**Bob:**

**You have requested that I review and comment on the responses received from Buzz Hughes of The Burt Group relative to the planned improvements at 916 Congress. The responses from Mr. Hughes are related to the email message I forwarded to Mr. Steve Sadowsky on March 13, 2017. The email included various items affecting the structural integrity of the masonry common wall between your building at 914 Congress and planned improvements at 916 Congress. The items I noted in the email do not appear to be fully addressed, following my review of the COA permitted drawings. As your structural consultant advising you on the impact of the planned improvements on the load bearing masonry common wall, the following are my responses to the responses from Mr. Hughes:**

**1. Regarding documentation of pre-construction conditions, Mr. Hughes proposes a video survey of both sides of the masonry common wall, to serve as a baseline for future comparisons. This may be acceptable provided the video survey is taken from a relatively close vantage point and that there is clear delineation as to where the documentation occurs. In my opinion, taking a video survey more than a few feet away from the wall will not provide sufficient documentation in that mortar or masonry cracks and/or distress may not be readily discernible. Assuming some existing cracks or distress exist, how will it be documented? It seems to me that anything that is discovered during the video survey will require further documentation such as close-up photographs as well as measurements so as to provide sufficient data to compare to in the future. I suggested that crack monitors be considered where pre-construction distress occurs as a way of documenting whether future movement occurs. Mr. Hughes states that they do not think that crack monitors are necessary as The Burt Group will address any damage to the wall that is apparent when compared to the video survey baseline. This underscores the importance of making sure the initial video baseline is as delineated as possible so as to avoid any debate as to whether distress existed pre-construction or occurred during construction. I suggest that we review the video survey when it is available to determine if it provides sufficient delineation.**

**2. Regarding "water resistant protection", the COA permitted drawings refer The Burt Group to architectural drawings. I was unable to locate architectural drawings which addressed this item. The mitigation plan states "water infiltration through the common walls to The Burt Group's knowledge has not been an issue prior to starting demolition and construction and is not expected to be an issue during construction". The big difference being that the existing masonry common wall currently is not an exterior condition; when demolition of 916 Congress occurs there will be nothing to prevent water from running down the then exterior face of masonry common wall. It seems to me that The Burt Group might want to be pro-active and consider identifying some temporary means of collecting and diverting water from a heavy rain event prior to that event rather than re-active after the event occurs.**

**3. In terms of shoring of the masonry common walls, I reiterate that sheet S0.01 does not reflect a complete design for the shoring system. The shoring note on sheet S0.01 states "5 inch standard pipe horizontal braces at 5'-0" max by others (size and spacing provided for pricing). Alternate designs by bracing engineer may be acceptable and shall be reviewed by Cardno Haynes Whaley (CHW). Locate bracing elevation within 18" of existing floor or roof diaphragm."**

**Sheet S0.01 requires The Burt Group to submit bracing shop drawings and calculations for bracing members, connections, and assembly repaired and sealed by a registered engineer for the Engineer of Record (CHW) to review prior to fabrication and installation.**

**Until the final shoring design is provided and reviewed by CHW, I cannot review and offer an opinion as to whether the shoring design appears sufficient.**

**4. In terms of vibration and/or movement during the drilling of piers into limestone, Mr. Hughes states that vibration is unavoidable during the pier drilling process. I do not necessarily disagree but raise the question as to how will it be monitored? Will someone be responsible to observe the walls during pier drilling to determine if distress occurs? If distress of the masonry common walls begins to occur during pier drilling operation, what action will occur? Will the pier drilling cease? Will additional**

**shoring be installed? Will an alternate pier approach (larger diameter, lesser or no penetration into limestone) be considered? Other alternatives?**

**5. In terms of vibration and/or movement relative to overall construction, Mr. Hughes states that substantial movement of 914 Congress is not expected. What is the plan if movement does occur? How will it be monitored? How often will the condition of both sides of the masonry common wall be assessed by The Burt Group? Are they expecting only you to notify them of issues that you become aware of, or will they be performing periodic assessments of both sides of the wall? I believe there needs to be a thorough understanding of what the on-going assessment process will entail.**

**6. In terms of accessing the drill rig to the lower level, Mr. Hughes states that a ramp will be constructed from the alley side down to the lower level and no shoring removal is expected in order to drill piers. However, the length of ramp will likely be 25 to 30 foot horizontally which will likely interfere with 5 to 6 of the horizontal shoring braces, depending on the height of the drill rig. What is the plan when the braces are removed to allow the drill rig to navigate down and up the ramp? What alternate means of shoring of walls will be utilized while drill rig is lowered or raised? A thorough plan and approach must be developed that assures the integrity of a shoring plan during the lowering and raising of the drill rig or any other piece of large equipment.**

**It appears the ramp will likely be constructed over 4 of the new piers at the lower level. Is the plan to deconstruct the ramp after the drill rig is lowered so that access to the 4 western most piers is realized, and then reconstruct the ramp to allow the drill rig to be removed from the lower level? If so, is there sufficient clearance beneath the remaining horizontal braces for this to occur?**
**I realize this is more of a Contractor's methods and means of construction but some of this could have an impact on stability of the masonry common wall.**

**I hope that my responses to the responses received from Mr. Hughes help to convey my concerns regarding the structural integrity of the masonry common wall. Please let me know if you have any questions or wish to discuss in greater detail.**

**Sincerely,**

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