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Observation Report

August 22, 2019

Matt Debus
Vail Management Company

Re: Meadow Creek Condominiums, Vail, CO
(Building D)
Project No. 0307-19 D

On August 9, 2019, at Matt Debus' request, I visited the property referenced above to observe the general condition of the exterior decks along the northwest side of the condominium building and to provide you with my observations. The opinions expressed in this report are based only on visual observation of the condition of the structure on this date, without disturbing any integrity of the decks or the residence. These opinions do not represent overall property review, structural analysis, or compliance with applicable building code. The original construction documents dated 01-02-1981 for the building were present at the time of my visit.

PURPOSE AND SCOPE:

The purpose of this report is to evaluate the structural integrity of the existing decks along the northwest side of the condominium for building D, and to provide recommendations of the remedial work that should be done in areas where structural problems and or damage is observed.

BACKGROUND:

The condominium complex is a cluster of buildings that are spread out over the property and appear to have some similarities in a common repetitive layout. According to limited Town of Vail Planning documents the condominiums appear to be built in the late 1970s or early 1980s. Building D consists of 4 units (D1-D4), built on a moderate sloping lot from the southeast to the northwest. Also according to some of the older documents from the town it appears that the exterior decks for building D have been modified from the plans dated 01-02-1981. The exterior decks for the units in concern are located on the northwest side of building D. There were no construction documents for the modified decks at the time of my visit.

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OBSERVATIONS:

Building D consists of four units and staggers two units at a time from the northeast towards the southwest approximately 8 feet starting with units D4 and D3 on the northeast side. The exterior decks are located on the northwest side of the building and are approximately 10 feet above the finished grade. They extend approximately 10 feet from the building and the lengths of the decks vary from unit to unit. There is a framed partition wall that divides the decks in half. This partition wall appears to be located between the two units at the party wall. The decks are accessed by an exterior door located on the west side of each individual unit and an exterior set of stairs for Unit D2. The exterior decks appear to be framed with 2x wood decking on a combination of 2x8 dimensional lumber joists, timber beams and posts. (See Image A and attached layouts)

(Image A)

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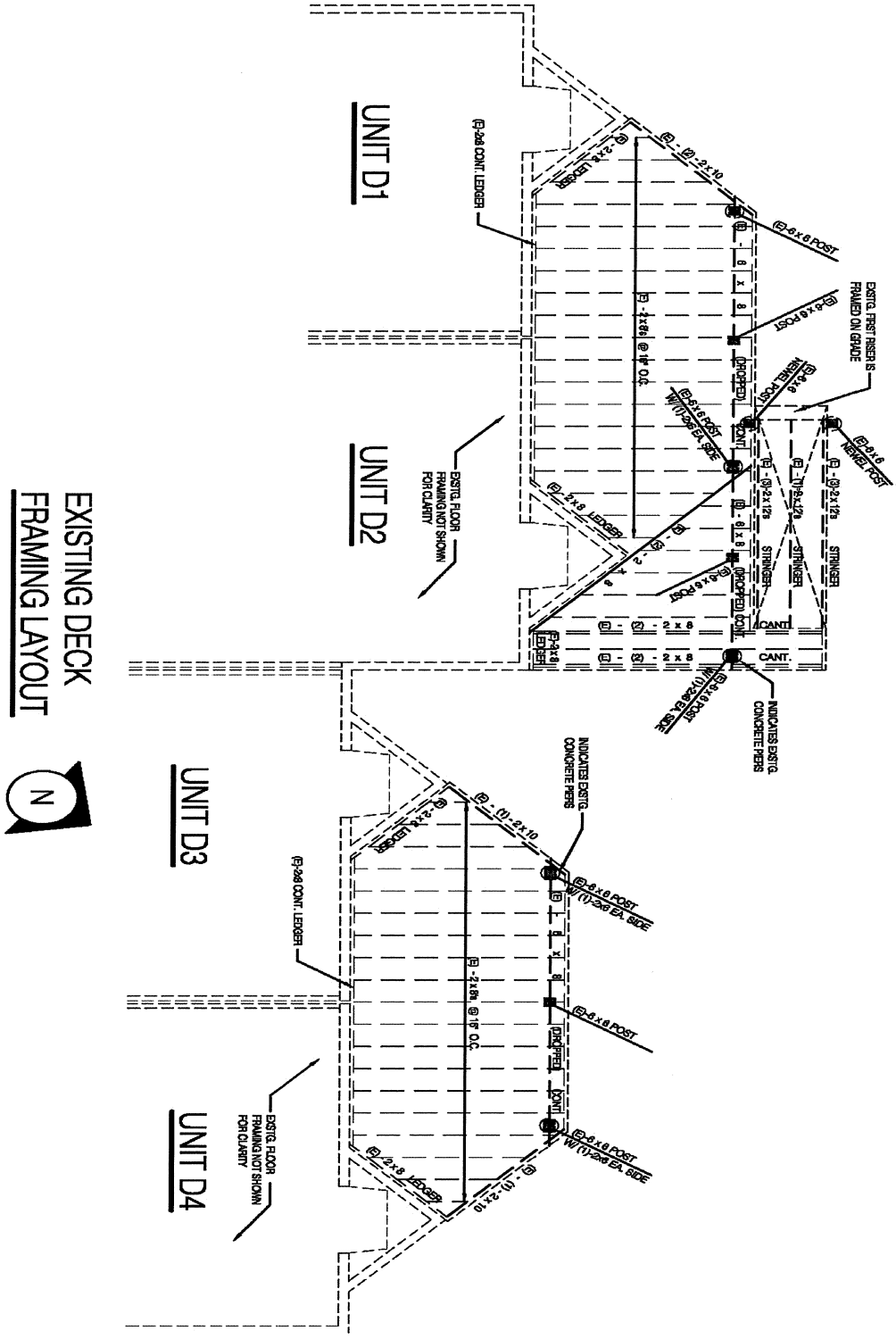

Meadow Creek Condominiums (Building D), Vail, CO **#0307-19 D**

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Unit D1: This unit deck is connected to unit D2 and is separated in the middle by a framed partition wall. It appears that the deck joists are 2x8 spaced at 16" on center. Most of the joists bear on mechanical steel hangers or are toe-nailed on the east end and cantilever approximately 8" on the west end. The east end hangers are nailed to either a 2x8 ledger that is perpendicular with the deck joists or toe-nailed to a 2x8 ledger that is on an approximate 45 degree angle to the deck joists. The 2x8 ledger appears to be nailed to the side of the building or to the cantilevered floor from above. On the west end where the 2x8's bear on the 6x8 beam there appears to be a small wood wedge between the deck joist and the 6x8. The paint that was applied to the underside of this decking and joists has mostly peeled away. Some of the nails appear to be weathered and show signs of rust. Some of the deck joists are cracking in areas and they appear to be taking on a blackish/gray weathered look. The cantilevered ends of the joists bear on a dropped 6x8 beam that spans continuously over three separate 6x6 posts. The posts are spaced out approximately 7'-9". It appears that where the 6x8 beams bear on a 6x6 post there are some mechanical steel caps on one side. The 6x6 post to the most south bears on a concrete circular pier with no apparent base connection. The 6x6 post in the middle appears to be aligned with the partition wall that separates the deck of the unit next to it and appears to bear on a 2x piece of wood that lays flat on the ground. The third 6x6 post to the north of that appear to have a treated 2x6 stud nailed to each side of it and also bears on a concrete circular pier with no apparent base connection.

Unit D2: The deck for this unit appears to have been remodeled at some point in time. This unit deck is connected to unit D1 and is separated in the middle by a framed partition wall. The majority of the deck is framed similar to unit D1 except for the addition to the north of the cantilevered wall from above and the stairs that have been added to access the deck from the finished grade below. The addition appears to have been framed with 2x8 deck joists spaced at 16" on center. Most of the joists bear on mechanical steel hangers or are toe-nailed on the east end and cantilever approximately 8" on the west end. The east end hangers are nailed to either a 2x8 ledger that is perpendicular with the deck joists or toe-nailed to a (2)-2x8 ledger that is on an approximate 45 degree angle to the deck joists. The 2x8 ledgers appear to be nailed to the side of the building or to the cantilevered floor from above. The paint that was applied to the underside of this decking and joists has mostly peeled away. Some of the nails appear to be weathered and show signs of rust. Some of the deck joists appear to be taking on a blackish/gray weathered look. The cantilevered ends of the joists bear on a dropped 6x8 beam that spans continuously over three separate 6x6 posts. The posts are spaced out approximately 6'-0". It appears that where the 6x8 beams

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bear on a 6x6 post there are some mechanical steel caps on one side. The 6x6 post to the south also supports the 6x8 beam from unit D1 and is described as the third 6x6 post. The middle 6x6 post appears to bear on a 2x piece of wood that lays flat on the ground. The next 6x6 post to the north of that appears to have a treated 2x6 stud nailed to each side of it and also bears on a concrete circular pier with no apparent base connection. The stairs appear to be framed with three separated stair stringers. The two stringers on the outsides of the stairs appear to be (3)-2x12 stringers, and one located in the middle appears to be (1)-2X12, with 2x decking treads. The two outside stringers appear to be attached to the (2)-2x8 cantilevered deck joist at the top with a mechanical steel hanger that was notched into the top quarter depth of the stringer. The stringer located in the middle was nailed from the back side of 2x8 into to the end grain of the stringer. On each side of the stair stringer at the bottom there are 6x6 newel posts that are bolted or lagged to them. These newel posts appear to be the support for the open steel railing on each side of the stairs. It appears the first riser at the bottom of the stairs has been framed on the finished ground with treated 6x6 blocks. The stair landing at the top of the stairs is approximately 2'-6" x 3'-6" in size. The landing appears to be framed from the extended cantilevered ends of the 2x8 deck joists mentioned above. (See Images B, C, & D)

(Image B)

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(Image C)

(Image D)

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Unit D3 & D4: These decks appear to be framed with 2x wood decking on 2x8 deck joists spaced at 16" on center that are separated in the middle by a framed partition wall. Most of the joists bear on mechanical steel hangers or are toe-nailed on the east end and cantilever approximately 8" on the west end. The east end hangers are nailed to either a 2x8 ledger that is perpendicular with the deck joists or toe-nailed to a 2x8 ledger that is on an approximate 45 degree angle to the deck joists. The 2x8 ledger appears to be nailed to the side of the building or to the cantilevered floor from above. The paint that was applied to the underside of this decking and joists has mostly peeled away. Some nails appear to be weathered and show signs of rust. Some of the deck joists are cracking in areas and they appear to be taking on a blackish/gray weathered look. The cantilevered ends of the joists bear on a dropped 6x8 beam that spans continuously over three separate 6x6 posts. The 6x8 beam appears to be sagging at the middle span. Upon placing a 6 foot level to the underside of this beam it was measured to be sagging approximately 1 inch over 6 feet. The south side of the 6x8 beam appears to have a horizontal crack along the bottom third of its depth. The posts that support the 6x8 beam are spaced out approximately 7'-6". It appears that where the 6x8 beams bear on a 6x6 post there are some mechanical steel caps on one side. The 6x6 post to the south appears to have a treated 2x6 stud nailed to each side of it and bears on a concrete circular pier that is just above the ground with no apparent base connection. The 6x6 post in the middle appears to be aligned with the partition wall that separates the deck of the unit next to it and appears to bear on the on a 2x piece of wood that has split and lays flat on the ground. The 6x6 post to the north appears to also have a treated 2x6 stud nailed to each side of it and appears to bear on a concrete circular pier that is below the ground with no apparent base connection. (See Image E, F and G)

(Image E)

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(Image F)

(Image G)

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CONCLUSIONS:

At this time, I do not believe that Units D3 and D4 exterior decks on the west side of Building D will fail structurally. Besides the deck being weathered in areas, there are no significant signs of rot or any indications of instability. Although I do not believe the decks will fail, I do feel that the existing decks are not constructed to today's building codes. I feel that the 6x8 supporting beams are not adequate to support the current Town of Vail design load criteria. I feel that the deck joists that are cracked and appear to be taking on a blackish/gray weathered look will eventually start to rot and will lose their structural integrity to support their imposed loads. I feel that the nails that are showing signs of rust may eventually become too corroded to support their imposed loads. I feel that the reason the wood wedge was installed between the deck joists and the 6x8 beam is due to the 6x6 post that is bearing on the 2x wood has settled. This post will continue to settle if not properly supported on a concrete pier.

I do believe that the exterior decks for Units D1 and D2 have structural issues and should be attended to as soon as possible. I feel that the existing 6x8 supporting beam is deflecting beyond it allowable limits and should be replaced. It is also showing signs of cracking along the horizontal face.

Other concerns that I feel will eventually shorten the workability of the decks is that all the supporting posts, newel post, and all other non-treated wood members should bear on a concrete pier that is a minimum of 8" above the grade and a minimum 48" below grade. These wood members should also have the correct steel mechanical connections. All 2x8 ledgers should be connected to a solid rim-board with a fastener that can withstand withdraw loading and not just nailing.

RECOMMENDATIONS:

I do recommend the following items have immediate remedial work completed on them:

1. Replace the 6x8 support beam for units D1 & D2 with a 6x10 beam prior to it failing. This will also be structurally adequate to support the current Town of Vail design loading criteria.

2. All load bearing 6x6 posts should bear on a concrete pier and footing. The bottom of the footing should be a minimum of 48" below grade for frost protection. The size of the footing can be determined by our office and is based on the load it is supporting and upon the soil bearing conditions. By code the bottom of a wood post should be a minimum of 8" from the

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finished grade or shall be of naturally durable or preservative-treated wood.

3. Provide Simpson ABU66Z base plates and Simpson PC6Z to all 6x6 posts.

4. Add (3)-4" x 3/16" diameter Timber-Lok screws at 16" on center to all existing 2x10 ledgers that are attached to the building rim-board.

The following items are recommended to help prolong the workability of the existing exterior decks:

1. Install Simpson LS70 or Simpson LUS26 hangers on all deck joists that are missing them.

2. Provide the other half of the mechanical steel cap plates on all existing 6x6 posts where they are missing.

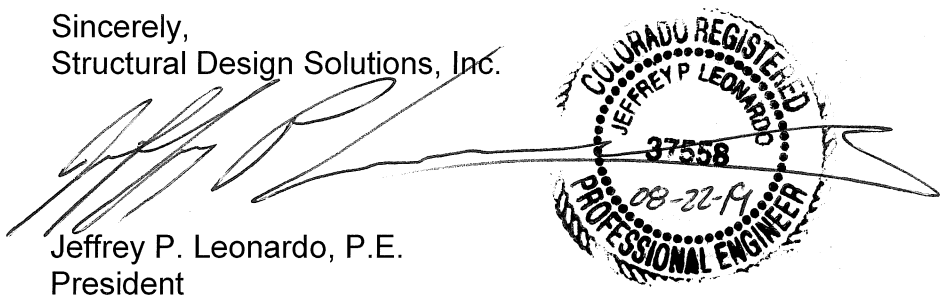
3. The area at the bottom of the stair landing should be re-graded so that there is proper clearance and drainage around the stair stinger and newel post. If this area continues to have moisture on it, it will begin to rot causing it to lose its structural integrity.

4. Install Simpson LS50 L-brackets to all sides of the stair stringers at the top landing of unit D2.

5. Maintain decks by regularly monitoring them, clearing them of snow and ice, and by resealing them with the proper stain/sealer and or paint.

If you would like to discuss this report, or if we can be of further service to you, please do not hesitate to contact us.

Sincerely,
Structural Design Solutions, Inc.



Jeffrey P. Leonardo, P.E.
President