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July 5, 2006
#06245

Sharon Backus
General Manager
Star Valley Ranch Association
P.O. Box 159
Thayne, WY 83127

Re: Administrative Office, Cook Shack, Silo, Barn, Maintenance Shed

Dear Ms. Backus,

On the 5th of this month I had the opportunity to look at five buildings located in the Star Valley Ranches subdivision. These included the Administrative Office, Cook Shack, Silo, Barn and Maintenance Building. The purpose was to answer your three main questions with respect to each of the buildings. Here are the questions that you needed as stated in your letter dated June 5, 2006:

1. Are the buildings structurally sound? Are they usable as they now exist or are there safety factors that dictate otherwise?
2. Could the sound buildings be rehabilitated into facilities that could be used all year instead of just in the summer or would it be more cost effective to erect new structures to replace them?
3. Is it feasible to move the existing Maintenance Building or would we be better advised to raze it and erect a new one?

Administrative Office- This building is in the best condition of the five with no apparent structural problems visible. However, there is one area of the building that has limited capacity and that is the exterior deck. A brief numerical analysis indicates that the exterior deck over the lower offices can only safely support a snow load of 75 psf. Snow loads of 100 psf or more are possible at the Star Valley Ranches. Therefore, when the snow depth exceeds six feet the excess snow should be removed. A brief numerical analysis and brief visual review indicates that the Office building itself will perform safely in the winter with no additional structural changes required. It should be noted that some maintenance to the exterior roof for the shingles and vent openings is needed.

Cook Shack- This building had some obvious problems, beginning with the roof. There is an obvious sag in the ridge line and water stains on the interior from a leak in the roof. There is no access to the attic space to visually determine the roof framing. Therefore, the

framing was estimated based on the size of the rafter tails. A brief numerical analysis indicates that the roof framing is inadequately sized to safely support the potential roof snow loads. Also the older portion of the building has several structural problems that include inadequate shear wall and extensive rot at the base of the walls and columns. Based upon the brief inspection it appears reasonable to expect that it would be more cost effective to replace the older part of the building with a new building than to make the required structural improvements. The newer portion of the building is currently in need of maintenance, but can be salvaged for future use. The older portion is safe to use during the summer based on its history of performance. However, it is recommended that it not be used during the winter in its present condition.

Silo- Several of the second floor framing beams have failed and are currently being held together with metal strapping only. This is a dangerous condition and as was recommended to my hosts at the time of my visit, no further use of this floor with the failed beams should occur until the beams have been replaced. The third floor had a beam which is also showing signs of failure and this beam should also be replaced. With regards to the other floor beams, there are no apparent failures and a brief numerical analysis indicates they should be able to safely support a 70 psf live load which is adequate for most uses. It should be noted that by current standards a restaurant loading or an assembly area requires a 100 psf load capacity. Therefore precautions should be taken to not overload the floor. It is imperative that the floor beams be replaced immediately to continue its use. An investigation into any heavy concentrated loads above those beams should also be done to avert any other future problems.

The roof structure appeared to be in the best condition with no visible signs of failure or problems. The rest of the floor framing and support columns are in good condition with the exception of the exterior log columns running the entire height of the Silo. These columns are very weathered, even with the new paint job recently applied. The bottoms of the columns are buried in the soil or are sitting even with grade with signs of rot. The main structure is tied to these columns with minimal lag screw connections. A more in depth inspection would be required to determine the extent of the rot at the foundation connections and others not visible during the site visit. The Silo will require extensive structural work to bring the framing up to current codes. Once the failed floor beams are replaced and the reasons for their failure identified it will be safe to use those particular floors.

Barn- The roof structure and walls appeared to be in good condition structurally and appear to be performing adequately at the present time. The floor structure appeared to be performing good without any signs of excessive stress. However, a quick numerical analysis indicates that the floor has a capacity of only 40 psf live load. For new construction, the current building codes recognize a safe load capacity of 100 psf. For an assembly area (and or dance floor, etc.), to upgrade the floor capacity an extra floor joist between the existing will need to be added, making the joists 12" o.c.. Also, the timber beams will have to be built up or deeper beams will have to replace the existing. The beams to column connections are not code compliant and will need to have steel brackets added. The brief numerical analysis also indicates that the lower roof at the back of the

Barn has undersized joists and undersized roof beams which can not safely support the potential roof snow loads.

Despite the Barn deficiencies, there are no signs of failure. The Barn is performing at the current time and does appear to have a good history of performance. The building can be upgraded cost effectively versus building a new building of the same size.

Maintenance Shed- The maintenance shed appears to be in good condition structurally with no obvious sign of any structural problems. After consultation with Lemon Movers here in Idaho Falls, with respect to moving the building, they would expect to charge approximately $20,000. This is a ball park prices without a site visit from the movers nor an idea of the route and distance to be taken.
Moving the maintenance shed would most likely be cheaper to build a new one.

In general, if the building does not show any signs of failure and has a good history of performance then it is generally considered safe for its occupants even if it is "under structured". This assumes no change in loading and no abnormal loading. When a modification or upgrade is made to the structure then those improvements and any other areas that are affected must be brought up to the current building code. Keep in mind that these changes are not restricted to the structure and may include mechanical, electrical or any other items.

The visit consisted of visual observations only, made solely to look at the overall structural adequacy of the five buildings listed above. Neither the visit nor this report is intended to cover other structural aspects of the five buildings, nor mechanical, electrical, or architectural features. If there are any questions, or if I can be of further assistance, please don't hesitate to call.

Sincerely,

Darin Geisler

Darin Geisler, P.E.

Phone Call to Darin Geiler G & S Structural Engineers
July 24, 2006
208-523-6918

Notes:
Discussed his visual inspection report and the safety of the Silo, Barn and Admin Bldg. Explained the buildings were built to the standards existing at that time and that we are in the process of determining whether they should be replaced with structures suitable for year round use, repaired, rehabbed etc. Also emphasized that we are concerned about potential safety hazards and would like to repair them so they are safe to utilize.

- In his opinion there are no safety problems with the Admin. Bldg.

- Silo – what he remembers is that the beam under the 2nd floor must be replaced and the need to check on beams under any heavy weights (i.e. freezer, stoves etc.) in the restaurant.

- Each floor of the Silo is more or less independent as he recalls.

- There is a concern that the condition of the base of the outer supports (telephone poles) is unknown as is the base of the Silo.

- Barn is okay except for large gatherings.

- Can't make recommendations as to repairs (except for broken beam) without further examination.

- I asked if he could make another trip and satisfy some of the questions remaining.

- Says his boss (Richard Schere) is more experienced than he and better able to envision needed repairs. He will have Schere call me as he is usually here or in Jackson on Thursday and Friday.