



~~HISTORICAL~~

596 ARVITA COURT
FAIRBANKS, ALASKA 99712
(907) 378-4663 Fax (907) 457-4919

February 27, 2011

To: ~~Charles Deakoffe~~
C/O: Selling Licensee: ~~Raymond [redacted]~~
Listing Licensee: Audrey Faldoe, Meyeres Real Estate

Re: Engineering report for the home at 3245 Repp Road, North Pole

This report was prepared for you after my inspection completed February 21, 2011. The structure appears to be in a similar condition as found in my last inspection of these premises when I checked it for Fabian and Amber Marco February 26, 2007. For brevity positive merits of the building are not reported here.

Recommendations for immediate correction are listed:

1. Ensure there are functioning smoke and CO detectors in the hall adjacent to bedrooms or living areas on each story of the residence.
2. Activate water system. It has been winterized. Check all piping and fixtures for leaks. Run all fixtures and check piping under the sinks and in the crawlspace. Check the water pump and gauges to ensure they are working properly.
3. Fill the jacuzzi tub and ensure that the heating system can provide enough hot water for the tub.
4. Install in-line vents or air admittance valves just after the traps for plumbing drains of sinks that do not have conventional vents such as those for the vanities in the master bathroom and the shower – check all fixtures.
5. Replace all glazing adjacent to the jacuzzi tub with safety glazing. The glazing must be etched with a label to confirm that it is safety glazing.
6. Energize all electrical receptacles in the master bedroom. Provide gfcı protection for all receptacles within 10' of the jacuzzi. Ensure the polarity and grounding are correct and the gfcı protection trips with an independent testing device.
7. Ensure that the electrical panel is fully labeled and all labels are accurate. The numbers for each circuit must correspond with those on the panel cover.

8. Separate ground and neutral wires in panels. Bond ground wires directly to panel with a separate buss bar. Connect all neutral wires to isolated neutral bar.
9. Move the transformer out of the electrical panel in the hall.
10. Correct open ground for receptacle in the kitchen by the range.
11. Provide a simple barrier to prohibit combustibles from being placed against the chimney in the closet. Any material (wood or metal) will work if it is at least 2" away from the chimney. Screw the guard together if it is opaque so that it can be removed for visual observation of the chimney.
12. Ensure that there is a functioning openable window for each bedroom that meet current egress requirements. Some bedroom windows have been replaced but they are not all adjusted and working.
13. Provide manufacturer's instructions for the woodstove and verify that it is installed correctly before using it or remove the stove.
14. Provide gable end vent for attic access and ventilation at the living room end. The minimum vent size is 22" x 30" with a full size opening.
15. Provide a switched exterior light for the exterior door out of the living room.
16. Install all wire splices in the basement junction boxes with a cover. Use a plastic junction boxes to avoid having to ground the box.
17. Provide permanent wiring for equipment in the basement. Use flex conduit or similar for wiring within 4' of the floor to replace the NM cable now in place.
18. Install heat shield(s) to protect portions of the wall or ceiling surfaces less than 18" from the single wall chimney vent connector for the boiler. Where the surface is between 9" and 18" away from the vent connector, mount a 28 gauge sheet metal shield on 1" non-combustible spacers with an air.
19. Install covers on all electrical junction boxes, switches and receptacles as necessary.
20. Have the water softener inspected and serviced. It would be prudent for you to be present during the servicing to find out the best way to maintain the unit.

21. Ensure that the bath fans are vented to the exterior at gable end of the attic. Use smooth, rigid material. Seal the joints with aluminum tape. Slightly slope the duct to drain toward exterior terminal. Insulate duct in attic. Use wire, string or zip ties to secure the insulation in a permanent manner.
22. Caulk the top of the windows and doors to make a weather tight seal
23. Support the drain pipes in the crawlspace every 4' or less.
24. Cap open plumbing drain pipes in the crawlspace.
25. Install fiberglass insulation to serve as an ignition barrier to cover foam plastic insulation in the rim joist in the crawlspace. Secure the fiberglass with staples or stay clips
26. The joists in the crawlspace are not properly supported at the center. Install a proper support system consisting of beams and posts/pads. You could use two each 9.5" versalams with a post/pad every 12' under the wood joists near the center section that is steel framed. Connect the beams to the joist and also to the concrete pad. Support the steel beams every 10' as well. A complete design of these supports is beyond the scope of this report but it should have enough information for a contractor to give a general price.
27. Incorrect fasteners were used in the short crawlspace AWW foundation wall sole plate. Install new drill anchor bolts (1/2" diameter and 5" long) every 4' and within 1' of each plate end.
28. The foundation for the crawlspace is constructed with untreated wood studs and AWW plywood. We noted decay at the bottom of some untreated wood studs. Any wood below grade should be pressure treated. Install new AWW foundation grade studs next to the untreated wood studs. Install double joist hangers to secure the bottom of the foundation wall studs to the sole plate. Use four hot dipped galvanized, 9 gauge wire nails such as the Simpson N10HDG nails into the plate per hanger.
29. The foundation for the basement is constructed with untreated wood studs. We noted decay in of some untreated wood studs. The wall is not properly constructed and the decay is trapped by urethane foam. Remove and replace this wall with a properly designed basement wall as can be found at the City of Fairbanks Building Dept. website. Ensure that the construction meets all the specifications for a full depth basement.
30. Cover all the soil in the crawlspace with 6 mil vapor barrier.

Additional information and/or suggestions for future reference follow:

- The trusses as viewed from the gable end access over the master bedroom are site constructed. The roof framing could not be fully accessed because there is a 5.125" x 12" gluelam beam and support post blocking access. It appears that the roof framing would not meet the design requirements for a 40 psf snow load. A full analysis of the snow load capacity of this system is beyond the scope of this report. It may be prudent to carefully remove the snow when the snow exceeds 24" in depth for better control of the snow especially over the dining/living area and master bedroom where there is no bearing wall under the center of the bottom of the truss.
- We note evidence of several leaks in the ceiling but do not know if they are from the roof or condensation.
- Provide a positive slope away from the foundation such that soil slopes away at 1/2" per foot for at least six feet. This is important to minimize the hydrostatic pressure/frost load on the basement walls and also to keep water out of the crawlspace foundation.

The inspection was limited to the portions of the building readily accessible. This report may not address every concern that you or another engineer deem applicable. It does not address: detached buildings, mold, wells, septic systems, fuel tanks, soils, environmental hazards (such as lead in paint or piping) or right of way/zoning violations. Leaks or condensation may not be identified if not readily visible.

Thanks for the opportunity to serve you. Please call me at 378-4663 if you need clarification or require reinspection.



Sincerely,
Vince Meurlott, P.E.