MEMORANDUM

OBERMEIER·SHEYKHET

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To:	David Roberts & Waterside HOA	**Date of Issuance:**	1/25/2024
Company:	Western Mountains Property Management	**Project:**	Waterside Condos Bldg. 3
From:	OS Architecture	**Project No.:**	54015
Subject:	Review of Structural Systems Letter	**File Name:**	WS3 OSA Memo – Structural Members
Attachments:	None	**Via:**	EMAIL

WATERSIDE CONDOS – STRUCTURAL BEAM SYSTEMS

Memo: Per coordination and request from the Waterside at Flathead Lake condominium association, OS Architecture has reviewed the structural letter titled "Opinion of Purpose of Exterior Deck Beam Member" dated January 10, 2024 as well as the revised letter dated January 25, 2024.

In summary, the structural engineer considers the perimeter balcony beams to be part of the primary structural framing system. All of the balcony perimeter beams and outrigger beams are integral with the rest of the building. Due to the connections of these beams to the exterior wall of the building units, any damage leading to hypothetical collapse of the balconies would cause consequent damage to the exterior walls of the units.

We note that in clarification of the revised January 25th letter, the structural engineer states that there is no concept of secondary structure within the existing configuration and connections between the balcony and building structure.

Sincerely,
Studio Obermeier Sheykhet Architecture

Jeroen Mostert
Project Manager

Cc: Derek Pumphrey, New Rome Enterprises

END OF MEMORANDUM

January 25, 2024

Obermeier-Sheykhet
1635 Blake Street, Suite 100
Denver Colorado 80202
ATTN: Mr. Alekandr Sheykhet

Re: **Opinion of Purpose of Exterior Deck Beam Member**
7175 South U.S. 93
Lakeside, Montana 59922

Mr. Sheykhet:

Per your request, New Rome Enterprises LLC (NRE) has reviewed an email sent by your office on December 20th regarding the primary purpose of the beams at the exterior decks.

BACKGROUND

The site contained four (4) multi-story, multifamily buildings; Building 3 had exterior decks that faced east toward Flathead Lake. Building 3 contained ten (10) elevated balconies with parallel glue-laminated beams that were parallel to the east-facing perimeter walls of this building. These parallel glue-laminated beams were supported by wood-sawn beams that were perpendicular to the east-facing perimeter wall (Perpendicular Beams). 2x10 wood joists were framed beneath each balcony that then supported wood sheathing and a concrete topping at the respective deck levels.

Some of the Parallel beams have evidence of deterioration as previously noted by Obermeier-Sheykhet (OS) in previous memorandums.

Subsequently, OS has been asked to discuss the function of the Parallel, Perpendicular Beams and other structural members relative to the performance of these exterior, east-facing decks as noted in the PURPOSE AND SCOPE portion of this report, below.

Photograph: East-Facing Decks of Units 105, 205 & 305

PURPOSE AND SCOPE

On December 19, 2023, OS was asked the following:

1. *Can a competent structural engineer* [provide a] *report... needed to address the following:*
   a. *Will* [the] *building fall down* [if the deck] *beam fails....*
   b. [Need to define differences between] *primary vs secondary structural members*
   c. *Structural Engineer's letter to be drafted with credentials listed*

Since NRE has provided structural opinions, calculations and details regarding the potential shoring and repairs as these noted structural members, this office shall provide the requested report to address Items [1] [a] through [c] above.

DECK STRUCTURAL MEMBERS AND DESCRIPTIONS

For clarity, the following definitions reference the Photograph shown above:

1. **Parallel Beams:** These are the glue-laminated beams that are closest to the camera in the Photograph. These Beams support the exterior ends of the 2x joists and floor sheathing for these exterior decks.
2. **Perpendicular Beams:** These are the wood-sawn beams that are placed beneath the deck partitions and beneath the exposed wood columns as seen above. These Beams support the Parallel Beams at each end of these Parallel Beams, via metal connections as seen above. These Beams are supported near the east ends by Exposed Wood Columns and at the west ends by Concealed Wood Posts at the Perimeter Wall Studs.
3. **Metal Connectors:** These are specialty-made steel supports located at each end of the Parallel Beams and are also connected to the east ends of the Perpendicular Beams, thus allowing the support of the ends of the Parallel Beams.

4. **2x10 Deck Joists:** These are the wood-framed joists located beneath each exterior deck and support the wood sheathing and the cast-in-place concrete topping at each exterior deck at Building 3. These Joists are supported at the east end by the Parallel Beams and at the west end by the Deck 2x Wood Ledger (defined below).
5. **Deck Wood Sheathing:** This Sheathing is placed on top of the 2x joists and beneath the concrete topping.
6. **Deck Concrete Topping:** This Topping, together with the water-resistive membrane beneath, is placed on top of the Deck Wood Sheathing.
7. **Deck 2x Wood Ledger:** This is a wood member that is bolted to the Perimeter Wall Studs (and / or blocking) that then supports the Deck Joists.
8. **Perimeter Wall Studs:** These are 2x6 wood members that separate the interior spaces from the exterior and support a portion of the structural loads from the Deck Joists and, by default, the Deck Wood Sheathing and Deck Concrete Topping.
9. **Exposed Wood Columns:** These are located near the east ends of the exterior decks and support the Perpendicular Beams near their respective east ends.
10. **Concealed Wood Posts:** These structural members are placed within the Perimeter Wall Studs and support the west ends of the Perimeter Beams.
11. **Cast-In-Place Foundation System:** This foundation is generally concealed and supports all of the superstructure loads from the exterior decks and the building itself, within the confines of the Perimeter Stud Walls.

The structural load paths created by the exterior decks is thus:

a) The **Parallel Beams** support the east ends of the **2x10 Deck Joists** (and by extension, the east ends of the **Deck Wood Sheathing** and **Deck Concrete Topping**) and are then supported at each end by the existing **Metal Connectors**.
b) These **Metal Connectors** are then supported by the **Perpendicular Beams**, which are then supported by the **Exposed Wood Columns** and **Concealed Wood Posts** at the east and west ends of these Beams, respectively.
c) The **2x10 Deck Joists** are supported at the east ends by the **Parallel Beams** and at the west ends by the **Deck 2x Ledger** and **Perimeter Wall Studs**.
d) The **Cast-In-Place Foundation** system then supports all of the loads identified above.

To address the questions listed in the PURPOSE AND SCOPE portion of this report, the primary[1] exterior deck structural members are thus:

1) The Parallel and Perpendicular Beams.
2) Metal Connectors
3) Deck 2x10 Joists
4) Exposed Wood Columns and Concealed Wood Posts
5) Perimeter Wall Studs

Due to the nature of the construction of these exterior decks, with beams, joists, posts / columns and other structural members listed above, the concept of 'secondary' structural members, i.e.

[1] For Clarity: The term 'primary' is utilized to discern structural members that, if structural failure of these members were to occur, would result in a minimum of a partial collapse of the supporting exterior deck.

members that would not result in a minimum of a partial collapse or localized distress, is not applicable for the description of the structural members at these exterior decks.

OPINION AND CONCLUSION

It is our opinion, within a degree of engineering certainty, that if any of the primary structural members - as listed above - experienced structural failure, the result would be a minimum of partial collapses of these exterior decks, with resulting localized collateral damage to some of the perimeter stud walls adjacent to these decks. This collateral damage would occur due to the sudden displacement of the joists and topping, with resulting localized damage to the perimeter studs.

The opinions and results described in this memorandum are based on information available at the time of the observation and preparation of this memorandum. Should additional information or unknown conditions be uncovered or made available, NRE retains the right to revise and supplement this memorandum accordingly.

In addition, this memorandum is a general summary of writings, recordings, photographs and other information, which is available for review, and placed within the job file. To the extent assumptions were made relating to the contents of this specific report, not all such assumptions are stated within this specific memorandum or in the corresponding job file. A description of such assumptions can only be identified if specific questions are directed regarding discrete issues because many of such assumptions are incorporated in the experience, education, training and judgment of personnel at NRE.

The professional opinions presented in this memorandum have been developed using that degree of care and skill ordinarily exercised under similar circumstances by professional engineers practicing in this locality. Aside from this standard, no warranty, either expressed or implied, is made as to the professional opinions expressed in this report. It is understood that NRE, is not responsible or liable for the accuracy or adequacy of a design performed by others, and that the responsibility for the original design rests with the Owner of the structure, the General Contractor, and the design professional of record for the structure.

ENGINEER'S STAMP

Observation Made By,
New Rome Enterprises LLC

Derek E. Pumphrey, P.E.

Attachments: Derek Pumphrey CV