Keystone Structural Solutions
Consulting Engineers

March 28, 2016

Mr. Mark Edelmann
EPM Architecture
185 Bradford Road
Suite 3
Bradford Woods, PA 15015

Re: Structural Condition Survey
Altmyer Barn
KSS No. 16052

Dear Mark:

At your request, Keystone Structural Solutions (KSS) conducted a structural condition survey on Thursday, March 3, 216. The purpose of a structural condition surveys is to visually observe a building and note construction defects, components that seem to exhibit less than expected service life, or systems that have been poorly maintained. They are non-invasive and non-destructive in nature. While at the site, I did not remove panels or covers, and did not enter confined crawl spaces to access any portion of the building structure. Condition surveys are not intended to address routine maintenance items or develop detailed plans for identified problems.

I observed 4 buildings. Building 1, the barn is a two-story structure with a generally rectangular footprint of about 50 ft. by 32 ft. It is a wood, timber framed structure. Although old, the building is in relatively good condition. The roof is much higher than the first floor, so, I couldn't see the structural members up close. Nevertheless, I didn't see any major defects or anything that caused me concern.

There are various mezzanines above the first floor that I understand will be removed.

While standing in the basement, I could see the first floor framing much better. Again, I didn't see any major defects, but, I did see about 8 wood beams that are cracked. See Photo 3 of Appendix One for a typical condition. This is likely due to the age of the building rather than the members being overloaded. In fact, according to my preliminary calculations, the floor structure is adequate to support at least 100 PSF, which is more than enough for use as a gathering space. Additionally, given its past use, the floor structure likely supported more weight than is required by code for a gathering space. However, I do recommend that the cracked beams be repaired prior to using this as a gathering space. The repair involves injecting wood glue into the cracks.

Buildings 2 and 3 are one story structures. Building 2 has a footprint of about 39 ft. by 28 ft. and Building 3 has a footprint of about 31 ft. by 22 ft. Both building structures consist of perimeter masonry walls that support wood roof framing, although some of the roof framing of Building 2 is

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covered. Building 3 is an open structure with no wall on the south side. I didn't see any concerning deterioration of Building 2 except for vegetation growing on the north wall.

Building 3 has a large vertical crack in the east side wall and horizontal crack in the back north wall. See Photos 10 and 11. The walls are above grade, so, the only load on the walls is wind. It is likely that the cracks formed because of building thermal movements and worsened due to freeze/thaw cycles. The cracks can be repaired by repointing. However, if the areas re-crack, then, more substantial repairs may be needed.

Building 4 is a two-story structure with a footprint of about 39 ft. by 22 ft. This building has perimeter masonry walls with interior wood framing. Although I didn't see any concerning deterioration, the second floor structure is relatively skimpy. The floor structure consists of 2x8 at 24" and spans about 11'-6". The calculated live load is only about 20 to 25 PSF, rendering it relatively useless.

I trust that this brief report is adequate for your needs. Please don't hesitate to call if you have any questions or if you need any other information.

Sincerely,
Keystone Structural Solutions

Tony L. Moscollic, P.E.
President

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APPENDIX ONE - PHOTOGRAPHS

Photo 1 – Barn Roof Structure

Photo 2 – First Floor Framing

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APPENDIX ONE - PHOTOGRAPHS

Photo 3 – Crack in First Floor Beam

Photo 4 – Vegetation on Back of Bldg. 2

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APPENDIX ONE - PHOTOGRAPHS

Photo 5 – West Wall of Bldg. 2

Photo 6 – Wood Roof Framing of Bldg. 2

APPENDIX ONE - PHOTOGRAPHS

Photo 7 – Structure Covered – Bldg. 2

Photo 8 – Open South Wall – Bldg. 3

APPENDIX ONE - PHOTOGRAPHS

Photo 9 – Wood Roof of Bldg. 3

Photo 10 – Horizontal Crack – Back Wall of Bldg. 3

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APPENDIX ONE - PHOTOGRAPHS

Photo 11 – Vertical Crack – Side Wall of Bldg. 3

Photo 12 – Second Floor Framing of Bldg. 4