracket will extend the service life of the structure but is not critical.

190814 **RFI05** was reassigned to Somerset for response.

Somerset Follow-up: Somerset confirms that the steel L bracket, as discussed in RFI #5, should be replaced.

190806 **RFI06** was assigned to Anthem for response.

QUESTIONS: After inspection, there are two additional columns on the west side of the building that are in need of replacing shown in the drawings and picture below as well as an additional glulam beam. Please confirm that the shown members should be included in the project scope.

RESPONSES: Replacement of the columns will prolong the life of the walkways but is not currently required as with the other members identified by PG Arnold. Replacement of the beam with a new one of equal size is acceptable.

190814 **RFI06** was reassigned to Somerset for response.

Somerset Follow-up: Somerset confirms that the two additional columns on the west side of the north building (in front of 1546 and 1550 Bradley), as discussed in RFI #6, should be replaced with new columns. We confirm that the defective glulam beam, as discussed, should be replaced with a new glulam beam.

190808 **RFI07** was assigned to Anthem for response.

QUESTIONS: Due to adding shims at the clouded section shown in the attachment, the stair stringers will be too short to span the distance required. We recommend including new stringers into the scope of work for the stairs, please advise how to proceed.

RESPONSES: Wood shims can be utilized to raise the stringers as required. For appearance and long-term durability, the stringers can be replaced with new members of equal size.

190812 **RFI08** was assigned to Anthem for response.

QUESTIONS: During construction on August 12th, one of the beams by the north stairs was found to be corroded at the end of the beam shown in the attached picture. The location of this beam is shown in the attached drawings. It is recommended that we remove the beam and replace with a new glulam. Please advise how to proceed.

RESPONSES: We concur that replacement of the beam in question is warranted.

190813 **RFI09** was assigned to Anthem for response.

QUESTIONS: Currently, the structural drawings (S1.02) call to replace the southeast 6x6 column on the southeast stairs. After inspecting the column, we recommend keeping the existing column which is shown in the attached pictures. Please advise if the column is in need of replacement and the reasoning behind it or if we can re-use the existing column.

RESPONSES: The existing column is ok to leave in place.

190820 **RFI10** was assigned to Anthem for response.

QUESTIONS: After removing the glulam beam on the upper east level of the walkway, an additional beam was found to be rotted out (shown in the attached photo). Please confirm this additional glulam beam is to be replaced due to unforeseen conditions.

RESPONSES: Replace the member with a new beam of equal size. At the connection add Vycor Deck Protector or similar to the top to prevent water intrusion into the joint.

190822 **RFI11** was assigned to Anthem for response.

QUESTIONS: The bottoms of the northeast upper stair stringers have been rotted out at the bottom and are in need of replacing. This can be seen in the attached photos. Please confirm we can order and replace these two stair stringers.

RESPONSES: RFI11 closed by PGAC in favor of reopening RFI7 assigned to Somerset for response.

190822 **RFI07** was reopened and reassigned to Somerset due to new conditions observed.

QUESTIONS: Due to adding shims at the clouded section shown in the attachment, the stair stringers will be too short to span the distance required. We recommend including new stringers into the scope of work for the stairs, please advise how to proceed.

RESPONSES: Somerset approves the replacement of the defective stair stringers.

190822 **RFI12** was assigned to Anthem for response.

QUESTIONS: The concrete pad at the bottom of the west-lower stairs is highly sloped toward the west and needs leveled. It also looks to be sinking into the ground shown at the expansion joint. We recommend leveling the concrete landing after the stairs are removed (also shown in the attached). Please advise how to proceed.

190827— **ANTHEM RESPONSES:** To reduce further settlement of the perimeter concrete wall and the concrete landing Anthem recommends removing and replacing the slab such that water will be directed down the stairs.

190827 PGAC calls Somerset Condominiums Association, and then reassigns RFI12 to Somerset for consideration of other options, as they find Anthem’s recommendation potentially cost prohibitive:

- As discussed in our phone call, here are some options on how to proceed with the lower west stair slab:
 - **Option 1** (Recommended by Anthem): Replace the whole concrete slab to prevent further settlement and to direct water down the stairs. This will call for both a large schedule and cost change due to this not being included in the scope of work and the amount of engineering that will be required.
 - **Option 2:** Leave the slab as is and pour a topping slab over it to direct the water down the stairs. This will not solve the settlement of the wall and slab into the ground but it will help level the stairs and prevent water from puddling up in this area.
 - **Option 3:** Leave the slab as is and add a shim under the stair stringers to level out the stairs. This is the simplest and cheapest option but will not solve the puddling of water at the concrete landing.

RESPONSES: On 190910 Somerset approved PGAC moving forward with Option 2.

190826 **RFI13** was assigned to Somerset for response.

QUESTIONS: Detail 3 of S1.01 calls out to reuse the existing bolts found at the connection. During construction we have found that a majority of the bolts are in need of replacing rather than reusing (seen in the attached picture below). Please confirm we can proceed with ordering new connection hardware (bolts, nuts & washers) based on these unforeseen conditions.

RESPONSES: Somerset approves PGAC ordering new connection hardware (bolts, nuts, and washers) as discussed in RFI #13 and shown in photo attachment.

190828 **RFI14** was assigned to Somerset for response.

QUESTIONS: During construction, two glulam beams were found to be rotted out at the location of the connections and an additional glulam has swollen to 14.5" causing the walkway to be uneven. Please confirm these glulam beams can be ordered and replaced (shown in the attached pictures and drawings).

RESPONSES: Somerset approves ordering and replacing the defective glulam beams as shown and discussed in RFI 14.

190903 **RFI15** was assigned to Somerset for response.

QUESTIONS: After removing multiple glulams, we have found that many of the 4x4 S4S Cedar planks have been rotted out that are not accounted for in the scope of the project. Examples are shown in the attached picture. Also attached is a diagram showing the planks that have been replaced and what planks we believe are still in need of replacing. Please advise if Somerset Condominiums would like to continue to replace all these board or leave the rotting boards. This would more than double the original amount accounted for when the original site walk-through was completed.

RESPONSES: 190907 -- Somerset approves PGAC continuing to replace all rotting or defective 4x4 S4S Cedar planks.

190909 **RFI16** was assigned to Anthem Structural Engineers for response.

QUESTIONS: During construction, the lower glulam on the west side of the building was leveled as per the drawing. Due to leveling the beam, the entry stair height is now a tripping hazard and does not meet code. The 4x4 planks are clearly rotted and are also in need of replacing. Note that these planks are sitting on dirt and not on concrete, therefore are rotting from the underside. We recommend pouring a small concrete pad from the end of the current concrete to the front facing side of the walkway, then add 4x4 planks for the stairs (see attachment for details). Please advise how to proceed.

RESPONSES: From Chris Shult, Anthem Structural Engineers: Extending the slab and adding a new step as described appears to be reasonable. The maximum rise on each step is 7".

190909 **RFI17** was assigned to Somerset for response.

QUESTIONS: After further inspection of the stair stringers on the southeast side of the building, we recommend that all four stair stringers get replaced. Though they do not need to be replaced immediately, they do show rotting at the end grains. Please advise if you would like to proceed with new stringers or leave the existing.

RESPONSES: 190910 -- Somerset approves moving forward with PGAC's recommendation that the four stair stringers on the southeast side of the building be replaced.

190910 **RFI18** was assigned to both Somerset and Anthem Structural Engineers for responses.

QUESTIONS: During construction, PG Arnold Construction has continued to discover rotting glulam beams and 6x6 columns that are not included in the original scope of work. With this RFI, we would like to confirm that PG Arnold Construction can replace all structural members that we find are rotting with like for like members. In the process of one day (9.10.19) we have found 3 members that are rotting (shown in the attached pictures) and expect to find more based on the exterior of the beams.

RESPONSES:

– 190911 From Somerset: Somerset approves replacing rotting structural members (glulam beams and 6x6 columns) following the process described in RFI 18.

– 190912 From Anthem Structural Engineers: Replacement of deteriorated members with new ones of equal size and type is acceptable where discovered.