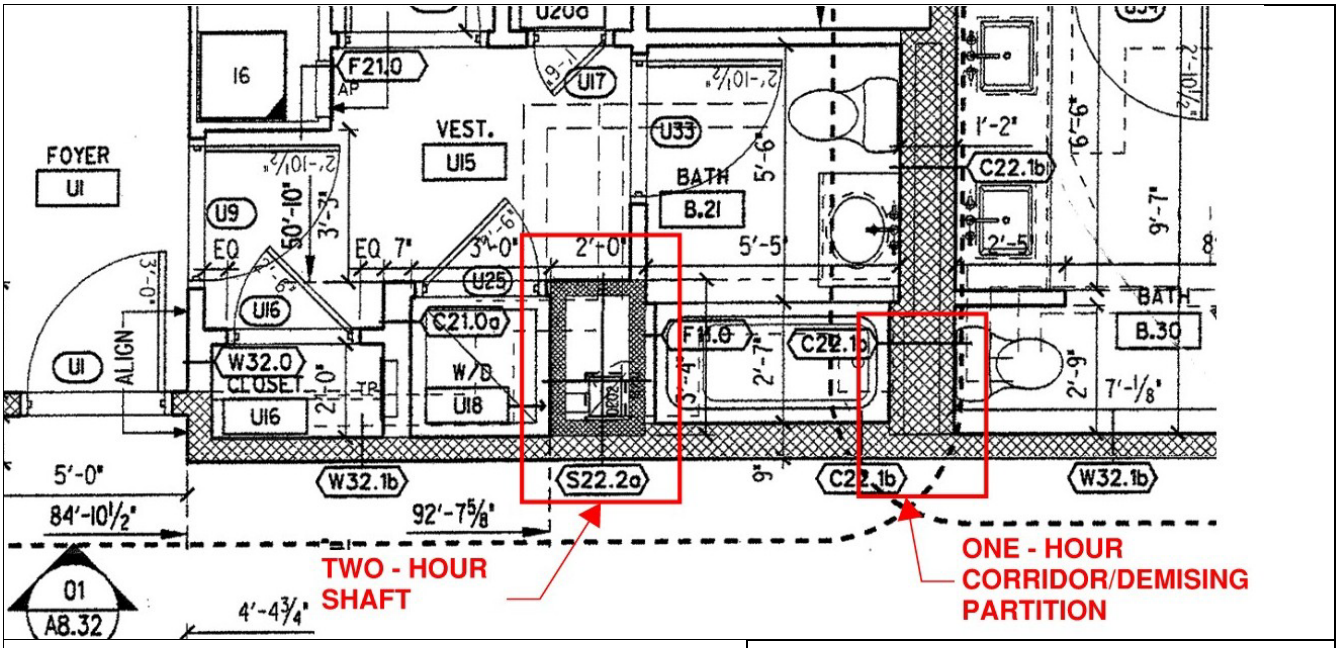
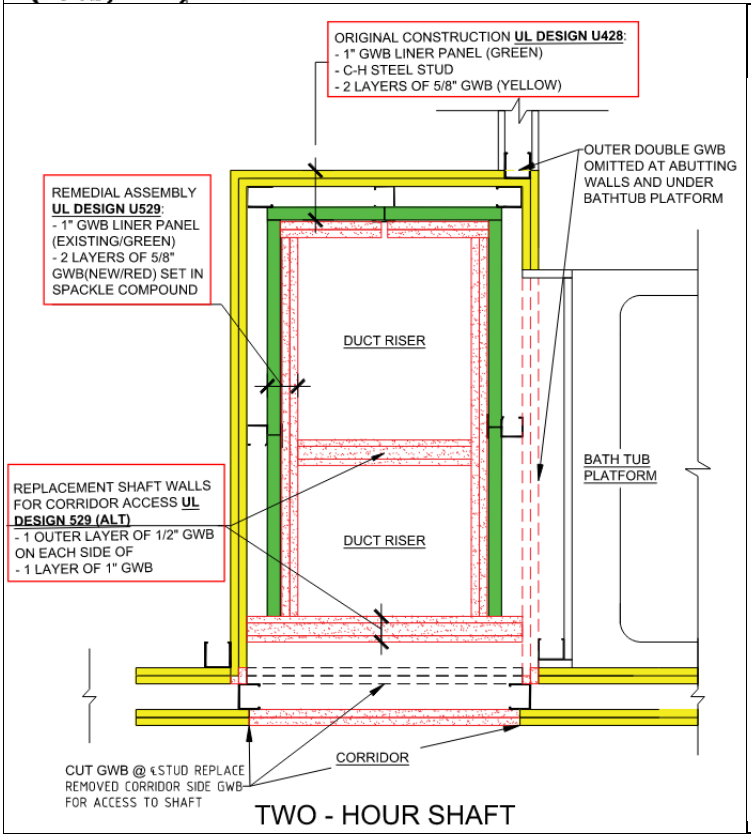
DAVIDSON & ASSOCIATES

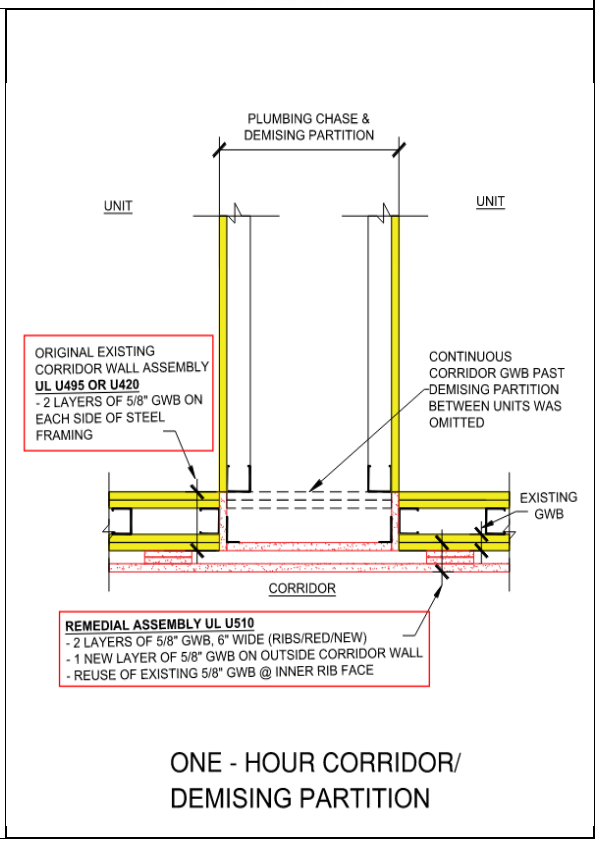
CONSTRUCTION ANALYSTS, INC.

Georgetown Condominium

Fire Rated Assemblies Forensic Investigation & Construction Litigation Support







CHANGING FIRE RATED ASSEMBLIES REDUCED COST BY 70%

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The subject building is a residential condominium located in Georgetown at what was referred to as the most prestigious address at the time. D&A was retained to perform a typical transition warranty analysis. At the time the association and management did not have any major concerns. The board was requesting this study as standard due diligence prior to reaching the statute of limitations on common element warranties. As part of our standard scope of work, we review the construction drawings for potential design issues. This review raised concerns regarding constructability of the selected UL Design assemblies for the 1-hour fire rated demising partitions and the 2-hour fire rated shafts. Due to their frequent close proximity, there was insufficient clearance to install the GWB at the adjacent faces. Also, the junctions and integration between assemblies were complicated and the drawings did not include any details on how these were to be implemented. During the transition analysis the GWB was removed at two locations from the corridor side of the demising partition at the junction with the 2-hour shaft and abutting platform tub. At both locations it was discovered that the GWB was omitted or discontinuous at the shaft and unit side of the demising partition. D&A performed borescope probes at a cross sampling of locations sufficient for litigation confirmation where GWB constructability design issues were suspect. This substantiated and documented that the concealed deficiencies in the fire rated assemblies were systemic.

A nationally renowned fire engineering firm was retained for litigation purposes to determine the validity of D&A's analysis and to determine a remedial scope and design. Their analysis concurred with D&A's conclusions. Their remedial recommendations, which they must certify as code compliant, was to deconstruct these areas and reinstall per the original design. The vast majority of the deficiencies were in or near the corridor wall on the unit side. This would require extensive demolition from within the unit forcing the residents to move out for extended periods of time. As a result, the claim was increased to $30 Million.

Challenges and Value Added:

- D&A Borescope Equipment Abilities: D&A borescope equipment has customized telescoping horizontal support that can extend up to six feet. **This permitted most probes to be accessed from the corridor side only without compromising the ability to view multiple sides of shafts, set back wall junctions, and past the full depth of tub platforms.**

- In-House Borescope Availability: The integrity of fire rated construction is inherently a concealed condition. With the equipment's continuous availability, the analysis was more accurate and cost effective by performing multiple site visits, the scope and locations of each building upon the previous findings. **This culminated in providing a tour to defense experts to substantiate the findings using D&A equipment. The view range of the defendant consultant's equipment was too limited to be conclusive.**

- Alternate D&A Remedial Design Resulting in Settlement: The remedial design had to be in accordance with a tested and certified by Underwriters Laboratories (UL) in order to have safe harbor for code compliance as a stipulation by the fire engineering consultant to provide the required certification. The vast majority of the deficiencies with the assemblies in close proximity to the corridor demising partitions were the outer GWB face on the unit side was omitted or discontinuous. D&A's remedial approach was by access through the corridor only. To incorporate the intact inner layer into a different UL Design that did not include the defective outer layer. **The use of these UL certified alternative assemblies was accepted by the fire engineer without needing access through the units, which resulted in a savings estimated at 70%. The design resulted in a cash settlement that was very favorable to the association.**

    - The corridor walls (UL Assembly U-495) are designed with two layers of GWB on each side of the steel framing. The omitted and discontinuous GWB was always on the unit side. The corridor side is exposed and therefore continuous. D&A's alternative was to modify the wall to comply with UL Design U510 which excludes the defective studs and unit side GWB and adds one layer of GWB over GWB furring on the corridor side.
    - 2-hr shaft (UL Assembly U-428) is comprised of a 1" thick GWB interior (which is properly installed), metal studs and two outer layers of GWB (which are discontinuous or omitted). D&A's alternative was to modify the shaft to comply with UL Design U529 which excludes the outer double layer and laminated two GWB layers to the inner face of the core board. A mockup of this was performed in the presence of the fire engineer to confirm that this modification could be achieved with access only from the corridor without disturbing the inside of the unit.