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Observation Report

August 15, 2019

Matt Debus
Vail Management Company

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

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 C, 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 C consists of 6 units (C1-C6), 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 C 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 C. There were no construction documents for the modified decks at the time of my visit.

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OBSERVATIONS:

Building C consists of six units and stagger two units at a time from the northeast towards the southwest approximately 8 feet starting with units C6 and C5 on the northeast side. The exterior decks are located on the northwest side of the building and are approximately 11 to 13 feet above the finished grade. They extend approximately 9 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 C1. The exterior decks appear to be framed with 2x wood decking, except for Unit C3 which has a composite material decking, on a combination of 2x10 dimensional lumber joists, timber beams and posts. (See Image A and attached layouts)

(Image A)

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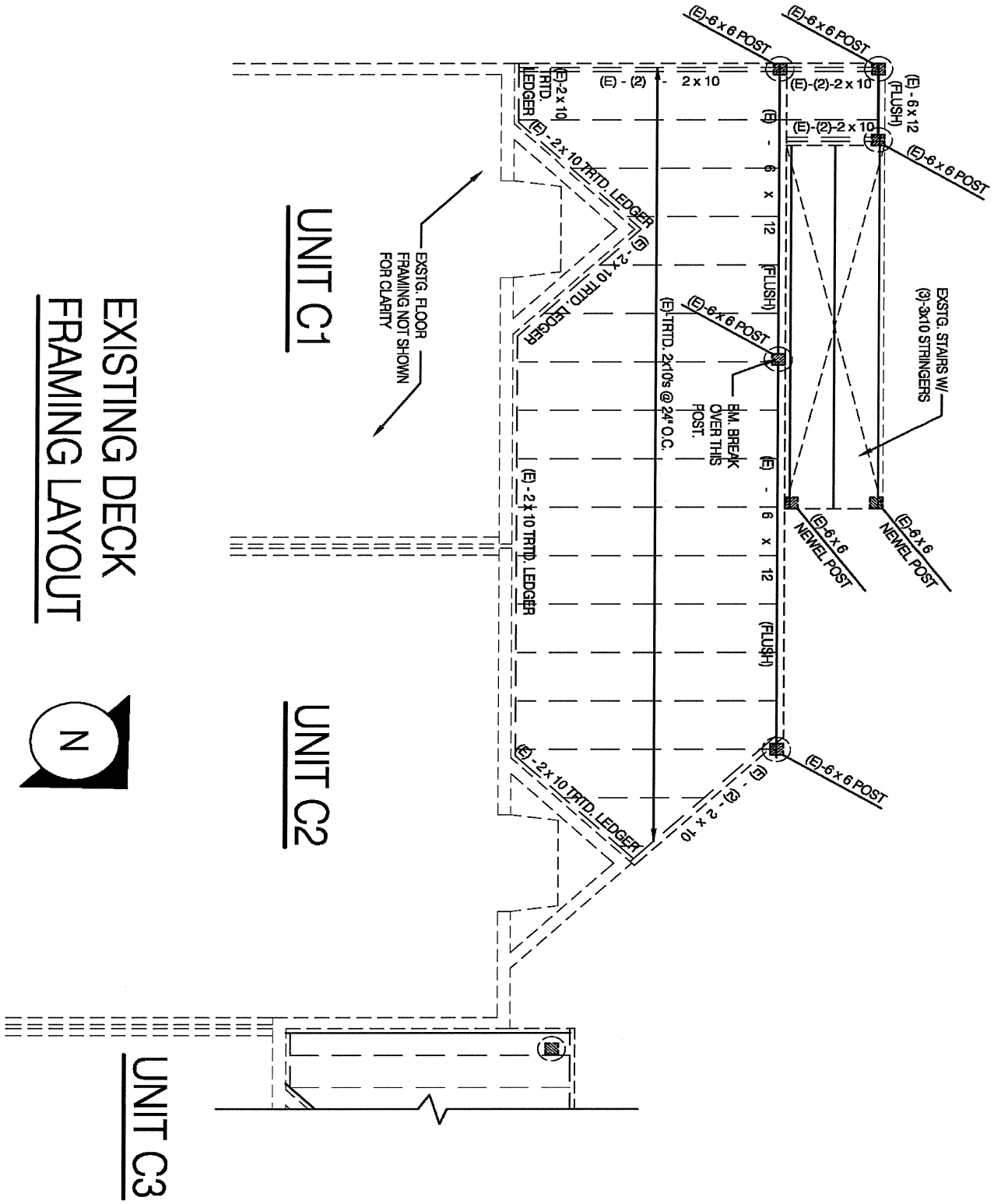

Meadow Creek Condominiums (Building C), Vail, CO **#0307-19 C**

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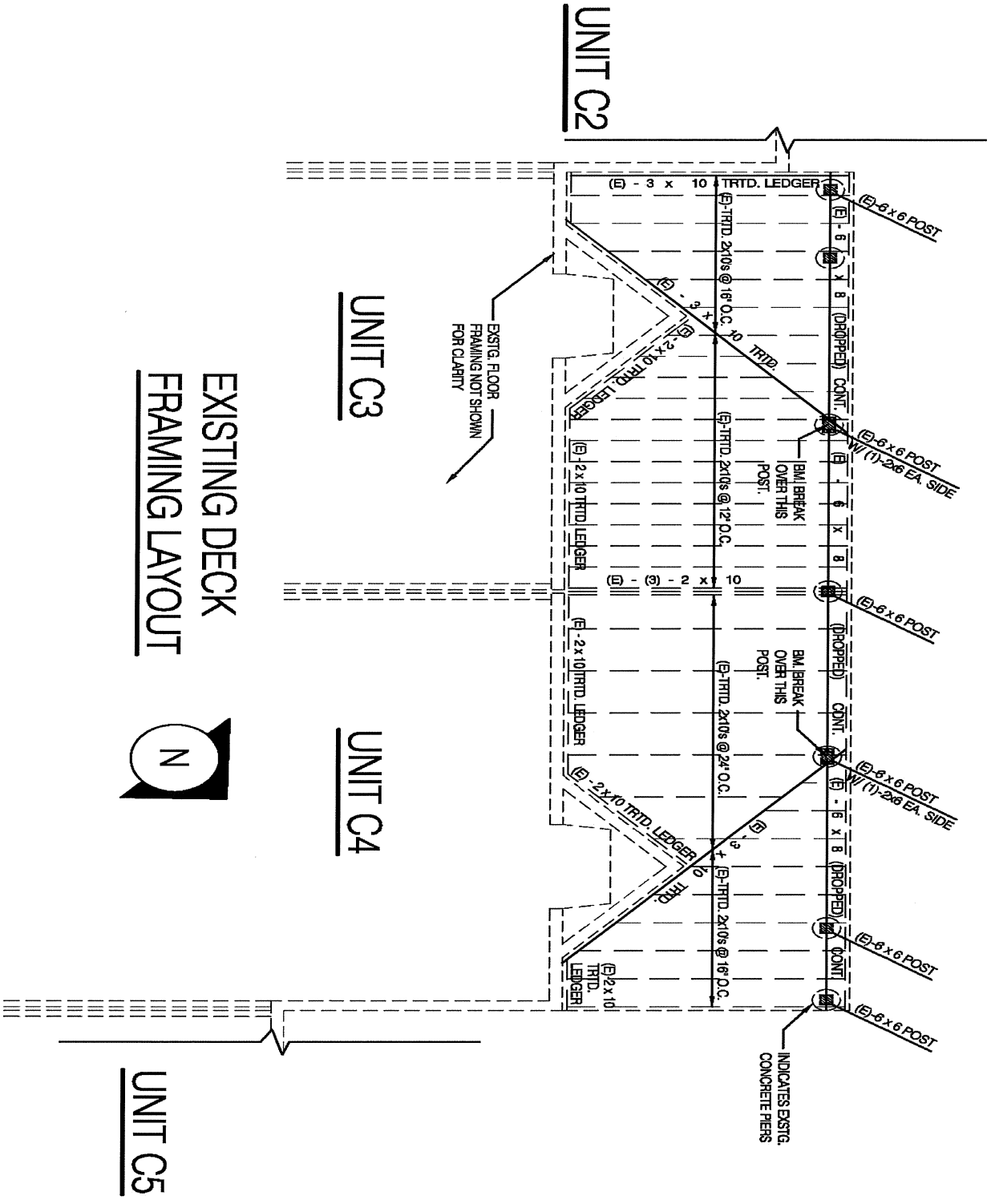

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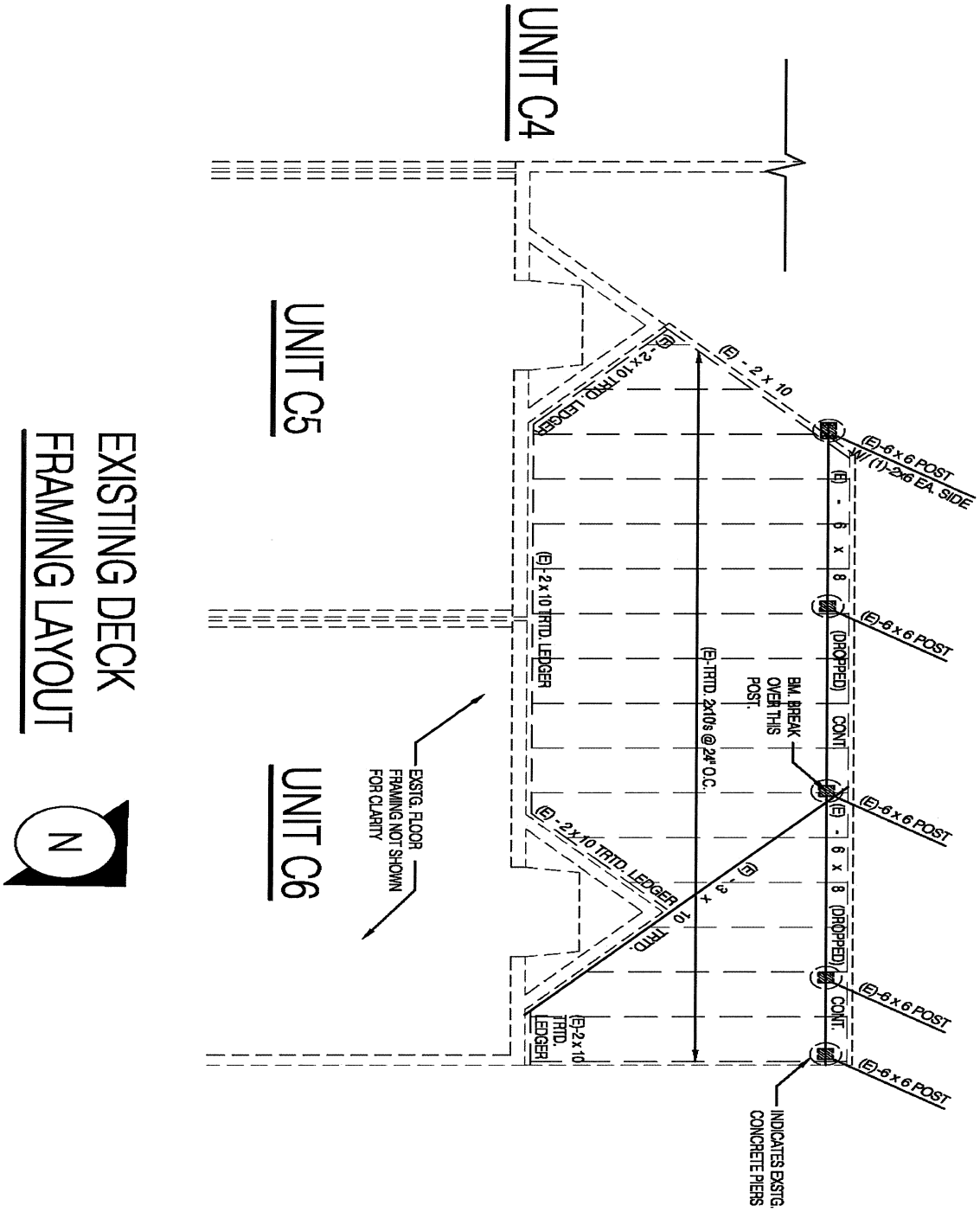
EXISTING DECK FRAMING LAYOUT



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Unit C1 & C2: The decks for these units appear to have been remodeled at some point in time. These two unit decks are separated in the middle by a framed partition wall. The deck joists are 2x10's at 24" on center spacing with 2x6 wood decking. The deck joists bear on mechanical steel hangers. The east end hangers are nailed to either a 2x10 ledger, that is perpendicular with the deck joists or a 2x10 ledger that is on an approximate 45 degree angle to the deck joists. The 2x10 ledgers appear to be nailed to the side of the building and to the bottom of an exterior wall that is cantilevered out from above. The west sides of the joists bear on a mechanical steel hanger that are nailed to a flush framed 6x12 rough sawn timber beam. The 6x12 beam spans continuously over two separate 6x6 posts. The 6x6 posts for these units bear on circular concrete piers. The 6x6 post to the far north bears on the concrete pier to the outside edge. The spans for the 6x12 beam are approximately 15'-6" and 12'-0". The stairs appear to be framed with three 3x12 stringers, one on each side of the stairs and one located in the middle, with 2x decking treads. Two of the three stair stringers appear to be attached to a (2)-2x10 beam at the top with a mechanical steel L-bracket on one side and bear on a concrete slab landing at the bottom. 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. The newel post located to the east side has soil and grass around the bottom. The stair landing at the top of the stairs is approximately 3'-6" x 3'-0" in size. The landing appears to be framed with 2x10 joists and 6x12 timbers that bear on 6x6 posts at each corner of the landing. (See Images B, C, & D)

(Image B)

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(Image C)

(Image D)

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Unit C3 & C4: The decks for these units appear to have been remodeled at some point in time. These two unit decks are separated in the middle by a framed partition wall. The decking surface for unit C3 is a composite material and 2x6 wood decking for unit C4. The deck joists are a combination of older 2x10 and newer 2x10 with an on center spacing of either 12", 16" or 24", refer to layout. 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 2x10 ledger that is perpendicular with the deck joists or toe-nailed to a 3x10 ledger that is on an approximate 45 degree angle to the deck joists. The 2x10 ledger appears to be nailed to the side of the building and the 3x10 ledger appears to be lagged or through-bolted to the bottom of an exterior wall that is cantilevered out from above every 24" along the length of the ledger. (See Image C) 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 randomly with the largest spacing being approximately 8'-6" and smallest spacing being approximately 3'-6" located at the ends of the deck. Some of the 6x6 posts appear to have a treated 2x6 stud nailed to each side of it and the 6x6 post appears to have some rot on the bottom. It appears that where the 6x8 beams bear on a 6x6 post there is a mechanical steel cap on one side. Some of the 6x6 posts bear on a mechanical steel base plate on a concrete circular pier. Some of the piers are above the grade and some are flush or below the grade. The paint has mostly peeled off the older deck joist where it had been applied. Some of the deck joists appear to be taking on a grayish weathered look. (See Image E & F)

(Image E)

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(Image F)

Unit C5: The deck for this unit appears to be similar to the plans dated 01-02-1981. The deck joists are 2x10's at 24" on center spacing with 2x6 wood decking. Most of the joists bear on mechanical steel hangers or are toe-nailed on the east end and cantilever approximately 8" on the west. The east end hangers are nailed to either a 2x10 ledger, that is perpendicular with the deck joists or a 2x10 ledger that is on an approximate 45 degree angle to the deck joists. The 2x10 ledgers appear to be nailed to the side of the building and to the bottom of an exterior wall that is cantilevered out from above. 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 randomly with the largest spacing being approximately 8'-6". Some of the 6x6 posts to the far south appear to have a treated 2x6 stud nailed to each side of it and the 6x6 post appears to have some rot on the bottom. It appears that where the 6x8 beams bear on a 6x6 post there is a mechanical steel cap on one side. Some of the 6x6 posts bear on a mechanical steel base plate on a concrete circular pier. Some of the piers are above the grade and some are flush or below the grade. The paint has mostly peeled off the deck joist where it had been applied. Some of the deck joists appear to be taking on a grayish weathered look. (See Image G)

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(Image G)

Unit C6: This deck appears to have been remodeled at some point in time. The deck joists are a combination of older 2x10 and newer 2x10 at 24" on center spacing with 2x6 wood decking. Most of the joists bear on mechanical steel hangers or are toe-nailed on the east end and cantilever approximately 8" on the west. The east end hangers are nailed to either a 2x10 ledger that is perpendicular with the deck joists or toe-nailed to a 3x10 ledger that is on an approximate 45 degree angle to the deck joists. The 2x10 ledger appears to be nailed to the side of the building and the 3x10 ledger appears to be lagged or through-bolted to the bottom of an exterior wall that is cantilevered out from above every 24" along the length of the ledger. 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 randomly with the largest spacing being approximately 8'-6" and smallest spacing being approximately 3'-6" located at the north end of the deck. It appears that where the 6x8 beams bear on a 6x6 post there is a mechanical steel cap on one side. Some of the 6x6 posts bear on a mechanical steel base plate on a concrete circular pier. Some of the piers are above the grade and some are flush or below the grade. The paint has mostly peeled off the deck joist where it had been applied. Some of the deck joists appear to be taking on a grayish weathered look. (See Image G)

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CONCLUSIONS:

At this time, I do not believe that any of the existing exterior decks on the southeast side of building C 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 deck will fail, I do feel that the existing decks are not constructed to today's building codes and current loading designs. I feel that the 6x12 and 6x8 supporting beams and 2x10 deck joists spaced at 24" on center are not adequate to support the current Town of Vail design load criteria.

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 2x10 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. Provide new 2x10 deck joists to the existing framed decks so that the maximum spacing is no greater the 16" on center.

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

3. 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.

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

1. Install Simpson LS90 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.

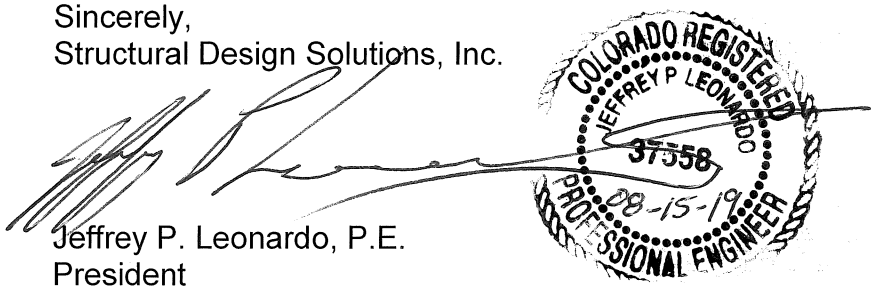
3. The area at the bottom of the stair landing should be re-graded so that there is proper clearance and drainage around the stair stinger and newel post. If this area continues to have moisture on it, it will begin to rot causing it to lose its structural integrity.

4. Install Simpson LS50 L-brackets to all sides of the stair stringers at the top landing of unit C1.

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