



18 December 2020

6825 Silver Ponds Heights #102
Colorado Springs, CO 80908
(719) 481-4560

Deborah Ritchey
17104 Goshawk Road
Colorado Springs, Colorado 80909

Re: Engineering Evaluation of Detached Structure, 17104 Goshawk Road, Geoquest #20-1162

Dear Deborah,

Per your request, we visited your home at the above location to look at an existing detached structure on the property. Per El Paso County Tax Assessor records, the residence was originally built in 1987. Per the Pikes Peak Regional Building Department (PPRBD) online database, a number of permits have been recorded for the address, but the detached structure was not permitted due to it being originally an agricultural use structure.

The drawings you provided us for the detached structure are dated March 1997. The design is by Lester Buildings or Butler Manufacturing Company. The drawings list Hammers Construction as the dealer for the project. No permits were issued in 1997 or 1998 for this building, so little is known about it outside of the drawings. No interior finishes are shown on the drawings, only agriculture use areas.

At the time of our inspection the building had sections of the main floor and upper level finished, but much of the building remains in the original unfinished condition. We looked at the existing framing and the drawings to determine any structural issues involved in converting the structure to a wedding event venue.

1. The floor framing is supported by a ledger to the structural columns with four 16d nails. This, for a span of 12' between the columns, is not adequate. Also, the single 2x12 ledger acts more as a beam than a ledger and is not adequate for the linear loading on the member.
2. The roof rafters are single 11-7/8" LVL's spaced 12" O.C. and were apparently designed for a 20psf snow (or possibly total) loading. The current requirement for snow load is 40psf with a dead load of 15psf, which means the existing rafters are well undersized.
3. The floor joists for the upper level are adequate.
4. The 17" diameter foundation pads under the structural columns are not adequate at any soil bearing we currently assign, 5,000psf maximum. No soil test is available to determine the actual size required, but since the structure was initially built without permit as an agriculture building this was not required. The age of the main house is such that no soil test would likely have been performed.

Several non-structural issues are also present. This is not a comprehensive list, as we are not qualified to comment on electrical, mechanical, or plumbing code issues. It is likely that a number of upgrades will be required to meet current codes in these areas.

1. The bathrooms are not Americans with Disabilities (ADA) compliant. Since you are planning to change the use of the facility from residential to commercial, it is unlikely this requirement will be bypassed.
2. The perimeter of the building does not have a frost barrier for the foundation or the interior slab. Normal frost requirements are to place a 30" deep foundation or rigid R10 insulation to a depth of 12" and neither of these are apparent.
3. The insulation for the entire habitable portion of the building is likely not adequate to meet the R21 wall insulation and R49 insulation for a newly constructed building.
4. Conversion of the structure from residential to commercial normally requires completion of a Code Study form.
5. The septic system calculations provided by JDM Consulting, LLC indicate the system design is adequate for up to 90 persons in an event setting, but does not include the preparation of foods or the cleaning of dishes associated with any event.

Since the structure has been in place for approximately 23 years and is performing well, we feel it would be appropriate to request a variance of the structural issues involved. The lack of perimeter insulation might be an exception to this, as it creates a danger of slab movement as well as increases the cost to heat and cool the facility. The final decision on these issues is up to the Pikes Peak Regional Building Department (PPRBD). If you wish for us to provide a set of specific recommendations to remedy any of the structural issues, we would be happy to do so but suggest you wait until a variance has been approved or denied.

Please feel free to contact us at (719) 481-4560 if you have any questions.


Charles E. Milligan, P.E.

