



March 25, 2014

Mr. Dan Roth
Ditto Residential
2217 14th Street NW, Third Floor
Washington, DC 20009

RE: 1326 Florida Ave NE, Washington, DC 20002 - P2 Level Construction Feasibility

Dear Mr. Roth:

At your request, we have conducted an analysis of the cost to construct underground structured parking, focusing on the cost differences between constructing one and two levels of parking. Below is an initial list of cost factors that we have identified thus far. Most non-builders do not properly consider the dramatic differences between one level of parking and two. In particular, the deeper excavation adds risk of encountering groundwater and other soil problems, which would arise for this project, as well as complexity in the support of excavation (sheeting and shoring and underpinning). For example, a one-level excavation that needs sheeting and shoring can often be accomplished with a simple cantilevered pile-driven system and lagging. A deeper excavation, in addition to the additional square footage of support, most often requires the addition of cross-bracing (whalers), concrete heel blocks and steel kickers, or tiebacks. Tiebacks are mechanical devices driven or auger-cast into the adjacent soil to anchor the shoring to help it stay upright and retain the earth. The cost per square foot or per parking space is significantly influenced by the soil type and method of shoring. The increase in cost as depth increases is not linear, but rather more of a geometric cost increase. The same holds true for the concrete work. Cost increase for a deeper foundation is not linear.

With that as the background, here is a summary of the variables impacting this project should a second level of parking be built:

1. Additional cost will be incurred for excavating another subsurface level. More soil, more hauling and disposal.
2. Additional cost will be incurred for construction of another subsurface level: more concrete, larger foundation walls with more reinforcing steel, larger slab beams and a larger mat slab. Also, there will be more lighting, more sprinkler, more ventilation, more plumbing, more waterproofing, more concrete testing and inspections. Additional cost will be incurred to structurally support the ramp from P1 to P2, and to provide a second egress stair from P1 to P2. Code will also require an elevator to reach all levels; so an additional elevator stop will be required on P2. The cost per stop will remain relatively constant, but an additional stop will cost approximately \$25,000. For a project this size, this alone is a significant cost per space.
3. Additional time and general conditions costs will be incurred. Construction of the additional parking level will result in an additional 30-45 days of construction, which translates into approximately \$60,000.
4. The addition of a P2 level will result in a reduction of parking spaces on the P1 level to

accommodate the second egress stair and the drive aisle turn connecting to the ramp from P1 to P2. This loss of parking spaces on P1 will inherently increase the price/space on the P1 level.

Based on historical averages, the cost to construct P1 is approximately \$35,000 per space, or \$560,000 at 16 spaces. Adding a second level, and factoring in all of the considerations above, will increase the cost of the garage construction to \$52,000 per space.

Please let me know if you have any questions.

A handwritten signature in black ink, appearing to read "Jay", with a long, sweeping horizontal stroke extending to the right.

Jay Eichberg, President
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