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Memorandum

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From: Eric L. Broadhurst, P.E.

Subject: **Hollywood and Vine Apartments**
Impact and Airborne Noise Testing
CSA Project No. 06-0345

This memo summarizes the results of the acoustical testing we conducted on 4 February 2009. We measured the FIIC¹ rating of floor-ceiling assemblies between Units 358 and 254, and NIC² rating of various party partitions of Unit 358. The Code minimums are FIIC 45 and NIC 45; the project criteria are FIIC 50 and NIC 50 at living rooms, and FIIC 45 and NIC 45 at bathrooms.

We measured FIIC ratings using the provided vinyl flooring and various acoustical underlayments. With the exception of one test, the vinyl was loose laid over the underlayment. The downstairs residence (Unit 254) was carpeted and there was a dropped ceiling in the kitchen and bathroom, but not the living room or the washer/dryer closet that is open to the bathroom. Table 1 summarizes the results of the FIIC testing.

¹ Field Impact Insulation Class (FIIC) – A single-number rating that quantifies the property of a floor-ceiling construction to reduce footfall-generated noise. Increasing FIIC ratings correspond to improved impact noise insulation.

² Noise Isolation Class (NIC) – A single-number rating derived from measured values of noise reduction. It provides an evaluation of the sound isolation between two enclosed spaces that are acoustically connected by one or more paths. Increasing NIC ratings correspond to improved noise isolation.

Table 1: Results of FIIC Testing

Source Room	Receive Room	Flooring System	Measured FIIC Rating
Living Room	Living Room	Bare concrete	42
Living Room	Living Room	Vinyl glued to slab	44
Living Room	Living Room	Vinyl over Impacta VC300	64
Living Room	Bathroom	Bare concrete	42
Bathroom	Bathroom	Vinyl loose laid on slab	44
Bathroom	Bathroom	Vinyl over Impacta VC300	70

As can be seen, the tests without an underlayment do not achieve either Code or the project criterion. Any of the three tested underlayments would be appropriate for achieving the project criterion.

We also tested the NIC ratings of the party wall between Units 356 and 358, the corridor wall at the Unit 358 bathroom, and the floor-ceiling assembly between the living rooms of Units 358 and 254.

The party wall test was corrupted due to the missing entry door at Unit 356; more noise was traveling down the corridor than through the wall itself.

The corridor wall test just fell short of the Code minimum, but when furnished we expect Code to be achieved.

The floor-ceiling assembly achieved NIC 60, which is well above both Code and the project criterion.

Should you have any questions, please feel free to call.