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Commentary on Existing Tree and Retaining Wall Works at Pegasus - 18 Rock Bath Rd, Palm Beach

To whom it may concern,

PMI Engineers are engaged as the structural engineers for the new residence at the above address. The proposed works include excavation into the hillside along the southern boundary of the property.

Currently, the southern boundary is supported by a deteriorating masonry retaining wall of unknown construction and thickness. This wall, approximately 2.5 metres in height, is located beyond the boundary of No. 18 Rock Bath Road and sits within the neighbouring property at No. 16 Rock Bath Road.

The wall shows significant signs of structural failure, including severe mortar erosion and large cracks indicative of progressive forward movement. Given its compromised condition, the wall must be stabilised prior to any excavation works below it. This is essential to ensure the safety of construction personnel during the works, and the long-term safety of the residence once completed (refer to Figure 1).

A full rebuild of the wall to meet current engineering standards is warranted. However, demolition would necessitate the establishment of a temporary batter encroaching onto the neighbouring property, which would result in significant damage to their landscaping and amenity.

As an alternative, we propose stabilising the existing masonry wall with a new cantilevered concrete wall to sit in front of the existing masonry wall with any void space between the two walls backfilled to prevent the masonry wall from collapsing. This concrete wall will need to be cantilevered off a capping beam and contiguous pile wall to provide permanent support and resist the imposed retaining loads (refer to Figure 2).

Unfortunately, a tree located directly in front of the existing wall (as shown in Figure 1) obstructs the placement of the required concrete wall, capping beam and retaining . This beam is critical, as it provides the necessary overturning resistance to ensure the long-term stability of the wall.

Preserving the tree while ensuring safe site access and confidence in the long term safety of the retaining solution would require full demolition of the existing retaining wall and the creation of a temporary batter into the property of No.16 Rock Bath Road. This, in turn, would require the removal of several other trees within the boundary of No. 16 that are situated close to the wall.

We therefore propose the removal of the tree shown in Figure 1 to facilitate safe and effective works at No. 18. A replacement tree can be planted following completion of construction.

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We hope this clarifies the engineering rationale behind the proposed works. Should you have any questions or require further information, please do not hesitate to contact the undersigned.

Figure 1: Image of the current masonry retaining wall showing significant erosion of mortar, and a number of large cracks within the wall. Wall shown also in close proximity to tree preventing works.

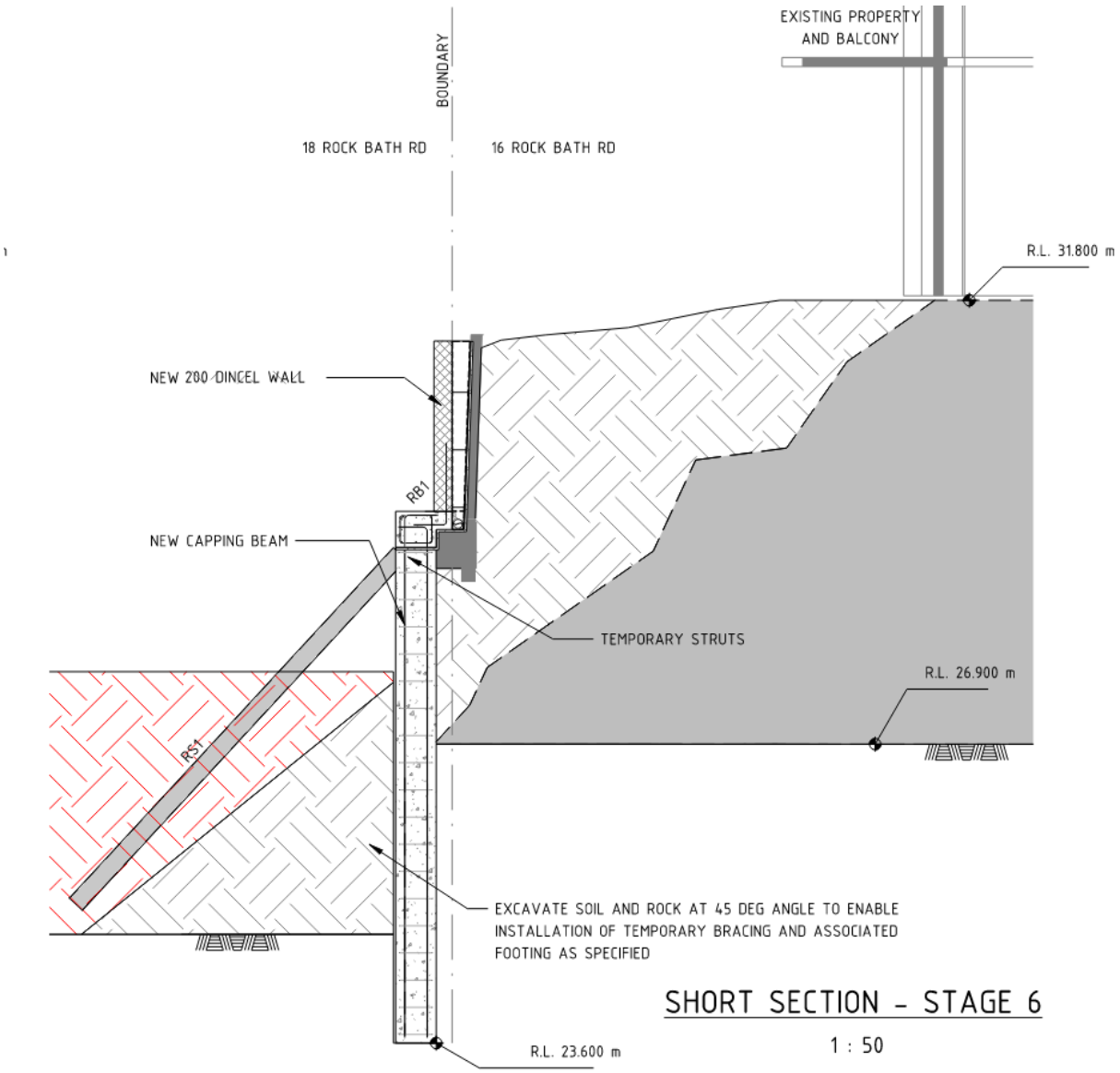

Figure 2: Proposed typical section of proposed retaining design showing Dincel wall in front of existing masonry retaining wall with gravel backfill, and required capping beam and piling structure to provide support for Dincel wall.

Yours faithfully,

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