CERTUS
STRUCTURAL ENGINEERS

June 23, 2022

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RE: 735 S Kansas Ave – Topeka, Kansas
Structural Building Condition Assessment

CERTUS SE Project Number: 01190014.100

Lauren:

We are providing this condition assessment of the subject property at your request. We have visited the property multiple times over the last few years, but most recently on June 15, 2022. Herein we summarize our findings as well as note structural limitations to consider in developing the property.

FINDINGS:

The building located at 735 S Kansas is a single-storey over a full basement, measuring approximately 25ft wide and 75ft deep, with frontages along Kansas Avenue and 8th Street, respectively. The building walls terminate at roughly 25ft above grade. The current above-grade structure was constructed in the 1960's. The basement walls are likely original to the building as constructed near the turn of the 20th century.

The roof of the structure is constructed of steel roof deck, supported on open-web steel joists (OWSJ's). The OWSJ's span east-west, supported by concrete masonry (CMU) walls at the east and west ends of the structure and by two braced steel frames in-between. A significant portion of the roof deck is exhibiting corrosion, some areas of which have rusted completely through. The steel framing still appears to be in fair condition.

The above-grade portion of the east, south, and west walls are constructed of CMU. Steel lintel beams are present in the south and east walls to support the wall construction over the numerous wall openings. The CMU walls are in fair condition.

The main floor construction consists of a concrete slab, poured on steel form deck, supported on OWSJ's. Generally, the OWSJ's span north-south, bearing on the south basement wall, an intermediate steel beam and column line, and again on the north basement wall. There is a large vault located in the north central area of the basement, with walls of masonry construction, that also support the floor construction above. The main floor construction is in fair condition and is adequately sized to support the live load requirements for most occupancies.

The basement walls appear to be original to the structure that existed before the 1960's rebuild. They are generally of stone masonry construction. There is evidence of significant water seeping into the basement through the walls, especially along the west wall. Other than the water seepage, the walls and concrete floor slab are in fair condition.

CONSIDERATIONS:

It is my understanding that the owner desires to repurpose the property with restaurant occupancy on the main floor, as well as on a new second floor and rooftop patio. The existing structure cannot accommodate this type of occupancy without significant, likely cost prohibitive, improvements. We feel the best approach would be to reconstruct this building to adequately and efficiently support the proposed use.

The existing roof joists and supporting steel frames, are rated only for roof live loads. A rooftop patio is not feasible without significant reconstruction, the magnitude of which is likely cost prohibitive. Similarly, the steel frames are unable to support the addition of an intermediate second floor within the existing building shell without significant reconstruction.

Additionally, we are not confident that the existing basement walls can support the addition of two additional occupied levels. Although they are in fair condition, considering their age, we have no record of what they were designed to support. It also seems logical that with the extent of reconstruction warranted for the proposed remodel that a new, dry concrete basement is justified.

Should the owner choose to forego the proposed second floor and rooftop additions and only remodel the building in its current configuration, a few things should be considered. The roof deck should be replaced in its entirety, as it is significantly corroded. Additionally, we recommend that a groundwater collection system be installed on the exterior of the basement walls to mitigate water seeping through the walls and into the basement.

In summary, the structure located at 735 S Kansas Avenue, although generally in fair condition, has limited capacity for use in its current configuration. We feel that reconstruction of the entire structure is warranted to efficiently accommodate the owner's proposed remodel.

We hope you find our report useful in your evaluation of the subject property. Please reach out to us if you have any questions regarding our findings noted herein.

Sincerely,

Certus Structural Engineers
Toby R Taggart, PE