



HEDDERMAN SERVICES

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MECHANICAL INSPECTION

11003 Riverview Dr
Houston, TX 77042



Inspector

Luis Mireles

TREC#22797

281-355-9911

office@hedderman.com



PROPERTY INSPECTION REPORT FORM

Jimmy McLean & Elyse McLean <i>Name of Client</i>	07/06/2022 9:00 am <i>Date of Inspection</i>
11003 Riverview Dr, Houston, TX 77042 <i>Address of Inspected Property</i>	
Luis Mireles <i>Name of Inspector</i>	TREC#22797 <i>TREC License #</i>
<i>Name of Sponsor (if applicable)</i>	<i>TREC License #</i>

PURPOSE OF INSPECTION

A real estate inspection is a visual survey of a structure and a basic performance evaluation of the systems and components of a building. It provides information regarding the general condition of a residence at the time the inspection was conducted. *It is important* that you carefully read ALL of this information. Ask the inspector to clarify any items or comments that are unclear.

RESPONSIBILITY OF THE INSPECTOR

This inspection is governed by the Texas Real Estate Commission (TREC) Standards of Practice (SOPs), which dictates the minimum requirements for a real estate inspection.

The inspector IS required to:

- use this Property Inspection Report form for the inspection;
- inspect only those components and conditions that are present, visible, and accessible at the time of the inspection;
- indicate whether each item was inspected, not inspected, or not present;
- indicate an item as Deficient (D) 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 SOPs; and
- explain the inspector's findings in the corresponding section in the body of the report form.

The inspector IS NOT required to:

- identify all potential hazards;
- turn on decommissioned equipment, systems, utilities, or apply an open flame or light a pilot to operate any appliance;
- climb over obstacles, move furnishings or stored items;
- prioritize or emphasize the importance of one deficiency over another;
- provide follow-up services to verify that proper repairs have been made; or
- inspect system or component listed under the optional section of the SOPs (22 TAC 535.233).

RESPONSIBILITY OF THE CLIENT

While items identified as Deficient (D) in an inspection report DO NOT obligate any party to make repairs or take other actions, in the event that any further evaluations are needed, it is the responsibility of the client to obtain further evaluations and/or cost estimates from qualified service professionals regarding any items reported as Deficient (D). It is recommended that any further evaluations and/or cost estimates take place prior to the expiration of any contractual time limitations, such as option periods.

Please Note: Evaluations performed by service professionals in response to items reported as Deficient (D) on the report may lead to the discovery of additional deficiencies that were not present, visible, or accessible at the time of the inspection. Any repairs made after the date of the inspection may render information contained in this report obsolete or invalid.

REPORT LIMITATIONS

This report is provided for the benefit of the named client and is based on observations made by the named inspector on the date the inspection was performed (indicated above).

ONLY those items specifically noted as being inspected on the report were inspected.

This inspection IS NOT:

- a technically exhaustive inspection of the structure, its systems, or its components and may not reveal all deficiencies;
- an inspection to verify compliance with any building codes;
- an inspection to verify compliance with manufacturer's installation instructions for any system or component and DOES NOT imply insurability or warrantability of the structure or its components.

NOTICE CONCERNING HAZARDOUS CONDITIONS, DEFICIENCIES, AND CONTRACTUAL AGREEMENTS

Conditions may be present in your home that did not violate building codes or common practices in effect when the home was constructed but are considered hazardous by today's standards. Such conditions that were part of the home prior to the adoption of any current codes prohibiting them may not be required to be updated to meet current code requirements. However, if it can be reasonably determined that they are present at the time of the inspection, the potential for injury or property loss from these conditions is significant enough to require inspectors to report them as Deficient (D). Examples of such hazardous conditions include:

- malfunctioning, improperly installed, or missing ground fault circuit protection (GFCI) devices and arc-fault (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;
- lack of electrical bonding and grounding; and
- lack of bonding on gas piping, including corrugated stainless steel tubing (CSST).

Please Note: items identified as Deficient (D) in an inspection report DO NOT obligate any party to make repairs or take other actions. The decision to correct a hazard or any deficiency identified in an inspection report is left up to the parties to the contract for the sale or purchase of the home.

This property inspection report may include an inspection agreement (contract), addenda, and other information related to property conditions.

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

Hedderman Engineering Inc.:

>It is the purpose of this report to give our client my educated and experienced opinion of the condition and function of the stated property as visually inspected by Hedderman Engineering Inc. The inspection performed on this property is of a general nature and includes the following systems: electrical, mechanical, and plumbing. This does not include any specialized inspections and/or inspections of any hazardous materials (such as done in environmental inspections) or any of the following; structural systems, mold, audio/visual components, lighting control systems, hazardous materials and gases, rated walls, lead paint, destructive insects or pest, security items, water or air treatment systems, etc. This inspection is limited to those components which were visible and readily accessible at the time of the inspection. It is noted that this report contains the opinions of this inspector of the stated property as it appeared on the day of the inspection and is in no way a warranty of any component in the days and future following the inspection. All mechanical components are judged on the basis of age, condition, and the function of those items as they appeared on the day of the inspection and are not guaranteed to continue functioning in that manner in the future. It is recommended that the our client purchase a home warranty policy to protect oneself from both unexpected and anticipated problems that may occur in the future.

>It is noted that Hedderman Engineering Inc. is not responsible for any problems found in the house during or after components are opened up, disassembled, uncovered, made visible, or made accessible by another entity after the inspection is completed.

>If a builder or service contractor examines an area of question and comes to the conclusion that there is no repair needed, have them present to you in writing that the item is in compliance with a prevailing code and is functioning properly, and not in need of repair.

>It is the intent of this inspector to work in compliance with the Standards Of Practice For Real Estate Inspectors. It is not required of this company to exceed these standards. You may obtain a copy of the document referred to above by contacting the Texas Real Estate Commission. It is also noted that this inspection is not a "code inspection", but rather an inspection of the condition and function of the stated property.

>Although this report may include observations of some building code violations, total compliance with mechanical, plumbing, electrical codes, specifications, and/or legal requirements are specifically excluded. We do not perform "code" inspections, and since building codes change every few years, our inspections are not performed with the intention of bringing every item in the property into compliance with current code requirements. Rather, the standard of our inspections is a **performance standard** to determine if the items inspected are functioning at the time of the inspection, or are in need of repair. This is particularly applicable to Home Warranty policies, where the standards of the Home Warranty service company are often different than our stated

performance standard for judging whether a piece of equipment is functional or in need of repair. If you intend to rely on a Home Warranty policy, then it is recommended that you contact the appropriate service companies for a more in-depth analysis of what may be required to meet their standards should a claim be made against the policy.

>If there are any questions or concerns please contact Hedderman Engineering, Inc. at 281-355-9911 or Office@HeddermanEngineering.com.

I. STRUCTURAL SYSTEMS

- A. Foundation**
Comments:
- B. Grading and Drainage**
Comments:
- C. Roof Covering Materials**
Comments:
- D. Roof Structures & Attics**
Comments:
- E. Walls (Interior and Exterior)**
Comments:
- F. Ceilings and Floors**
Comments:
- G. Doors (Interior and Exterior)**
Comments:
- H. Windows**
Comments:
- I. Stairways (Interior and Exterior)**
Comments:
- J. Fireplaces and Chimneys**
Comments:
- K. Porches, Balconies, Decks and Carports**
Comments:

The structural portions of this property were inspected by an engineer from Hedderman Engineering Inc. per the inspection agreement between this firm and our client. All comments regarding the structure and property grade are found in the structure report that is created and provided by the engineers at Hedderman Engineering Inc.

According to HAR, the house was built in 1972.

Orientation - House Facing North:

For the purpose of the inspection, North is considered to be the front of the house.

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I NI NP D

II. ELECTRICAL SYSTEMS

A. Service Entrance and Panels

Comments:

Electrical System Description:

The electrical service is provided by a 120/240 volt, single-phase, 150-ampere underground service to an electric meter located at the east side of the house.

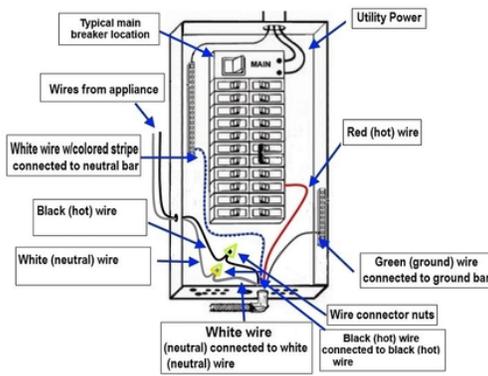
Electrical Wiring Information

<u>Service Wires</u>	<u>Branch Circuit Wires</u>	<u>Grounded or Ungrounded System</u>
2/0 aluminum	Copper and aluminum	Grounded

Breaker Panel Information

<u>Location</u>	<u>Manufacturer</u>	<u>Rating - Amps</u>
East	G. E.	Unknown

Circuit Breaker Wiring Diagram



Breakers - Routine Check:

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It is a general recommendation that all circuit breakers be tripped off and on at least once a year to ensure that they are still physically able to trip off. Occasionally, the points on a breaker will fuse to the main bus in the panel, preventing the breaker from tripping off, even if there is an overload on the circuit. If this condition occurs, it can be a fire hazard.

AFCI Breakers Not Present - Home built pre-AFCI:

The breaker panel(s) did not contain any Arc Fault Circuit Interrupters (AFCI). This is an “as-built” condition, that does not meet current building code standards. AFCI devices are intended to protect against fires caused by electrical arcing in the wiring, by shutting off the power to the circuit when an electrical arc is detected in the circuit. Homes built prior to 2002 were not required by the National Electrical Code (NEC) to be protected by AFCI devices. Since this home was built prior to 2002, the breaker panel is not required to be retrofitted with new AFCI breakers. If adding AFCI breakers is desired, it is recommended that you contact an electrician for further information.

Wiring - 240-volt aluminum circuits:

The electrical wiring for the property was a combination of copper and aluminum. The 120-volt outlet and lighting circuits were observed to be copper and the 240-volt appliance and large equipment circuits were aluminum. It is pointed out that, while the use of aluminum branch circuit wiring is no longer practiced, aluminum 240-volt circuits are not considered a problematic condition.

Breaker panel legend:

The circuit breakers were labeled to identify the circuits they were protecting. We did not trip off every breaker and trace out every circuit and, therefore, could not verify the accuracy of the labeling. If further investigation is desired, it is recommended that an electrician be contacted.

1: Manufacturer's data sticker

The manufacturer's data sticker was missing or illegible and we could not determine the rating of the breaker panel. It is recommended that an electrician be contacted to evaluate determine if the panel is adequately rated for this application.

Further investigation is recommended

Recommendation: Contact a qualified professional.

2: No Antioxidation Solution installed

The aluminum conductors were not coated with an anti-oxidation solution. Per the standards set forth by The Texas Real Estate Commission, we are compelled to recommend that the wires should be coated with an anti-oxidation solution, however this is not required by the current building codes.

Obtain cost estimate

3: Cover Plate - Missing screw installed

The dead front cover for the breaker panel was missing one or more screws.

Obtain Cost Estimate

4: Ground Rod Buried repaired

The ground rod was buried below the ground, and the grounding conductor and clamp were not visible. The conductor and clamp should be visible above ground to allow for periodic inspection of the connection of the clamp to the rod.

Obtain Cost Estimate

5: Breakers Oversized - A/C condensing unit replaced

The circuit breakers for air conditioning condensing unit was rated higher than the maximum size allowed by the manufacturer of the condensing unit. The breakers should be replaced by the size listed on the

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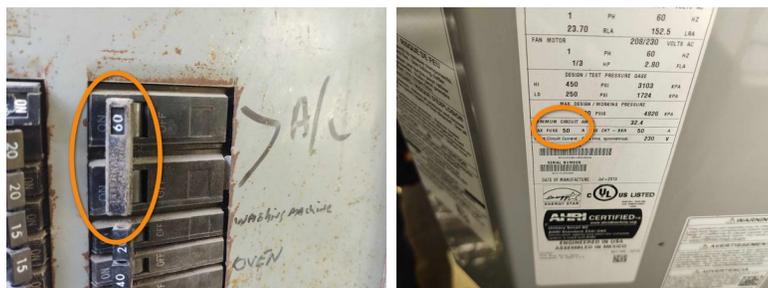
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I NI NP D

manufacturer's nameplates located on the condensing unit.

Obtain Cost Estimate



6: Wires - Terminated improper

Wires that were improperly terminated were observed in the box.

Obtain Cost Estimate



B. Branch Circuits, Connected Devices, and Fixtures

Type of Wiring: Copper 120 volt and Aluminum 240 volt circuits -
Comments:

GFCI Outlet - Functional : Kitchen counter tops, All bathrooms, Exterior North, Exterior south -
Outlets that were protected by ground fault circuit interrupt (GFCI) devices were present and functioning properly at the time of the inspection. The GFCI devices were checked and the power to the outlets turned off when the test buttons were pressed. It is pointed out that GFCI devices can stop tripping and/or resetting properly at any point. The devices should be tested periodically and replaced when necessary.

Outlets - Some inaccessible:

Some of the receptacle outlets in the home were inaccessible and could not be reached for inspection due to furniture, heavy storage items, personal effects, or conditions outside the control of the inspector.

1: GFCI - Missing at outlet **installed**

Washing machine, Garage, Garage door opener, Dishwasher/disposal outlet -
A GFCI device was not installed at one or more locations that are currently required to have GFCI protection. It is recommended that an electrician install GFCI devices at all of the currently required locations.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

2: Cover Plate - Damaged/Missing **replaced**

Attic,

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A missing or damaged cover plate was observed.

Obtain Cost Estimate



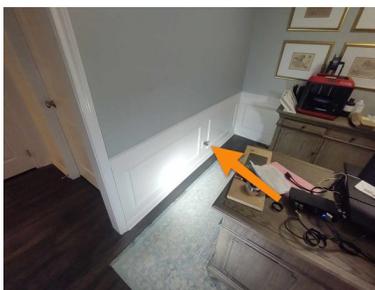
3: Outlets- Nonfunctional

repaired; backyard outlet required switch to be on. Functional now.

Study, back yard,

An outlet was observed that was nonfunctional at the time of the inspection. The reason for the condition was not determined with certainty. Have an electrician find the source of the problem, and make any necessary repairs.

Obtain Cost Estimate



4: Outlet - not secured to wall

repaired

Utility room,

An outlet was not secured to the wall and needs repair.

Obtain Cost Estimate

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Behind dryer



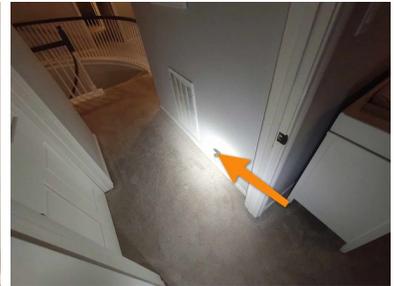
5: Outlet - Reversed polarity

repaired

Family room, 2nd floor west hallway,

An outlet in which the hot and neutral (black and white) wires were reversed, causing reversed polarity.

Obtain Cost Estimate



6: Outlets - Box extenders needed

installed

Junction box extenders were not installed at the outlets and/or light switches at several locations around the house where a gap greater than 1/4 inch was observed between the electrical junction box and the cover plate. Junction box extenders should be installed at all the needed devices to prevent the wall cavity from exposure to hazardous electrical conditions inside the junction boxes. It is recommended that an electrician be contacted to remove the device cover plates and to install junction box extenders at all of the needed locations.

Obtain Cost Estimate

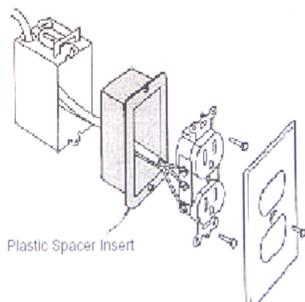
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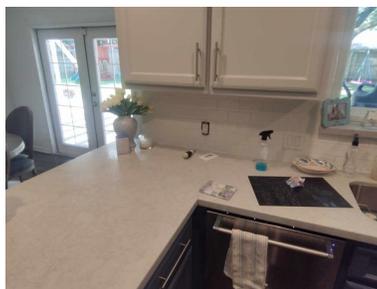
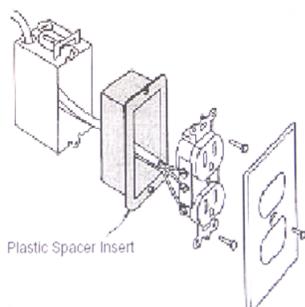
I NI NP D



7: Outlets - Box extenders missing at backsplash installed

We observed outlets located in countertop backsplashes that were not protected by extender boxes. This is considered to be a fire hazard, and it is recommended that the extender boxes be installed.

Obtain Cost Estimate



8: Cover Plate - Missing screw repaired

Kitchen countertop,

A screw was missing on cover plate.

Obtain Cost Estimate

9: Light Fixture - Nonfunctional functional. Required switch to be on.

Front porch, back porch, front of garage,

A light fixture that was non-functional when the switch was on was observed. The problem may be a burned out bulb, defective light fixture, or defective switch.

Further investigation is recommended

10: Conduit Missing repaired

Rear

A portion of the electrical wiring was exposed where electrical conduit was not properly or not completely installed.

Obtain Cost Estimate

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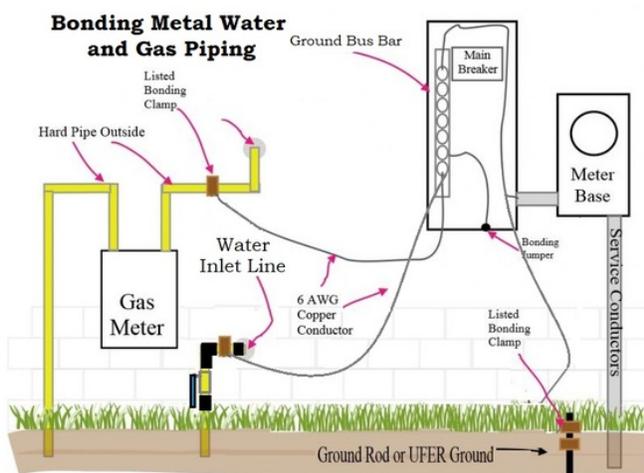
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11: Gas Piping - Bonding not visible repaired

The location where the gas supply piping was bonded back to the electrical ground system was not visible at the time of the inspection. It is recommended that an electrician be contacted to determine if the plumbing in the house is properly bonded and to make any needed repairs.

Obtain Cost Estimate



Recommendation: Contact a qualified professional.

12: Smoke and Carbon Monoxide Detectors

We could not determine if the smoke and/or carbon monoxide detectors are connected to the security alarm system as is common practice, therefore, to avoid triggering the security alarm we did not operationally check each device. Further investigation is recommended with a service company who specializes in this field to determine if the devices are interconnected as currently required and functioning properly. For safety purposes, it is recommended that smoke detectors and carbon monoxide detectors be replaced every ten years. Further investigation is recommended.

Recommendation: Contact a qualified professional.

13: Smoke detectors - Current standards not met

The house does not meet the current code concerning smoke alarms. This house is an older home and, if bringing the house into current standards is desired, it is recommended that you contact a service contractor to make all of the needed repairs. Smoke detectors are currently required to be connected in a manner that causes one detector to engage each other detector should an alarm be tripped, They are also required to be hardwired into the electrical system and contain a battery back up. Lastly, smoke detectors are required

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I	NI	NP	D
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inside each bedroom, outside of bedroom areas, hallways, stairwells, and at each level of the structure.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

14: Carbon Monoxide Detectors - Current standards not met

Carbon monoxide detectors were not installed at all of the currently required locations and it is recommended that approved carbon monoxide detectors be installed. Currently, carbon monoxide detectors are required outside each sleeping area.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

15: Low Voltage Systems - Not inspected

It is pointed out that low voltage systems, low voltage wiring, and low voltage connections were not included in the scope of the inspection and were not checked, including: audio/visual systems, alarm systems, data lines, and phone lines. If further investigation is desired, it is recommended that a service company be contacted.

Recommendation: Contact a qualified professional.

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III. HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

A. Heating Equipment

Comments:

Type of System: Forced Air

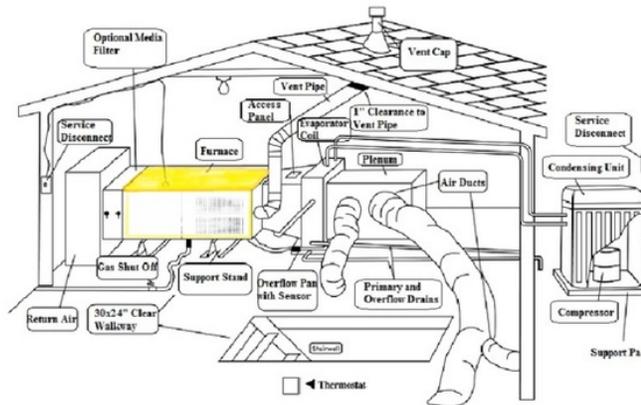
Energy Sources: natural gas

It is pointed out that our inspection of the air conditioning and heating system(s) is a limited, visual inspection in accordance with the TREC SOP, where we check the equipment as it has been installed to determine whether or not the system(s) is cooling and/or heating at the time of the inspection. Our inspection is a cursory inspection of the apparent function, as we do not determine the sizing, adequacy, or design of any component in the system, or the compatibility of the individual components, nor the installation of the system(s) to be in conformity to the latest building code requirements. If you desire an in-depth analysis of the HVAC system(s) by a qualified service technician using specialized diagnostic equipment, then it is recommended that a service company be contacted to analyze the system(s). This is particularly important if the system(s) is an older system and has only a limited amount of remaining life due to its age and/or condition.

Gas Furnace Description:

The heating for the property was provided the following natural gas-fired equipment:

<u>ZONE</u>	<u>BRAND</u>	<u>BTU</u>	<u>DATE</u>	<u>LOCATION</u>
House	Carrier	110k	2019	attic



Heating Equipment - Functional:

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I	NI	NP	D
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The heating equipment was observed to be operating and functional at the time of the inspection. The heating equipment responded to the thermostat(s) and the equipment appeared to be heating the air adequately.

Heat Exchanger - Information:

Gas furnaces are constructed in such a way that the units must be dismantled in order to view the entire heat exchanger inside. The equipment was not dismantled, and the heat exchanger was not able to be viewed for evidences of cracks. If further investigation is desired, it is recommended that a service company be contacted to dismantle the equipment. It is pointed out, for safety purposes, the heat exchanger should be inspected by an HVAC service company once a year.

1: Vent Pipe - Fastened with screws **repaired**

The vent pipe was fastened with screws, which is improper. The vent is designed to connect without fasteners, as screws holes can allow carbon monoxide to seep from the vent pipe. The portions of the vent pipe that were damaged with screws should be repaired.

Obtain Cost Estimate



B. Cooling Equipment

Comments:

Type of System: Split system

The inspection of the HVAC system is cursory in nature in accordance with the TREC SOP. We measure the temperature drop (ΔT) across the indoor coil(s) at the time of the inspection and our observations have been recorded in this report. It is pointed out that our measurements of the cooling performance of the equipment is only at a "point in time", and cannot reflect whether the equipment has been recently serviced, or what the future performance of the equipment will be after the day of the inspection. Further investigation with the homeowner is recommended to determine when the equipment was last serviced. It is pointed out that an HVAC license is required to check the refrigerant pressures for the A/C equipment, therefore the refrigerant pressure was not checked during the inspection.

A/C Equipment Description:

The type of air conditioning for the property is a forced air split system. The cooling equipment for the property was as follows:

Zone	Brand	Size/Age Condenser	Size/Age Coil	Temp Drop Degrees
House	Carrier	5-ton 2019	5-ton 2019	16

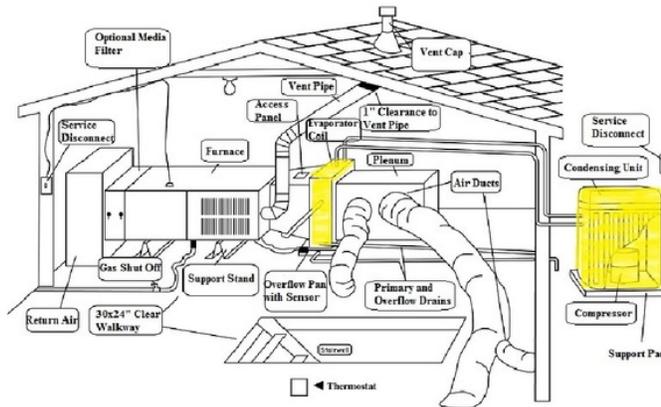
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Condensing Unit Equipment - Functional:

The condensing unit equipment was functional at the time of the inspection. The equipment responded to the corresponding thermostat, and the compressor components and fan motor components appeared to be operating as evidenced by the cooling performance of the system.

Coil Equipment - Functional:

The coil equipment was operating and was providing a degree of cooling at the time of the inspection.

Cooling Performance - Acceptable:

The cooling performance of the equipment was observed to be adequate according to industry standards. The air conditioning equipment was observed to be cooling between 16-20 degrees across the indoor coil at the time of the inspection.

Overflow Pan - Water sensor present:

The overflow pan under the evaporator coil was equipped with a water sensor that is intended to shut off the air conditioning equipment if the pan fills with water.



Cooling Performance:

We measure the temperature drop (ΔT) across the indoor coil(s) at the time of the inspection and our observations have been recorded in this report. It is pointed out that our measurements of the cooling performance of the equipment is only at a "point in time", and cannot reflect whether the equipment has

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been recently serviced, or what the future performance of the equipment will be after the day of the inspection. Further investigation with the homeowner is recommended to determine when the equipment was last serviced.

1: Coil - Secondary drain capped repaired

The secondary drain at the coil was observed to be capped instead of being directed to the pan with a drain line. Have a service company to make the necessary repairs.

Obtain cost estimate

Recommendation: Contact a qualified professional.



2: Coil - Leaking conditioned air repaired

The air conditioning system was leaking conditioned outside of the system at the coil. The coil need to be properly sealed.

Obtain Cost Estimate

3: Primary Drain Line - Terminated in plumbing vent

The primary condensate drain line for the unit terminated into a plumbing vent pipe in the attic. This can allow sewer gases to backup into the living space, which is a hazard. It is recommended that the primary drain line be rerouted and terminated in an approved manner.

Obtain Cost Estimate



C. Duct Systems, Chases, and Vents

Type of ducts: Rigid ducts -
Comments:

Duct Work - Acceptable:

The ductwork appeared to be in good condition at the time of the inspection and air was blowing out of each of the registers. The airflow may need to be adjusted in each room to meet your specific needs.

Return Air - Acceptable :

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The return air system in the house had no visible items that were in need of repair and appeared to be performing as intended at the time of the inspection.

Ductwork - Flex and Rigid ducts :

The air ducts in the attic consisted of some newer flex ducts and some older rigid ducts. Due to the age of the rigid air ducts, further investigation is recommended with the homeowner and/or a service company to determine if the ductwork has been cleaned recently. If the air ducts have not been cleaned, it is recommended that the interior of the ducts be checked by a service company.

1: Microbial growth on equipment/ductwork cleaned

Microbial growth was observed on the outside of the equipment and/or ductwork. This condition is indicative of a moisture/condensation problem, possibly due to air leaks at the equipment and/or a lack of adequate attic ventilation. Further investigation is recommended with a service company to determine the source of the growth and to determine if the growth is present inside the equipment and/or air ducts. It is recommended that you obtain a cost estimate for any needed repairs.

Further investigation is recommended

Recommendation: Contact a qualified professional.



2: Registers - Dirty cleaned

The registers and adjacent ceiling areas were covered with debris that has passed through the air conditioning duct work. Have a service company check the inside of the duct work to determine if there is a build-up of debris, and to clean the ducts if necessary.

Obtain Cost Estimate



I=Inspected

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NP=Not Present

D=Deficient

I	NI	NP	D
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IV. PLUMBING SYSTEMS

A. Plumbing Supply, Distribution Systems, and Fixtures

Comments:

Location of water meter: The street curb

Location of main water supply valve: east

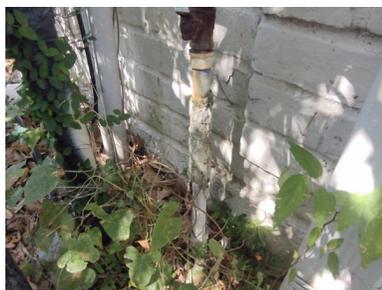
Static water pressure reading: 48 PSI

Water Supply Material: galvanized steel, PEX, copper, CPVC,

A plumbing system typically consists of three major components, including the potable water supply piping; the waste or drain piping; and the plumbing fixtures. The distribution piping brings the water from the public water main or a private well to the individual fixtures throughout the property. The water distribution system is under pressure, usually from 40 psi to 70 psi. The waste or drain piping carries the waste water and products underground to the sewer system or septic tank, and the waste piping is not under pressure, but operates by gravity flow. We typically run water down the drains from the sinks, tubs, showers, and toilets, but this cannot simulate the waste flow characteristics of full occupancy. There may be partial blockage of the underground waste lines from debris, broken pipes, or tree roots that cannot be detected by a visual inspection. If you desire a more in-depth inspection, it is recommended that you contact a qualified plumber.

Main Water Shut Off Valve Location: East side -

The main shut-off valve for the water line service piping is intended to provide a means to disconnect the water service to the structure/property.



Static Water Pressure: 45-50 PSI -

The static water pressure at the property was measured with a water pressure gauge at the hose bibb nearest to the shut off valve at the time of the inspection.



Water Supply Piping - Galvanized Steel:

All or portions of the water piping for the property was observed to be the original galvanized piping. It is pointed out that the galvanized piping will deteriorate with time, and will corrode on the inside of the piping, thereby reducing the inside diameter of the pipe, and restricting the flow of the water through the pipe. In addition, the piping will corrode through to the outside of the pipe and will eventually deteriorate to where the pipe will start leaking. It can be anticipated that the galvanized water piping throughout the house will need to be replaced when it is causing reduced water pressure or is corroded enough to start leaking.

I=Inspected

NI=Not Inspected

NP=Not Present

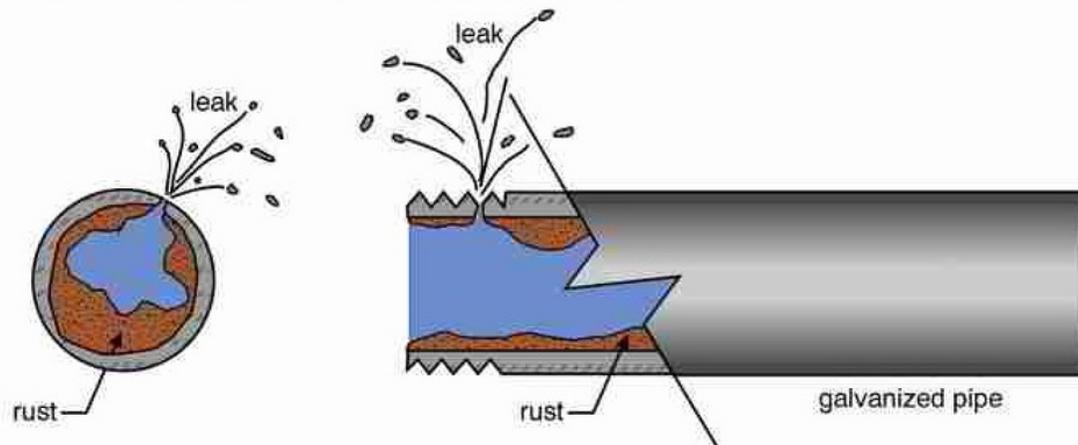
D=Deficient

I NI NP D

Galvanized steel pipe

rusting of galvanized pipe can greatly reduce water pressure and will eventually cause leaks as rust creates holes in the pipe walls

problems are likely to occur soonest on pipes carrying hot water, horizontal pipes and at threaded (thinner) sections



Sinks & Lavatories - Functional:

No items requiring repair were visible at the time of the inspection to the operation of the sinks and/or lavatories. The sinks were filled with water, and were observed to be draining properly, with no leaking piping or slow drains.

Toilets - Functional:

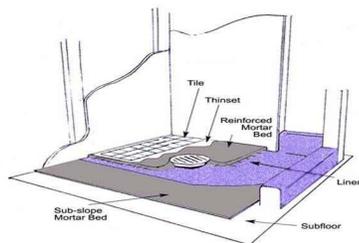
No items requiring repair were visible at the time of the inspection to the operation of the toilets. The toilets were flushing properly, with no leaks visible in the plumbing, the wax seal, or the internal valves.

Tub/Shower - Functional:

No items requiring repair were visible for the tub and/or shower at each bathroom. The tubs were partially filled with water and water was run in the showers, and they were observed to be operating adequately at the time of the inspection.

Shower - No evidence of shower pan leak:

No evidence of a current shower pan leak were visible at the time of the inspection for the shower(s). It is pointed out, our shower inspection is limited to a visual inspection and we did not perform a shower pan leak test. It is recommended that a plumber be contacted to perform a shower pan leak test to determine if any water is leaking past the shower pan.



1: Insulate Inlet Water Line

repaired

The main inlet water line needs to be insulated at the house.

Obtain Cost Estimate

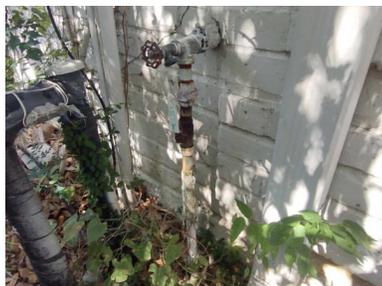
I=Inspected

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NP=Not Present

D=Deficient

I NI NP D



2: Vacuum Breaker - Missing

The atmospheric vacuum breaker devices were missing at one or more of the hose bibbs, and it is recommended that they be installed to prevent cross connections, which can allow contaminated water to enter the potable water supply.

Obtain Cost Estimate



3: Water Stains/Damage Observed

remedied

Master closet,

Water damage/stains were observed indicating a current or previous leak. The source of the condition was not determined, with certainty, at the time of the inspection. Further investigation is recommended with a contractor to determine the source of the condition and to make any necessary repairs to correct the moisture condition and, if present, any secondary damage.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.



4: Water Pressure Reduced

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

The water pressure in the house reduced noticeably when more than one plumbing fixture was operated at the same time. This condition is commonly found when galvanized water piping is present, and may indicate a significant amount of rust or scale is present on the interior walls of the water piping. Further investigation is recommended with a plumber to determine the reason for the condition and to provide a cost estimate for any needed repairs.

Obtain Cost Estimate

5: Main Inlet Water line - Rusted/Corroded repaired

The main inlet water line was observed to be galvanized steel piping and was severely rusted. It is recommended that the rusted/corroded piping be replaced. It is pointed out that the pipe was not leaking at the time of the inspection, however repairs will become necessary in the future.

Obtain Cost Estimate



6: Water Meter - Cover damaged request made to COH for replacement

The cover was damaged at the water meter, and the lid was not covering the opening properly. This is a hazard to foot traffic and needs to be corrected.

Obtain Cost Estimate



7: Tub - Caulk needed

2nd Floor south bathroom,

The tub needs to be caulked.

Obtain Cost Estimate

8: Shower - Caulking needed

Master bathroom,

The shower needs to be caulked.

Obtain Cost Estimate

9: Shower/Tub - Caulk valves

2nd Floor South Bathroom,

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

The tub and/or shower valves and/or faucet needs to be caulked to prevent water from entering the wall cavity behind the valves/faucet.

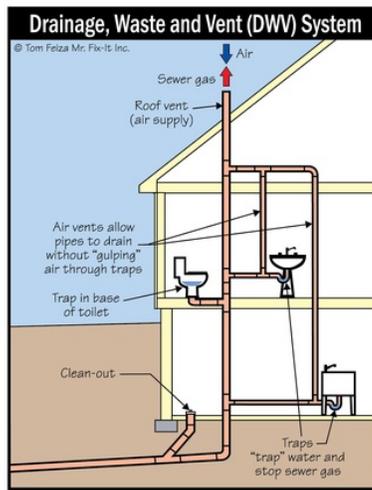
Obtain Cost Estimate

B. Drains, Wastes, and Vents

Sewer Piping Material: Appears to be ABS -
Comments:

Sewer System - Functional:

No evidences of a system wide problem were observed when the system was operationally checked by running water through each of the plumbing fixtures during the duration of the inspection. It is noted that most of the drain waste system in the walls, under the floors, and in the ceilings is not visible. If further investigation is desired, it is recommended that a plumber be contacted to perform an in depth survey with a camera or hydrostatic test.



Sewer Clean Out Present: Front, Rear -

A sewer clean out was present. The clean out is needed in the event of a stoppage in the main sewer drain line, and the clean out is where a sewer snake would be utilized to remove a clog in the sewer line.



C. Water Heating Equipment

Energy Source: Natural gas -
Capacity: Gallons

Gas Water Heater Description:

The hot water for the property was provided by the following natural gas fired gas water heater(s):

I=Inspected

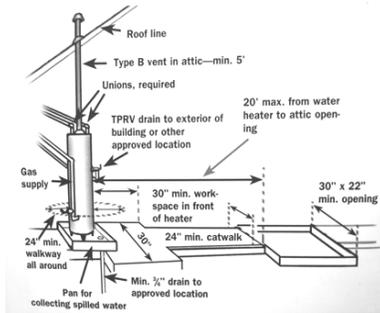
NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

Location	Brand	Capacity	Age	Energy Type
Attic	State	40-gallons	2007	Gas



Water Heater Equipment - Functional:

The water heater equipment was functional at the time of the inspection and providing hot water to the applicable plumbing fixtures.

Hot water - Temperature:

The generally recommended maximum temperature setting for a hot water heater, to prevent accidental scalding, is 120-125 degrees. It is recommended that the water heater thermostat be adjusted to and maintained in this temperature range.

The temperature of the hot water was measured at the kitchen sink.

WATER TEMPERATURE	Children (skin thickness of 1.5 mm)		Older (skin thickness of .68 mm)	
	Time required for a third-degree burn to occur			
150°F 66°C	1 second	0.5 second		
148°F 64°C	2 seconds	1 second		
146°F 62°C	5 seconds	1 second		
138°F 60°C	10 seconds	4 seconds		
132°F 57°C	1 minute	10 seconds		
124°F 51°C	2 minutes	1.5 minute		
120°F 49°C	5 minutes	2.5 minutes		
100°F 37°C	Safe temperature for bathing		Safe temperature for bathing	

For 50%: °C = (°F) - 32 / 1.8 (°F = 1.8 °C + 32)

Figure P108.3 TEMPERATURE BURN CHART



Temp/Pressure Relief Valve - Information:

Temperature/pressure relief valves are not operationally checked by this firm during the inspection. Valves typically do not reseal properly when they are operated, which causes the valves to leak. It is best to replace the temperature/pressure relief valves for water heaters every 2-3 years to prevent them from getting clogged with mineral deposits.

1: TPR valve needs repair

Routed uphill, Flex piping installed in line -

The drain line for the temperature pressure relief valve on the water heater was not installed properly and is in need of repair.

Obtain cost estimate

Recommendation: Contact a qualified professional.

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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2: Tank - Gurgling noise

The tank was observed to be gurgling while it was heating, indicating a buildup of scale and other deposits inside the water heater. It can be anticipated that the condition will continue to worsen until the water heater is replaced. It is recommended that a plumber be contacted for further investigation and a cost estimate for any needed repairs.

Obtain Cost Estimate

3: End of Life

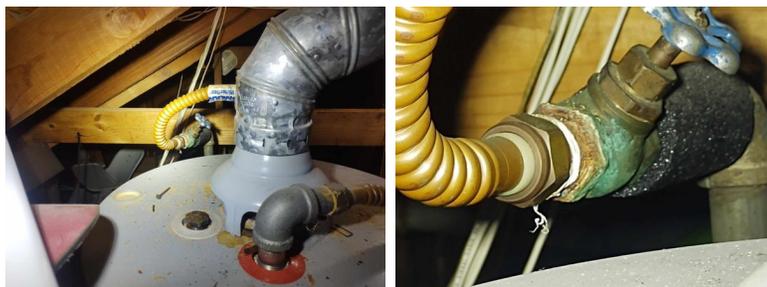
Due to the age and/or condition of the equipment, it is the opinion of the inspector that it is essentially at the end of its normal, useful life and should be replaced at this time. Normal life expectancy of a water heater in the Houston area is approximately 7 to 10 years.

Obtain Cost Estimate

4: Shut Off Valve - Corroded

The water shut off valve on the inlet water line was significantly corroded and needs to be replaced.

Obtain Cost Estimate



5: Overflow Pan - Remove Insulation/debris

Insulation and/or debris was observed in the overflow pan and needs to be removed.

Obtain Cost Estimate



I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

6: Vent Pipe - No Type -B roof jack and vent pipe termination

The vent pipe did not have an approved Type-B roof jack, where the vent pipe extends through the Type-B roof jack, to be vented to the outside. This can allow the hazardous combustion gases to be routed back to the attic, and repair is needed.

Obtain Cost Estimate



D. Hydro-Massage Therapy Equipment

Comments:

Hydro-Therapy Equipment Not present:

Hydro-therapy equipment was not present at the time of the inspection.

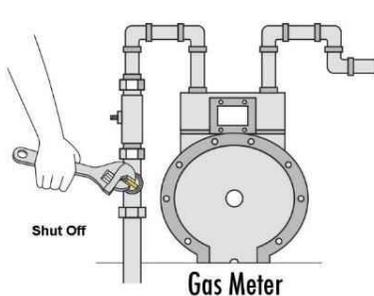
E. Gas Distribution Systems and Gas Appliances

Location of Gas Meter: East side -

Type of gas distribution piping material: Steel piping with flexible appliance connectors

Comments:

A cursory visual inspection was performed on the gas supply piping. The inspection was limited to the gas pipes that were visible and accessible at the time of the inspection, without digging to uncover gas lines. The underground gas line is typically galvanized steel, which can and does rust. However, viewing the underground gas line(s) would require digging, and HEI does not do any digging around the gas lines to determine their condition or the degree of rusting at the underground piping. Also, the use of specialized equipment to detect leaks is not included in the scope of this inspection, nor is determining the gas supply pressure or adequacy. If further investigation is desired to know the condition of the underground gas line(s), it is recommended that a plumber be contacted.



1: Sediment Trap - Missing

Furnace and water heater

Sediment traps were not installed at the gas supply lines for one or more of the gas fired equipment. A sediment trap is intended to catch sediment/moisture/debris in a gas supply line before it can enter into the

I=Inspected

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NP=Not Present

D=Deficient

I	NI	NP	D
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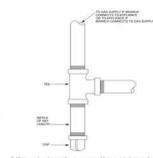
gas equipment.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.



HEI file photo showing sediment trap



Clip art showing a sediment trap in gas line

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

V. APPLIANCES

A. Dishwashers

Comments:

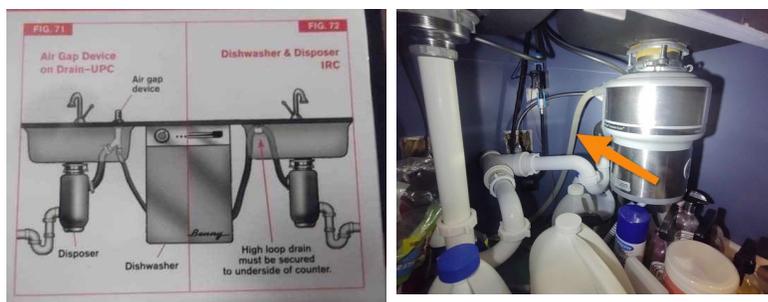
Functional:

The dishwasher was functioning and responded to the controls. The unit was run through a cycle at the time of the inspection and appeared to be operating properly.

1: No Anti-Siphon

The drain line under the sink was not equipped with an anti-siphon device, nor was it looped up so that the top of the loop is at least six inches above the entrance of the drain line into the disposal. It is recommended at least that the drain line be looped to prevent the water from the garbage disposal from siphoning back into the dishwasher, or an anti-siphon device installed.

Obtain Cost Estimate



B. Food Waste Disposers

Comments:

Functional:

The disposal was operating and responded to the controls at the time of the inspection.

C. Range Hood and Exhaust Systems

Comments:

Range Vent - Functional:

No items requiring repair were visible at the time of the inspection to the operation of the range vent. The vent fan was observed to be venting properly at the time of the inspection.

D. Ranges, Cooktops, and Ovens

Comments:

Gas Cooktop - Functional:

The gas cooktop was functioning and responded to the controls when they were operated. All of the burners and controls were operating properly at the time of the inspection.

Oven - Calibrated properly:

No repair was needed to the calibration of the oven thermostat. The thermostat was set at 350 degrees, and the oven heated to within the allowable ± 25 degrees.

Both ovens

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D



E. Microwave Ovens

Comments:

Functional:

No items requiring repair were visible at the time of the inspection for the heating operation of the microwave. A cup of water was placed in the unit, and the microwave heated the water adequately. It is pointed out that the unit was not checked for microwave leakage.

F. Mechanical Exhaust Vents and Bathroom Heaters

Comments:

Mechanical Vents - Functional:

The mechanical vent fans were functional at the time of the inspection. The bath vent fans responded to the switches and were functional at all the bathrooms.

1: Vents - Not terminated outside

We observed one or more bath vent fans that were not terminated outside. The most current building code requires the vent fan to be vented to the outside of the house, and it is recommended that the vent be extended to the outside of the house.

Obtain Cost Estimate



2: Exhaust Fan - Not present

Utility room,

An exhaust vent fan was not present. Exhaust vent fans are intended to remove humidity and moisture from the air. Consideration should be given to installing an exhaust vent fan.

Obtain Cost Estimate

G. Garage Door Operators

Comments:

Functional - Infra-red sensor not present:

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

The garage door opener equipment was functional at the time of the inspection and opened/closed when the controls were operated. The auto-reverse mechanism was operational, and the sensitivity setting on the mechanism was adequate. It is pointed out that the unit was not equipped with the infra-red sensing safety device that automatically reverses the door should the beams be broken, and it is recommended that the infra-red safety device be installed.

West opener

1: Opener - did not auto-reverse, no sensor

East opener

The garage door opener did not stop the descent of the door when the door was subjected to a reasonable resisting pressure. This could cause possible personal injury or damage to house, and the opener is in need of adjustment. It is pointed out that the unit was not equipped with the infra-red sensing safety device that automatically reverses the door should the beam be broken, and it is recommended for safety purposes that one be installed.

Obtain Cost Estimate

H. Dryer Exhaust Systems

Comments:

Dryer Vent:

The dryer vent appeared to be properly installed at the time of the inspection. It is pointed out that a portion of the dryer pipe was not visible where it entered the wall/ceiling. Also, dryer vents need to be cleaned periodically for safety reasons and to allow the dryer to operate properly.

Dryer vent - Dryer present:

The vent was connected to the dryer but was not tested. It is recommended that the vent be checked for an excess of lint and that it be cleaned if necessary. (Information)

Vent - Check for lint:

It is recommended that the vent be checked periodically for an excess of lint and that it be cleaned if necessary. (Information)

1: Vent - Cover loose repaired

The dryer vent cap was loose and needs to be secured properly.

Obtain Cost Estimate



I. Other

Comments:

Non Built-in Equipment - Not inspected:

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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It is pointed out that non built-in refrigerators, wine coolers, small refrigerators, clothes washers, and clothes dryers are not included in the scope of this inspection and were not checked. If further investigation is desired, it is recommended that a service company be contacted.

Further investigation is recommended

Dryer Connection - No electric connection - Gas only:

A 240-volt electric outlet was not provided for an electric dryer connection. A gas connection was present.

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

VI. OPTIONAL SYSTEMS

A. Landscape Irrigation (Sprinkler) Systems

Comments:

Sprinkler System: Rachio, Located inside garage, 8 zones -

An automatic sprinkler system was installed. The system included a control panel, one or more solenoid valves, underground water lines and with sprinkler heads.



Backflow Prevention Device - present:

A backflow prevention device was present and was equipped with the two water shut off valves on the water supply line to the sprinkler system.

East



Rain Sensor: Rain Sensor - Present -

It is currently required for automatic sprinkler systems to be equipped with a rain sensor device that will prevent the sprinkler system from operating during and shortly after a significant rain.

Front of garage



1: Adjust sprinkler head spray

Zone 3, 7,

Spraying garage, Spraying front of house -

The sprinkler head spray was in need of adjustment/repair.

Obtain cost estimate

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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Recommendation: Contact a qualified professional.

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

INFORMATION FROM HEDDERMAN ENGINEERING INC.

Closing Comments :

Opinions and comments stated in this report are based on the apparent performance of the items included within the scope of the inspection, at the time of the inspection. Performance standards are based on the knowledge gained through the experience and professional studies of the inspector. There is no warranty or guarantee, either expressed or implied, regarding the habitability, future performance, life, merchantability, and/or need for repair of any item inspected. It is recommended that a Home Warranty Policy be provided to protect the appliances and mechanical equipment against unforeseen breakdowns during the first year. Check with your agent for details.

Items identified in the report as Deficient and our Recommendations are provided in the above report. Many, but not all, recommendations are highlighted in bold red text. It is our intention, and your responsibility, that you follow up on these deficiencies and recommendations as part of your due diligence by contacting the appropriate service contractor(s) for Further Investigation, Obtain cost estimate, and/or Contact the builder. It is pointed out that other related and/or underlying conditions may be present, and which may not be apparent in our limited, visual inspection without further investigation by qualified service companies. It is emphasized how important it is for you if you intend to rely on our report(s), to continue to gather the in-depth information that will be obtained by further investigation with appropriate service technicians who will use their specialized knowledge of the component(s) and the related building codes along with their specialized diagnostic equipment to give you the TOTAL PICTURE of the condition of the property. Failure on your part to do your due diligence will constitute negligence on your part and will result in an incomplete body of knowledge upon which you base your decisions regarding this property. We recommend that your further investigations be done before the expiration of your option period and before closing on the property.

As an additional service, we recommend using a new tool we have on our website that can quickly turn your inspection report into an easy-to-read estimate of repairs for a nominal fee. These pricing reports from a third party company called Repair Pricer not only make the inspection report easy to understand in terms of dollars and cents, but they are also useful negotiation tools. Just visit the page below on our website and upload your report into Repair Pricer. If you have any questions when you receive your report, you can contact them at info@repairpricer.com
<http://www.heddermanengineering.com/repair-cost-estimates>