

# Home Inspection Report



# 111 Round Cir My Town, ID 83000

Inspection Date: mm/dd/yyyy





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#### GENERAL SERVICE AGREEMENT

(PLEASE READ CAREFULLY

Between: AAD INSPECTION CORP. (Company)

And: **Happy Wiseman** (Customer)

Re: 111 Round Cir, My Town, ID 83000 (Subject Property)

The Company agrees to perform an inspection and prepare a report to enhance the Customer's knowledge of major systems and aspects of the Subject Property. Information conveyed will consist of professional opinions, only, and will be based upon the Company's customary efforts to maintain accuracy.

While the Company strives to discover and report in a manner that can significantly reduce the Customer's future possible health, safety, and financial risks, the Customer agrees that it is not reasonably possible to eliminate all such risks through the procurement of this inspection service. It is further understood and agreed that the inspection may be limited to readily accessible areas of the property and that the report will be based upon observations of apparent conditions existing at the time of the inspection. The Company shall not be required to dismantle items or systems, move, remove, or lift personal property, debris, or snow in order to perform the inspection, but may do so at its option. The Company is not responsible for the discovery or reporting of latent or concealed defects or deficiencies. (The Company cannot perform a functional inspection on a system if its respective public utility has been shut off.)

The inspection and report might not address and are not responsible to address the possible presence of, or danger from, any potentially harmful substances or environmental hazards including (but not limited to) radon gas, lead paint, asbestos, urea formaldehyde, toxic or flammable chemicals, or water and airborne hazards. Any information that may be conveyed by the Company for the benefit of the Customer with regard to such hazards is not to be construed as being in compliance with inspection or reporting protocols of any regulatory bodies unless such compliance is specifically claimed in the report.

This company and its inspectors are not licensed or insured as pest, fungus, or mold/mildew inspectors. Any information that may be conveyed by the Company for the benefit of the Customer with regard to pests or bio growths, or conditions conducive to their attraction or proliferation is made without warranty. These services are available from others licensed or certified in their respective fields.

The inspection and report do not address compliance or certification regarding past or present governmental codes or regulations of any kind. We are not code inspectors.

THE COMPANY IS NOT GENERALLY AN INSURING AGENT. However, the Company provides both a "200% Satisfaction Guarantee" and a "90-Day Limited Structural & Mechanical Home Warranty", which are both made part of this contract. The inspection and report are not generally intended as (or to be used as) a guarantee or warranty (express or implied) regarding the adequacy, performance, or condition of any structure, item, or system. All warranties outside the scope and responsibilities expressly stated herein and in the attached "200% Satisfaction Guarantee" and in the "90-Day Limited Structural & Mechanical Home Warranty" (both express and implied) are disclaimed, including any warranty of merchantability or of fitness for a particular purpose.

In no case shall the Company be liable to the Customer for any special, incidental, or consequential damages, including damages claimed in association with published recalls or class action law suits. In no event shall the Company's total liability to the Customer for damages, losses, and causes of action, whether in contract, tort (including negligence and malpractice), or otherwise exceed the amount actually paid by the Customer for the Company's inspection and report, except as expressly stated in the aforementioned "90-Day Limited Structural and Mechanical Home Warranty".

If legal action is brought against the Company for any reason, the Customer agrees to pay reasonable expenses for pro se defense or representation by an attorney if the Company prevails.

The Customer agrees to hold <u>Bill Buyerhelper & Buyerhelper Real Estate</u> forever harmless regarding liabilities for any or all consequences arising from the inspection and report.

The use of any information conveyed through the inspection and report by any party shall be deemed as a contractual understanding, acknowledgment, and acceptance of all terms of this agreement.

**Explanation of** 

# Our 200% Satisfaction Guarantee

If, when you receive your inspection report, you feel that you are unable to rely on our services with confidence, we will return your full inspection fee and reimburse you for another inspection of your choice ... up to the amount of our original fee.

Our promises of excellent service to you are so important to us that we are willing to back them up by as much as 200%

Notice of dissatisfaction regarding your service expectations must be given within 24 hours of receiving your inspection report, as we realize time is of the essence for you in your transaction. However, please remember that our 90-Day Limited Structural and Mechanical Home Warranty also provides meaningful coverage by us far after we've completed your inspection and delivered your report. Therefore, we urge you to consider keeping it in force.

# 90-Day Limited Structural and Mechanical Home Warranty

[FOR FULL HOME INSPECTIONS, ONLY]

This Limited 90-Day Structural and Mechanical Home Warranty is provided solely for the benefit of the person(s) designated on this form, below, as "Beneficiaries", regarding the subject property designated on this form, below, as "Inspected Home Street Address". This warranty becomes effective on the date of the home's inspection and continues for a period of 90 days or 21 days after the actual closing date of the purchase and sale contract, whichever occurs later. Benefits under this limited warranty cover failures of listed covered items, only, which occur after the Beneficiaries have legal possession, and are subject to all exclusions set forth, below. Notice of claims must be received by AAD Inspection Corp before the expiration date to be valid. (We suggest providing written notice to serve as proof of notification.)

#### WHAT MECHANICAL COMPONENTS IN MY HOME ARE COVERED?

Under PLUMBING: Components covered – all supply and drain piping, plumbing fixtures, water heaters, gas lines, and valves (excluding main shut-off valves, service stop valves, water heater valves, laundry valves, and water conditioning or filtering equipment). Under ELECTRICAL: Components covered – main service panels, subpanels, switches and receptacles, and lighting fixtures (excluding bulbs & fluorescent tubes). Under APPLIANCES: Components covered – free-standing ranges, drop-in ranges and other built-in cooking appliances, built-in dishwashers, built-in microwaves, trash compactors, garbage disposers, and garage door openers. Under CLIMATE CONTROL: Components covered – all primary, built-in heating and air conditioning system components serving living spaces. (All coverage is subject to the exclusions set forth below.)

#### WHAT STRUCTURAL COMPONENTS IN MY HOME ARE COVERED?

Under FOUNDATIONS: Components covered – poured concrete and masonry-block foundations under living spaces. Under FRAMING: Components covered – all structural framing. Under ROOFING: Components covered – roof sheathings and roof coverings, together with associated flashings, roof jacks, and drip edges (limited to repair of leaking areas, only). Under GARAGE DOORS: Components covered – vehicle doors for garages attached to homes with living spaces, only. (All coverage is subject to the exclusions set forth below.)

#### WHAT IS EXCLUDED UNDER THIS LIMITED WARRANTY?

Any item or component not specifically listed above as covered. All secondary or consequential damages. Items listed in the subject full home inspection report as defective, needing further professional evaluation, not verifiable, not inspected, or not visible at the time of the inspection. Cosmetic repairs. Water damage in any form. Items embedded in, beneath, or behind concrete. Damages caused by negligence subsequent to the subject inspection. Any climate control system, water heater, or covered built-in appliances 10 years of age or older (except for dishwashers 5 years of age or older). Removal and repair or replacement of walls, floors, roof, concrete, or other items to access failed components that are covered under this limited warranty. Blocked pipes. Sewage treatment systems. Damage due to (or mitigation of) mold in any form. Improvements, modifications, or upgrades made solely for the purpose of bringing up to code, rule, or regulation. Service calls to perform routine maintenance and service. Fireplace and chimney repairs. Concrete cracking or scaling. Interior and exterior painting and all other maintenance items. Any damage caused by vermin (insects, termites, rodents, etc.).

Roof repair is limited to repair of the immediate leakage or damaged area, only. Repairs and/or replacement materials will be completed in substantially the same kind and quality of material. All mechanical coverage is limited to within the footprint of the foundation of the home or buildings having covered living spaces and to a maximum of \$500. All structural coverage, including foundation and roofing, is limited to within the foundation footprint of the home or buildings having covered living spaces and to a maximum of \$2,000. Indemnification from all loss is not implied by this limited warranty.

#### CLAIMS PROCEDURES (We welcome your phone calls, too @.)

AAD Inspection Corp reserves the right to inspect the subject system or component *before* repairs or replacements are made and *before* committing to paying claims under this warranty. Therefore, the Beneficiary is highly encouraged to contact AAD as early as possible in the event of a possible claim. (AAD is often able to avert unnecessary expense or other trouble by becoming involved as early as possible.)

Notification of claim must be received (preferably in writing) by AAD Inspection Corp., 3288 Sweetwater Dr., Boise, ID 83716, or by phone at 208-338-9144, or by e-mail at <a href="SendToAAD@gmail.com">SendToAAD@gmail.com</a> before the expiration date of the limited warranty period. Please provide a brief summary of the problem and include your name, complete address, and the home inspector's name. It would be helpful to also include a copy of an itemized estimate or repair bill with a breakdown of parts, labor, and the specific cause for the failure from a qualified repair person. (AAD Inspection Corp. reserves the right to inspect the failure, talk to the repair person, or request up to two additional estimates.)

Beneficiaries	Inspection Date
Happy Wiseman	mm/dd/yyyy
Inspected Home Street Address	
111 Round Cir, My Town, ID 83000	

#### Suggestions for Understanding and Using This Report

#### No property is perfect.

Every building has imperfections or items that are ready for maintenance. It's the inspector's task to discover and report these so you can make informed decisions. This report should not be used as a tool to demean property, but rather as a way to illuminate the realities of ownership.

#### Maintenance costs are normal.

Building owners should plan to spend around 1% of the total value of a property in maintenance costs, annually. (Annual costs of rental property maintenance are often 2% or more.)

If considerably less than this percentage has been invested during several years preceding an inspection, the property will usually show the telltale signs of neglect; and the new owner may have to play "catch up" with large sums of money and time.

#### This report is not an appraisal.

When an appraiser determines worth, only the most obvious conditions of a property are taken into account to establish a conservative valuation. In effect, the appraiser is usually only representing the interests of a lender. Building inspectors focus more on the interests of the prospective buyer; and, although inspectors must be careful not to make any statements relating to property value, their findings can help buyers more completely understand the true costs of ownership.

# This report may include (upon specific request) cost estimates for repair or replacement of certain items.

Where estimates are given, they may appear as a range of possible costs. The low figure of the range is the inspector's best guess of current material costs, alone – the higher figure of the range includes reasonable retail profits on the materials, together with reasonable labor costs, overhead, and profit for qualified contractors. Nonetheless, the client is encouraged to obtain several bids from licensed or otherwise qualified contractors before agreeing to any work.

## This report may include estimates of normal useful lives for certain items.

Where estimates of normal, useful life for any components or appliances are offered in the report, the inspector is relying upon widely published data for similar items or systems. When these data are compared to known or estimated ages given in the report, the client may form his or her own opinions as to likely remaining life.

#### We offer future assistance at no cost.

If you find yourself needing a second opinion regarding repairs or renovations at any time in the future, please give us a call. Most of the time, we should be able to help you avoid high-pressure marketing tactics or costly errors in judgment. Consultation by telephone costs you nothing. We encourage you to continue to trust us for timely and meaningful advice whenever you need it.

If You Have Any Questions please feel free to contact us at any time. We will be happy to discuss your report or provide further maintenance tips.

(Master copies of all reports are kept in our files for future reference.)

Good Luck! We wish you the best!

#### REPORT OVERVIEW

Dear Happy Wiseman,

Thank you for choosing us as your building consultants.

Please review this report carefully before releasing your contingency.

If you need further explanation regarding this property's conditions, please don't hesitate to call:

Our 24-hour, 7-day office number is: (208) 338-9144.

Sincerely,

Stan Auditte

Stan Audette, building consultant

Inspection date: mm/dd/yyyy
Property address: 111 Round Cir

My Town, ID 83000

Occupancy status: Vacant

Date built/remodeled: 2020 (0 years)

Current weather: Between 45°F & 70°F

Recent weather: Mid 80's, Very smoky, Hazy sun, Calm.

Customer(s): Happy Wiseman Referring (Buyer's) Agent: Bill Buyerhelper

Agency: Buyerhelper Real Estate

Attending Inspector(s): Dustin Nicholas(Access through unlocked house)

Others in attendance: No one else



#### **INSPECTION FINDINGS**

(Inspection Issues, Defects, Imperfections, Etc.)

Only defects, imperfections, safety issues, or maintenance concerns are reported in this section. If no issues are published concerning a particular component or system, then it may be assumed that it is "serviceable" in its present state, or that its condition is typical and normal for the age and style of the property.

#### Major Issues:

These are findings of consequence to the safety, soundness, sanitation, or future integrity of the property, which *individually* are likely to (or may possibly) require more than \$1,000 to cure. (They may be listed in random order).

NOTE: Whether any issues are listed in this category or not, it's entirely possible that any of the other issues, imperfections, or facts that I've listed elsewhere in this report could conceivably cost more to address to the satisfaction of a prospective buyer than the \$1,000 threshold I've arbitrarily defined for this category to help clarify perspectives.

#### Lesser Issues:

These are findings of consequence to the safety, soundness, sanitation, or future integrity of the property, which *individually* are likely to (or may possibly) require less than \$1,000 to cure. (They may be listed in random order.)

1. The masonry wainscot at the front and sides of the home is installed with contact of the adjacent asphalt and finish-grade soil surfaces, as exemplified in the following two photos.



3288 Sweetwater Dr. Boise, ID 83716

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This can encourage future potential moisture wicking and cracking in the masonry where it meets the asphalt at the front if any seasonal frost heaving or settling occurs. Siding manufacturers suggest maintaining several inches of ground clearance. Furthermore, landscaping has not yet been installed and will likely be installed over the level of the bottom edges of the siding surfaces.



2. A number of siding trim surfaces are not fully finished with paint or stain, as exemplified in the following three photos.



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3. The rear patio support post surfaces are unsealed where they pass through the masonry caps, as exemplified in the following two photos. This can allow moisture behind these surfaces. (Similarly, the post bases where they pass through the masonry at the front have not yet been installed.)





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4. The siding and masonry at the rear patio is contacting the concrete slab below it, as exemplified in the following photo. This can encourage moisture to wick up into the siding, which can lead to possible deterioration. Siding should be held at least 1 inch above concrete to help prevent such issues. Furthermore, the materials behind and below the siding should be protected with flashing designed and installed to effectively prevent water entry behind the concrete.



5. The masonry on the support posts at the rear exterior are in contact with the adjacent concrete, as exemplified in the following photo. This can encourage moisture wicking and potential cracking of the mortar or masonry during potential seasonal or intermittent frost heaving.





6. The freeze-proof sill cock (exterior garden hose valve) at the right exterior extends past the masonry, as shown in the following photo. It can be pulled or pushed somewhat. Furthermore, it twists during operation of the valve handle. This could cause damage to the flexible plastic piping inside the wall during normal operation.



7. An electrical wire hangs from the soffit at the right front exterior, as shown in the following photo. This may be wiring for gutter heat cabling.



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#### Subject Property: 111 Round Cir, My Town, ID 83000

- 8. The metal gutters at the front of the structure do not have downspouts or leader chains. Perhaps they are intended for installation, but have not yet been installed.
- 9. The vehicle door jambs contact the adjacent concrete slabs at the front. This can encourage moisture wicking.
- 10. A depression is present in the asphaltic pavement in front of the right vehicle door, as shown in the following photo. This may trap or hold moisture during periods of inclement weathers.



11. I walked completely through the infrared "eyes" of both vehicle doors while they were closing and found that they failed to stop or reverse the doors' travel. It appears as though neither door senses obstructions to its downward travel from the infrared sensors near the centers of their openings. Because this is unusual and can indicate a deficiency, I suggest involving a registered contractor.

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Inspection Date: mm/dd/yyyy

#### Subject Property: 111 Round Cir, My Town, ID 83000

- 12. The hinge springs of the garage-house entry door are too weak or have been purposely relaxed. The door is intended to be able to self-close and self-latch if released from a fully open position.
- 13. When I approached the home, the breaker for the water heater was in a 'tripped' position. The water heater was not "on" or operating at this time. Therefore, I suggest involving a registered contractor.



14. Water flows continuously from the upstairs bathroom tub spout while operating the shower, as shown in the following photo. I suggest involving a licensed plumber.





15. The brace-mounts for the overhang over the front window has been 'flashed', as exemplified in the following photo. However, the supports for the overhang of the rear windows have not been flashed, as exemplified in the following two photos.





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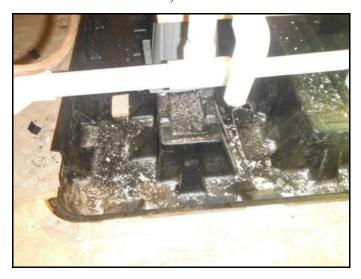
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16. When I first approached the home, the rear entry sliding doors were open about an inch, as shown in the following photo. This could be a security risk and present an inadequate weather seal. I had some difficulty closing the door. However, I was able to successfully do so during the inspection.



- 17. I ran the living room fireplace for about 25 minutes inside the home. After that amount of time, the smoke detectors in the home sounded and ran continuously. Perhaps the appliance should be run for a while to burn off any factory coatings, while airing out the home to help prevent these nuisance alarms in the future.
- 18. The catch tray beneath the HVAC system in the attic is filled with construction debris, as exemplified in the following photo. This debris can clog the primary drain or water sensor, if it were to fill with condensate. It should be cleaned.





19. A small amount of insulation is missing from the refrigerant line where it enters into the evaporator coil cabinet to the left of the furnace in the attic, as shown in the following photo. Interior humidity can condense on this piping, leading to drips of water that can cause nearby moisture damage.



20. The HVAC equipment has been operating without a filter, as shown in the following photo. The blower compartment interior is dirty, as shown in the second photo. I suggest having a licensed HVAC contractor address this issue.







21. The viewing glass panel is missing through the blower compartment cover of the furnace in the attic, as shown in the following photo. This can allow attic interior air to be pulled through the blower during operation of the furnace.



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#### **Cosmetic Issues:**

These issues apply to imperfections that have *no bearing* upon the safety, soundness, sanitation, or future integrity of the property, but which may be of concern to the Customer, regardless of likely or possible costs to address. (They may be listed in random order.)

a. Some fasteners are not fully driven through the fascia at the left exterior over the A/C compressor.



b. One or more windows have little or no caulking around their frames at the exterior. However, if the windows are properly installed (with caulking behind their nail fins and with flashing tape applied around their frames before the siding was installed), the only remaining concern might be future swelling of trim boards. Therefore, periodic monitoring for swelling or other signs of water entry is a good idea.



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c. A small crack is visible in the patio below the left rearmost post, as shown in the following photo.



- d. Casement window screens and rear entry sliding glass door screens have not yet been installed. However, this is typical for construction at this stage. (Most builders will provide the promised screen panels at closing, as they prefer to keep them out of harm's way until then.)
- e. One or more hairline cracks have formed in the concrete flatwork of the rear patio. However, this type and extent of cracking is cosmetic, only. Please refer to further discussion regarding "Sealing Hairline Cracks in Concrete Flatwork", which I have included in the section titled "Ownership Tips for this Particular Property" near the end of this report.
- f. One or more small, but noticeable gaps are visible in the wood paneling in the rear patio soffits, as exemplified in the following photo.



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g. Aspects of the shed door and buildout for the meter at the right exterior are incomplete or unfinished, as exemplified in the following two photos.





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- h. The door for the front entry has a missing, damaged, or ineffectual doorstop. Other doors may have doorstop issues, as well. Doorstops can help prevent the damage to nearby surfaces that might otherwise occur because of doors swinging into them.
- i. The bottom edges of the sheetrock inside the finished garage have areas of exposed fasteners or torn paper facing, as exemplified in the following photo. I noticed one or more paint chips around the garage right-facing man door.



j. The wall surfaces between the data communications panel and the circuit breaker panel are unfinished, as exemplified in the following photo.





k. The two lower corner fasteners are missing from the circuit breaker panel cover, as shown in the following photo.



- 1. The laundry closet door rubs against its hinge jamb weather stripping, intermittently, preventing it from latching.
- m. What appear to be some heavy texture drips are visible in the wall of the upstairs bathroom electrical triple-gang switch box, as shown in the following photo. Although cosmetic, it is quite noticeable.





n. Scuff marks are visible on the latch jamb side of the front bedroom door to the shared bathroom, as shown in the following photo.



- o. The upstairs rear room entry door from the hallway impacts the strike plate when closing. This causes it to rub against the metal.
- p. Heavy scratches are visible in the basin of the stainless-steel kitchen sink, as exemplified in the following photo.



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q. The half bathroom vanity mirror has not yet been installed, as shown in the following photo.



r. The veneer coating for the casement window crank outside the master bedroom door is scratched, as shown in the following photo.





s. Covers have not been placed over the plumbing cleanouts beneath the master bathroom vanity sinks, as exemplified in the following photo. While these are not required, many homeowners choose to cover them.



t. Some circular stains are visible on the bench seat in the master shower, as exemplified in the following photo.





u. Sheetrock has been cut out a little larger around the light switch for the master closet than the size of the box's cover plate, as shown in the following photo. This is only a cosmetic concern. However, you may wish to have this and any other similar areas patched, as necessary.



v. Heat-caused discolorations from a soldering torch were noted on some of the white PVC plastic condensate drain piping adjacent to the evaporator coil cabinet of the HVAC equipment, as shown in the following photo. However, this is only a cosmetic concern.





w. Some minor black spotting is visible on a wooden stud beneath the HVAC platform in the attic, as shown in the following photo. However, this was likely on the wood before construction.



x. The viewing panel is a little crooked at the top right corner of the fireplace, as shown in the following photo.



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#### FYI (For Your Information):

The following additional information and considerations are provided to help enhance the reader's knowledge of the property. However, this information is not intended to be material to purchase or sale negotiations.

- Our policy as building inspectors is to not functionally test (open or close) main shut-off valves, laundry valves, water heater valves, water conditioning valves, filtering equipment valves, or service stop valves leading to plumbing fixtures during the inspection. These valves are not meant to be frequently operated and are installed mostly for maintenance. Please refer to further discussion regarding this issue, which I have included in the section titled "Ownership Tips for this Particular Property" near the end of this report. Because it is not reasonable for us to operate these valves during our inspection, all such aforementioned valves are specifically excluded from coverage under our 90-Day Limited Structural and Mechanical Home Warranty.
- As building inspectors, we typically inspect clothes dryer ducts for visually obvious disconnections, leaks, spewing of clothes lint, and runs that are too long or with too many bends. We cannot inspect the interiors of clothes dryer ducts; and we've discovered that perceptions of air flow rates can lead to false assumptions regarding the conditions at the interiors of these ducts.

We've learned that all clothes dryer ducts should be professionally cleaned at least every 2 years to reduce the risk of dryer-initiated fires. (Just because a person can feel air flowing from an exterior vent cap with the clothes dryer running does not mean the duct is clean enough to be safe.)

We also strongly suggest having the same professional simultaneously ensure that no clothes lint has built up anywhere in the appliance cabinet or in its hose connection to the dryer duct. [One such local, trusted clothes dryer duct cleaning professional is Francis Burger of Boise Dryer Vent Cleaning. Mr. Burger's business phone number is 208-713-1581.]

• This building has multiple levels of conditioned spaces, but only one HVAC system with no multi-zone thermostat controls. Therefore, it's likely that the upper levels will become noticeably warmer than the lower levels. Please refer to further discussion regarding multi-level buildings with only one heating/cooling system, which I have included in the section titled "Ownership Tips for this Particular Property" near the end of this report.

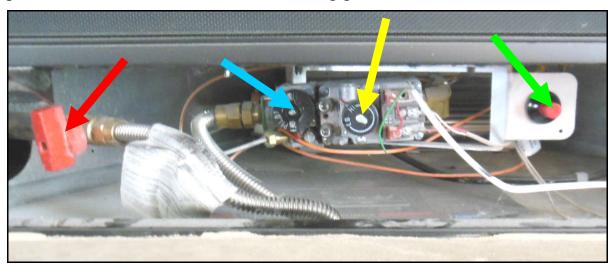
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• I was able to light and start the gas fireplace. Once my functional test was completed, I returned the gas valves below the unit to the alignments found before conducting the test.

The following photo is a diagram of the fireplace controls behind the removable panel below the flame chamber and viewing glass.



Red Arrow: Gas Shut-Off Valve.

When the knob is aligned with the gas line, gas is flowing. When it is cross-wise to the gas line, gas is stopped.

Blue Arrow: "On/Off/Pilot" control knob.

Yellow Arrow: The flow control knob. (For larger flames set to "Hi".)

Green Arrow: Pilot Igniter (Spark) Button.

Operation Instructions: To light the fireplace, first turn the gas valve horizontally to the full open position. Then turn the control knob to "pilot" and hold it depressed until gas is available at the pilot flame post ... usually this takes between 30 seconds and 5 minutes, depending on how long gas has been shut off to the unit and how much is pressurized in the line). Next, press the red igniter button until the pilot light ignites. Once lit, continue to hold the pilot knob depressed until the pilot can sustain itself. (This usually requires another 30 seconds.) Once this has been completed, turn the "On/Off/Pilot" knob to the "On" position. After all this is complete, the fireplace can be operated by one of two wall switches near the fireplace.





• I operated the primary HVAC equipment through normal user controls and visually inspected the major components without disassembly past that which would typically be performed by a homeowner. Any adverse issues found during this inspection are listed, above, in this report. The presence and locations of certain components can be found in the descriptive section of this "Full Inspection Report".

However, since the outdoor air temperatures were too cool to allow me to obtain meaningful cooling effect measurements, AAD cannot warrant the condition or operation of the A/C portions of the HVAC systems. (Outside air temperatures below 70°F allow the A/C system to provide cooling only as a heat exchanger—not as an actual air conditioner. Therefore, any measurements of cooling effect would be misleading.)

• The method and extent of my inspection of the roof coverings can be found, below, in the descriptive section of this "Full Inspection Report", together with my estimates of "Remaining Functional Life" and "Remaining Economic Life". Any adverse issues found during this inspection are listed, above, in this report.



- Essentially every type of buried water service piping is prone to eventual failure. Therefore, it's probably wise to consider purchasing the relatively inexpensive additional insurance offered through most water utility companies. The premiums for this type of insurance can usually be added to the utility billing, making it very convenient once put into effect. From past experience, I believe that risk of failure is probably highest with older galvanized iron piping. Older copper piping is in a close second. Next is probably blue polybutylene plastic piping (along with inappropriately chosen gray polybutylene, PVC plastic, or CPVC plastic, of course). At this time, black polyethylene probably has the lowest risk of failure.
- The exterior lighting is photo-cell-operated. The photocell is located at the left central exterior. I suggest waiting until after dusk to test these fixtures.
- Swales, drainage ditches, and piping are present on either side of the property, as exemplified in the following two photos. In fact, a pump with a flow switch and garden hose is visible at the left rear of the lot. This could indicate continuous drainage needs. I do not know if any type of perimeter drain system is intended for installation.







• Gas piping has been stubbed out at the rear patio for a possible future barbeque or other outdoor cooking appliances. However, I suggest always keeping a plug or cap in place over the end of the piping (in addition to any other valves or quick disconnects) whenever appliance hoses are not connected.



• The siding face nails are visible and have not been caulked or otherwise sealed. However, this is intentional to create a uniform look throughout the siding that has been stained, rather than painted.



• The gas piping enters the right exterior of the home, as shown in the following photo. A local shut-off valve is present nearby. I suspect this is fed by community tanks. However, they are not located on this property.



• A drainage trough is built between the entry walking path and the asphalt driveway, as exemplified in the following photo. It has an open ended drain that discharges towards the front of the property.





• A drainage ditch runs across the front of the property with culverts below the driveway, as exemplified in the following two photos.

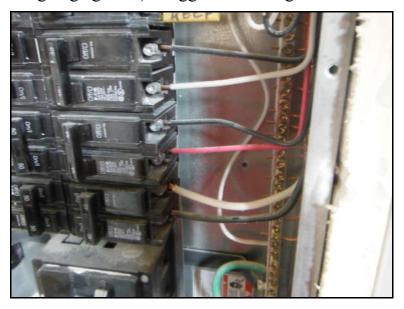




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• White conductors have been used to carry current to the water heater and air conditioning circuit breakers in the main distribution panel, as shown in the following photo. It is my understanding of typical electrical practice that white conductor insulation is reserved for neutral conductors, only. (Additionally, a white conductor carries current to a 20-amp, single-pole breaker labeled, "heat tape" for the garage gutter.) I suggest involving a licensed electrician.



• This building has a data communications junction box installed in the laundry closet, as shown in the following photo.

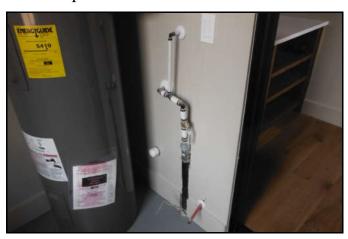




These boxes facilitate the interconnection of numerous low-voltage cables in the most efficient manner to deliver Internet, intranet, telephone, and TV signals to various points of use throughout the building. This feature is beyond the scope of our inspection. However, local communications contractors should be able to answer all questions and help with any desired modifications.

• Piping has been provided in the laundry closet for a possible future water softener, as shown in the following photo. However, no appliance is currently in place.

NOTE: I strongly suggest that any further piping modifications be made only by a licensed plumber.



• Appliances not attached to the property (such as free-standing refrigerators, clothes washers, clothes dryers, portable microwaves, etc.) are not intended to be included within the scope of this inspection, even though the inspector may comment about them. Nonetheless, they are excluded from our "90-Day Limited Structural and Mechanical Home Warranty".



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# Subject Property: 111 Round Cir, My Town, ID 83000



• The kitchen range burners ignited and operated normally during this inspection, as shown in the following photo.



- Blue masking tape has been placed by others at many of the existing (remaining) cosmetic imperfections to indicate intentions to address these issues. This report may mention some of these or other cosmetic issues. However, this report does not intend to list all such cosmetic issues, as the blue masking tape, alone, is a very effective communication tool.
- The master bedroom is pre-wired with dual switches for a potential future 3-speed fan/light fixture. However, no fixture has been installed.

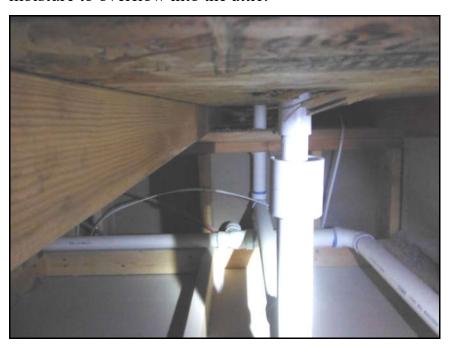
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• The HVAC equipment in the attic has a catch tray beneath it with a sensor intended to shut the system down, if it ever fills with moisture, as shown in the following photo. This is an intentional safety device.



• The HVAC system in the attic drains into an open attic drain beneath the furnace, as shown in the following photo. It has a water trap and should stay wet year-round if heated and cooled. However, any potential clogs or backups could allow moisture to overflow into the attic.



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• One or more of the smoke detectors inside the home are covered with masks, as exemplified in the following photo. These are typically removed towards the end of construction.



• The dishwasher filled and drained normally at the time of this inspection, as shown in the following photo.



- I was not able to confirm the exact method of ventilation for the attic above the left side of the main level.
- Lawn and landscaping was not yet been completed at the time of this inspection.



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# DESCRIPTIONS OF MAJOR SYSTEMS & FEATURES

Only those components, systems, or features which exist on the property are included in this section. If an existing component, system, or feature present on the property and required to be addressed by industry standards was not inspected, that fact and the reason for not inspecting it will be published.

#### **Perimeter Foundation**

<u>Description</u>: Cast-in-place concrete walls and footings.

## Floor Framing & Interior Support

Description: Slab-on-grade concrete.

## **Gutters & Downspouts**

<u>Descriptions</u>: Metal gutters.

#### **Roof Coverings**

<u>Method of roof inspection</u>: Viewed from the ground, only. (I could easily see all surfaces and flashings from the ground ②.)\_(Roof surfaces were too steep to safely walk upon.)

<u>Current roof covering</u>: Presidential® composition shingles (typical 40-yr lifespan).

Estimated Age of Current Top Course: New

Number of courses in place: One, only.

<u>Estimated "Remaining Functional Life"</u>\*: 35 to 40 years. Estimated "Remaining Economic Life" +: 32 to 37 years.

- \* "Remaining Functional Life" is the amount of time left before an average building owner would choose to replace a roof because of leaks occurring that are too numerous or expensive to simply repair.
- \*\*Remaining Economic Life" is the amount of time left before a roof would most likely need to be replaced in order to satisfy a prospective buyer who may be receiving advice from a roofing repair contractor or other inspector. (Most prospective buyers and some lenders like to be assured that at least 3 to 5 years of "useful life" remain.)

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#### **Roof Structure & Attic**

<u>Accessibility and/or method of inspecting attic</u>: I entered and viewed most of the accessible unfinished attic spaces.

Location(s) of Accesses: Master closet ceiling.

Roof framing: Engineered truss system.

Roof sheathing (decking): OSB (Oriented Strand Board) sheeting.

Type and thickness of insulation: Spray-on foam insulation against the roof

sheathing in the attic.

## Walls (Interior & Exterior)

<u>Perimeter wall structures</u>: Stud wall construction. Partition wall structures: Stud wall construction.

Exterior surfaces: Painted wood siding and trim. Stone masonry veneer all around.

Interior surfaces: Sheetrock.

#### **Windows**

General descriptions: Vinyl-framed, thermal-paned.

#### **Fireplace**

General description: Single-sided. Propane (LPG) gas-fueled. Metal flue.

Location of gas shut-off valve (if any): Beneath the fire box in the control chamber.

#### **Service & Entrance Panels**

Service type: Underground service.

<u>Location of main electrical power shut-off:</u> In the main circuit breaker panel box.

Service amperage and voltage: 200-amps (120/240 volts) Service entry conductor materials: Stranded aluminum.

Locations of meter and main panel: The meter is located inside a shed-cabinet at the right exterior. The main distribution panel is located inside the laundry closet adjacent to the meter. [The locations of any additional subpanels will be noted in the "FYI (For Your Information)" section of the report.]

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#### **Branch Circuits**

Types of overcurrent protection: Circuit breakers.

<u>240-volt conductor materials</u>: Stranded copper. Solid copper.

120-volt conductor materials: Solid copper.

Wiring Methods: The branch circuits of this building are grounded.

## **Gas Supply**

<u>Type of gas</u>: Bottled Gas (LPG) supplied from somewhere off-site. Location of hydrant or tank and main shut-off: At the right exterior.

Points of use: Outdoor BBQ.

## **Heating Equipment**

Type: Central furnace.

**Energy source**: Bottled Gas (propane)

BTU's/hr or kilowatts heating capacity: 80,000

Location: In the attic.

Estimated Manufacture Date: 2020 [Most gas furnaces and electric heat pumps last from 12 to 18 years. Most oil furnaces last from 18 to 25 years. Most gas boilers, ceiling-hung space heaters, and wall furnaces last from 30 to 40 years. Most electric space heaters, forced-air central heaters, and baseboard heaters last 30 years or more.]

Method of heat distribution: Central, forced-air system, with ductwork.

<u>Filter types and locations, if applicable</u>: A custom filter access panel is installed to the right of the furnace.

Manufacturer: Payne

Model No.: 926TB48080V17A-A

Serial No.: 0820A47258

## **Cooling Equipment**

Type: Refrigerative, air-to-air central conditioning system.

Energy source: Electricity. Cooling Capacity: 3-ton.

Location of outdoor compressor (condenser) unit: At the left exterior.



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Estimated Manufacture Date: 2018 [Most air conditioners and heat pumps last from 12 to 18 years. Most window- or wall-mounted room coolers last from 10 to 15 years. Most evaporative ("swamp") coolers last from 8 to 15 years.]

Method of cool-air distribution: Central forced-air, integral with the heating system.

Comments (for refrigerative systems, only): If the outdoor air temperatures at the time of this inspection were below 45°F, our policy is to NOT attempt to start and run a refrigerative appliance. If the outside air temperatures are above 45°F, our policy is to attempt to start and run a refrigerative appliance. However, we do not expect meaningful cooling performance data until or unless the outdoor air temperatures are above 70°F. Therefore, until or unless the outdoor air temperatures are recorded as being above 70°F at the time of this inspection, we cannot warrant the performance of any A/C system.

Manufacturer: Bryant Model No.: 113ANA036-I Serial No.: 3718E15197

#### **Ducts & Vents**

Descriptions: Insulated in the attic spaces.

<u>Comments</u>: The ductwork was inspected for continuity only where visible access was available.

NOTE: Although air flow may be discernible at supply registers, building inspectors are not able to determine whether the availability and balance of air flow is acceptable to all prospective occupants.

## Water Supply Systems & Fixtures

Source of domestic water: Public water system.

<u>Location of main shut-off valve</u>: In the laundry/mechanical closet.

<u>Supply piping</u>: The potable water service line into the building is of black plastic buried pipe. The supply piping throughout the building is mostly of PEX (Crosslinked Polyethylene) plastic pipe.

<u>Comments</u>: The pressurized water supply piping within the building was inspected only where visible and readily accessible.



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#### **Drains, Wastes, & Vents**

Type of collection system (if known): Public collection system.

Visible building drain piping materials: Plastic.

Comments: The drain lines within the property were inspected only where visible

and readily accessible.

## **Water Heating Equipment**

**Energy Source**: Electricity.

Location of gas and/or water shut-off valves: Adjacent to the appliance.

Capacity: 50-gallon.

Estimated Date of Manufacture: 2020 [Most gas water heaters last from 12 to 18

years. Most electric water heaters last from 20 to 40 years.]

Location: In the laundry/mechanical closet.

Manufacturer: Rheem

Model No.: PROE50 T2 RH95

Serial No.: M242016050

## Dishwasher(s)

<u>Dishwasher Type</u>: Built-in, under-the-counter.

Manufacturer: Bosch

Model No.: SHVM78Z53N/01

FD No.: 000600058

## Food Waste Disposer(s)

Manufacturer: Badger

Model No.: 5-89

Serial No.: 20051164866



#### Kitchen Exhaust

<u>Type</u>: Range hood over the major cooking appliance. This appliance vents to the exterior.

## **Primary Cooking Appliances**

<u>Descriptions</u>: Propane (LPG) gas-fueled, free-standing range/oven. Location of gas shut-off valves (if applicable): Behind the appliance..

Manufacturer: Wolf Model No.: DF304-LP Serial No.: 18510470

## **Microwave Cooking Equipment**

Description: Built into the wall cabinets.

Manufacturer: LG

Part No.: MEZ66990903

#### **Garage Vehicle Doors**

<u>Descriptions</u>: Two, multiple-sectioned metal overhead.

Types of safety reversing (if present): Both electronic eye and force-sensitive stop-

and-reverse functions are in place.

## **Dryer Vent**

<u>Description</u>: Routed directly through the perimeter wall.

Termination: Exterior vent cap through siding.

#### **Landscape Irrigation**

Comments: No sprinkler system appears to be installed.



## **Fire Protection Equipment**

<u>Description</u>: Both hard-wired and battery-backup. If one unit sounds, they all sound.

<u>NOTE</u>: WE DO NOT TEST smoke and/or carbon monoxide detectors or alarms during the course of a home inspection. Instead, we provide the following maintenance, periodic testing, and/or replacement suggestions to homeowners:

<u>Suggestions</u>: Regardless of the size or age of any residential living spaces, we suggest maintaining smoke detectors in every bedroom and in every other room or hallway that adjoins any bedrooms. Furthermore, it's always a good idea to have at least one detector installed at each living level or ceiling level that differs from the next by more than 2 feet.

Smoke detectors may be periodically checked (tested) for response to actual smoke by building owners. (Try using a short candle at the bottom of a tall glass jar. The candle will tend to produce a lot of smoke due to lack of oxygen, and the jar will keep hot wax off hands and floor coverings. However, if such testing is done too frequently, the smoke particles may prematurely coat the sensors with a film that could block their sensitivity.)

We also suggest replacing smoke detectors at least every 5 to 7 years because their sensors will usually begin failing after that period (even though their alarms will continue to sound when their test buttons are pressed). Some manufactures of newer detectors suggest replacement every 10 years.

Additionally, carbon monoxide detectors should be installed to protect all sleeping areas whenever combustion appliances are present within the building of any residential living spaces.

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# OWNERSHIP TIPS FOR THIS PARTICULAR PROPERTY

Each of the following subjects was included in this report because it pertains directly to this particular property. Each short article is written by our inspectors for the benefit of our customers in hopes that their ownership experiences will be enhanced.

## Guarding Against Molds, Mildews, and Other Fungi.

Molds and mildews (recently so often referred to as "toxic molds") can grow anywhere in and around our buildings where the conditions are right. Molds need darkness, relative humidity above 50%, and organic food sources.

Sunlight will kill mold rather quickly. One way to kill mold or stop it from getting a "foothold" is to periodically let as much sunlight as possible into the areas where it might otherwise thrive.

Dry environments will not allow mold to grow. Even though mold spores may be present in almost any air, the spores must land on surfaces that can provide enough food and moisture for them to live. Otherwise they become dormant and eventually die. Surfaces that are being continually wetted or which never dry out can support mold colonies even when the surrounding air is relatively dry. However, if the air, itself, is continually above 50% relative humidity, the mold can thrive on otherwise dry surfaces.

Food sources can include even fine dust or lint that collects on otherwise indigestible materials. (This is how mold colonies are sometimes found on windows.) Wood, paper, or any other material containing cellulose can be a food source to molds. The significance of this is that most building materials contain these nutrients.

All these molds, mildews, and fungi produce spores that have been floating around in our daily environment for all our lives without causing much trouble for anyone. It's the unique confinement of living spaces that lends itself to possibly harmful concentrations of these micro-organisms. That's why we are learning to become more educated and more responsible with respect to mold.

Many types of molds typically found in today's living environments may contain allergens that cause a wide variety of symptoms in individuals. These symptoms are most often related to the respiratory system, but may also involve rashes or dizziness. Not all people are allergic to these types of molds. Typically, people with compromised immune systems will be more likely to have allergic reactions. People suffering from asthma are particularly sensitive.

Some types of black molds have been identified as neurotoxins. These can cause severe, long-term damage to the nervous system. People can be hurt by these molds without ever developing outward allergenic symptoms. Although this type of injury is rather rare, it should make us more cautious with respect to threats from molds, in general.

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Allergy doctors can usually identify which of the known molds may cause allergic reactions in any individual, but the doctors are not equipped to tell that individual whether he or she may be exposed to those molds in their daily environment. Fortunately, Southern Idaho now has mold specialists who can survey a building and identify any molds or mildews that may be present (along with other possible airborne contaminants). Slide samples of molds or other fungi can be sent off to microbiologists for analysis. Air samples can be taken.

Southern Idaho also has several mold mitigation contractors trained in removing or treating mold and reducing the conditions that may be conducive to their proliferation. However, the EPA currently recommends involving certified remediation contractors only if the affected area of mold exceeds 10 square feet. (For areas less than that, building owners can usually feel confident in their ability to scrub away any mold with a 10% bleach solution.)

Regardless of the type or extent of mold remediation that might be required, the most important strategy is to remove the source of invasive moisture and to take steps to ensure that moisture does not return.

## **Draw-String Window Coverings**

Any of the popular window coverings that incorporate drawstrings to raise and lower them can be operated in a manner that will greatly extend their expected lives. Rather than using only the tension of the draw strings for raising the window coverings, one may do most of the lifting by placing one hand under the center of the window covering's bottom rail to support most of the weight while simultaneously keeping only mild tension on the draw strings. In this manner, the window coverings are not raised by the strings, but only held in place by the strings.

Conversely, when wishing to lower the coverings, one may hold the drawstrings in their "release" positions with only very slight tension. Then, rather than applying enough downward tension on the strings to cause the locking cams to release, one can gently lift the center of the bottom of the window coverings to release the cams. In this manner very little actual tension is required on the drawstrings to release the cam.

By following the procedures outlined above, very little wear occurs on the draw strings as they follow around their pulleys, and very little "tugging" is done on the window covering's attachment hardware to the window casings or walls. The window coverings will last much longer. I suggest teaching all occupants in a building to use these techniques.

#### Trees and Shrubs Near Building Surfaces.

If trees or shrubs have branches that can touch the building, those branches should be kept trimmed back and away from those surfaces seasonally to avoid long-term wind-action abrasion damage. For this reason, we strongly recommend carefully planning the placement of any new trees or shrubs. It's wise to consult an arborist or botanist regarding the expected eventual sizes and shapes of all mature plantings. Whenever possible, the locations of such plantings should allow for at least 1 foot of clearance between the foliage and any building surfaces even after the trees or shrubs have reached full maturity. However, if trees or shrubs are already planted rather close to the building, we suggest seeking the advice of arborists or botanists as soon as possible to determine whether pruning,



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relocation, or removal would be the best choice. Please bear in mind that expert answers to these questions can save a lot of money, later, as trees and shrubs get more expensive to prune, relocate, or move when they get larger.

#### Insurance Industry's C.L.U.E. Reports

The insurance industry maintains a database of risk factors associated with individual clients and with certain properties. The database functions much like a credit report. Most of the risk factors are associated with the financial habits of individuals; but some important data stays with the building. For instance: If a building has had a water damage claim, the insurance underwriters may be afraid of future claims deriving from molds or mildews.

This database is known as the C.L.U.E. (Comprehensive Loss Underwriting Exchange). The acronym is a clever play on words, as it pertains to giving insurance companies a "clue" regarding risks that could lower their profits.

Building owners should know that whenever they file a claim (or even call their insurance company to inquire as to whether they should file a claim) the information they give over the phone is most likely being entered into the C.L.U.E. database. This information can have grave and lasting negative effects on future insurability. For this reason, the insurance departments and commissioners of many states are taking proactive roles in educating consumers and in protecting them from misuse of these data. However, Idaho has not yet taken such action ... leaving consumers to protect themselves through self-education.

Therefore, I strongly urge building owners, buyers, and sellers to think twice about disclosing any water damage to their insurance companies. (This includes fire damage, as many fires are put out with water ... which, of course, often leads to associated water damage.)

Finally, I highly recommend asking your prospective building or homeowners insurance agent to be sure to obtain a CLUE report on this property before submitting a binder for insurance to your lender. (Failure to insist upon this important information *before* purchase of the building could possibly result in a surprise increase of premiums or even in withdrawal of the insurance once the insurance company has completed their due diligence.)

#### **Backflow Prevention Valve Codes and Inspections.**

The State of Idaho requires all irrigation systems that are in any way connected to domestic water systems (including underground aquifers, by means of private wells) to have adequate means of preventing contamination of their associated domestic water sources. The state publishes detailed specifications for the design, installation, and performance of the required backflow prevention valves.

Idaho requires that certified inspectors inspect all existing backflow prevention valves, annually. The state and the local water providers have the right to immediately discontinue service to any point of final use that is not in compliance. (However, normally, some notice is given along with a reasonable time to comply.)

It is fair to note that enforcement of these laws has been sporadic and inconsistent, which explains why so many Idaho citizens are yet unaware of any need to comply. However, once an address is listed



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in the state's records as requiring backflow prevention, it is more likely that annual inspections will be tracked and compliance enforced.

The numerous older-styles of anti-siphon loops with ball-check valves and many other older backflow prevention devices that are no longer in compliance with today's codes cannot be accepted as "legal". There are no "grandfather" rights when it comes to public safety.

Further information about backflow prevention valves can be obtained from the State of Idaho Department of Environmental Quality (DEQ) at (208) 373-0413.

#### Sodium-Based Water Softeners.

Some water sources (both private and public) may contain high concentrations of dissolved minerals that can build up and clog piping and faucet aerators or cause water heaters to fail faster. This condition, known as "hard water", can be measured to decide upon a course of action, if desired.

Most water softeners installed in residences use sodium-based ion displacement systems. This type of water conditioner forces the iron, calcium, potassium, and a number of other elements typically associated with "hard" water out of solution by super saturating the water with sodium. Sodium is easily obtained from salt that is rather plentiful, cheap, and easily dissolved into water. (That's why people need to keep refilling the salt canisters of water softeners.) The unwanted ions of the harder elements are deposited on the surfaces of resin beads and then flushed down the drain periodically to refresh (or recharge) the resin bed of the conditioner.

The high concentration of sodium in most "softened" water is usually detectable by making the water feel "slippery". Softened water not only prevents the buildup of harmful deposits on the inner surfaces of piping and plumbing fixtures, but also allows more lather to be easily produced with a given amount of detergent. (It saves on soap bills.) In contrast, it's the hard water that makes the "squeaky" sound on skin or dishes when they're being rinsed.

It's important for anyone instructed by their physicians to maintain a low-sodium diet to avoid the consumption of water softened by many of the sodium-based systems. (Most people can drink sodium treated water without ill effects; but many people don't like the taste or feel.) Check with a knowledgeable dealer regarding the sodium contents of the water being treated by a particular installation, as some systems manage to keep the sodium levels much lower than others.

Also, if indoor potted plants are continually watered with high-sodium water, their captive soils may trap and accumulate enough salts to eventually kill the plants.

For these few above reasons, it is rather typical to have the plumbing modified to provide unconditioned water for human consumption or plant watering to one or more taps at the interior of the building. Most people also want to ensure that the water to the exterior sill cocks (hose connections) is not treated, which avoids needless salt costs.

Whenever the building's water piping is to be modified for the installation of a water softener subsequent to original construction, it is very important to realize many water softener dealers may not employ licensed plumbers. Since plumbing modifications should require a plumbing permit and code inspections, I suggest making it known to the water softener salesperson that necessary permits and inspections will be expected by the building owner. (I've seen too many poorly installed units and improper modifications to building plumbing that have caused extensive damage to buildings due to incompetence or poor workmanship.)



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## **Tripping Hazards Along Public or Private Walking Surfaces**

Precendences set by governing agencies typically define any vertical disparity along a walking path as a "tripping hazard" if it is greater than 5/8 inch in height. These guidelines represent what attorneys feel are appropriate when prosecuting or defending trip/fall cases in courts of law. Therefore, as building inspectors, we try to follow these guidelines regarding the reporting of possible tripping hazards.

The need for such guidelines seems to begin with public right-of-way sidewalks. Sidewalks installed along public streets are part of the public's property, but the individual property owners usually have the responsibility for their maintenance. Likewise, if anyone is injured due to a tripping hazard anywhere in the right-of-way areas bordering their property, the individual owner(s) are usually liable, just as they would be for someone tripping or falling on their own property. However, although this liability can be very great, most people simply rely upon their building or homeowner's insurance to cover these risks.

There is one very important exception to the above-mentioned strategy, however! Local government agencies typically have the legal responsibility of ensuring that hazards along their rights-of-way are being addressed. If their department is made aware of a possible tripping hazard, they are legally obligated to investigate further. If their inspector finds that any hazard exists, then the property owner adjacent to the hazard may be contacted and be given instructions for repair as an ultimatum.

Most such governing entities will consider any abrupt vertical irregularity greater than 5/8 of an inch to be a tripping hazard. (The arbitrary 5/8-inch standard is a measure that their attorneys feel they can reasonably defend for not taking corrective action. However, any hazard—no matter how small—may still end up in court if someone trips and injures themselves.)

If the property owners fail to accomplish the directed repairs in a timely manner, the government agency may have the work done and invoice the property owners. If the property owners fail to pay the invoice, a tax lien or other remedy may be placed against their title. (NOTE: All work done in the public rights-of way must usually be done only by contractors who have been approved by the agencies having jurisdiction. This usually increases expenses far above those that the building owners would choose to incur on their own.)

Most governing agencies do not actively inspect sidewalks for hazards. They respond only to people who call in to complain about sidewalk conditions or to people who call to inquire about regulations. (This explains why most citizens can point to obviously hazardous areas in public sidewalks that have remained unaddressed for years.)

If the person receiving a phone inquiry regarding sidewalks is given a street address, then they are usually obligated to send an inspector to that address. This could trigger a very expensive chain of events for some property owners. Most of the people answering the phones at those offices will try to warn the callers not to give a specific address unless they wish to make a complaint.

My advice to building owners inquiring about the sidewalks, curbs, or driveways in front of their own property is to ask about general advice regarding right-of-way sidewalk regulations without giving out their specific addresses.

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## Importance of GFCI (Ground Fault Circuit Interrupting) Devices

Over the past 40 or so years, the electrical code authors have begun to recognize the importance of increased protection against inadvertent small electrical shocks due to ground faults. Physiologists have discovered that electrical currents as small as 30 to 60 milliamps per square centimeter passing through a heart muscle can cause fibrillation. This is probably the most serious condition that electrical currents can produce. Once a heart goes into fibrillation, it usually requires a defibrillator to save the patient. (Most of us don't have this type of equipment nearby.) Ironically, if greater amounts of current pass through the heart muscle, it's far more likely that the heart will simply spasm in response to the shock and then regain its normal rhythm.

Research has found that older people and persons with unsound hearts are much more susceptible to small shocks that might be below the threshold of perception of younger, healthier people. For this reason, it's quite possible that a malfunctioning appliance in a building could be creating small shocks that don't bother one user, but which could kill another user.

The electrical industry has addressed this danger by requiring the installation of protective devices (commonly known as GFI's, for Ground Fault Interrupters) to serve all outlets that are within six feet of plumbing fixtures or major appliances likely to have exposed surfaces directly connected to ground. Outside outlets and outlets over bare concrete surfaces are also required to have this type of protection.

These GFI devices are usually set to open (trip) a circuit if an imbalance of current flow between the "hot" and "neutral" conductors greater than 10 milliamps is measured. While some of these devices are incorporated into GFI-type circuit breakers, the more modern implementation is the use of GFCI (Ground Fault Circuit Interrupting) duplex receptacles ... the outlets having special "test" and "reset" buttons.

The GFCI outlets were originally designed for use on fully grounded circuits, i.e., circuits having a black, white, and a bare ground conductor. However, these outlets can also be appropriately applied to ungrounded circuits. (This is a little-known fact within much of the industry, which otherwise appears to be in conflict with the general rule about allowing only 2-hole outlets ungrounded circuits.)

NOTE: The locations and degree of implementation of GFI-type devices has changed dramatically over the past 30 or so years, according to codes adopted by various authorities. (One cannot expect all older buildings to be in compliance with today's codes.)

#### Importance of AFCI (Arc Fault Circuit Interrupting) Devices

It's been known for many years that certain wiring problems can cause fires before the actual current ratings of the conductors are exceeded. Fuses and circuit breakers have traditionally been the only line of defense against overloaded circuits that can generate enough heat to ignite nearby combustible materials in residences. The sizes of these fuses or circuit breakers are based upon the sizes and types of wiring designed and insulated to carry the necessary load currents.

However, it's all too common that smaller amounts of current can find paths through poor wiring insulation that can generate more heat than the engineers predicted. When this occurs, fires can start.

The types of paths that electrical currents can follow when they escape their intended circuits are known as "faults". When the current has to jump through or past poor insulation to follow a fault path,



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it must usually form an "arc" through the air or through insulation that has high resistance to current flow. Therefore, these types of wiring failure are referred to as an "arc faults".

Arc faults tend to generate high amounts of heat in very small spaces without involving large amounts of electrical current.

The following short list defines some examples of wiring problems that can generate arc faults:

- a) Extension cord insulation becoming frayed by being walked upon under a throw rug
- b) Appliance cords being pulled around sharp corners.
- c) Rats or mice chewing on wiring insulation in walls or ceilings until it is nearly bare, or until it can touch adjacent surfaces that can conduct some electrical current.
- d) Pets chewing on appliance cords or extension cords.
- e) Embrittled insulation around fixtures that are not adequately protected from too much heat.
- f) Insulated wires touching sharp metal edges of electrical boxes, rather than being protected by bushings or bushing clamps, or other strain relief devices.

The electrical industry has finally been able to develop "smart" circuit breakers that use small-scale integrated circuit logic to compare the typical load waveforms of arc faults to normal loads that should be expected. When the waveforms look like arc faults, rather than safe loads, the breakers "trip".

Since these devices are still rather expensive and are still in their infancy of development, code authorities are requiring the inclusion only in bedroom receptacle circuits at this time. However, as they become less expensive and more dependable (that is, with fewer "nuisance trip"), they will no doubt be included in more and more of a typical building's branch circuits.

At this time, the AFCI's are made only in a circuit breaker format. However, it's expected that the industry will soon be able to produce them in the small and less expensive duplex electrical receptacle format.

#### **Making Incandescent Light Bulbs Last Longer**

Have you ever noticed that light bulbs seem to burn out just when you turn them on? That's because their frail filaments are hit hard and suddenly by a large burst of voltage and current every time conventional switches turn them on. Those forces actually cause them to be "jarred" physically. (Sometimes, in a quiet room, you can actually hear the filaments sound like a released spring in response to the sudden energy put to them.)

To reduce the amount of unnecessary stresses that switches can place on light bulb filaments, I suggest considering the incorporation of what some people call "soft switches". These are any number of solid-state dimmer devices that allow the lights to be turned on gradually, instead of simply "slamming" them with the sudden forces that most contacts create. Any dimmer switch that forces the user to move a dial or toggle through a continuously increasing range of voltage or current in order to get the fixture to its fully "on" position each and every time the light is turned on could be considered as a "soft switch". (Any style of rotating-dial dimmer switch with a push-push on/off action, or a slide control in combination with a rocker switch that allows the dimming level to be set, but yet also allows a separate "on/off" action does not qualify as a "soft switch".)

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I suggest incorporating soft switches especially wherever expensive light bulbs are used, or where light bulbs are exceedingly difficult to access (such as at high ceilings or over stairways). The use of soft switches can extend bulb life by as much as a factor of 5 or 10.

#### Refrigerators and Freezers on GFI-Protected Circuits

Most garages built after 1976 have GFI-protected outlets. Other garages and exterior storage rooms are often subsequently "upgraded" with GFI-type protection. If refrigerators or freezers are plugged into these outlets they can sometimes cause "nuisance" trips of the protective devices. This can lead to food spoilage if the tripped conditions manage to go unnoticed for too long.

I suggest placing refrigerators or freezers in garages (or for other locations that may be protected by GFI-type devices) only upon non-GFI outlets. Usually, a qualified electrician can provide such an outlet in these locations with very little alteration of the existing circuits.

#### **Loose Door Knobs and Door Pulls**

When the surface plates (escutcheons) of doorknobs and closet door pulls are allowed to slide loosely around on finished surfaces, the surfaces are often damaged. Therefore, I suggest keeping all hardware tightly secured to avoid such damage.

## **Laundry Valves**

Since most washing machine hoses will eventually fail, it is wise to close the supply valves to which they are connected after each appliance use. For many building owners, this would seem to be very inconvenient ... especially if the valves are hard to reach behind the washing machine or require many turns to operate. However, in these cases it would still be appropriate to turn the valves off during long periods of non-use, such as during vacations, etc.

Alternatively, some modern valve stations are made with simple globe valves that require only one-quarter turn for their full range of motion. Some valves are also available with a single lever to control both hot and cold valves simultaneously. It might be advisable to consider replacing existing valves with these newer types to promote the habit of turning them off between laundry uses.

If easier valves are not a ready option, it may be prudent to employ only the more expensive, steel-reinforced washer hoses to help reduce the chances of flood damage.

#### Window Screen Panels Do Not Safely Hold Children

There have been a number of unfortunate accidents through the years involving infants and small children falling through windows that parents thought were safe because of the presence of screen panels. The children would manage to climb onto interior windowsills and lean against screen panels that they naively trusted would hold them. Therefore, I urge all parents of infants and young children to keep the toddlers away from open windows, altogether ... especially windows of upper story rooms.

If windowsills cannot be made inaccessible to youngsters, then it may be wise to either keep sashes secured shut or to open window panels only a few inches for air circulation, when desired.



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## Smoke and CO Detector Placement, Testing, and Maintenance

While older buildings may not have been required to have either smoke detectors or carbon monoxide (CO) detectors in place when they were built, we strongly suggest considering the installation of these important life-safety devices in any building. Furthermore, building owners should know that any time a building permit was or is needed to be obtained during any period when the IRC (International Residential Code) has been adopted by the local code authority, smoke detectors and carbon monoxide detectors have been required to be updated to current codes, regardless of the age of the building.

Current codes require smoke detectors in every sleeping area, in every room or hallway that adjoins sleeping areas, at least one at every living level, and at least one for every ceiling level that varies from an adjacent ceiling level by more than 2 feet. Additionally, they should be interconnected in a way such that if one sounds, they all sound. (However, battery-operated smoke detectors that sound independently are acceptable in renovations where major electrical upgrades are not otherwise being made.)

Likewise, current codes require at least one carbon monoxide detector to be placed at each living level in or adjacent to sleeping areas whenever any type of combustion appliance is installed in the building.

I suggest replacing smoke detectors at least every 5 to 7 years, as their sensors will usually begin failing after that period (even though their alarms will continue to sound when their test buttons are pressed).

Smoke detectors may be periodically checked for response to actual smoke by building owners. (Try using a short candle at the bottom of a tall glass jar. The candle will tend to produce a lot of smoke due to lack of oxygen, and the jar will keep hot wax off hands and carpeting. However, if such testing is done too frequently, the smoke may prematurely coat the sensors with a film that could block their sensitivity.)

## Leaking or Stuck Valves (Service Stops or Main Shutoffs)

If water valves that are not regularly used (such as those for shutting off water supplies to entire buildings or to specific plumbing fixtures), seem "stuck" or "frozen" in a certain position, we recommend exercising extreme care in attempting to force their movement. It's all too easy to damage such valves or their nearby piping and find yourself with a flood emergency on your hands. Unless the building owner is an experienced plumber, it's not a good idea to risk causing damage that you have neither the tools, parts, nor experience to repair before the situation gets quickly worse. (We suggest always knowing where the main shut-off valve is located, or how to operate the valve at the water meter before attempting repairs that could possibly cause damage and result in flooding.)

Infrequently used valves can fail to stop water flow when closed after being open for long periods of time. This is sometimes found to be the case with older building shut-off valves that have been in their "open" positions for years. It's also quite common with valves installed in the cold-water inlet pipes above water heaters. If such valves fail to stop all water when closed, a plumber should be called to replace the valve, as either their stop washers or the valves, themselves, will need to be replaced.

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It's very common for valves to leak a little water past their stem packing or cartridge seals when they get older and/or haven't been used for some time. This leaking us usually caused by moving a valve that has been stationary for years. However, this unwanted water escape from the valves can usually be stopped by closing the valve immediately. If the leaking valve has a packing nut, we suggest attempting to tighten the nut a little to stop the leak. This can usually be done with a crescent wrench on the packing nut and an opposing wrench on the valve body to avoid transferring damaging forces to nearby piping. (The packing nut is the very first fitting on the valve behind the operating handle that allows the valve stem to pass into the valve body.) By tightening this nut a little, the valve stem packing washer is further compressed into its confined cylindrical space to usually stop the leak by making a tighter seal around the valve stem as it spins in the valve body's bore where the circular valve stem from the handle must enter. However, if this simple method does not stop the leak, then a plumber must be called to replace either the valve packing or the valve.

Some valves with screw-action stems are designed to stop packing leaks if they are turned fully open, hard against their fully open stop positions. Therefore, if a stop or gate valve leaks a little from its stem packing while being turned open or closed, it's sometimes possible to stop the leak by simply turning the valve fully open and tight against its internal stops.

Ball valves and globe valves do not have this feature. If they leak from their valve bodies, it's time for a new valve. (Ball and globe valves are the ones that usually have a bar or lever-shaped handle that moves only through 90 degrees of travel, rather than having circular handles that require many turns to fully operate like gate or stop valves.)

If a building owner is experiencing problems with any types of valves, we are more than willing to receive calls at any hour to try to help them take the most appropriate action, first. Sometimes, we can guide building owners through corrective repairs. Other times we can help building owners choose the best plumbers at the most reasonable rates. Hopefully, we can always help reduce anxiety and educate the customer further in the process.

## **Air Conditioning Systems**

Air conditioning compressor units (the outdoor portion of the system) should not purposely be run when the outdoor air temperatures are below 45 or 50 degrees Fahrenheit. (The cold oil in their sumps tends to lift up and into the Freon (coolant), leaving none to lubricate the compressor.)

When the outdoor air temperatures are between 50 and 70 degrees Fahrenheit, the compressor can safely be run and some cooling will take place; but this cooling effect is due primarily to the fact that the outdoor air is cooler than the living space air—not due to any change-of-state of the coolant (from liquid to gas).

Air conditioning systems cannot work as designed until the outdoor air temperatures reach at least 70° Fahrenheit. For this reason, annual maintenance should not be scheduled each spring until the outdoor air temperatures will be at least this warm. Heating and cooling maintenance contractors cannot tell whether the coolant charges are correct when outdoor temperatures are below 70 degrees.

It's also important for the maintenance contractors to verify that the fine air fins of both the outside and inside refrigerant coils (heat exchangers) are free of dust clogging. (An access panel must be available to see the coils at the indoor unit. Sometimes, an access must be cut through the sheetmetal.) Freon (or other coolant types) cannot be correctly adjusted unless the coils are clean.



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One should avoid purposely restarting a compressor unit within the first 3 to 5 minutes after it has stopped. (It is more difficult for the compressor motor to restart against a load. Allowing a few minutes for the coolant pressures to equalize helps take the load off the compressor.) During power outages, it's a good idea to quickly turn the thermostat to the "off" position until power is restored and appears to be stable. These precautions can help prolong the life of the compressor motor.

#### **Air Conditioner Condensate Leaks**

When refrigerative-type central air conditioning systems are working in the summer months, the indoor refrigerant coils unavoidably collect moisture from the air in the form of condensate, which gathers into larger and larger droplets of water until it drips off the coils. This water is gathered in trays beneath the coils where it flows by gravity into a condensate drain to carry the water away from the system. The drain piping should be routed either to the exterior or to another suitable drain—not just into a crawl space.

If the intended collection and drain path becomes clogged with the typical dust and lint that also lands on the same refrigerant coils (especially if the furnace filters aren't doing their job), the condensate can build up and overflow the collection trays. This causes water to leak down out of the system in places where it can often cause damage. Therefore, one should periodically check all areas directly beneath the indoor refrigerant coils of the air conditioning system for signs of leaks during the summer months when the air conditioning system is in operation. (Searching for the typical 3/4-inch and 3/8-inch soft copper tubing emerging from one of the metal cabinets at or near the furnace or indoor air handler, where the system blower is usually located can identify the indoor refrigerant coils. The larger of these copper-tubing lines is usually covered with black foam rubber insulation. Both lines are usually found running side-by-side from the indoor coils to the outdoor compressor unit.)

Condensate leaks down into the heat exchangers of combustion furnaces can lead to damaging corrosion that can cause breaches in the heat exchanger walls and threaten to let carbon monoxide from the flames into the living spaces.

Condensate leaks down into the crawl spaces or through the flooring can attract termites or lead to dry rot damage or the development of molds and mildews.

One should look for telltale signs of water trails or rust on metal parts of the furnace or ducting (plenums) under the refrigerant coils, or stains left from water puddles on floors adjacent to the furnace or air handler cabinets. Of course, if actual water is found puddling, then one can know for sure that a condensate leak is occurring.

If any signs of condensate leaks are noted, a qualified heating/cooling contractor should be contacted to make any necessary repairs before other problems develop.

## **Heating System Maintenance**

Heating systems (furnaces, air handlers, space heaters, etc. – any heating component other than simple radiant electric heat components) should be cleaned and checked annually. However, it's not important what time of year this maintenance is done. For this reason, it's usually wisest to direct the five minutes or so of annual heating system maintenance to be done at the same time as the annual air

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conditioning service. This strategy can save building owners the cost of an additional, unnecessary service fee each year.

#### **HVAC System Filters**

The types of filter elements that are only 1 or 2 inches thick (usually of paper, fiber mesh, "hog hair", fiberglass, open-cell foam, etc.) must be washed or replaced as often as monthly to ensure the longest possible system life. These simple and inexpensive furnace filters (such as often purchased in grocery stores) will typically help furnaces and air conditioners last up to 17 to 22 years if very diligently maintained. Whereas, the more expensive and more efficient types (such as 4,5, or 6-inch pleated media filters, electronic filters, and combination filter systems) can help a furnace's heat exchanger last up to 35 or 40 years and an air conditioner's compressor last 20 to 25 years or more.

Usually, custom installed filter racks and appliances containing electronic, electrostatic, or pleated media filters will provide the best results. Therefore, I suggest contacting several local heating and cooling contractors to gain more knowledge about the types available.

Of course, better filtering systems also provide the added benefits of helping keep the living spaces cleaner and reducing symptoms of allergy sufferers. People who suffer from asthma also gain more comfort from better filtering systems.

#### Roof Valleys and Gutters Over Sloped Shingled Roofs.

Since the roof of this building is prone to collect tree debris, I suggest that the valleys and gutters be cleaned seasonally. If too much tree debris is allowed to stand in the valleys, the shingles may let water through into the attic or living spaces. If the gutters become too full of tree debris, water may leak back under the shingles along the eaves to damage the fascia, soffits, or living spaces.

#### Overhead Garage Door Operator Safety Functions.

The newer-style multi-sectioned overhead vehicle doors in use at most buildings today have a tendency to develop higher forces close to the bottoms of their travel than the older-style one-piece doors. This is due to a cam-like action that is developed by the drive linkages in the last few inches of downward travel.

In order for drive-force-sensitive stop-and-reverse safety functions to be effective when the bottoms of the garage doors are at the height of a child's head or chest, they must be set extremely light at the upper extents of their travel.

This often tends to cause the doors to stop and reverse because of the inherent friction in their tracks and rollers. By the time adjustments are made to allow the doors to travel fully closed without reversing from their own frictional forces, the forces that can occur without tripping the stop-and-reverse safety function in the last 4 inches of their travel can be too great to provide any real protection for children or small animals.

That's probably the main reason the industry has developed the electronic "eye" (or "light beam") sensors that have been included with most installations since 1993. These sensors can augment the



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relative safety of the traditional drive-force-sensitive functions by causing the drive motors to stop and reverse whenever the light beam is interrupted while the door is traveling downward.

However, I see all too many of these electronic "eyes" being installed at heights much greater than those of a child's head or chest. This could conceivably allow a child or small pet to lay upon the floor beneath the light beam without tripping that function … leaving only the older-style, relatively insensitive, safety function remaining in effect.

Some people have been tempted to raise the levels of the electronic "eyes" high enough that cars cannot be parked halfway in and out of garages (where the light beams would simply shine under the cars, between their front and rear wheels, for instance). This certainly provides more protection for the cars; but severely reduces the protection for children and small animals. I strongly discourage this practice.

I suggest that any electronic "eyes" installed as safety features on garage door operators be installed at heights no greater than 4 inches above the floor.

I further recommend that the drive-force-sensitive safety features be set to barely allow the doors to drive downward without stopping and reversing upon their own friction. (This adjustment should be checked every month or so, as the settings will tend to "creep".)

As a final word: The only truly safe way to operate automatic garage doors is to watch them travel fully open and closed. Children should not be allowed to operate these appliances without adult supervision.

#### Sprinkler Controller Back-up Batteries.

Automatic sprinkler controllers designed to hold their customized programs in solid-state memory usually lose their programming whenever the power source to their memory is interrupted. These controllers require the implementation of "back-up" batteries. Although the controllers are not designed to allow actual operation of the sprinkler system during power outages, they can at least save the custom programs stored in their memory and keep track of the correct time and dates during most power outages. (This is a great way to ensure that your custom timing and scheduling has not been interrupted, changed, or forgotten because of a power outage.)

However, to ensure that the backup batteries remain fresh enough to do their job, I suggest replacing them each fall when the sprinkler system is "winterized". (They can be replaced while the main power source is still available to the controller without fear of losing the program.)

It's a good idea to place a chart of any custom program schedules near the controller. It's also a good idea to keep a map of the zones and sprinkler head locations near the controller. The map should also show the locations of all the solenoid control valves, the stop-and-drain valves, and the backflow prevention valve. (This information is invaluable to sprinkler contractors, plumbers, lawn maintenance personnel, or even friends who may have to operate the system in your absence.)

#### Discovering and/or Verifying Water Service Line Leaks

If the sound of flowing or rushing water can be heard through the pipes inside a building, and yet you know that no fixtures are using water, you may have a buried water service line leak. (These sounds transmit themselves rather easily through the piping, even if the leak is occurring beyond the



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building walls. Of course, other ways to discover water service line leaks are high water bills or constantly cycling pumps in private wells.

If a private well pump can be heard cycling on and off when no water is being used, a leak has developed somewhere. The leak needs to be found and eliminated. The sounds of the pump can usually best be heard near the pressure tank, pressure switch, or the well head.

If the property has a water meter, most meters have a small red triangular indicator on the dial face that spins perceptibly even for the smallest of leaks. It is a good idea to watch the leak indicator triangle periodically on older buildings with any type of direct-buried metal service line piping.

Many water utility companies make special insurance policies available to their customers (through independent vendors) that will cover the costs of buried service line leaks. Usually, these policies are very inexpensive.

## **Using Unfinished Attic Spaces for Storage**

The open truss or rafter framing found in most unfinished attics will not provide surfaces capable of withstanding loads required for storage activities. The danger is that people might inadvertently step through sheetrock or plaster ceilings, thereby causing property damage or personal injury. I suggest installing solid wood plank flooring or at least ½-inch plywood sheeting to span the framing members before attempting to walk in unfinished attics. Likewise, stored personal items should never be placed so their weight is applied directly to sheetrock or plastered ceiling surfaces. Such loads should always be applied to the framing members. Additionally, it would be wise to have an architect or engineer determine the amount of weight that can be safely placed on ceiling framing in any attic. Furthermore, if attic storage space is made over living spaces, care should be taken to avoid degrading the insulation needed for energy efficiency.

## **Dealing with "Fogged" Windows**

When building inspectors are able to identify even one thermal window that has "fogged", there are often other windows on the same property that are also showing visible interior condensation from time to time. When this condition first develops, water droplets may be visible at certain times of the day or during certain whether conditions, only. At other times, these same windows may appear completely clean and clear.

It isn't until moisture-laden air (along with dust and other soils carried into the thermal panels with that air) has been entering the window assemblies for a considerable period of time that the characteristic streaks of mineral deposits remain even when no condensate happens to be visible. When these streaks finally become prominent, they begin to interfere with the ability to see clearly through the windows. (They also make the windows look "dirty".)

While windows in this condition can eventually look pretty bad, their ability to keep out wind and rain is not really hampered. In fact, their ability to continue to provide thermal insulation is not affected all that much. The only slight exception, here, I suppose, is the partial exchange of argon gas found in many higher quality windows, with normal air. (Argon gas conducts less heat than air.)

The "loss of seal" or "seal failure", as some people are fond of saying, is really only the condition of the desiccant powders placed in the windows' thermal units by their manufacturers having finally



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absorbed more moisture than they can hold. Many thermal windows are designed to "breathe". Those typically have tiny capillary tubes installed that are designed to let only small amounts of air in and out of the spaces between the glass to help equalize pressures between the gasses inside the windows and the atmospheric air outside.

Usually, south-facing windows with no tree shade have to "breathe" much more during their daily cycles of strong direct sunlight and cool nights than windows facing in other directions. For this reason, the south-facing windows are often the first to become "fogged".

However, if a person unwittingly sprays a window that is exposed to direct sunlight on a hot day with cold water to wash it, it's a pretty good bet that the rapid change in temperatures will cause enough sudden contraction to either break the seals along the spacer channels, or the glass, itself.

In fact, just banging on a window or slamming a moveable sash open and closed while a window is stressed from temperature changes could also cause seal failure and result in premature "fogging".

Unfortunately, the only feasible way to eliminate the undesirable effects of "fogged" windows is to replace the thermal glass units, themselves. Fortunately, though, most factory-framed windows allow these thermal units to be replaced without having to remove the window framing from its building. The process of replacing "fogged" thermal units is usually quite fast and causes very little disruption to the building. However, wood-set windows (where the thermal units are built right into the building, rather than being factory-framed) usually require a little more time and disruption, as casings and/or moldings have to be temporarily removed, replaced, repainted and/or recaulked.

## Avoiding Baked-on Food Soils in Oven Door Glass Panels

I often see brown streaks of baked-on food soils deposited on the inner layers of glass-paneled oven doors. Once food soils get inside the oven doors, disassembly of the doors is required to access the surfaces to remove the stains.

To avoid this problem, I suggest being aware that cleaning fluids can easily enter the interior of oven doors through their edge seams and especially through their latch lever holes which are provided for the "self-cleaning" functions. Since the "self-cleaning" processes do not reach any food soils deposited beyond the oven door's flexible seals, building owners usually need to clean these perimeter surfaces separately with a strong detergent. I encourage the building owners to wring all excess moisture from their cleaning rags before attempting to scrub these surfaces. Any water or detergents that get into the oven door may look clear at first (as they run down the inner glass surfaces), but any organic soils dissolved or suspended in the water will eventually darken and become baked on.

## Soils Settling Next to Foundations

When foundations are made that must extend to frost grade (a minimum of 24 inches in Idaho) beneath most buildings, the earth is excavated beyond the boundaries of the foundations to allow room for the concrete forms. After the forms are removed, the trenches are gently backfilled so as not to threaten the relatively uncured, weak concrete. As a result, most backfill will settle noticeably within the first few feet of any foundation during the first 5 years after construction.

After this initial setting has occurred, building owners may find that the ground surfaces which originally sloped away from their foundations now slope towards them. If this is the case, I strongly



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recommend periodic inspection of any adjacent below-grade spaces for possible exterior surface water entry. If waters from rains or irrigation begin entering below-grade spaces due to inadequate slope of the soils away from the foundation, then corrections should be made. However, if the settlement occurs adjacent to slab-on-grade floors (such as for most garages and some living spaces), then the importance of correction is less. Nonetheless, it's never a good idea to allow water to pond against foundations.

If corrections are needed, the loose topsoil, landscaping materials, shrubs, plants, and any sprinkler system components should first be removed to expose the underlying "subgrade" of native earth that was used to originally backfill the footing trenches. Once the underlying soils are exposed, they should be further compacted with vibrating machinery as much as possible.

After that, additional soils with relatively high clay content should be added in 3-inch "lifts" and carefully compacted until the maximum slope away from the foundation can be achieved. It's wise to use soils less permeable (i.e., with slower percolation rates) than the native soils, if possible. (Note: At least several inches of clearance should be maintained between the bottom edges of siding and the tops of the finish grading.)

Once appropriate new soils are properly placed in the footing trenches to bring them up to adequate slopes away from the building, the sprinkler components, plants, shrubs, lawn, landscaping materials, etc., can be reinstalled.

## Multi-Level Buildings with Only One Heating/Cooling System

Many buildings with bonus rooms over garages or with second stories or basements have only one forced-air heating system. Those buildings often have difficulty maintaining even, comfortable room temperatures at every living level, simultaneously. This is due to the fact that hot air tends to rise and cold air tends to sink. These buildings can easily experience as much as 10 F° of temperature differential between lower and upper level rooms.

In the summer months, it's relatively harder to get cold air to travel through duct systems into the upper levels of the building. Conversely, in the winter, it's all too easy to get the warm furnace air to the upper rooms—making the upper rooms hotter, for a different reason.

However, it's usually possible to significantly reduce the differences in room temperatures between upper and lower living levels by closing off some of the feed-air registers. (Most feed-air registers have built-in dampers that can be adjusted to regulate the amount of air that can flow through them.)

In the summer it's helpful to close off most of the lower level feed-air registers. This tactic creates greater pressure in the duct system that helps more of the cool air (from the air conditioning system) to be forced out at the upper level rooms.

In the winter it's helpful to close off most of the upper level feed-air registers, instead. This action forces most of the furnace's warm air to be let out into the lower level rooms, first. (Much of that air finds its way to the upper rooms, anyway, without making them seem unbearably hot.)

CAUTION: Heating & Air Conditioning contractors may warn against the practice of closing off air flow to any of the rooms ... especially to too many rooms. Therefore, let me instruct the building owner on how to know whether too many feed-air registers have been closed.

In the summer, with the air conditioner running, if too many registers are closed, there's not enough warm room air circulating through the evaporator coils of the system to keep the condensate



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from freezing. When freezing occurs, the coils may become totally blocked with ice (looking much like the freezer compartment of a non-frost-free refrigerator). If this happens, turn off the air conditioner, but leave the main blower fan running, until you can feel strong air flow, again, at the feed-air registers. After the ice has melted, open a few more of the registers until the system can be run continuously in the "cooling" mode without freezing the coils.

In the winter, it's important to leave enough of the feed-air registers open to allow the main blower to remove sufficient heat from the furnace's flame chamber to keep it from overheating. If overheating of the furnace's heat exchanger occurs, the furnace will automatically turn off the flames until the heat exchanger cools down. Running a furnace against its upper limit safety switch in this manner creates a condition called "short cycling". It's not immediately dangerous (as long as the upper limit switch is functioning); but it's not a good idea, either.

The way to know if the furnace is "short cycling" is to turn the thermostat up to its highest setting while operating in the "heat" mode. As long as the thermostat is calling for heat, the main flames should not need to shut off. Therefore, watch the flames at the furnace for at least 10 minutes after running the thermostat to its highest setting. If the flames shut off during that test period, the furnace is "short cycling". You'll need to open additional feed-air registers.

Please note that other factors can also lead to iced air conditioner evaporator coils and to short cycling of the furnace. Clogged furnace filters will cause the same unwanted conditions. Therefore, you should be sure to keep the filters free of dust build up that could slow down the needed air flow through the evaporator coils and/or furnace's heat exchanger.

Slow or failing blower motors can also cause the same symptoms. Malfunctioning limit switches or improperly charged refrigerant can also lead to these same symptoms. Therefore, it's best to have the systems checked at least annually by qualified HVAC contractors.

#### **Hinge-Mounted Doorstops**

I suggest considering the removal of hinge-mounted doorstops, wherever possible. This type of doorstop can apply extreme point loads to door surfaces—all too often punching through the "skins" of hollow-core doors. (However, if this style is the only kind that will work in a given situation, then I suggest applying one to each hinge pin and adjusting them all to share the loads, equally.) Brass self-adhesive plates are also available for door surfaces to spread the point loads over slightly larger areas, or to "patch" door skins that have become damaged by this type of doorstop, rather than needing to replace the whole door because of one small hole.

Some newer hinge-mounted doorstops have been designed to transfer their point loads back onto the hinge plates, rather than onto weak door skins. However, I find many hinges bent because of these.

Builders are required by code inspectors to apply some sort of doorstop to every door in every building. However, once owners take possession, they should go through the building and immediately decide whether to remove some of the doorstops or replace some of them with different types of doorstops. Commercial-style bumpers can be placed over wall surfaces to avoid (or even cover) damage.

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## **Various Types of Hose Valves**

Older-Style Non-Freeze-Proof Hose Valves: Older buildings which have not been fitted with modern freeze-proof sill cocks (typically pre-1950 buildings) usually provide a means of draining all water from their sill cocks (exterior hose valves) during the winter months to prevent freeze damage to the piping. This is done by employment of special "stop-and-drain" valves located somewhere inside the building ... usually in the crawl spaces or in basement ceilings within a few feet of the hose valves.

To "winterize" these older-style hose valves, one would close their associated stop-and-drain valves, and then open the exterior hose valves to let all water drain outside that will drain freely by gravity. To guaranty that all water has drained from the valves and the sections of piping that might be exposed to cold weather, special knurled drain nuts are designed into the sides of the stop-and-drain valve bodies that can let water drain out also through that end of the pipes. Most people simply hang small tin cans or buckets beneath the stop-and-drain valves to catch any small amounts of water that drain from these points.

This process is simply reversed in the spring to reactivate the function of the non-freeze-proof exterior hose valves.

<u>Freeze-Proof Hose Valves</u>: This type of sill cock (exterior valves for garden hose) is designed to allow all water to drain from its barrel each time the water is shut off. This allows all water that would otherwise be exposed to freezing air temperatures in the winter to drain away safely before it can freeze and expand to cause damage to the piping inside or behind the wall.

However, in order for this type of hose connection to function correctly, any hoses or other obstructions such as additional valves must be removed during cold weather to allow the valve barrel to freely drain when the valve is shut off. (The valves are designed to be mounted so that their barrels slope towards the exterior enough to effectively drain. If they are incorrectly installed, water can be trapped in their barrels to lead to freeze damage, even if hoses are diligently removed each winter.)

If hoses are inadvertently left attached during freezing weather, one can check for possible freeze damage after the piping is thawed by placing a tight-fitting cap over its hose threads and turning the valve open. If any water sprays or leaks out either to the exterior or into the crawl spaces or wall cavities around the freeze-proof barrel (behind the exterior portion of the valve), the valve must be replaced as soon as possible. (This type of water leak will occur only when the valve is in use and with some back pressure developed.)

<u>Freeze-Proof Self-Draining Garden Hose Valves</u>: These valves have an improved design that allows garden hoses to remain attached during the winter without threat of freeze damage to the valves or their adjacent piping. However, in order for the valves to remain protected during the winter months, their valve handles must be turned closed (clockwise) a few more turns than are needed to simply shut off the flow of water. When the extra turns are applied, water should be seen falling through a gap created to let water out of their freeze-proof barrels just behind the hose attachment. It is important to apply the extra turns to the valve handles whenever freezing weather might occur before next use of the sill cock.

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#### **Rust Stains on Concrete**

Rust stains can usually be totally removed from concrete surfaces, or at least greatly reduced (if not eliminated) by treating them with chemical cleaners designed for that purpose. The most effective product I've seen so far for removing these stains is made by Behr®. It's their "Concrete Etchant and Rust Remover". However, up to a dozen applications with interspersed water rinsing and a lot of scrubbing with a stiff-bristled brush may be required.

Rust from Irrigation Water: If water available for irrigation has a lot of iron (ferric ions) dissolved in it or rust (ferric oxide) particles suspended in it, constant watering of adjacent lawn or landscaping areas may result in reddish brown deposits accumulating on the concrete from the nearly unavoidable overspray. Although these stains are difficult to remove, they tend to wear away in time if something can be done to minimize the repetitive wetting of the concrete. Often times, an adjustment of the landscaping and/or sprinkler system will help.

One can install decorative borders adjacent to the concrete flatwork of the driveways, walkways, patios, etc., that don't require watering and which provide enough separation to eliminate most of the occasional overspray.

Rust from Fertilizer: Some pelletized fertilizers containing iron will leave small rust-colored stains if not swept off concrete driveways, sidewalks, or patios before the next rain or sprinkler operation. I recommend sweeping or vacuuming all fertilizer pellets off concrete surfaces immediately after application.

Rust from Leaking Radiators or Battery Acid: Radiator water or battery acid leaks from vehicles tend to leave rust-colored stains on concrete driveway surfaces. Therefore, automobiles with these problems should not be parked over clean concrete surfaces.

Rust from Iron or Steel Objects: Iron or steel patio furniture, plant pots, etc., touching or placed above concrete can be responsible for rust-colored stains if they are not kept adequately coated to prevent oxidation when it rains or automatic sprinklers wet them.

#### Floor Coverings in Rooms with Plumbing

Bathrooms and laundry rooms are often subject to inadvertent water spills onto the flooring. Even though most contractors carefully seal the joints between the fronts of tub and/or shower curbs and adjacent floor coverings, water spills can run to the nearby walls. For this reason, I suggest applying matching silicone sealants along the bottoms of all painted wooden baseboard moldings around the entire perimeters of bathroom or laundry-room floors ... especially if the floor coverings have particleboard underlayment beneath them. (Ceramic tiled or stone floors with cementitious underlayments are not nearly as susceptible to this type of damage.)

Without this precaution, water that manages to get to the edges of the floor coverings can be absorbed into their particleboard underlayments to cause swelling and eventual discoloration of vinyl flooring or swelling of other flooring materials. Once this happens, the underlayment and the floor covering may both need to be replaced. Therefore, it's much cheaper to protect the underlayment by sealing all possible water entry points.

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# Subject Property: 111 Round Cir, My Town, ID 83000

## **Sealing Refrigerator Cubbies Against Water Leaks**

Since refrigerators (especially those with icemaker lines) can let water onto flooring, I suggest considering sealing the perimeters of the floor coverings in their cubbies with silicone to prevent water entry into the crevices where the floors meet the walls or adjacent cabinets. This precaution may help prevent unnoticed water leaks from causing long-term damage to subflooring and structures. (I've seen many cases where hardwood flooring has become very warped for 10 feet in both directions from such leaks because water got under it and followed the grooved channels cut into the bottoms of the flooring boards.)

If water leaks are prevented from finding their way down into or past the finished flooring, they will be more likely to advance out onto the floor surfaces in front of the appliance where they will be more readily noticed—before causing greater damage.

Another way to accomplish the same precautionary measure is to place 6-mil plastic sheeting under the appliance. The sheeting can be folded up and against the back of the appliance cubby and along its sides, and held in place with tape. The front edge of the sheeting can be cut to stay just out of view.

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