

**Specialty Home Inspections
Presents**



**A Town Home Inspection Report On
11568 S. Kirkwood, Stafford, TX
Sold by Sandra McClusky, Listed By**



Specialty Home Inspections

www.SpecialtyInspections.com

Monday, January 27, 2020

Chyecaria Evans
Home Buyer
Houston, Texas

Dear Chyecaria:

Thank you for selecting our company for your inspection needs. I enjoyed working with you to develop the attached deficiency report. Attached you will find your formal home inspection report as per current TREC guidelines. Please review the report and if all is well noted, you may forward the report to your Realtor and/or other party that is assisting you in the home buying process. Please note that the home inspection is part of your due diligence as noted on the TREC cover of this report and additional investigations may be necessary during your option period at which you may find additional issues.

If you have any questions please feel free to call me.

Yours Truly

A handwritten signature in black ink, appearing to read "Genaro Lopez". The signature is fluid and cursive, with a large initial "G" and "L".

Genaro Lopez
Professional Inspector No. 3078

Tel 281-477-0893

Fax 281-477-0612

e-mail: Houstonss@aol.com

Specialty Inspection Services

2219 Shelby Park
Katy, TX 77450

Phone: (281)477-0893

Fax:

INVOICE

CLIENT'S NAME: Chyecaria Evans TX
--

INVOICE NUMBER	GL20200127-01
INVOICE DATE	January 27, 2020
TERMS	Due on receipt

INSPECTION DESCRIPTION	PRICE	AMOUNT
Standard Inspection	\$350.00	\$350.00
PAYMENTS: 1/27/2020	 (\$350.00)	 (\$350.00)
	SUBTOTAL	\$350.00
	TAX	\$0.00
	TOTAL	\$350.00
	BALANCE DUE	\$0.00

THANK YOU FOR CHOOSING OUR COMPANY FOR YOUR INSPECTIONS!

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PROPERTY INSPECTION REPORT

Prepared For: Chyecaria Evans
(Name of Client)

Concerning: 11568 S. Kirkwood, Stafford, TX
(Address or Other Identification of Inspected Property)

By: Genaro Lopez, Lic #3078 01/27/2020
(Name and License Number of Inspector) (Date)

(Name, License Number of Sponsoring Inspector)

PURPOSE, LIMITATIONS AND INSPECTOR / CLIENT RESPONSIBILITIES

This property inspection report may include an inspection agreement (contract), addenda, and other information related to property conditions. If any item or comment is unclear, you should ask the inspector to clarify the findings. It is important that you carefully read ALL of this information.

This inspection is subject to the rules ("Rules") of the Texas Real Estate Commission ("TREC"), which can be found at www.trec.texas.gov.

The TREC Standards of Practice (Sections 535.227-535.233 of the Rules) are the minimum standards for inspections by TREC-licensed inspectors. An inspection addresses only those components and conditions that are present, visible, and accessible at the time of the inspection. While there may be other parts, components or systems present, only those items specifically noted as being inspected were inspected. The inspector is NOT required to turn on decommissioned equipment, systems, utility services or apply an open flame or light a pilot to operate any appliance. The inspector is NOT required to climb over obstacles, move furnishings or stored items. The inspection report may address issues that are code-based or may refer to a particular code; however, this is NOT a code compliance inspection and does NOT verify compliance with manufacturer's installation instructions. The inspection does NOT imply insurability or warrantability of the structure or its components. Although some safety issues may be addressed in this report, this inspection is NOT a safety/code inspection, and the inspector is NOT required to identify all potential hazards.

In this report, the inspector shall indicate, by checking the appropriate boxes on the form, whether each item was inspected, not inspected, not present or deficient and explain the findings in the corresponding section in the body of the report form. The inspector must check the Deficient (D) box if a condition exists that adversely and materially affects the performance of a system or component or constitutes a hazard to life, limb or property as specified by the TREC Standards of Practice. General deficiencies include inoperability, material distress, water penetration, damage, deterioration, missing components, and unsuitable installation. Comments may be provided by the inspector whether or not an item is deemed deficient. The inspector is not required to prioritize or emphasize the importance of one deficiency over another.

Some items reported may be considered life-safety upgrades to the property. For more information, refer to Texas Real Estate Consumer Notice Concerning Recognized Hazards or Deficiencies below.

THIS PROPERTY INSPECTION IS NOT A TECHNICALLY EXHAUSTIVE INSPECTION OF THE STRUCTURE, SYSTEMS OR COMPONENTS. The inspection may not reveal all deficiencies. A real estate inspection helps to reduce some of the risk involved in purchasing a home, but it cannot eliminate these risks, nor can the inspection anticipate future events or changes in performance due to changes in use or occupancy. It is recommended that you obtain as much information as is available about this property, including any seller's disclosures, previous inspection reports, engineering reports, building/remodeling permits, and reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should also attempt to determine whether repairs, renovation, remodeling, additions, or

other such activities have taken place at this property. It is not the inspector's responsibility to confirm that information obtained from these sources is complete or accurate or that this inspection is consistent with the opinions expressed in previous or future reports.

ITEMS IDENTIFIED IN THE REPORT DO NOT OBLIGATE ANY PARTY TO MAKE REPAIRS OR TAKE OTHER ACTIONS, NOR IS THE PURCHASER REQUIRED TO REQUEST THAT THE SELLER TAKE ANY ACTION. When a deficiency is reported, it is the client's responsibility to obtain further evaluations and/or cost estimates from qualified service professionals. Any such follow-up should take place prior to the expiration of any time limitations such as option periods. Evaluations by qualified tradesmen may lead to the discovery of additional deficiencies which may involve additional repair costs. Failure to address deficiencies or comments noted in this report may lead to further damage of the structure or systems and add to the original repair costs. The inspector is not required to provide follow-up services to verify that proper repairs have been made.

Property conditions change with time and use. For example, mechanical devices can fail at any time, plumbing gaskets and seals may crack if the appliance or plumbing fixture is not used often, roof leaks can occur at any time regardless of the apparent condition of the roof, and the performance of the structure and the systems may change due to changes in use or occupancy, effects of weather, etc. These changes or repairs made to the structure after the inspection may render information contained herein obsolete or invalid. This report is provided for the specific benefit of the client named above and is based on observations at the time of the inspection. If you did not hire the inspector yourself, reliance on this report may provide incomplete or outdated information. Repairs, professional opinions or additional inspection reports may affect the meaning of the information in this report. It is recommended that you hire a licensed inspector to perform an inspection to meet your specific needs and to provide you with current information concerning this property.

TEXAS REAL ESTATE CONSUMER NOTICE CONCERNING HAZARDS OR DEFICIENCIES

Each year, Texans sustain property damage and are injured by accidents in the home. While some accidents may not be avoidable, many other accidents, injuries, and deaths may be avoided through the identification and repair of certain hazardous conditions. Examples of such hazards include:

- malfunctioning, improperly installed or missing ground fault circuit protection (GFCI) devices for electrical receptacles in garages, bathroom, kitchens, and exterior areas;
- malfunctioning arc fault protection (AFCI) devices;
- ordinary glass in locations where modern construction techniques call for safety glass;
- malfunctioning or lack of fire safety features such as, smoke alarms, fire-rated doors in certain locations, and functional emergency escape and rescue openings in bedrooms;
- malfunctioning carbon monoxide alarms;
- excessive spacing between balusters on stairways and porches;
- improperly installed appliances;
- improperly installed or defective safety devices; and
- lack of electrical bonding and grounding.
- lack of bonding on gas piping, including corrugated stainless steel tubing (CSST).

To ensure that consumers are informed of hazards such as these, the Texas Real Estate Commission (TREC) has adopted Standards of Practice requiring licensed inspectors to report these conditions as "Deficient" when performing an inspection for a buyer or seller, if they can be reasonably determined.

These conditions may not have violated building codes or common practices at the time of the construction of the home, or they may have been "grandfathered" because they were present prior to the adoption of codes prohibiting such conditions. While the TREC Standards of Practice do not require inspectors to perform a code compliance inspection, TREC considers the potential for injury or property loss from the hazards addressed in the Standards of Practice to be significant enough to warrant this notice.

Contract forms developed by TREC for use by its real estate licensees also inform the buyer of the right to have the home inspected and can provide an option clause permitting the buyer to terminate the contract within a specified time. Neither the Standards of Practice nor the TREC contract forms requires a seller to remedy conditions revealed by an inspection. The decision to correct a hazard or any deficiency identified in an inspection report is left to the parties to the contract for the sale or purchase of the home.

Report Identification: GL20200127-01, 11568 S. Kirkwood, Stafford, TX

INFORMATION INCLUDED UNDER "ADDITIONAL INFORMATION PROVIDED BY INSPECTOR", OR PROVIDED AS AN ATTACHMENT WITH THE STANDARD FORM, IS NOT REQUIRED BY THE COMMISSION AND MAY CONTAIN CONTRACTUAL TERMS BETWEEN THE INSPECTOR AND YOU, AS THE CLIENT. THE COMMISSION DOES NOT REGULATE CONTRACTUAL TERMS BETWEEN PARTIES. IF YOU DO NOT UNDERSTAND THE EFFECT OF ANY CONTRACTUAL TERM CONTAINED IN THIS SECTION OR ANY ATTACHMENTS, CONSULT AN ATTORNEY.

ADDITIONAL INFORMATION PROVIDED BY INSPECTOR

Particulars

Present at Inspection: Buyer Selling Agent Listing Agent Occupant Inspector

Building Status: Vacant Owner Occupied Tenant Occupied Other

Weather Conditions: Fair Cloudy Rain Temp: 66 °

Utilities On: Yes No Water No Electricity No Gas All Electric

Special Notes: _____

Recommendations - Home Owners Warranty

HOME OWNERS WARRANTY RECOMMENDED: Inspector does not warranty any equipment or imply a type of guarantee or warranty, thus the buyer is encouraged and it is recommended to purchase a Home Owner's Warranty through his/her Realtor or from an insurer of his/her choice. Home warranty is an appliance service protection plan that covers the maintenance expenses associated with household items such as refrigerator, dishwasher, HVAC units, plumbing system, electrical wiring etc. Your home owner's insurance will insure against natural disasters such as fire and flood but it will NOT cover the maintenance and repair charges of appliances.

Visit the following web site to assist you in choosing the company that best meets your expectations and budget:

<http://www.homewarrantyreviews.com/>

Buyer is directed to read the last pages and any addendum to this report which includes important recommendations, exclusions and disclaimers which constitute part of this report. Please note that the scope of this inspection is limited to the present condition of the Structural and Mechanical components of the subject property.

The report does not imply or include any other environmental type of inspection, investigation or condition present in the subject property such as MOLD, FUNGI, LEAD HAZARDS, ASBESTOS, EMF, WOOD DESTROYING INSECTS, RODENTS, VARMINTS, ANTS, or any other type of BIO HAZARD CONDITION.

**NOTICE: THIS REPORT IS PAID FOR BY AND PREPARED FOR THE CLIENT NAMED ABOVE.
THIS REPORT IS NOT VALID WITHOUT THE SIGNED SERVICE AGREEMENT AND IS NOT TRANSFERABLE.**

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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I. STRUCTURAL SYSTEMS

A. Foundations

Type of Foundation(s): Slab on Grade Pier and Beam Combination

Comments:

11. Subject property is a two story town home in condominium.



12. Town home has a slab on grade type of foundation

13. Most town homes are normally guided by a condominium declaration that should be filed in County Records, the buyer is encouraged to obtain a copy of the same to see what the association is responsible for repairs such as exterior foundation repairs and interior settlement issues.

14. The buyer should investigate with the town home association management company of the as to any foundation repairs to the subject property building or plans for repairs and how it may affect the common area maintenance fee.

15. Buyer should investigate if the common area association fees is based on a per building basis or a project basis.

16. Subject property is on a common foundation which as a whole was not visible to this inspector.

Exterior Perimeter Beam:

Waffling Cracked Corners Exposed Tendons Exposed Rebar

Over Extended Foundation All perimeter beam was not visible

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Signs of Structural Movement or Settling None

- Cracks on brick veneer Cracks in exposed concrete floors
- Floors not level Separations between trim and siding
- Cracks in interior wall(s) Cracks on ceilings Tape Separations

Performance Opinion

The foundation appears to be performing the function intended, the foundation is supporting the walls properly and serving as a base for the structure, no detrimental conditions noted at the time of the inspection.

Structural movement and/or settling noted; however, the foundation is supporting the structure at this time and no immediate repairs recommended.

Signs of structural movement noted; suggest that an expert in this field be consulted for further evaluation of the structure and to provide suggestions as to what, if any, corrective actions should be taken.

Foundation is in need of repairs at the extended part of the perimeter beam

Foundation is in need of immediate repairs at the exposed tendons by a qualified post tension technician.

Foundation is in need of immediate repairs and leveling.

Additional information:

17. The foundation on the home is a post tension type of foundation.

18. In the Houston area since the 60's, we pretty much have had all slab foundations in new home construction with mostly re-bar steel reinforcement slabs but also with many post tension slabs. In the last thirty or so years the Post Tensioned Slab has become more and more popular.

19. Post-tensioning is a method of reinforcing (strengthening) a concrete slab on grade with high-strength steel strands. These strands or cables are also referred to as tendons. High-tension steel tendons enable slab foundations to withstand the stresses of expansive and compressive soil conditions that are prevalent in Texas.

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20. Houston and most of Texas is well known for their shifting and expansive clay soils. During the hot, dry summer of the Greater Houston area, clay soils shrink, and during extended periods of wet weather soil naturally tends to expand. Since the slab foundation itself protects the soil directly beneath from wetting and drying, most swelling and shrinking takes place at the edges of the foundation.

21. Photos below are of what a modern foundation is composed of; modern day foundations have cables running across it, then the concrete is poured over the cables leaving the tips of the cables along the edges exposed; the cables are stretched (Tensioned) then the cable tips that are called tendons are cut and sealed;



Note 1: *Weather conditions, drainage, leakage and other adverse factors are able to effect structures, and differential movements are likely to occur. The inspectors opinion is based on visual observations of accessible and unobstructed areas of the structure at the time of the inspection. Future performance of the structure cannot be predicted or warranted.*

Note 2: *It is important to note, this was not a structural engineering survey nor was any specialized testing done of any sub-slab plumbing systems during this limited visual inspection, as these are specialized processes requiring excavation. In the event that structural movement is noted, client is advised to consult with a Structural Engineer who can isolate and identify causes, and determine what corrective steps, if any, should be considered to either correct and/or stop structural movement.*

SUGGESTED FOUNDATION MAINTENANCE & CARE - *Proper drainage and moisture maintenance to all types of foundations due to the expansive nature of the area load bearing soils. Drainage must be directed away from all sides of the foundation with grade slopes. In most cases, floor coverings and/or stored*

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articles prevent recognition of signs of settlement - cracking in all but the most severe cases.

B. Grading and Drainage

Comments:

22. Subject property is a town home where normally the exterior areas are maintained by the town home association the interior patio areas are usually the responsibility of the owners.



23. Buyer should investigate the extent of his responsibilities in the exterior yard maintenance area.

High Soil:

24. Various points around the perimeter beam of the foundation the soil is too high, it must be at least six inches from the ground to avoid water intrusion and/or pest infestation.



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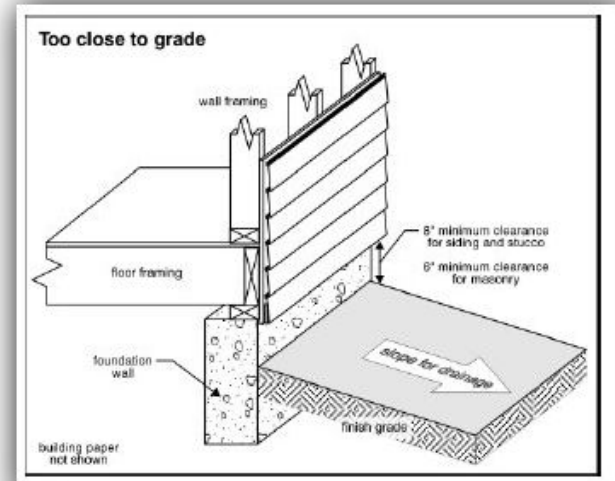
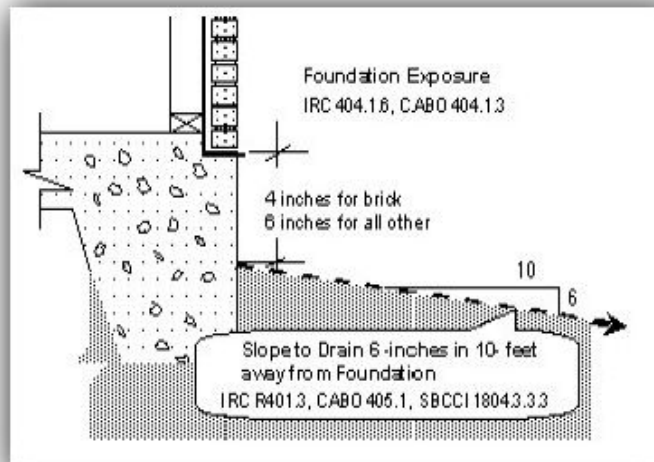
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25. Note: Any area where the ground or grade does not slope away from the structure is to be considered an area of improper drainage. Six inches per 10 feet.



Site Drainage:

26. **R401.3 Drainage.** Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as to not create a hazard. Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6 inches (152 mm) within the first 10 feet (3048 mm).

27. Front down spout terminates next to the foundation and is too close to the sidewalk, thus a "flex pipe" must be installed that goes under the sidewalk and terminates to the front yard for proper drainage towards the street as required by code.



Other Homes Shown Below:

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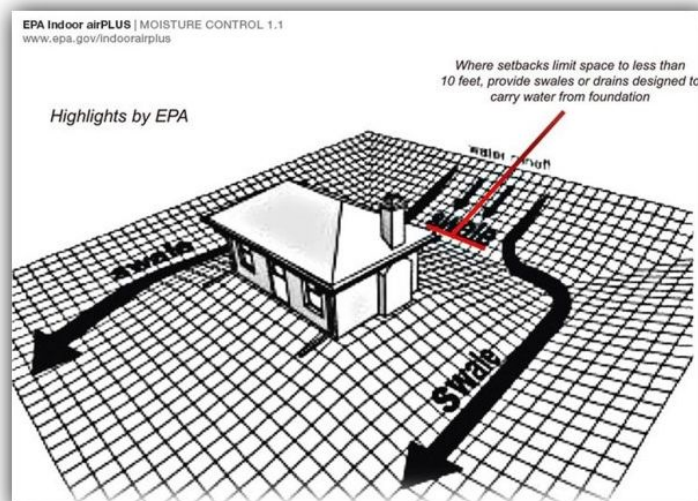
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28. Ponding noted at several points around the foundation or near the foundation all low spots should be filled, compacted and caused to drain away from the foundation to avoid future foundation settlement issues.

Code Requirements:



The Texas Administrative RULE §304.32

- **Performance Standards for Yard Grading**

(a) Yards shall have grades and swales that provide for proper drainage away from the home in accordance with the Code or other governmental regulations.

(1) If the grades or swales fail to meet the standard stated in this subsection, the owner shall take such action as is necessary to bring the variance within the standard.

(2) The homeowner shall maintain the drainage pattern and protect the grading contours from erosion, blockage, over-saturation or any other changes.

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(b) Settling or sinking of soil shall not interfere with the drainage patterns of the lot or have a vertical depth of six inches or more if it does, the owner should make the proper repairs for proper drainage.

C. Roof Covering Materials

Type(s) of Roof Covering: Asphalt Shingles

Viewed From: Ground

2. The subject property has a common roof covering.



3. Buyer is encouraged to investigate with the town home association management company to request the history of the roof covering, age, and if there are plans to replace the roof covering in the near future and how it may affect the common area maintenance fee on the subject property.



Type of Roof:

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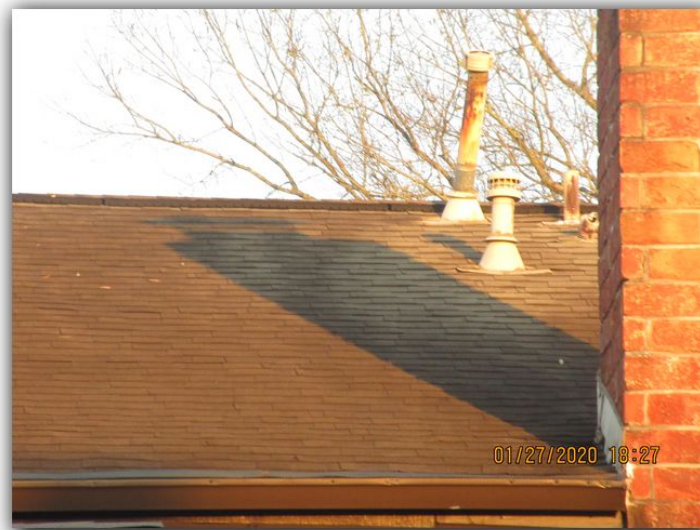
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- The home has a laminated composition roof shingle covering over wood decking on slats.



- Shingles were not raised to count the nail order, it damages the shingle glue tab adhesion which is designed for only one seal.
- The buyer was told that the roof covering is going to be replaced soon and that funds are available in the association escrow account.



Venting & Gutters:

- Venting is provided by ridge vents.
- The gutters need to be cleared of leaves and debris.

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Conclusion:

9. Overall the roof covering is in acceptable conditions at the time of the inspection.

D. Roof Structures and Attics

Viewed From: Some areas Obstructed from view

Approximate Average Depth of Insulation: 0-6 inches

Meets current code Does not meet current code.

Approximate Average Thickness of Vertical Insulation: n/a 4 inches 0-4 in

Comments:

Attic Ladder:

10. Home has a drop down folding ladder leading to the attic.

11. The attic ladder is missing insulation as required by code.

12. The attic ladder is also missing a weather strip as required by code.

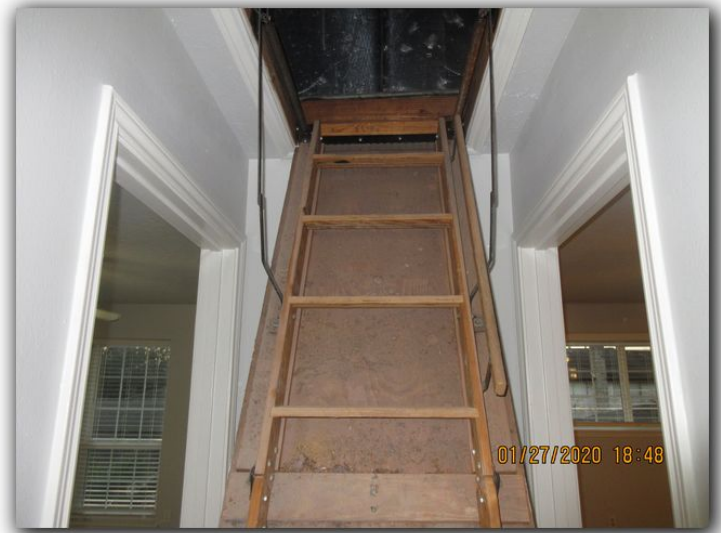
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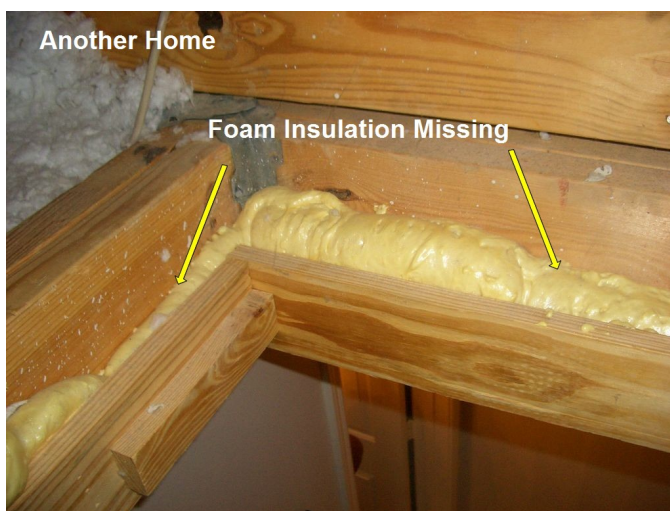
Subject property on the right and it is correct on the left side

Recommendation:

13. It is recommended that since the attic has a common attic area divided by the firewall, that the attic ladder be secured with a lock and the alarm system connected to the attic ladder as if it was another exterior door.

Foam Insulation:

14. Missing foam insulation at the perimeter of the attic ladder frame as per code.
15. N1102.1.10 Air leakage. All joints, seams, penetrations, window and door assemblies and their respective jambs and framing; and other sources of air leakage (infiltration and exfiltration) through the building thermal envelope shall be caulked, gasketed, weather stripped, wrapped, or otherwise sealed to limit uncontrolled air movement (see photo below)



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Landing:

16. Missing a clear landing at the top of the stairs as required by code.

17. **R312.1.1 Landings for stairways.** There shall be a floor or landing at the top and bottom of each stairway.



Decking & Work Platform:

18. Improper decking methods, attic decking must be solid plywood with no obstructions in front of the furnace as per code and as seen on the left lower photo below.

19. One of the furnaces is installed backwards and has no work space.



20. Unprotected romex wiring by the attic entrance, all wiring within six feet of the attic entrance must be protected as per code.

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21. Missing a switch cover on the light switch by the attic entrance for the attic light.



Insulation:

22. The insulation meets code R-38 or at least ten inches as per code.



Firewall:

23. Missing a proper firewall between the units in the attic as required by code.

24. As seen below the attic has a type of firewall but it is not the right material and has no fire tape at the seams.

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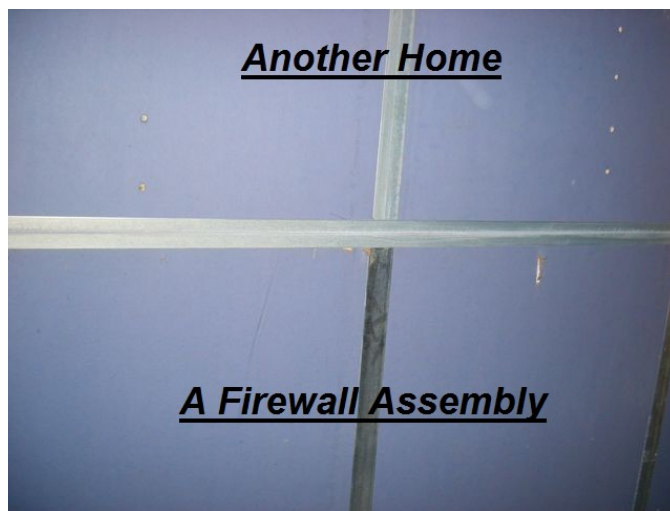
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Another town home shown below:



Firewall: (wikipedia)

A **firewall** is a fire resistant barrier used to prevent the spread of fire for a prescribed period of time. Fire walls are built between or through buildings, structures, electrical substation transformers, or within an aircraft or vehicle.

Firewalls can be used to subdivide a building into separate fire areas and are constructed in accordance with the locally applicable building codes. Firewalls are a portion of a building's passive fire protection systems.

Types:

There are three main classifications of *fire rated walls*: fire walls, fire barriers, and fire partitions. To the layperson, the common use of language typically includes all three when referring to a *firewall* unless distinguishing between them becomes necessary. In addition specialty fire rated walls such as a High Challenge Fire Wall would require further distinctions.

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- A *firewall* is an assembly of materials used to separate transformers, structures, or large buildings to prevent the spread of fire by constructing a wall which extends from the foundation through the roof with a prescribed fire resistance duration and independent structural stability.
- A *fire barrier wall*, or a *fire partition*, is a fire rated wall assembly with lower levels of protection than typically granted to a fire wall. The main differences are that these fire barrier walls are not structurally self-sufficient, and do not typically extend through the roof, or necessarily terminate at the underside of the floor or roof sheathing above.

Fire barrier walls are typically continuous from an exterior wall to an exterior wall, or from a floor below to a floor or roof above, or from one fire barrier wall to another fire barrier wall, having a fire resistance rating equal to or greater than the required rating for the application. Fire barriers are continuous through all concealed spaces (e.g., above a ceiling), but are not required to extend through concealed spaces if the construction assembly forming the bottom of the space has a fire resistance rating at least equal to or greater than the fire barrier wall.

- A *high challenge fire wall* is a wall used to separate transformers, structures, or buildings or a wall subdividing a building with high fire challenge occupancies, having enhanced fire resistance ratings and enhanced appurtenance protection to prevent the spread of fire, and having structural stability.

Portions of structures that are subdivided by fire walls are permitted to be considered separate buildings, in that fire walls have sufficient structural stability to maintain the integrity of the wall in the event of the collapse of the building construction on either side of the wall.

Characteristics

- Fire rating - Fire walls are constructed in such a way as to achieve a code-determined fire-resistance rating, thus forming part of a fire compartment's passive fire protection.

Some areas include repeated impact force testing upon new fire wall systems. Other codes require impact resistance on a performance basis.

- Design loads – Fire wall must withstand a minimum 5 lb./sq.ft., and additional seismic loads.
- Building Firewalls typically extend through the roof and terminate at a

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code-determined height above it. They are usually finished off on the top with flashing (sheet metal cap) for protection against the elements.

Materials

- Building and structural firewalls in North America are usually made of concrete, concrete blocks or reinforced concrete. Older fire walls, built prior to World War II, utilized brick materials.
- **Fire barrier walls** are typically constructed of drywall/gypsum board partitions with wood or metal framed studs.
- Penetrations – Penetrations through fire walls, such as for pipes and cables, must be protected with a listed fire stop assembly designed to prevent the spread of fire through wall penetrations. Penetrations (holes) must not defeat the structural integrity of the wall, such that the wall cannot withstand the prescribed fire duration without threat of collapse.
- Openings – Other openings in Fire walls, such as doors and windows, must also be fire rated.

Performance based design

Firewalls are used in varied applications that require specific design and performance specifications. Knowing the potential conditions that may exist during a fire are critical to selecting and installing an effective firewall. For example, a firewall designed to meet National Fire Protection Agency, (NFPA), 221-09 section A.5.7 which indicates an average temperature of 800°F, is not designed to withstand higher temperatures such as would be present in higher challenge fires, and as a result would fail to function for the expected duration of the listed wall rating.

Performance based design takes into account the potential conditions during a fire. Understanding thermal limitations of materials is essential to using the correct material for the application. Laboratory testing is used to simulate fire scenarios and wall loading conditions. The testing results in an assigned listing number for the fire rated assembly that defines the expected fire resistance duration and wall structural integrity under the tested conditions. Designers may elect to specify a listed fire wall assembly or design a wall system that would require performance testing to certify the expected protections before use of the designed fire rated wall system.

Firewall must have fire rated taping, mud, and a 3/4 inch sheet panel rock on

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D=Deficient

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each side of the wall to meet the required firewall rating;

Another property shown below



Another application with firewall finishing's:



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E. Walls (Interior and Exterior)

Comments:

Exterior Walls:

35. The home had the exterior finishes as follows:

Siding Materials Brick Stone Wood Wood byproducts Stucco
 Vinyl Aluminum Asbestos Cement Board Other



36. The siding is in generally good condition.

Expansion Joints:

37. Expansion Joints are present and properly sealed.

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Interior Walls:

38. The interior walls have no significant deficiencies



Firewall:

39. Firewall not checked for integrity as an assembly unit; Firewall must have fire rated taping, mud, and a 3/4 inch sheet panel rock on each side of the wall to meet the required firewall rating;

-
-
-
-

F. Ceilings and Floors

Comments:

Ceilings:

40. No significant issues viewed.

Floor Coverings:

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41. Floor coverings are made up of carpet, a type of what appears to be wood flooring but may be porcelain or ceramic, but it is in new and in good conditions.

42. The flooring in the kitchen and family room are in good condition.



43. The flooring in the bedroom are also in fair condition as viewed at random.



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G. Doors (Interior and Exterior)

Comments:

Garage Doors

Type: Aluminum Wood Fiberglass Doors / panels are damaged

1. Garage door frame wood trim is too close to the ground, must be cut 45 degrees, painted at the base (sealed) and be two inches above the concrete floor to avoid water rot;



2. Other homes shown below:



3. Door going into the garage is separated from the home on the detached garage.

Interior Doors:

I=Inspected

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4. All interior doors were tested and operated properly.

H. Windows

Comments:

Type of Windows:

1. Home has windows with double pane and low e that meets code.
2. The windows have been updated.



Window Screens:

3. Home has window screens as required by code.



I. Stairways (Interior and Exterior)

Comments:

I=Inspected

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- The home has a stairway that is in good condition.
- The stair way has a proper three way switch, one on the bottom and a second on the top of the stairs as per code.



- The stairway has a proper light fixture over the stairs as per code.

J. Fireplaces and Chimneys

Comments:

Type of Fireplace: Factory Masonry Free Standing

Wood Burning Fireplace Not a wood burning fireplace

Chimney:

- Chimney viewed from the ground level, limited viewing.
- Crown not viewed.
- Chimney has a proper chimney cap in place as seen from the ground.

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Fireplace:

10. Fireplace and chimney must be serviced prior to use.



11. Missing a c-clamp, c-clamp on the damper keeps it open for carbon monoxide venting, however when the fireplace is not in use such as in the summer, the vent should be closed.

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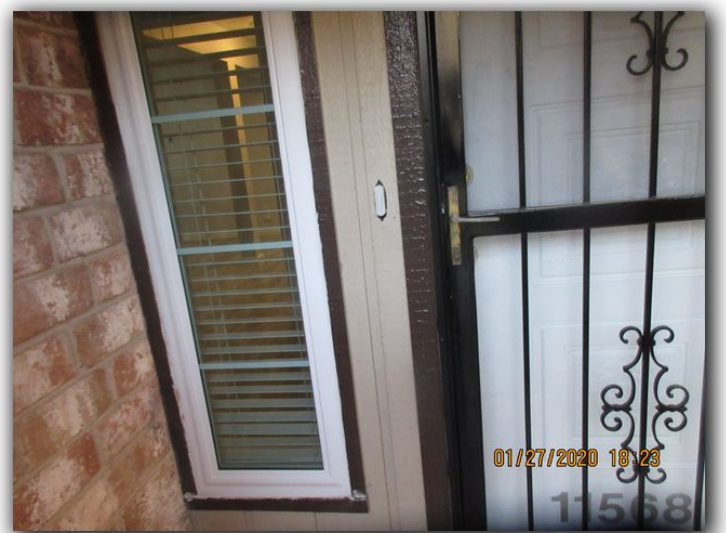


K. Porches, Balconies, Decks, and Carports

Comments:

Front Porch:

12. The home has a small front porch area.



13. Home has a patio between the garage and the home.

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14. The patio has loose pavers and some that are in need of repair, a trip hazard.



15. The home has paved drives that are in good condition.



16. The home has concrete entrances to the garage which are in good condition.

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I NI NP D



L. Other

Comments:

17. Wood perimeter fence is in need of repairs at various places



18. Some of the fence has minor wind damage.

II. ELECTRICAL SYSTEMS

A. Service Entrance and Panels

Comments:

Service: Overhead Service Underground Service Meets code

Type of Wire Into Home: Copper Aluminum Mixed

Main Electrical Disconnect Panel:

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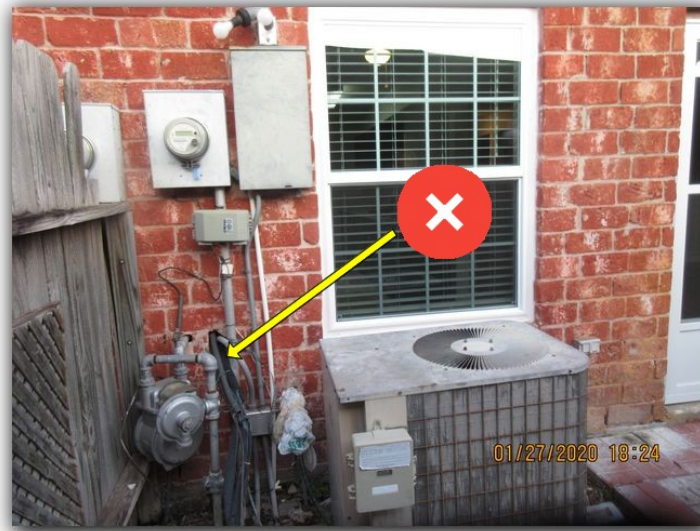
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19. The main panel is missing the required 3 ft x 3 ft unobstructed space in front of the panel as per code.

20. There is a gas meter under the main panel, a violation of code and a hazard.



21. Insufficient space in front of the main panel as required by code, code requires at least 36 inches in front of the main panel, as installed the clearance is not sufficient for safety issues.

SECTION E3305

EQUIPMENT LOCATION AND CLEARANCES

22. **E3305.1 Working space and clearances.** Access and working space shall be provided and maintained around all electrical equipment to permit ready and safe operation and maintenance of such equipment in accordance with this section and Figure E3305.1.

E3305.2 Working clearances for energized equipment and panelboards.

23. Except as otherwise specified in Chapters 33 through 42, the dimension of the *working space* in the direction of access to panel boards and live parts likely to require examination, adjustment, servicing or maintenance while energized shall be **not less than 36 inches (914 mm) in depth**. Distances shall be measured from the energized parts where such parts are exposed or from the enclosure front or opening where such parts are enclosed. In addition to the 36-inch dimension (914 mm), the work space shall not be less than 30 inches (762 mm) wide in front of the electrical equipment and not less than the width of such equipment. The work space shall be clear and shall extend from the floor or platform to a height of 6.5 feet (1981 mm). In all cases, the work space shall allow at least a 90-degree opening of equipment doors or hinged panels. Equipment associated with the electrical installation located above or below the electrical equipment shall be

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permitted to extend not more than 6 inches (152 mm) beyond the front of the electrical equipment.

24. Home is serviced by a smart meter.

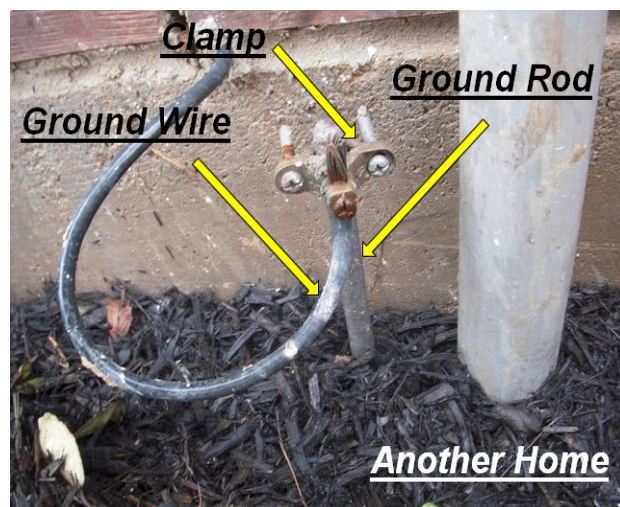
25. The main breaker and service is 100 amps which is adequate for the connected load.



26. Improper ground rod, it is extremely too short, it must be at least six feet made of copper bonded steel rod. [Press Here to see one at ACE.](#)

27. At this time there is no ground rod protection.

28. Ground rod must be above ground and visible, the ground rod clamp must be visible, the ground rod should extend at least six inches above the ground to be able to inspect and maintain the ground rod clamp, see photo below of another home with a properly installed ground rod.



E3511.1 Methods of grounding conductor connection to electrodes. The grounding

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conductor shall be connected to the grounding electrode by listed lugs, listed pressure connectors, listed clamps or other listed means. Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod or other buried electrodes, shall also be listed for direct soil burial. Not more than one conductor shall be connected to the grounding electrode by a single clamp or fitting unless the clamp or fitting is listed for multiple conductors. One of the methods indicated in the following items shall be used:

1. Bolted clamp. A listed bolted clamp of cast bronze or brass, or plain or malleable iron.
2. Pipe fitting, pipe plug, etc. A pipe fitting, pipe plug or other approved device screwed into a pipe or pipe fitting.
3. Sheet-metal-strap-type ground clamp. For indoor telecommunications purposes only. A listed sheet-metal-strap-type ground clamp having a rigid metal base that seats on the electrode and having a strap of such material and dimensions that is not likely to stretch during or after installation.

Labeling of Breakers:

29. Main panel dead front cover is not labeled as per code.



Type of Wiring:

30. The main panel has copper wiring going into the home as per code.

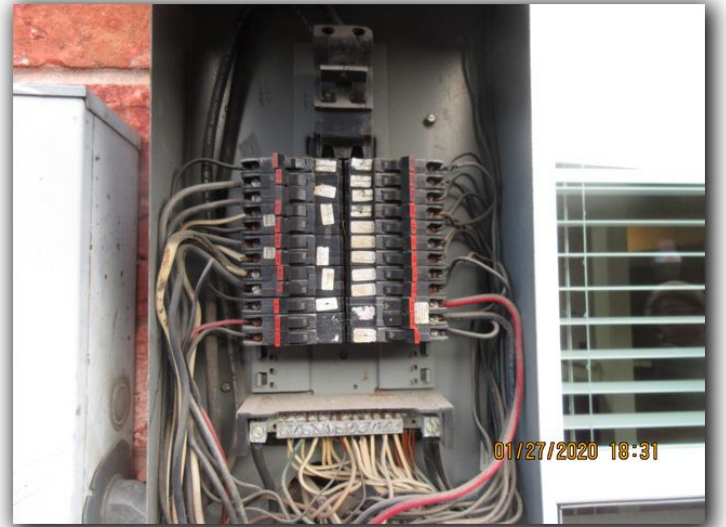
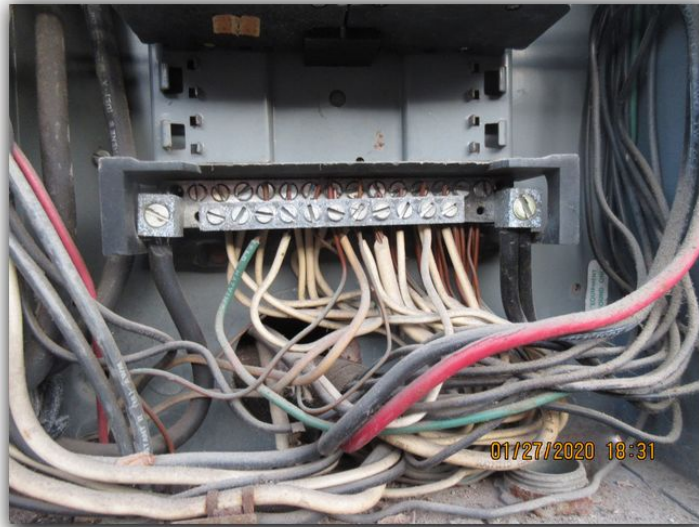
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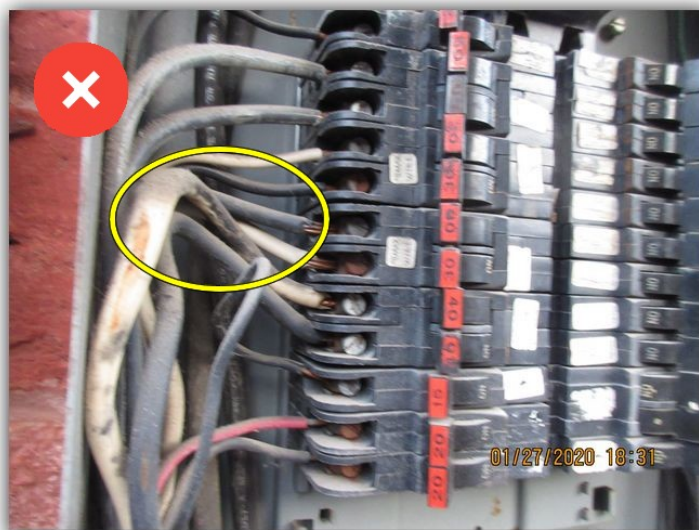
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- 31. Improper wiring methods, there is one double lugged breaker and what appears to be an over heated wire on the top right bank as seen below, it needs immediate repair.
- 32. There is a damaged white wire on the left bank as seen below on the left side, needs repair.
- 33. An electrician should make further assessment to confirm that the main panel was not damaged due to an over current resulting from a defective ground rod.



Arc Fault Interrupters:

- 34. Missing arc fault interrupters as required by current code of 2008 and newer homes.
- 35. Recommend that the home be upgraded to accommodate arc fault protection.

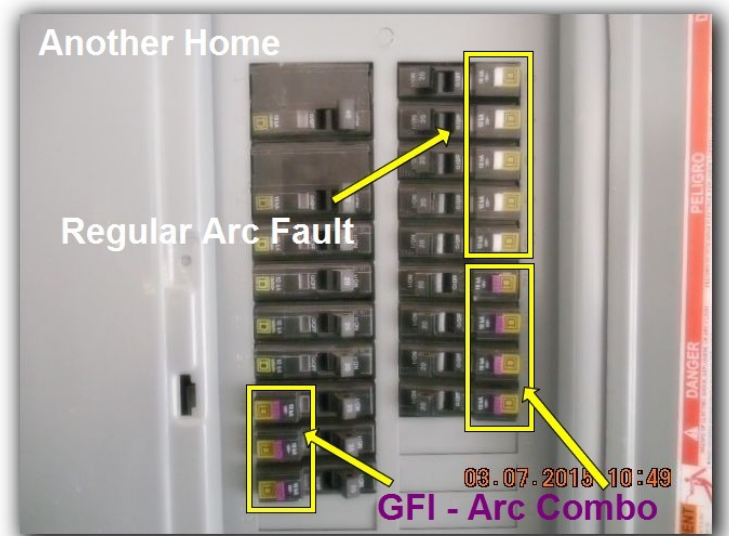
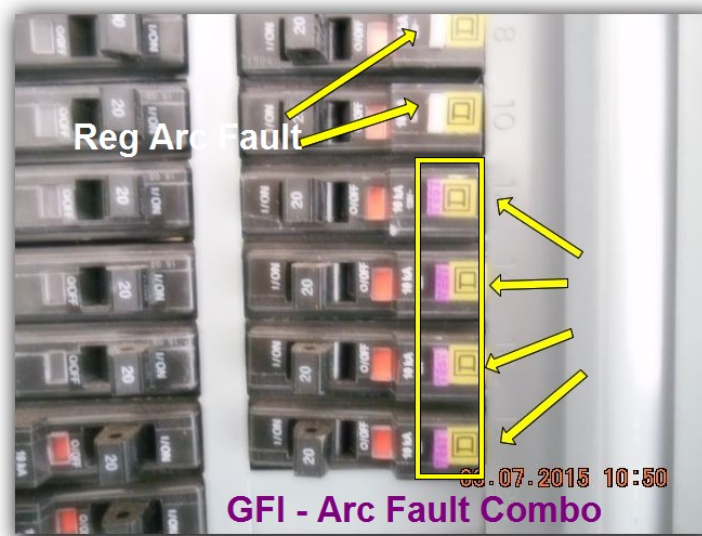
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36. Code IRC 3802.11 requires arc fault interrupters in all circuits going into the living area.

37. Home is missing arc fault protection on the GFI's as required by current code.

38. See another home below with proper dual purpose breaker (purple button).



The Arc Fault Circuit Interrupter

The “AFCI” is an arc fault circuit interrupter. AFCIs are newly-developed electrical devices designed to protect against fires caused by arcing faults in the home electrical wiring.

THE FIRE PROBLEM

Annually, over 40,000 fires are attributed to home electrical wiring. These fires result in over 350 deaths and over 1,400 injuries each year¹. Arcing faults are one of the major causes of these fires. When unwanted arcing occurs, it generates high temperatures that can ignite nearby combustibles such as wood, paper, and carpets.

Arcing faults often occur in damaged or deteriorated wires and cords. Some causes of damaged and deteriorated wiring include puncturing of wire insulation from picture hanging or cable staples, poorly installed outlets or switches, cords caught in doors or under furniture, furniture pushed against plugs in an outlet, natural aging, and cord exposure to heat vents and sunlight.

HOW THE AFCI WORKS

Conventional circuit breakers only respond to overloads and short circuits; so they do not protect against arcing conditions that produce erratic current flow. An AFCI is selective

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so that normal arcs do not cause it to trip. The AFCI circuitry continuously monitors current flow through the AFCI. AFCIs use unique current sensing circuitry to discriminate between normal and unwanted arcing conditions. Once an unwanted arcing condition is detected, the control circuitry in the AFCI trips the internal contacts, thus de-energizing the circuit and reducing the potential for a fire to occur.

An AFCI should not trip during normal arcing conditions, which can occur when a switch is opened or a plug is pulled from a receptacle. Presently, AFCIs are designed into conventional circuit breakers combining traditional overload and short-circuit protection with arc fault protection. AFCI circuit breakers (AFCIs) have a test button and look similar to ground fault circuit interrupter (GFCI) circuit breakers. Some designs combine GFCI and AFCI protection.

Additional AFCI design configurations are anticipated in the near future. It is important to note that AFCIs are designed to mitigate the effects of arcing faults but cannot eliminate them completely. In some cases, the initial arc may cause ignition prior to detection and circuit interruption by the AFCI.

The AFCI circuit breaker serves a dual purpose – not only will it shut off electricity in the event of an “arcing fault”, but it will also trip when a short circuit or an overload occurs. The AFCI circuit breaker provides protection for the branch circuit wiring and limited protection for power cords and extension cords. Single-pole, 15- and 20- ampere AFCI circuit breakers are presently available.

WHERE AFCIs SHOULD BE USED

The 1999 edition of the National Electrical Code, the model code for electrical wiring adopted by many local jurisdictions, requires AFCIs for receptacle outlets in bedrooms, effective January 1, 2002. Although the requirement is limited to only certain circuits in new residential construction, AFCIs should be considered for added protection in other circuits and for existing homes as well.

Older homes with aging and deteriorating wiring systems can especially benefit from the added protection of AFCIs. AFCIs should also be considered whenever adding or upgrading a panel box while using existing branch circuit conductors.

INSTALLING AFCIs

AFCI circuit breakers should be installed by a qualified electrician. The installer should follow the instructions accompanying the device and the panel box. In homes equipped with conventional circuit breakers rather than fuses, an AFCI circuit breaker may be installed in the panel box in place of the conventional circuit breaker to add arc protection

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to a branch circuit. Homes with fuses are limited to receptacle or portable-type AFCIs, which are expected to be available in the near future, or AFCI circuit breakers can be added in separate panel boxes next to the fuse panel box.

TESTING AN AFCI

AFCIs should be tested after installation to make sure they are working properly and protecting the circuit. Subsequently, AFCIs should be tested once a month to make sure they are working properly and providing protection from fires initiated by arcing faults.

A test button is located on the front of the device. The user should follow the instructions accompanying the device. If the device does not trip when tested, the AFCI is defective and should be replaced.

AFCIs vs. GFCIs

The AFCI should not be confused with the GFCI or ground fault circuit interrupter. The GFCI is designed to protect people from severe or fatal electric shocks while the AFCI protects against fires caused by arcing faults. The GFCI also can protect against some electrical fires by detecting arcing and other faults to ground but cannot detect hazardous across-the-line arcing faults that can cause fires.

A ground fault is an unintentional electric path diverting current to ground. Ground faults occur when current leaks from a circuit. How the current leaks is very important. If a person’s body provides a path to ground for this leakage, the person could be injured, burned, severely shocked, or electrocuted.

The National Electrical Code requires GFCI protection for receptacles located outdoors; in bathrooms, garages, kitchens, crawl spaces and unfinished basements; and at certain locations such as near swimming pools. A combination AFCI and GFCI can be used to satisfy the NEC requirement for GFCI protection only if specifically marked as a combination device.

Ault, Singh, and Smith, “1996 Residential Fire Loss Estimates”, October 1998, U.S. Consumer Product Safety Commission, Directorate for Epidemiology and Health Sciences

B. Branch Circuits, Connected Devices, and Fixtures

Type of Wiring: Copper Aluminum Mix

Comments:

Ground Fault Circuit Interrupt Safety Protection

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39. Home has proper GFI protection as noted below.



- | | | | | | |
|--------------|---|--|----------------------------------|------------------------------------|------------------------------|
| Kitchen: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | |
| Entry Bath: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | <input type="checkbox"/> N/a |
| Master Bath: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | |
| Hall Baths: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | <input type="checkbox"/> N/a |
| Garage: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | <input type="checkbox"/> N/a |
| Exterior: | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Partial | <input type="checkbox"/> Defective | |



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Smoke and Fire Alarms

- 40. Replace all batteries of existing smoke detectors
- 41. Smoke alarms are not present in each sleeping area
- 42. No smoke alarm in hallway

Carbon Monoxide Detectors

- 43. Missing carbon monoxide detectors, smoke detectors are not carbon monoxide detectors.



Fixtures:

- 44. Improper luminary at the exterior by the main panel.
- 45. Some exterior light fixtures (barn lamp) are inoperable or in need of repair

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46. Rear lamp at the brick wall is not properly installed.



47. Missing some luminaries (bulbs) in some light fixtures.



Receptacles:

48. Missing four prong 220 volt receptacle on the dryer electrical connection has the obsolete three prong receptacle.

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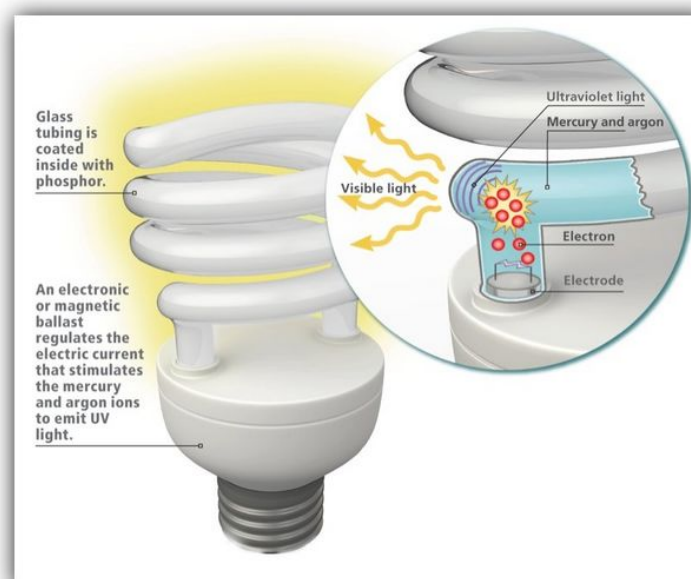
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Other homes shown below:



Special Note/Warning: (Compact Fluorescent lamps)



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From the Environmental Health Perspectives Web site:

With growing concern over energy use, much of the developed world has adopted compact fluorescent lamps (CFLs), which use 25–80% less energy and can last 3–25 times longer than regular incandescent bulbs.¹ A new study suggests that certain elements of these bulbs might be improved for safer use.²

Investigators measured ultraviolet (UV) radiation emissions from nine commercially available CFLs and observed cracks in the phosphor coating on each bulb that might allow UV leaks. “Phosphor is very rigid, so it’s not surprising it would crack [when applied to a CFL’s tight coils],” says coauthor Miriam Rafailovich, distinguished professor of materials science at the State University of New York at Stony Brook. She says long, straight fluorescent tubes don’t have these cracks.

The team exposed healthy human keratinocytes and dermal fibroblasts to the CFL with the highest UV emissions at a distance of 2.5 cm for 2 hours at a time. They also tested CFL exposure combined with titanium dioxide (TiO₂) nanoparticles, a catalyst. CFL exposure was associated with a slight increase in the formation of reactive oxygen species (ROS) in both cell types, reduced mitochondrial activity and cell proliferation in both cell types, and reduced migration velocity and collagen contraction in fibroblasts. These outcomes were greater in combined CFL/TiO₂ exposure scenarios.

But in contrast to media depictions of “skin-frying” CFLs, researchers are reluctant to draw conclusions about consumer risk on the basis of these findings. “The UV measurement procedures are not described, so one cannot evaluate the data,” says Mats-Olof Mattsson, a cell biology professor at the Austrian Institute of Technology. The authors also reported higher UV emissions than other studies have found^{3,4,5} and did not follow international measurement standards,⁶ he adds.

In vitro studies have limitations for assessing CFL impacts on skin because the intensity of light reaching the cells within skin is much less than the light intensity at the skin surface. Furthermore, says Harry Moseley, a photobiology professor at the University of Dundee, “Work carried out *in vitro* can be helpful to show the direct effect of UV radiation on the cells, [but] it doesn’t tell us how the body deals with any damage to the cells.”

Nevertheless, the study results are not inconsistent with published research.⁵ “When we have exposed people to [CFL] light, sensitive patients do get a sunburn, and a small proportion of normal people get a mild sunburn,” he

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says.

III. HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

A. Heating Equipment

Type of System: Central

Energy Source: Gas

Comments:

Location of Furnaces:

49. Home has two gas furnaces located in the attic area.

50. Both of the furnaces were active at the time of the inspection.

51. The right side furnace is installed backwards, the controls are not accessible.

52. The controls must be properly installed to face the work platform as required by code.



Vent Pipe:

53. The vent pipes are not properly secured to the rafters as per code.

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54. The vent pipe is a Type B with cap and collar as per code.

Gas Line:

55. The gas line is a flex line.

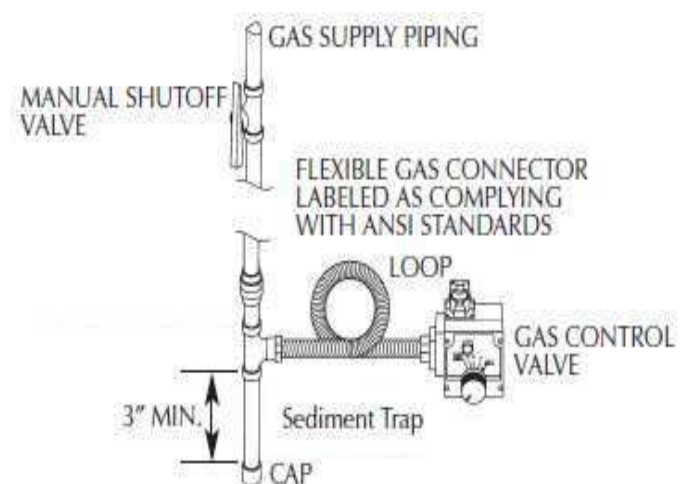
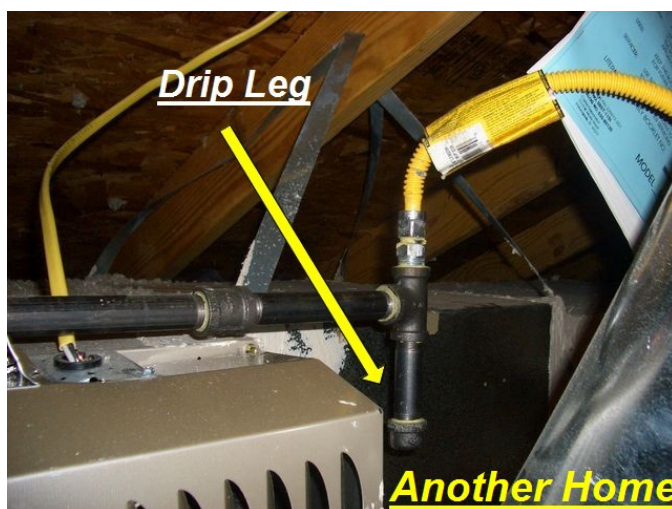
56. The gas line was not protected from impact as per code.

57. **G2421.1.1 (411.1.1) Protection from damage.** Connectors and tubing shall be installed so as to be protected against physical damage.

58. **G2419.1.3 (409.1.3) Access to shutoff valves.** Shutoff valves shall be located in places so as to provide access for operation and shall be installed so as to be protected from damage.

Drip Leg:

59. Missing a drip leg at the gas connector/gas flex as per code, see photo below of another home with a proper drip leg.



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Additional Information:

- 60. All natural gas line installations require a sediment trap or drip leg to trap condensate, oil, metal shavings and other debris and impurities, which might otherwise clog the burner orifice or lodge in the gas valve.
- 61. Proper installation of the needed drip leg will help maintain the proper functioning of the gas furnace and water heater units but also help prevent a safety hazard. The sediment trap should be installed as close to the water heater or furnace inlet as possible.
- 62. The Drip Leg / Sediment Trap (called by either name) is a gas line safety device required by The National Fuel Gas Code, ANSI Z223.1 / NFPA 54 and by the IRC (International Residential Code), the UPC (Uniform Plumbing Code) and the NFPA (National Fire Protection Agency) along with most if not all manufacturers of large gas appliances including water heaters and furnaces, boilers and gas pool heaters and is listed in the installation procedures of the appliance manual/ installation instructions.
- 63. Not installing the appliances per manufacturers installation requirements may void the warranty on water heaters and furnaces

Bonding:

- 64. The gas line was bonded.
- 65. The gas line was not bonded as per code.
- 66. E3509.7 Metal gas piping bonding. Each aboveground portion of a gas piping system upstream from the equipment shutoff valve shall be electrically continuous and bonded to the grounding electrode system.

Service Systems:

- 67. **GAS FURNACES:** Both of the furnaces need to be serviced prior to closing in order to validate most home owner's warranty requirement. The a/c technician must issue a certification that the system meets code and is heating properly and the heat exchanger is in good conditions.

Additional Information CCST furnace gas flex lines:

- 68. All CSST manufacturers expressly added the bonding and grounding procedure to their installation requirements in August 2006. This improved safety installation requirement

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reduces the likelihood of an electrical surge that can potentially cause a fire. More than 800 million feet of CSST gas piping in approximately six million homes has been installed in the U.S. since 1990.

69. If you find CSST it is strongly recommended that you determine if the CSST system is properly bonded and grounded. A bonding device should be installed on your natural gas system in order to reduce the chances of a natural gas leak or fire. Bonding is provided primarily to prevent a possible electric shock to people who come in contact with the gas piping and other metal objects connected to the grounding system. Nearby lightning strikes can also result in an electrical surge and can potentially puncture a hole in the CSST. Proper bonding and grounding will reduce the risk of damage and fire from a lightning strike.

Bonding of CCST:

70. Direct bonding is required for gas piping systems incorporating standard (yellow) or uncoated CSST whether or not the connected gas equipment is electrically powered. This requirement is provided as part of the manufacturer's instruction for single-family and multi-family buildings and required by the 2009 and later editions of the National Fuel Gas Code, the International Fuel Gas Code and the Uniform Plumbing Code. A person knowledgeable in electrical system design, the local electrical code and these requirements should specify the bonding for commercial applications.
71. The bonding conductor is permanently and directly connected to the electrical service equipment enclosure, the grounded conductor at the electrical service, the grounding electrode conductor, or to one or more of the grounding electrodes used. When an additional grounding electrode(s) is used for the gas service, it shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding system.
72. The bonding conductor shall be no smaller than a 6 AWG copper wire or equivalent. The bonding conductor shall be installed and protected in accordance with the National Electrical Code, NFPA 70, (NEC) and Canadian Electrical Code CSAC22.1 (CEC). Bonding/grounding clamps shall be installed in accordance with its listing per UL 467 and shall make metal-to-metal contact with a rigid pipe component or CSST fitting. This direct-bond is in addition to any other bonding requirements as specified by local codes for ground fault protection.

B. Cooling Equipment

Type of System: Central - Air Conditioner

Comments:

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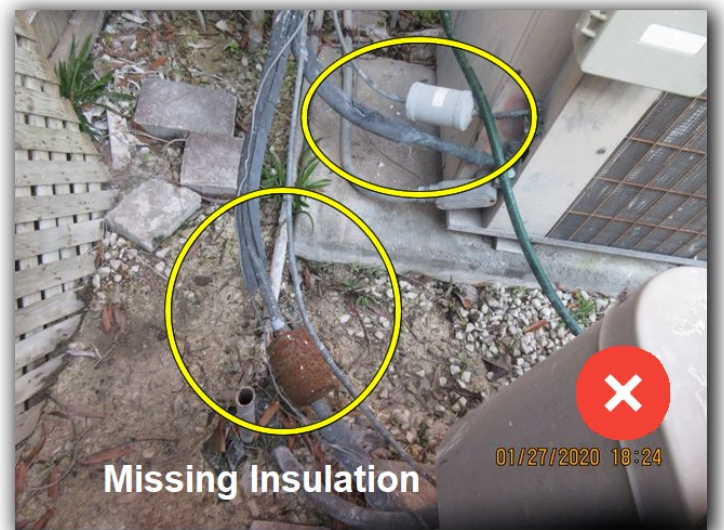
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1. The town home has a central a/c system with two condensers on the exterior and two evaporators on the interior the typical split a/c system.
2. Both of the systems were active at the time of the inspection but not tested, too cold to run effectively.
3. Both condensers are at the end of their useful lifespan.

Number of Units: Two Systems



Primary Drain Lines:

4. Both of the drain lines are terminating to the plumbing drain system to avoid foundation settlement and attracting termites when dripping next to the foundation.



5. The primary drain line are normally located under the cabinet in the bathroom as

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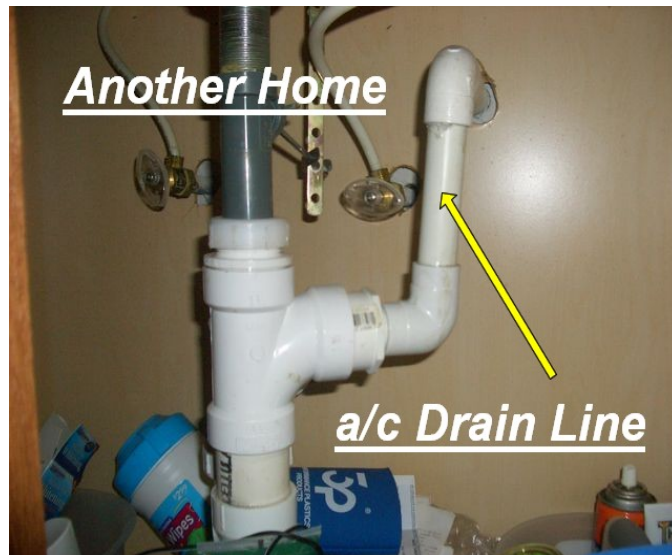
NP=Not Present

D=Deficient

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per code.

See other homes shown below:



- 6. The drain line is PVC which is good.
- 7. Both of the primary drain lines must be cleared.

Evaporator, Secondary Drain Line & Pan:

- 8. Both of the drain pans in the attic were clear.
- 9. One drain pan has minor rust spot.
- 10. The drain pan has a secondary drain line connected, termination not confirmed.



- 11. Both of the secondary drain lines were viewed at the soffit as per code.

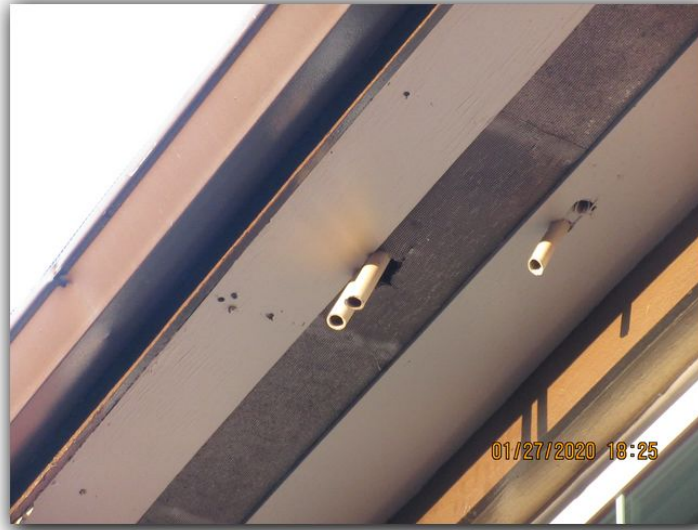
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12. Note: Termination of the secondary drain line was not confirmed other than that reported above. The secondary drain lines normally run under the attic insulation and the whole run is not viewable.

Service System:

13. The a/c system must be serviced prior to closing in order to validate most home owner's warranty requirements, the a/c technician must issue a certification that the condenser and evaporator is operating properly and is not defective and is cooling properly.

14. Buyer should receive a copy of the documentation for the service of the a/c system in order to validate the home owner's warranty requirements.

C. Duct Systems, Chases, and Vents

Comments:

Type of Ducting: Flex Ducting Duct Board Metal

15. Ducts must not be in contact with each or lay on top of the joists other or they will create condensation that is prone to mold and mildew issues.

16. Various ducts are damaged and are in need of replacement.

I=Inspected

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17. The ducts must be elevated and supported from the rafters.



Other homes shown below;



18. Return air filter needs replacement

I=Inspected

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IV. PLUMBING SYSTEM

A. Plumbing Supply, Distribution Systems and Fixtures

Location of water meter: Front of Home

Location of main water supply valve: Front of Home

Static water pressure reading: 45 psi below 40 psi above 80 psi

Home was winterized Home needs to be winterized n/a

Comments:

Water Source: Public Private **Sewer Type:** Public Private

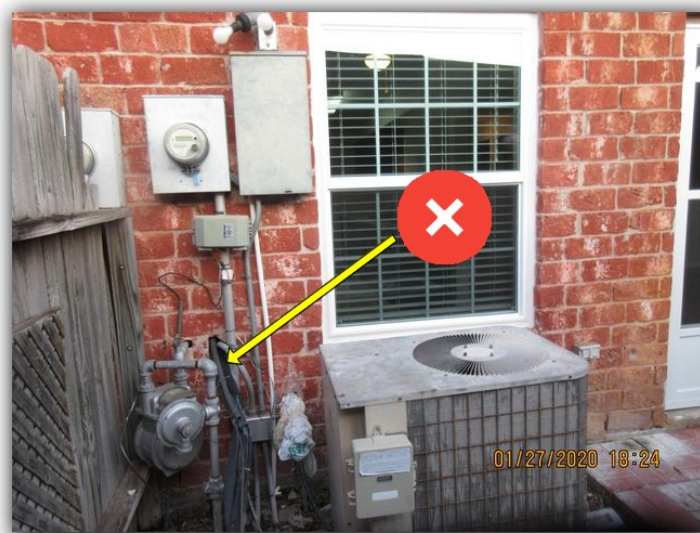
Gas Meter:

19. The home has a gas meter present.

20. The gas was active at the time of the inspection.

21. There is a gas leak at the gas meter that is under the main panel, a hazard, needs immediate attention.

22. The gas meter should not be located under the main panel or next to the a/c condenser.



23. Gas meter was not bonded as required by code

24.E3509.7 Metal gas piping bonding. Each aboveground portion of a gas

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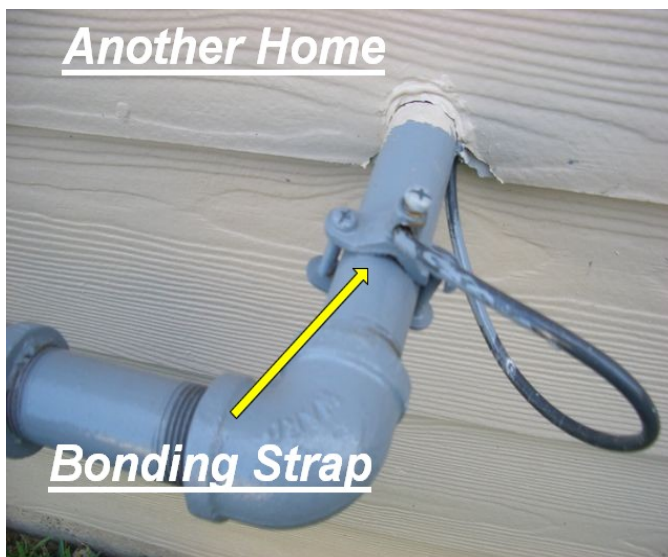
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pipng system upstream from the equipment shutoff valve shall be electrically continuous and bonded to the grounding electrode system.



Washing Machine Connections

25. Washing machine connections not tested - faucets, drains not tested

Interior Plumbing:

26. The kitchen fixture had low water pressure, reason not known, it may be due to clogged water lines.

27. All commodes flushed properly.

28. All commodes are properly anchored.

Type of Pipes:

29. Homes built before 1988 had Galvanized water lines.

30. In the attic it was seen what appears to be galvanized water lines as seen below.

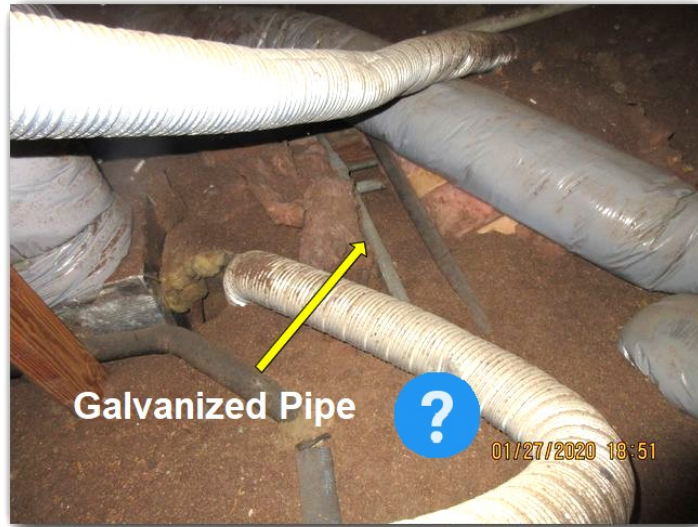
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31. In this case some of the water lines appear to have been upgraded to copper at the new water heater as seen below.

32. The copper water lines on the water heater are not insulated.



33. Home of this age normally has galvanized water supply lines that with time can clog and have to be replaced, at the time of the inspection all of the fixtures flowed adequately except the kitchen.

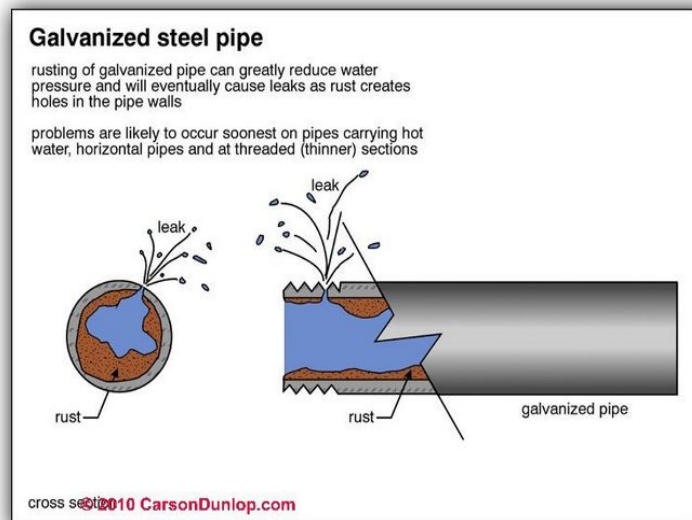
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Additional Information:

- 34. Galvanized pipes have a general life expectancy of 50 years, but this can be shortened considerably by the amount of minerals in the water supply. Houston has hard water, and galvanized pipes here tend not to last longer.
- 35. Two things happen to galvanized pipes as they age. First, minerals tend to slowly build up on the inner walls of the pipe decreasing the inside diameter. In extreme cases, this can slow the water flow to a trickle. The other common problem with galvanized pipes is corrosion at the joints. In the process of cutting the threads for the pipe fittings, the protective galvanizing is cut away exposing bare metal. Over time, these threaded joints will corrode and eventually break.
- 36. If the pipes are original I would definitely consider replacing them. If you are not sure how old they are, a plumber should assess the plumbing pipes in the home

Upgrade Recommendation:

- 37. Home may have galvanized water lines as other homes of this age have.
- 38. This inspector recommends if the home has galvanized pipes that they be upgraded in the near future to a PEX water supply system which is a modern type of water pipes that replaced copper water lines and pvc water lines.
- 39. PEX water lines are usually found with a central manifold and a "home run" type of water lines with individual cut off valves.
- 40. A manifold is not code required and may not be possible in an upgrade, check with a plumber.

Another Homes shown below:

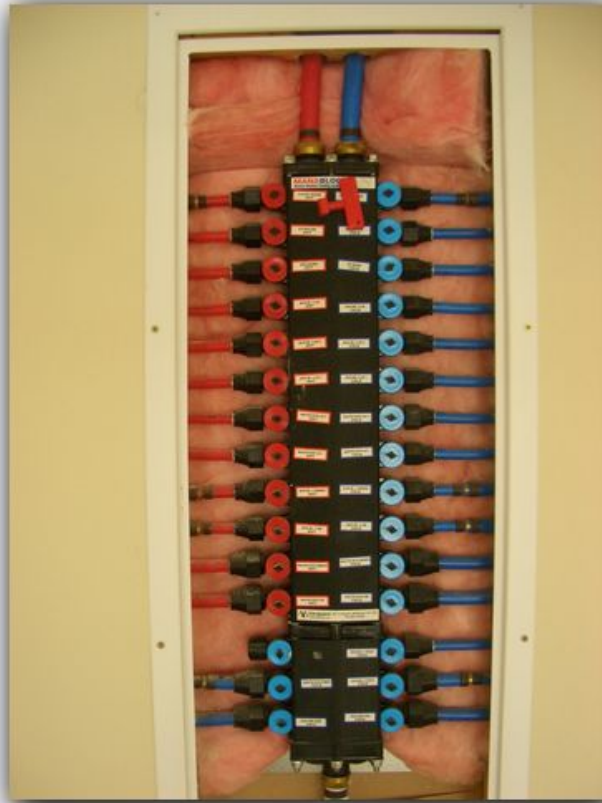
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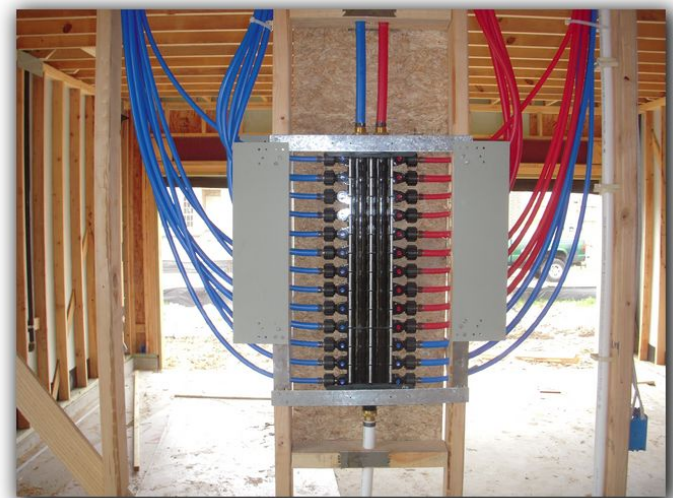
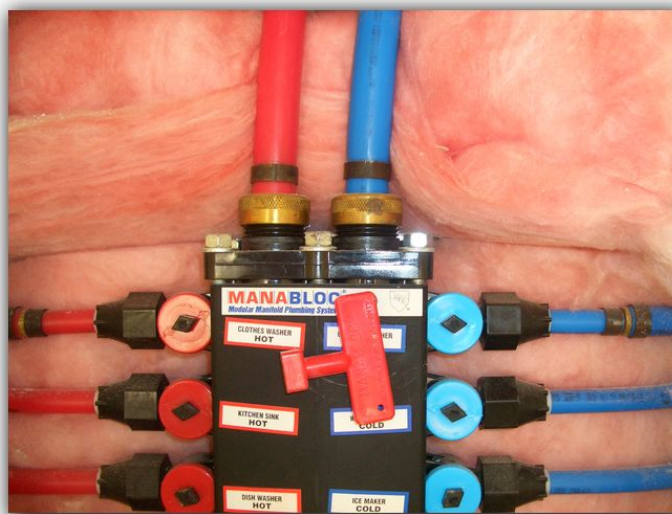
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MANA AND ZURN MANIFOLDS:



41. PEX (or *cross linked polyethylene*) is part of a water supply piping system that has several advantages over metal pipe (copper, iron, lead) or rigid plastic pipe (PVC, CPVC, ABS) systems. It is flexible, resistant to scale and chlorine, doesn't corrode or develop pinholes, is faster to install than metal or rigid plastic, and has fewer connections and fittings.

42. **(Cross linking** is a chemical reaction that occurs between polyethylene polymer chains. Cross linking causes the HDPE to become stronger and resistant to cold temperature cracking or brittleness on impact while retaining its flexibility. The three methods of cross linking HDPE are the Engels method

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(PEX-a), the Silane Method (PEX-b), and the Radiation method (PEX-c). Several industry participants claim that the PEX-a method yield more flexible tubing than the other methods. All three types of PEX tubing meet the ASTM, NSF and CSA standards)

43. PEX tubing is made from cross linked HDPE (high density polyethylene) polymer. The HDPE is melted and continuously extruded into tube. The cross linking of the HDPE is accomplished in one of three different methods.

44. PEX plumbing has been in use in Europe since about 1970, and was introduced in the U.S. around 1980. The use of PEX has been increasing ever since, replacing copper pipe in many applications, especially radiant heating systems installed in the slab under floors or walkways. Interest in PEX for hot and cold water plumbing has increased recently in the United States

Advantages of PEX Plumbing

- I. Flexible PEX tube is manufactured by extrusion, and shipped and stored on spools, where rigid plastic or metal piping must be cut to some practical length for shipping and storage. This leads to several advantages, including lower shipping and handling costs due to decreased weight and improved storage options.
- II. PEX plumbing installations require fewer fittings than rigid piping. The flexible tubing can turn 90 degree corners without the need for elbow fittings, and PEX tubing unrolled from spools can be installed in long runs without the need for coupling fittings.
- III. Attaching PEX tube to fittings does not require soldering, and so eliminates the health hazards involved with lead-based solder and acid fluxes; PEX is also safer to install since a torch is not needed to make connections..
- IV. PEX resists the scale build-up common with copper pipe, and does not pit or corrode when exposed to acidic water.
- V. PEX is much more resistant to freeze-breakage than copper or rigid plastic pipe.
- VI. PEX tubing does not transfer heat as readily as copper, and so conserves energy.

I=Inspected

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VII. Water flows more quietly through PEX tube, and the characteristic "water hammer" noise of copper pipe systems is virtually eliminated.

B. Drains, Wastes, and Vents

Comments:

1. The inspector operated at least three fixtures to test for proper water flow in the drain system.
2. No obstructions were viewed at the time of the inspection.
3. Missing drain pan under washing machine at second level utility room as required by code with a two inch drain line that terminates to exterior. IRC P-2719.1.
4. The utility room does not have a drain on the floor.



Other homes shown below:



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5. Missing tub access panel at sheet rock wall as required by IRC code P-2704.1.



C. Water Heating Equipment

Energy Source: Gas

Comments:

Location of Water Heater:

- 6. The water heater is located in the attic area.
- 7. The water heater has been recently installed.
- 8. The water heater is gas and was active at the time of the inspection.



Vent Pipe:

- 9. The vent pipe is not properly secured to the rafters as per code.

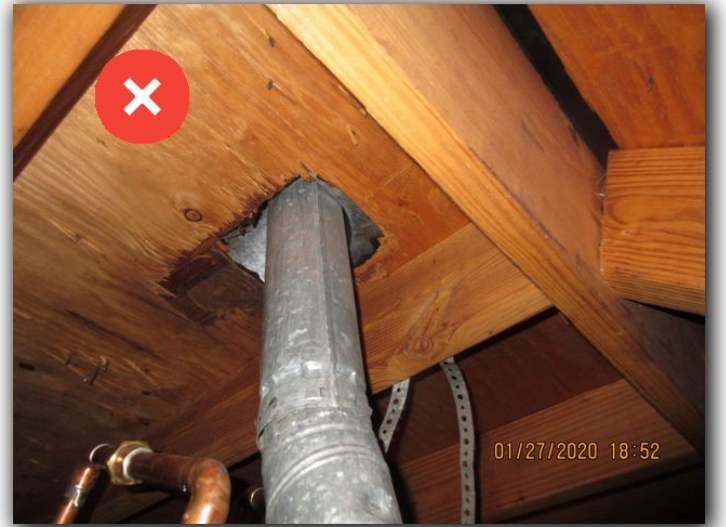
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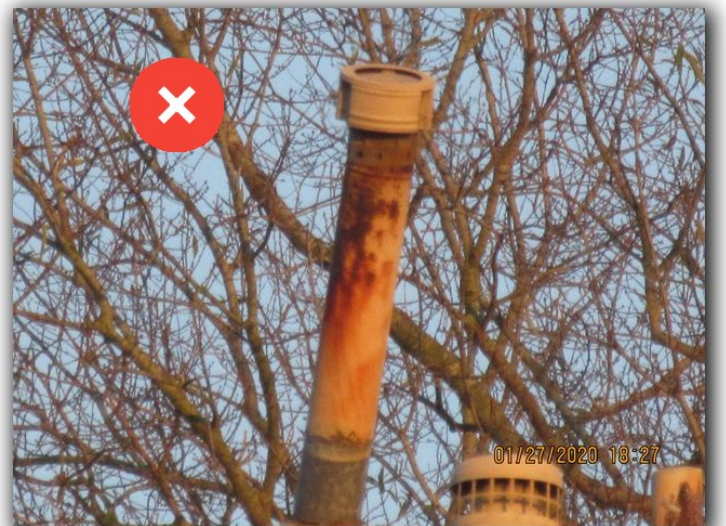
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10. The vent pipe is a Type B with cap and collar as per code.

11. The vent pipe at the roof level is rusty and it may be due to a blockage that has caused over heating, the vent pipe and cap need to be replaced.



Drain Pan:

12. The water heater has a proper drain pan under the tank as per code.

13. The water heater drain pan has a drain line connected, termination appears to be to the plumbing drain system which is acceptable.

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Gas Line:

- 14. The water heater has a flex gas line.
- 15. The gas line is missing a bonding wire as required by code.



Drip Leg:

- 16. Missing a drip leg as per code.

Another Home Shown Below:

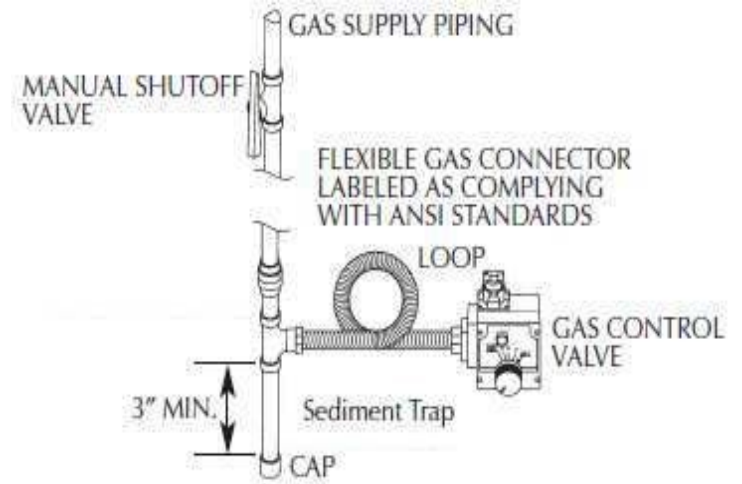
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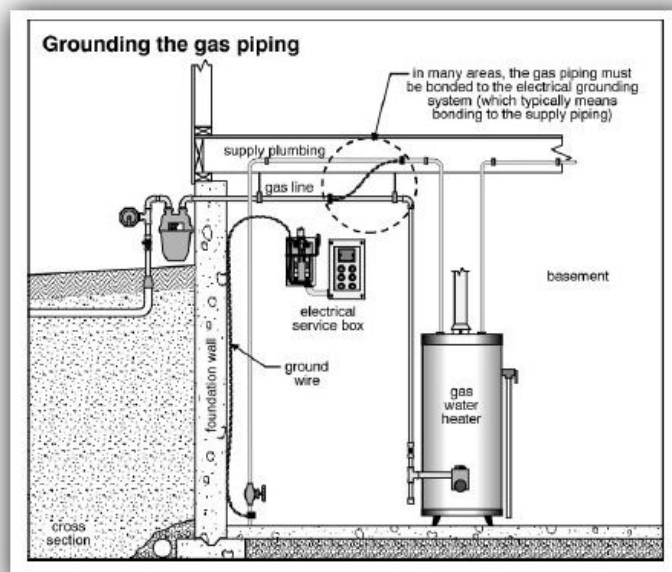
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Bonding to System:

17. The hot and cold water lines were not bonded to the gas line as per code

18. **E3509.6 Metal water piping bonding.** The interior metal water piping system shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more rounding electrodes used. The bonding jumper shall be sized in accordance with Table E3503.1. The points of attachment of the bonding jumper(s) shall be accessible.



T&P Valve:

19. The drain line for the T&P valve has joints that are PVC for cold water use, must be CPVC for hot water use.

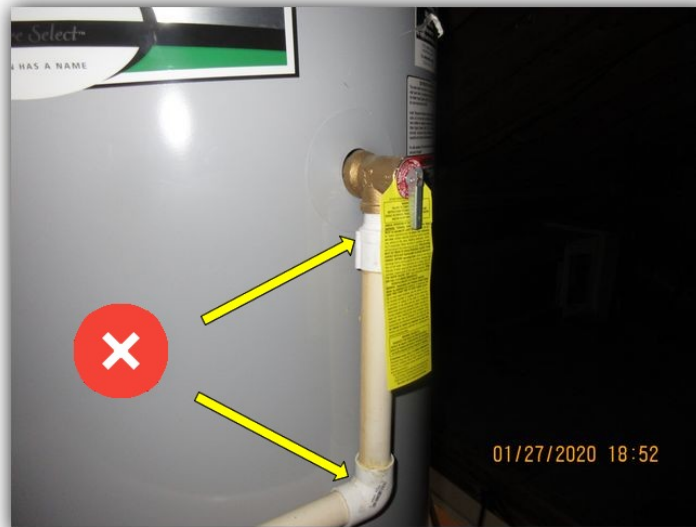
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Di-Electric Connection:

20. Missing a dielectric connection at the copper and galvanized connections if present, not visible.
21. A dielectric union is necessary because when two **dissimilar** (different) metals, when placed in an acidic solution, will create a battery. And one metal will usually erode away as the chemical reaction progresses. The other metal may have a buildup of new material, which may be a chemical combination of the eroded metal and the acid. Since virtually all domestic water is slightly acidic or slightly basic, this **electro-galvanic** action can occur in any metal plumbing system.
22. When copper and steel pipes are connected together directly, the "battery" has a path for electrical current to flow. (This current is tiny, and the voltage is not a safety hazard.)
23. If the current cannot flow, because there is no electrical connection (interrupted by the plastic insulators) then the "battery" never discharges. In theory there will always be a small voltage between the different metals. The metals do not erode.

Additional Information CCST gas flex lines:

24. CSST was developed in Japan in the 1980s. It was developed as a safety improvement over rigid black iron gas pipes that often failed and started fires during earthquakes. The flexible nature of the CSST system allows it to handle seismic activity without leaking gas.

In the early 1980s, the Gas Research Institute initiated research into the use of CSST systems in the U.S.; listing processes, and code approvals needed to be developed and accepted by regulatory bodies. The American National Standards Institute performance

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specification, AGA LC-1 1987 "Proposed Standard for Interior Fuel Gas Piping Utilizing CSST" was released in 1989.

Sales of CSST in the U.S. began in 1990 with approximately 100,000 ft. sold. Use of CSST grew in the U.S. as contractors quickly discovered it could be installed in 1/3 the time of rigid black iron pipe systems. Beyond the time saved on installations, contractors and code officials appreciated the reduction of fitting joints in a flexible gas piping system. Joints are areas for concern in gas piping systems as they represent potential leak paths. Flexible CSST systems have approximately 75% fewer fitting joints than rigid black iron pipe systems.

All CSST manufacturers expressly added the bonding and grounding procedure to their installation requirements in August 2006. This improved safety installation requirement reduces the likelihood of an electrical surge that can potentially cause a fire. More than 800 million feet of CSST gas piping in approximately six million homes has been installed in the U.S. since 1990.

25. If you find CSST it is strongly recommended that you determine if the CSST system is properly bonded and grounded. A bonding device should be installed on your natural gas system in order to reduce the chances of a natural gas leak or fire. Bonding is provided primarily to prevent a possible electric shock to people who come in contact with the gas piping and other metal objects connected to the grounding system. Nearby lightning strikes can also result in an electrical surge and can potentially puncture a hole in the CSST. Proper bonding and grounding will reduce the risk of damage and fire from a lightning strike.

Bonding of CCST:

26. Direct bonding is required for gas piping systems incorporating standard (yellow) or uncoated CSST whether or not the connected gas equipment is electrically powered. This requirement is provided as part of the manufacturer's instruction for single-family and multi-family buildings and required by the 2009 and later editions of the National Fuel Gas Code, the International Fuel Gas Code and the Uniform Plumbing Code. A person knowledgeable in electrical system design, the local electrical code and these requirements should specify the bonding for commercial applications.
27. Standard CSST installed inside or attached to a building or structure shall be electrically continuous and direct bonded to the electrical ground system of the premises in which it is installed. The gas piping system shall be considered to be direct-bonded when installed in accordance with the following:
28. The bonding conductor is permanently and directly connected to the electrical service equipment enclosure, the grounded conductor at the electrical service, the grounding

I=Inspected NI=Not Inspected NP=Not Present D=Deficient

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electrode conductor, or to one or more of the grounding electrodes used. When an additional grounding electrode(s) is used for the gas service, it shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding system.

29. For single and multi-family structures a single bond connection shall be made on an accessible rigid piping component or CSST fitting located downstream of the utility gas meter or second-stage LP regulator. The bonding clamp attachment point may be at any location within the gas piping system. However, the shortest practical bonding wire length will improve the effectiveness of the direct-bond. The corrugated stainless steel tubing portion of the gas piping system shall not be used as the point of attachment of the bonding clamp under any circumstances.
30. The bonding conductor shall be no smaller than a 6 AWG copper wire or equivalent. The bonding conductor shall be installed and protected in accordance with the National Electrical Code, NFPA 70, (NEC) and Canadian Electrical Code CSAC22.1 (CEC). Bonding/grounding clamps shall be installed in accordance with its listing per UL 467 and shall make metal-to-metal contact with a rigid pipe component or CSST fitting. This direct-bond is in addition to any other bonding requirements as specified by local codes for ground fault protection.
31. The 2015 edition of the National Fuel Gas Code, International Fuel Gas Code, and Uniform Plumbing Code limits the length of the bonding conductor to 75-ft. When there are no local code requirements for the length of this conductor refer to the manufactures instructions or the NEC / CEC for guidance regarding the permissible length of the bonding conductor.
32. Manufactures of black jacketed CSST products which have been tested and listed to ICC-ES LC 1024, "CSST Utilizing a Protective Jacket", may not require or include in their instructions the additional direct-bonding step that is required with standard (yellow) CSST products. However local codes may be more restrictive and may differ from manufacturer's requirements. Local codes take precedence and must be adhered to.

D. Hydro-Massage Therapy Equipment

Comments:

33. Other homes shown below with proper doors to access the mechanical equipment.

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

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34. Air switch is working

35. It is GFI protected as per code

E. Other

Comments:

V. APPLIANCES

A. Dishwashers

Comments:

36. The dishwasher is new but not working properly at the time of the inspection, water has not been activated to unit.



Drain Line:

37. The drain line was not raised above the drain and looped as per code.

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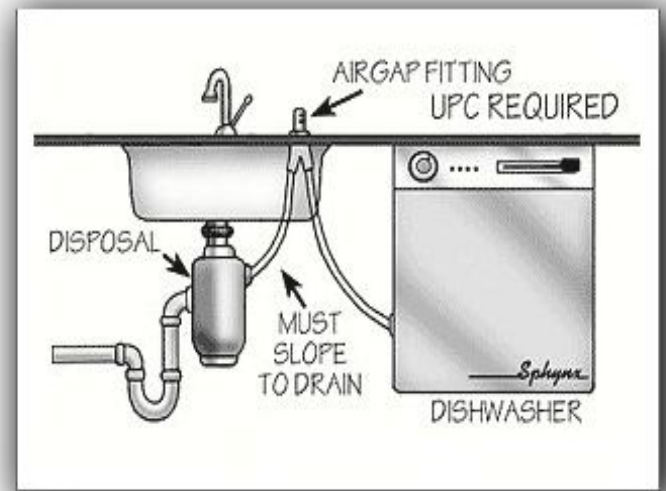
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38. Missing an air gap valve on top of the sink as per code.



B. Food Waste Disposers

Comments:

39. The disposer was present and working properly at the time of the inspection.

40. Missing proper conduit on the electrical connection.

C. Range Hood and Exhaust Systems

Comments:

41. The vent hood was present and working properly at the time of the inspection.

42. The vent hood is a re-circulating vent hood that does not terminate to the exterior.



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D. Ranges, Cooktops, and Ovens

Comments:

Range Type: Electric Gas Not in place at the time of the inspection
 Stand Alone Stove top

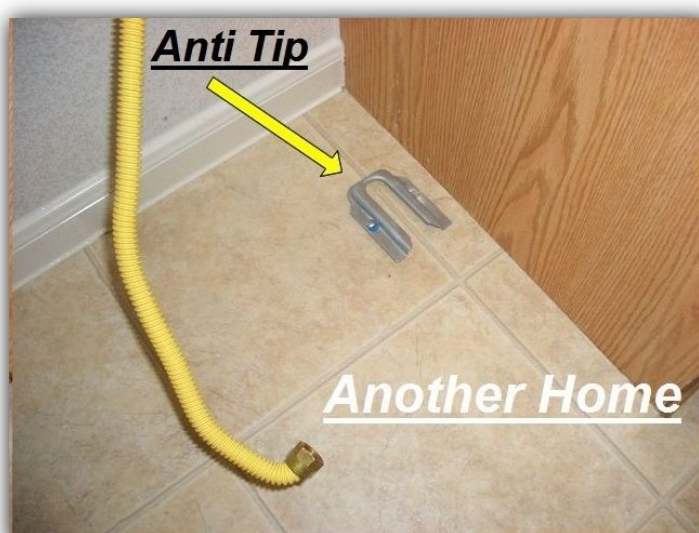
43. The home has a new working gas stove.

44. The stove has a proper gas flex and gas valve behind the unit as per code.



45. The stove was not working at the time of the inspection.

46. Stove is missing an anti tip device as required by code.



47. Anti tip devices are an important safety item for all homes with free standing or slide in ovens/ranges. Anti tip brackets are metal devices designed to prevent oven/ranges from

I=Inspected NI=Not Inspected NP=Not Present D=Deficient

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tipping over. Anti Tip Devices/Brackets are also referred to as a Tilt Guard or a Range Stability Device.

- 48. The bracket is usually attached to a rear leg of the range and anchored into the floor or the wall behind it. Brackets mounted to the floor allow the leg of the range to slide back into place, preventing it from falling forward. Some wall mounted brackets are installed into an opening in the back of the oven in lieu of on the bottom of the leg. The brackets are included with all appliance installation packages.
- 49. A range that does not have an anti tip bracket installed may tip over if enough weight or pressure is applied to the open oven door, such as that from a large Thanksgiving day turkey, or even a small child using the door as a step. A falling range can crush, scald, or burn someone close by. Newer ranges are light enough that it doesn't take much weight to cause them to tip over, but they're heavy enough to injure or kill small children trapped beneath. Anti-tip brackets can prevent this from happening and they are required by current standards but they aren't installed in a huge portion of ranges.

E. Microwave Ovens

Comments:

- 50. The microwave was present and working properly at the time of the inspection.
- 51. The microwave has a vent hood built in.
- 52. The vent hood has proper filters and light fixture.



F. Mechanical Exhaust Vents and Bathroom Heaters

Comments

- 53. The second floor hall bathroom has a defective power exhaust vent, needs to be

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D=Deficient

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replaced.



54. Improperly terminating flex vents into the attic, they must be properly fitted into the roof jack so they can terminate to the exterior as per code.



55. Missing a 50 cfm power exhaust vent at the ceiling of the utility room that has no windows as per code R-303.3x;

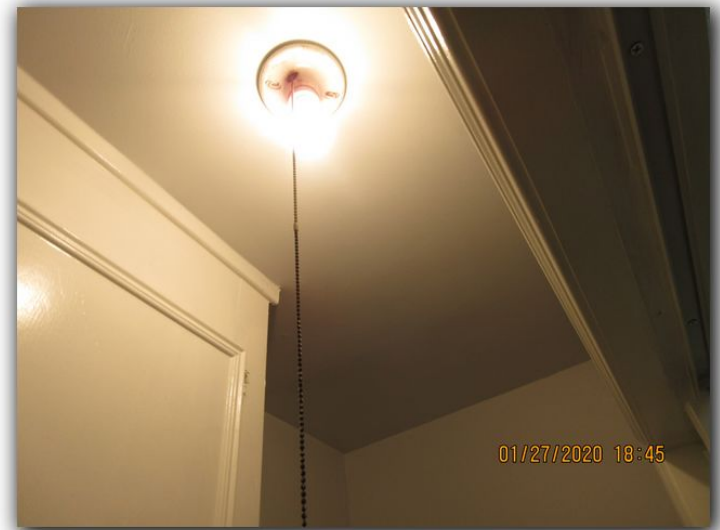
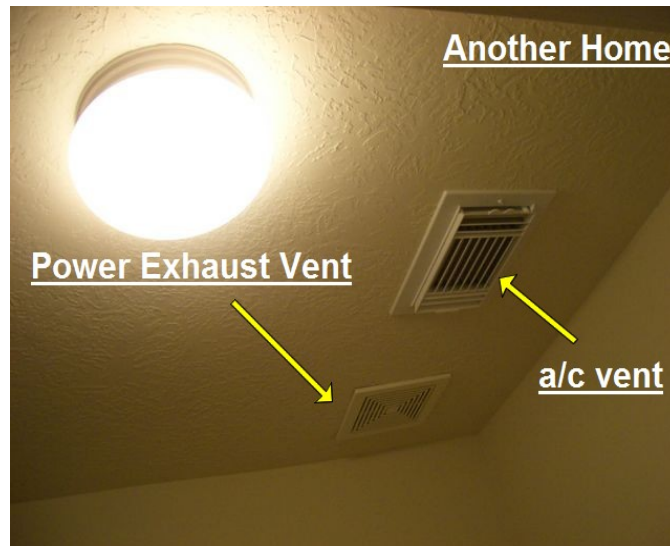
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56. R303.3 Bathrooms. Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet (0.279 m²), one-half of which must be openable.

57. Exception: The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cfm (23.6 L/s) for intermittent ventilation or 20 cfm (9.4 L/s) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside.

G. Garage Door Operators

Comments:

Garage Door Opener:

58. The garage door opener was present and working properly at the time of the inspection.

59. The garage door opener has an auto return mechanism.

Electrical Connection:

60. The garage door opener was properly connected to a ceiling mounted receptacle as per code.

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H. Dryer Exhaust Systems

Comments:

61. The dryer vent must be cleared prior to use.

62. Missing a back draft damper at the termination of the vent as per code.

63. Improper dryer vent; Code requires that the roof jack has a back draft damper; The subject property has no back draft damper, has a type "A" roof jack that will hold lint and be a fire hazard (as per fire department); Remove existing roof jack and properly install one as required by code;



64. Dryer Vent - **G2437.3 (613.4) Exhaust material.** Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building and **shall be equipped with a back draft damper.**

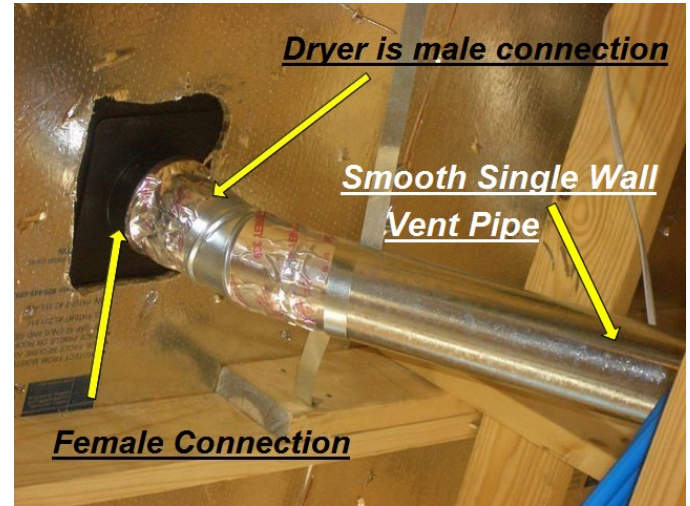
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Above Photo shows a proper utility roof jack as required by code with back draft damper and sealed under the decking;

65. Improper dryer vent will cause lint to fall into the attic or accumulate in a sealed type A roof jack both of which are a fire hazard as shown on the photo below;



Additional Information:

Statistics from the Consumer Product Safety Commission (CPSC) show that over 24,000 house fires and nearly \$100 million in property damage annually are related to faulty clothes dryer vent installations. House fires related to clothes dryer vents are much more common than most people believe but luckily are relatively easy to prevent. The photo above illustrates how dirty many dryer ducts are and most people would have no idea until they either (1) have a fire, or (2) decide to finally clean out their dryer vent.

During a normal drying cycle, up to a gallon of water may be drawn out of the clothes in the form of water vapor. The purpose of the dryer vent system is to transport this water vapor, and the lint that accompanies it, to a safe location outside the home.

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Flex Vinyl Tubing:

The most commonly seen improper type of dryer vent is flexible vinyl tubing. Vinyl is a type of plastic and it can easily melt and lead to a house fire. This material, most often white and ribbed, tends to allow for lint to readily accumulate. Lint is very flammable and all it takes is a small spark to ignite it leading to a house fire.

The more lint that fills a clothes dryer vent, the more energy the clothes dryer consumes to try to dry the clothes as air won't freely flow through the clogged vent material. This, in turn, causes the drying cycle to be much longer than normal and raises utility bills. The photo below shows an installation of vinyl tubing.



I. Other

Comments:

List of Repairs - Summary Report

Note: Person responsible for repairs must first read the report on the topic prior to going only by the list of repairs. The report shows how the deficiency should be made and in some cases the code associated with the repair. Do not begin repairs using only this list of repairs.

GRADING AND DRAINAGE

6 High Soil:

1. Various points around the perimeter beam of the foundation the soil is too high, it must be at least six inches from the ground to avoid water intrusion and/or pest infestation

6 Site Drainage:

2. 6 Front down spout terminates next to the foundation and is too close to the sidewalk, thus a "flex pipe" must be installed that goes under the sidewalk and terminates to the front yard for proper drainage towards the street as required by code.
3. 6 Ponding noted at several points around the foundation or near the foundation all low spots should be filled, compacted and caused to drain away from the foundation to avoid future foundation settlement issues

ROOF COVERING MATERIALS

4. 6 The gutters need to be cleared of leaves and debris

ROOF STRUCTURES AND ATTICS

6 Attic Ladder:

5. 6 The attic ladder is missing insulation as required by code.
6. The attic ladder is also missing a weather strip as required by code

6 Recommendation:

7. It is recommended that since the attic has a common attic area divided by the firewall, that the attic ladder be secured with a lock and the alarm system connected to the attic ladder as if it was another exterior door

6 Foam Insulation:

8. 6 Missing foam insulation at the perimeter of the attic ladder frame as per code
9. 6 N1102.1.10 Air leakage. All joints, seams, penetrations, window and door assemblies and their respective jambs and framing; and other sources of air leakage (infiltration and exfiltration) through the building thermal envelope shall be caulked, gasketed, weather stripped, wrapped, or otherwise sealed to limit uncontrolled air movement

6 Landing:

10. Missing a clear landing at the top of the stairs as required by code

6 Decking & Work Platform:

11. Improper decking methods, attic decking must be solid plywood with no obstructions in front of the furnace as per code and as seen on the left lower photo below.
12. 6 One of the furnaces is installed backwards and has no work space
13. 6 Unprotected romex wiring by the attic entrance, all wiring within six feet of the attic entrance must be protected as per code
14. 6 Missing a switch cover on the light switch by the attic entrance for the attic light

6 Firewall:

15. 6 Missing a proper firewall between the units in the attic as required by code
16. 6 As seen below the attic has a type of firewall but it is not the right material and has no fire tape at the seams

WALLS (INTERIOR AND EXTERIOR)

6 Firewall:

- 17.6 Firewall not checked for integrity as an assembly unit; Firewall must have fire rated taping, mud, and a 3/4 inch sheet panel rock on each side of the wall to meet the required firewall rating

DOORS (INTERIOR AND EXTERIOR)

6 Garage Doors

- 18.6 Garage door frame wood trim is too close to the ground, must be cut 45 degrees, painted at the base (sealed) and be two inches above the concrete floor to avoid water rot

FIREPLACES AND CHIMNEYS

6 Fireplace:

- 19. Fireplace and chimney must be serviced prior to use
- 20.6 Missing a c-clamp, c-clamp on the damper keeps it open for carbon monoxide venting, however when the fireplace is not in use such as in the summer, the vent should be closed.

PORCHES, BALCONIES, DECKS, AND CARPORTS

- 21.6 The patio has loose pavers and some that are in need of repair, a trip hazard

OTHER

- 22. 6 Wood perimeter fence is in need of repairs at various places
- 23. 6 Some of the fence has minor wind damage

SERVICE ENTRANCE AND PANELS

6 Main Electrical Disconnect Panel

- 24. 6 Insufficient space in front of the main panel as required by code, code requires at least 36 inches in front of the main panel, as installed the clearance is not sufficient for safety issues.
- 25. 6 Improper ground rod, it is extremely too short, it must be at least six feet made of copper bonded steel rod
- 26. 6 At this time there is no ground rod protection
- 27. 6 Ground rod must be above ground and visible, the ground rod clamp must be visible, the ground rod should extend at least six inches above the ground to be able to inspect and maintain the ground rod clamp, see photo below of another home with a properly installed ground rod.

6 E3511.1 Methods of grounding conductor connection to electrodes. The grounding conductor shall be connected to the grounding electrode by listed lugs, listed pressure connectors, listed clamps or other listed means. Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod or other buried electrodes, shall also be listed for direct soil burial. Not more than one conductor shall be connected to the grounding electrode by a single clamp or fitting unless the clamp or fitting is listed for multiple conductors. One of the methods indicated in the following items shall be used:

- 6 1. Bolted clamp. A listed bolted clamp of cast bronze or brass, or plain or malleable iron.
- 6 2. Pipe fitting, pipe plug, etc. A pipe fitting, pipe plug or other approved device screwed into a pipe or pipe fitting.
- 6 3. Sheet-metal-strap-type ground clamp. For indoor telecommunications purposes only. A listed sheet-metal-strap-type ground clamp having a rigid metal base that seats on the electrode and having a strap of such material and dimensions that is not likely to stretch during or after installation.

- 28.6 Main panel dead front cover is not labeled as per code
- 29.6 Improper wiring methods, there is one double lugged breaker and what appears to be an over heated wire on the top right bank as seen below, it needs immediate repair
- 30.6 There is a damaged white wire on the left bank as seen below on the left side, needs repair.
- 31. An electrician should make further assessment to confirm that the main panel was not damaged due to an over current resulting from a defective ground rod

6 Arc Fault Interrupters:

- 32.6 Missing arc fault interrupters as required by current code of 2008 and newer homes.
- 33. Recommend that the home be upgraded to accommodate arc fault protection.
- 34. Code IRC 3802.11 requires arc fault interrupters in all circuits going into the living area
- 35.6 Home is missing arc fault protection on the GFI's as required by current code

BRANCH CIRCUITS, CONNECTED DEVICES, AND FIXTURES

6 Smoke and Fire Alarms

- 36.6 Replace all batteries of existing smoke detectors
- 37.6 Smoke alarms are not present in each sleeping area
- 38.6 No smoke alarm in hallway

6 Carbon Monoxide Detectors

- 39.6 Missing carbon monoxide detectors, smoke detectors are not carbon monoxide detectors.

6 Fixtures:

- 40.6 Improper luminary at the exterior by the main panel
- 41.6 Some exterior light fixtures (barn lamp) are inoperable or in need of repair

42.6 Rear lamp at the brick wall is not properly installed

43.6 Missing some luminaries (bulbs) in some light fixtures

6 Receptacles:

44.6 Missing four prong 220 volt receptacle on the dryer electrical connection has the obsolete three prong receptacle

HEATING EQUIPMENT

45.6 The right side furnace is installed backwards, the controls are not accessible.

46. The controls must be properly installed to face the work platform as required by code

47.6 The vent pipes are not properly secured to the rafters as per code

48.6 The gas line was not protected from impact as per code.

49. G2421.1.1 (411.1.1) Protection from damage. Connectors and tubing shall be installed so as to be protected against physical damage.

50. G2419.1.3 (409.1.3) Access to shutoff valves. Shutoff valves shall be located in places so as to provide access for operation and shall be installed so as to be protected from damage

6 Drip Leg:

51.6 Missing a drip leg at the gas connector/gas flex as per code, see photo below of another home with a proper drip leg

6 Bonding:

52.6 The gas line was not bonded as per code

53.6 E3509.7 Metal gas piping bonding. Each aboveground portion of a gas piping system upstream from the equipment shutoff valve shall be electrically continuous and bonded to the grounding electrode system

6 Service Systems:

54.6 **GAS FURNACES:** Both of the furnaces need to be serviced prior to closing in order to

validate most home owner's warranty requirement. The a/c technician must issue a certification that the system meets code and is heating properly and the heat exchanger is in good conditions

COOLING EQUIPMENT

55.6 Both condensers are at the end of their useful lifespan

6 Primary Drain Lines:

56.6 Both of the primary drain lines must be cleared

6 Service System:

57.6 The a/c system must be serviced prior to closing in order to validate most home owner's warranty requirements, the a/c technician must issue a certification that the condenser and evaporator is operating properly and is not defective and is cooling properly

DUCT SYSTEMS, CHASES, AND VENTS

58.6 Ducts must not be in contact with each other or lay on top of the joists or they will create condensation that is prone to mold and mildew issues

59.6 Various ducts are damaged and are in need of replacement

60.6 The ducts must be elevated and supported from the rafters

61.6 Return air filter needs replacement

PLUMBING SUPPLY, DISTRIBUTION SYSTEMS AND FIXTURES

- 62. 6 There is a gas leak at the gas meter that is under the main panel, a hazard, needs immediate attention
- 63. 6 The gas meter should not be located under the main panel or next to the a/c condenser
- 64. 6 Gas meter was not bonded as required by code
- 65. 6 **E3509.7 Metal gas piping bonding.** Each aboveground portion of a gas piping system upstream from the equipment shutoff valve shall be electrically continuous and bonded to the grounding electrode system.

6 Washing Machine Connections

- 66. 6 Washing machine connections not tested - faucets, drains not tested
- 67. 6 The kitchen fixture had low water pressure, reason not known, it may be due to clogged water lines
- 68. 6 In the attic it was seen what appears to be galvanized water lines as seen below
- 69. 6 In this case some of the water lines appear to have been upgraded to copper at the new water heater as seen below
- 70. 6 The copper water lines on the water heater are not insulated
- 71. 6 Home of this age normally has galvanized water supply lines that with time can clog and have to be replaced, at the time of the inspection all of the fixtures flowed adequately except the kitchen.

DRAINS, WASTES, AND VENTS

- 72. 6 Missing drain pan under washing machine at second level utility room as required by code with a two inch drain line that terminates to exterior. IRC P-2719.1
- 73. 6 The utility room does not have a drain on the floor
- 74. 6 Missing tub access panel at sheet rock wall as required by IRC code P-2704.1.

WATER HEATING EQUIPMENT

75.6 The vent pipe is not properly secured to the rafters as per code

76.6 The vent pipe at the roof level is rusty and it may be due to a blockage that has caused over heating, the vent pipe and cap need to be replaced

77.6 The gas line is missing a bonding wire as required by code

6 Drip Leg:

78.6 Missing a drip leg as per code

6 Bonding to System:

79.6 The hot and cold water lines were not bonded to the gas line as per code

80. E3509.6 Metal water piping bonding. The interior metal water piping system shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more rounding electrodes used. The bonding jumper shall be sized in accordance with Table E3503.1. The points of attachment of the bonding jumper(s) shall be accessible.

6 T&P Valve:

81.6 The drain line for the T&P valve has joints that are PVC for cold water use, must be CPVC for hot water use

6 Di-Electric Connection:

82.6 Missing a dielectric connection at the copper and galvanized connections if present, not visible

DISHWASHERS

83.6 The dishwasher is new but not working properly at the time of the inspection, water has not been activated to unit

84.6 The drain line was not raised above the drain and looped as per code

85.6 Missing an air gap valve on top of the sink as per code

FOOD WASTE DISPOSERS

86.6 Missing proper conduit on the electrical connection

RANGES, COOKTOPS, AND OVENS

87.6 Stove is missing an anti tip device as required by code

MECHANICAL EXHAUST VENTS AND BATHROOM HEATERS

88.6 The second floor hall bathroom has a defective power exhaust vent, needs to be replaced

89.6 Improperly terminating flex vents into the attic, they must be properly fitted into the roof jack so they can terminate to the exterior as per code

90.6 Missing a 50 cfm power exhaust vent at the ceiling of the utility room that has no windows as per code R-303.3x

DRYER EXHAUST SYSTEMS

91.6 The dryer vent must be cleared prior to use.

92.6 Missing a back draft damper at the termination of the vent as per code

- 93.6 Improper dryer vent; Code requires that the roof jack has a back draft damper; The subject property has no back draft damper, has a type "A" roof jack that will hold lint and be a fire hazard (as per fire department); Remove existing roof jack and properly install one as required by code;
- 94.6 Improper dryer vent will cause lint to fall into the attic or accumulate in a sealed type A roof jack both of which are a fire hazard as shown on the photo below;

DISCLAIMERS: As per TREC guidelines, the inspector does not;

1. Provide the life expectancy of the roof covering or any component
2. Determine the warrant ability or insurability of any component
3. Call out specific hazardous conditions 535.227b
4. Perform testing that requires specific licensing
5. Enter crawl spaces where headroom is less than 18" or deemed hazardous.
6. Determine the accuracy of the main panel breaker labeling
7. Certify any flatwork or local City Ordinance violations such as required in Missouri City
8. Confirm draw or flow on chimneys or other vents such as vent hoods
9. Confirm blockage or flow of dryer vents
10. Perform repairs or recommend contractors
11. Call out wood destroying insects
12. Provide the value of the property or investment projections
13. Review building plans and compare to the as built
14. Call out environmental hazardous conditions if any exist
15. Look for or call out suspect asbestos conditions
16. Does not perform a code inspection confirmed by on site plans
17. Check washer, dryer and refrigerator appliances
18. Check water purification devices
19. Light fire places or check for drafting
20. Does not locate or look for leaking pipes under the foundation
21. Does not remove attic insulation to view condition of pipes under the insulation
22. Check or confirm that drain pans located in the attic for the air conditioning or water heater systems lines leak, have a breach or terminate to the appropriate location
23. Guarantee the work or repairs performed by others
24. Fireplace not checked for grounding
25. Firewall not checked for assembly integrity as required by code
26. The inspection is performed for the party noted on page one of the report and is not transferable. If a party instigates legal action against the inspector and fails to prevail on every count such party will be responsible for the payment of the inspector's legal fees.
27. The inspector issues an opinion on the present condition of the component that is inspected
28. If the client finds a perceived fault in the inspection the client must contact the inspector in writing within the five days of the discovery in order that the inspector has an opportunity to review the alleged faulty issue.
29. Inspector does not check for issues with defective toxic sheetrock, such as Chinese Sheetrock that exists on some homes since 2001 see www.wikipedia.org/wiki/Chinese_drywall.
30. Inspector does not check for issues with granite tops such as radioactivity such as radon.
31. Other limitations for each category as found on the TREC web site

MANDATORY DISCLOSURE REQUIRED ON REPORT

The TREC Standards of Practice (Sections 535.227-535.233 of the Rules) are the minimum standards for inspections by TREC-licensed inspectors. **An inspection addresses only those components and conditions that are present, visible, and accessible at the time of the inspection. While there may be other parts, components or systems present, only those items specifically noted as being inspected were inspected.** The inspector is NOT required to turn on decommissioned equipment, systems, utility services or apply an open flame or light a pilot to operate any appliance. **The inspector is NOT required to climb over obstacles, move furnishings or stored items.** The inspection report may address issues that are code-based or may refer to a particular code; however, this is NOT a code compliance inspection and does NOT verify compliance with manufacturer's installation instructions. **The inspection does NOT imply insurability or warrantability of the structure or its components. Although some safety issues may be addressed in this report, this inspection is NOT a safety/code inspection, and the inspector is NOT required to identify all potential hazards....**

...THIS PROPERTY INSPECTION IS NOT A TECHNICALLY EXHAUSTIVE INSPECTION OF THE STRUCTURE, SYSTEMS OR COMPONENTS. **The inspection may not reveal all deficiencies.** A real estate inspection helps to reduce some of the risk involved in purchasing a home, but it cannot eliminate these risks, nor can the inspection anticipate future events or changes in performance due to changes in use or occupancy. It is recommended that you obtain as much information as is available about this property, including any seller's disclosures, previous inspection reports, engineering reports, building/remodeling permits, and reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should also attempt to determine whether repairs, renovation, remodeling, additions, or other such activities have taken place at this property. It is not the inspector's responsibility to confirm that information obtained from these sources is complete or accurate or that this inspection is consistent with the opinions expressed in previous or future reports.

ITEMS IDENTIFIED IN THE REPORT DO NOT OBLIGATE ANY PARTY TO MAKE REPAIRS OR TAKE OTHER ACTIONS, NOR IS THE PURCHASER REQUIRED TO REQUEST THAT THE SELLER TAKE ANY ACTION. **When a deficiency is reported, it is the client's responsibility to obtain further evaluations and/or cost estimates from qualified service professionals. Any such follow-up should take place prior to the expiration of any time limitations such as option periods. Evaluations by qualified tradesmen may lead to the discovery of additional deficiencies which may involve additional repair costs. Failure to address deficiencies or comments noted in this report may lead to further damage of the structure or systems and add to the original repair costs. The inspector is not required to provide follow-up services to verify that proper repairs have been made.**

Property conditions change with time and use. For example, mechanical devices can fail at any time, plumbing gaskets and seals may crack if the appliance or plumbing fixture is not used often, roof leaks can occur at any time regardless of the apparent condition of the roof, and the performance of the structure and the systems may change due to changes in use or occupancy, effects of weather, etc. These changes or repairs made to the structure after the inspection may render information contained herein obsolete or invalid. **This report is provided for the specific benefit of the client named above and is based on observations at the time of the inspection. If you did not hire the inspector yourself, reliance on this report may provide incomplete or outdated information...it is recommended that you hire your own licensed inspector to perform an inspection to meet your specific needs...**

ADDENDUM: MAINTENANCE ADVICE Upon Taking Ownership

- **After taking possession of a new home, there are some maintenance and safety issues that should be addressed immediately. The following checklist should help you undertake some of these improvements and maintenance issues:**
- **Change the locks on all exterior entrances, for improved security. If burglar bars are present make them detachable as per City of Houston ordinance (able to be opened without a key).**
- **Check that all windows and doors are secure. Improve or replace window hardware as necessary. Security rods can be added to sliding windows and doors. This inspector recommends a monitored security alarm system with smoke and fire detection hardware.**
- **Install smoke detectors on each level of the home, in each bedroom, in the hallway immediately outside the bedrooms and the game room, but not in the kitchen.**
- **Replace batteries on any existing smoke detectors and test them. Make a note to replace batteries again in one year, usually when the Daylight Savings time changes.**
- **Create a plan of action in the event of a fire in your home. Ensure that there is an operable window or door in every room of the house. Consult with your local fire department regarding fire safety issues and what to do in the event of a fire.**
- **Examine driveways and walkway for trip hazards. Undertake repairs where necessary.**
- **Examine the interior of the home for trip hazards such as faulty vinyl or ceramic flooring, loose or torn carpet, and make the appropriate repairs.**
- **Undertake improvements to all stairways, decks, porches and landings where there is a risk of falling or stumbling.**
- **Review your home inspection report for any items that require immediate repairs or improvement or further investigation. Address these areas as required and make the appropriate repairs.**
- **Install rain caps and vermin screens on all chimney flues, soffit vents, etc. as necessary.**
- **Investigate the location of the main shut-offs for the plumbing, heating and electrical systems.**
- **Seal all cracks or separations at brick veneer at exterior window sills and frames.**
- **Install stainless steel reinforced water supply lines to your washing machine to avoid accidents.**
- **If a condominium, buyer should carefully review the condominium declaration and from time to time also inspect the integrity of the fire walls in the attic.**
- **Buyer should check for any community restrictions and limitations.**
- **Make a note of the telephone numbers for local police, fire and ambulances services.**
- **Locate and confirm the termination of the dryer vent and clear of lint; The vent must not terminate to the attic, interior wall and must have a back draft damper, but no screen.**
- **Locate, confirm the termination of the vent hood vent and clear it, must not terminate into the attic.**
- **Fireplace/Chimney must be serviced prior to use,**
- **Clear any bird's nest/obstructions & service damper.**
- **Install protective covers (globe) over exposed incandescent light bulbs in the closets**

Regular Maintenance

- **Examine heating/cooling air filters and replace or clean as necessary**
- **Check that fire extinguisher(s) are fully charged, re-charge if necessary or purchase & install one**
- **Inspect and clean electronic air filters**
- **Clean gutters and down spouts. Ensure that down spouts are secure, and that the discharge of the down spout is appropriate (open end away from slab);**
- **Remove debris from exterior window wells**
- **Carefully inspect the condition of shower enclosures. Repair or replace deteriorated grout and caulk. Ensure that water is not escaping the enclosure during showering. Check below all plumbing fixtures for evidence of leakage.**
- **Repair or replace leaking faucets or shower heads.**
- **Secure loose toilets, or repair flush mechanisms that become troublesome**
- **If mold appears, locate the source and promptly fix it and remediate the affected area**

Buyer Notes:

SPRING AND FALL

- Examine the roof for evidence of damage to roof covering, flashing and chimneys.
- Look in the attic (if accessible) to ensure that roof vents are not obstructed. Check for evidence of leakage, condensation or vermin activity. Level out insulation if needed.
- Trim back tree branches and shrubs to ensure that they are not in contact with the house
- Inspect the exterior walls and foundation for evidence of damage, cracking or movement.
- Watch for bird nests or other vermin or insect activity
- Survey crawl space walls for evidence for moisture seepage.
- Look at overhead wires coming to the house. They should be secure and clear of trees or other obstruction.
- Ensure that the grade of the land around the house encourages water to flow away from the foundation.
- Inspect all driveways, walk ways, decks, porches, and landscape components for evidence of deterioration, movement or safety hazards.
- Clean windows and test their operation. Improve caulking and weather stripping as necessary.
- Watch for evidence of wood rot around window frames and window sills.
- Paint and repair window sills and frames as necessary.
- Test all ground fault interrupters (GCFI) devices, as identified in the inspection report.
- Shut off isolating valves for exterior hose bibs in the fall or properly insulate.
- Test the Temperature and pressure valve (TPR) on water heater and replace if necessary.
- Inspect for evidence of wood boring insect activity. Eliminate any wood/soil contact around the perimeter of the home.
- Test the overhead garage door opener, to ensure that the auto reverse mechanism is responding properly. Clean and lubricate hinges, rollers and tracks on overhead doors.
- Replace and clean exhaust hood filters.
- Clean, inspect and or service all appliances as per the manufacturer's recommendations.

Buyer Notes:
