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Structural
The Village at Waugh Chapel –
Senior Living Facility III
2614 Chapel Lake Drive
Gambrills, MD 21054

Pro-Con Structural Study of Alternate Floor Systems

Executive Summary

Included in this report is an analysis of the lateral load resisting system for The Village at Waugh Chapel – Senior Living Facility III. As part of the report, the layout of the current shear wall locations was shown within the floor plan of the building and calculations done to determine the adequacy of each member. The layout of the floor plan is the same for each floor so the shear walls fall directly on top of each other providing the equivalent of a wall the full height of the structure. This provides a great deal of added rigidity for the building. Also, the floor trusses span across the shear walls which puts extra load across the wall and helps combat the overturning moment about the wall. The shear wall placement is also of great advantage because they are located at the party walls which separate the apartments from each other. These walls are actually the thickness of two walls placed side by side which increases rigidity and allows each wall to take more load and eliminate the need for intermediate shear walls in the floor plan which cuts down a great deal on construction costs and time. Because of the layout of the floor plan and the material being used in the construction of the building, this method of lateral system is the obvious choice. Each apartment is approximately the same dimensions which spaces the shear walls at equal intervals and prevents building torsion from becoming a problem because the lateral loads are distributed evenly to each wall in each direction. Another advantage that the building layout gives to the construction is the overall architecture of the building has been repeated many times and the way the building will respond to the lateral loads can be anticipated. This gives the engineer a great deal of confidence that the design of the lateral system will work and no additional time will need to be taken to try to predict reactions that have not yet been analyzed.