



HEDDERMAN ENGINEERING. INC.

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MECHANICAL REPORT

3763 Rice Boulevard
Houston, TX 77005



Inspector

Gary Atherton

TREC#24236

281-355-9911

office@hedderman.com



PROPERTY INSPECTION REPORT FORM

Roy Devereux & Kristina Devereux

Name of Client

01/24/2025 9:00 am

Date of Inspection

3763 Rice Boulevard, Houston, TX 77005

Address of Inspected Property

Gary Atherton

Name of Inspector

TREC#24236

TREC License #

Name of Sponsor (if applicable)

TREC License #

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, without disassembling or removal of any portion of the structure, mechanical equipment, plumbing equipment, or electrical wiring and equipment is beyond the scope of this 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 1940.

Orientation - House Facing North:

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

I=Inspected

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NP=Not Present

D=Deficient

I NI NP D

II. ELECTRICAL SYSTEMS

☒ ☐ ☐ ☒ A. Service Entrance and Panels

Electrical System Description:

The electrical service is provided by a 120/240 volt, single-phase, 200-ampere service to an electric meter located at the rear of the house.

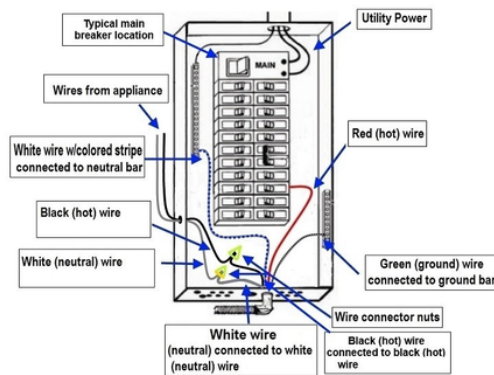
Electrical Wiring Information

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

Breaker Panel Information

<u>Location</u>	<u>Manufacturer</u>	<u>Rating - Amps</u>
Rear	General Electric	200 Amps
Attic	General Electric	125 Amps

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 - Several installed:

One or more of the Arc Fault Circuit Interrupter (AFCI) breakers were installed in the breaker panel(s), and the AFCI breakers were protecting some of the 120-volt circuits in the structure. An AFCI breaker is intended to turn off the power to a 120-volt circuit should an electrical arc be detected in the circuit. In 2002 AFCI breakers began to be phased into the building codes, starting with the bedroom areas. Currently, AFCI breakers are required to be present for the 120-volt circuits throughout the house, with few exceptions. It is pointed out, due to the age of this house, it does not meet current standards regarding AFCI breakers, however, local building authorities do not require that houses built prior to the AFCI codes be retrofitted with additional AFCI breakers. If installing additional AFCI breakers is desired, it is recommended that an electrician be contacted for further information.

AFCI breakers- Not tripped off:

The Arc Fault Circuit Interrupters in the panel were not operationally tested due to the house being occupied. Sudden loss of power can damage some electronic equipment, therefore, as a policy we do not trip off breakers inside an occupied house. If further investigation is desired, it is recommended that a service company be contacted when the house is not occupied or all of the electronics are unplugged.

Automated audio/visual and lighting:

An automated control system was installed for the audio/visual systems and lighting for the house. This equipment is beyond the scope of this inspection and it is recommended that a company who specializes in automated systems be contacted for further investigation.

Breaker panel legend:

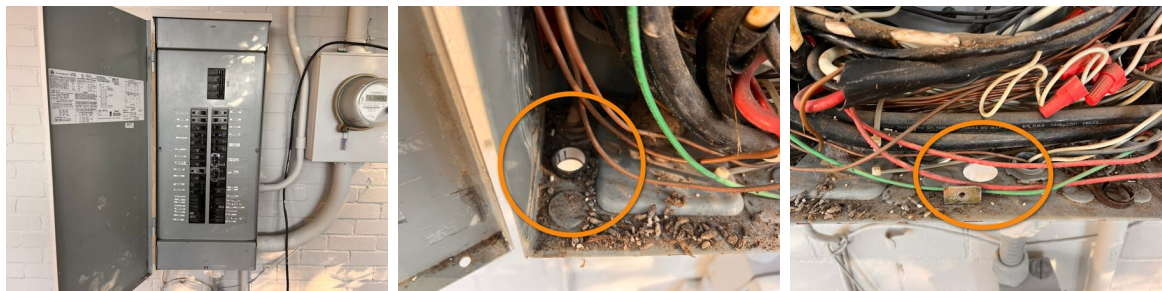
The circuit breakers were labeled to identify the circuits they were protecting. We did not trip off every breaker and trace out every circuit and, therefore, could not verify the accuracy of the labeling. If further investigation is desired, it is recommended that an electrician be contacted.

1: Knockout missing inside box

A knockout opening that was not being used was missing a cover inside the electrical box. The opening needs to be covered in an approved panel.

Obtain cost estimate

Recommendation: Contact a qualified professional.



2: Surge Protection Device - Not installed

A surge protector device (SPD) was not installed for the electrical system. In the 2020 National Electric Code, a Type 1 or Type 2 surge protective device became required for new construction and for existing houses when the service panel is replaced. An SPD may be integral to or adjacent to the electrical service panel. If

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further information is desired, it is recommended that an electrician be contacted.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

3: Power Wire - White insulation

We observed one or more white wires that were used as a power wires, and were connected to a circuit breaker. Typically, the white wires are the grounded/neutral conductors, and if they are used as a power conductor, they must be permanently marked or wrapped with black or red tape to identify them as a “hot” ungrounded conductor.

Obtain Cost Estimate

E3407.3

4: Cover Plate - Pointed fasteners

One or more of the breaker panel screws had a pointed end, rather than a blunt end. This can be a safety hazard, as the point can easily penetrate one of the conductors, causing a short circuit.

Obtain Cost Estimate

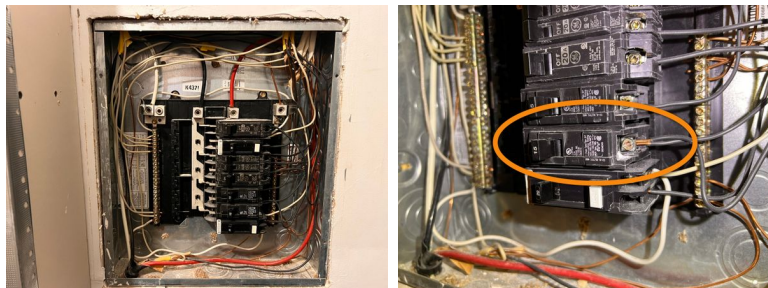


5: Breaker - Double lugged

Attic

A breaker was observed inside the panel with more than one wire attached. Each wire should be on its own breaker.

Obtain Cost Estimate



6: Low Voltage Block - Not Present

A low voltage grounding block for the low voltage service was not installed at the grounding rod. A grounding block may need to be installed for low voltage network service, such as phone and cable.

Obtain Cost Estimate

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7: Service Conductors - Contact with trees

The overhead service entrance conductors were in contact with tree limbs, and the tree limbs need to be cut back.

Obtain Cost Estimate



8: Breakers - Not original manufacturer

We observed breakers in the panel that were not the same brand as the manufacturer of the panel, and therefore, they may not be listed for use in this panel. Further investigation by an electrician is recommended to determine the serviceability of the breakers and panel.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

☒ ☐ ☐ ☒ B. Branch Circuits, Connected Devices, and Fixtures

Type of Wiring: Copper -

Comments:

GFCI Outlet - Functional : Kitchen counter tops, All bathrooms, Exterior of house, Garage, Garage door opener outlet, Wet bar, Utility room -

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.

Light Fixtures - Functional:

The light fixtures throughout the house were operated and were observed to be functional at the time of the inspection.

Limited visibility of electrical wiring : At attic, Insulation cover, limited access at attic -

Visibility of the electrical wiring was very limited at the time of the inspection and some portions of the wiring that are typically accessible were concealed. If further investigation is desired, it is recommended that

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

a service company be contacted.

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.

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.

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.

1: Dryer 240-volt Outlet - Pre-GFCI Protection Requirement

The 240-volt dryer outlet does not have ground fault protection (GFCI) and does not meet the current National Electrical Code requirements. It is pointed out that this home was constructed prior to this current requirement. GFCI protection is intended to turn off the power to the dryer should a ground fault be detected in the circuit or appliance. If this condition concerns you, it is recommended that an electrician be contacted to make the necessary repairs to update the 240-volt dryer circuit. It is pointed out, depending on the method in which the electrician provides the GFCI protection, the electrician may need to modify the bonding jumper wire inside the dryer to enable the dryer to operate properly with GFCI protection.

Obtain Cost Estimate

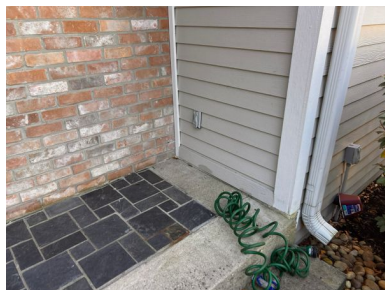
Recommendation: Contact a qualified professional.

2: Ungrounded Three Prong Outlets - Protected by GFCI device

Front Porch

The electrical system was observed to be a 2-wire ungrounded system and three prong outlets, which are intended to be grounded, were installed on the ungrounded circuits. The ungrounded three prong outlets were retrofitted by protecting the ungrounded outlets with a GFCI device (which is an acceptable repair for an ungrounded three prong outlet). Each GFCI protected ungrounded outlet should be equipped with a sticker label to indicate that it is a GFCI protected outlet.

Recommendation: Contact a qualified professional.



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I	NI	NP	D
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3: GFCI - Missing at outlet

Kitchen sink area, Dishwasher outlet, Garbage disposal outlet, Exterior south -

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.

4: Exterior Outlet - No water tight cover

An exterior outlet that was not protected by a water tight cover plate was observed.

Obtain cost estimate



HEI File Photo

5: Light Fixture - Missing

Entry

A light fixture was missing.

Obtain Cost Estimate



6: Open junction box

Attic & Crawlspce

An open junction box that was missing a cover was observed.

Obtain Cost Estimate

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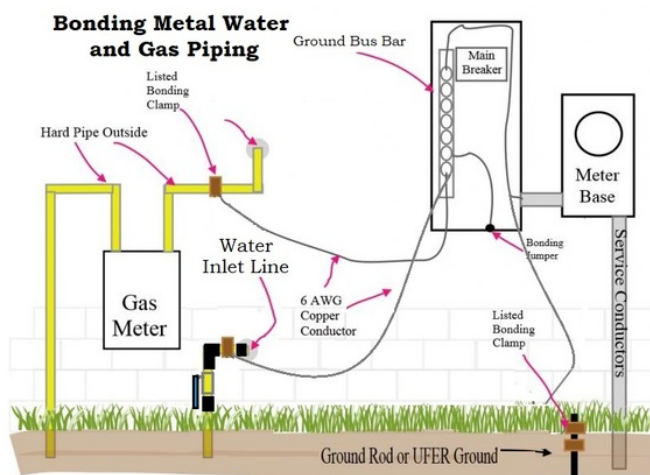
D=Deficient

I NI NP D

**7: Gas and/or Water Piping - Bonding Not visible**

The location(s) where the water supply piping and/or gas supply piping were bonded together and/or back to the electrical ground system were 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.

8: 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.

9: Electrical Disconnect - Double Lugged

The condenser disconnect wires were double lugged. Each unit should have its own dedicated disconnect.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

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D=Deficient

I	NI	NP	D
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I NI NP D

III. HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

☒ ☐ ☐ ☒ A. Heating Equipment

Comments:

Type of System: Forced Air

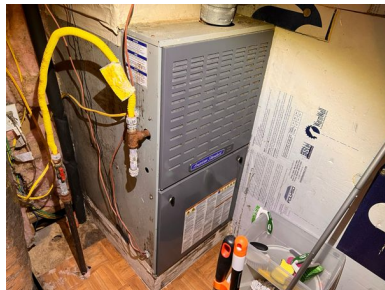
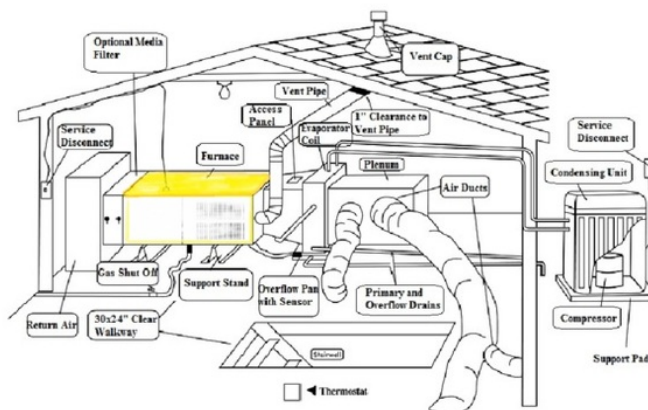
Energy Sources: Natural Gas & Electric

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>
1st floor front	American Standard	100k	2012	Attic



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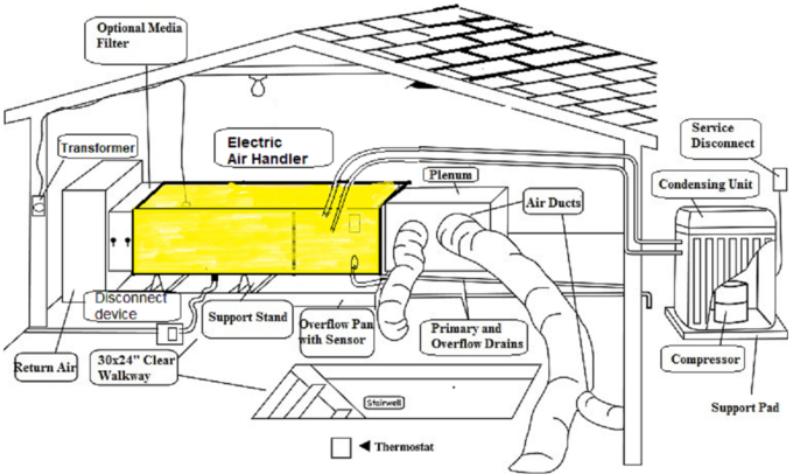
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1st Floor

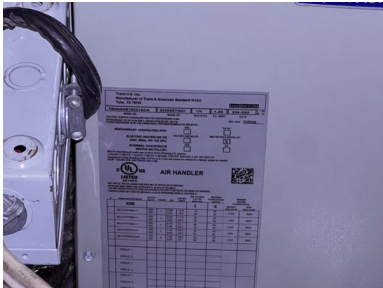
1st Floor

Electric Air Handler Description:
The heating for the property was provided by the following electric heating equipment:

ZONE	BRAND	DATE	LOCATION
1st floor rear	American Standard	2022	Master Closet Attic
2nd floor	American Standard	2011	Utility Room



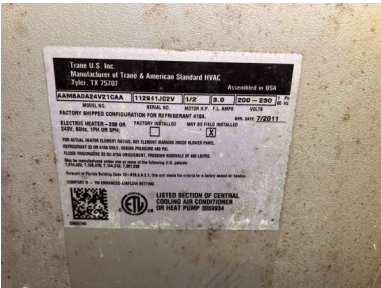
1st Floor Rear



1st Floor Rear



2nd Floor



2nd Floor

Heating Equipment - Functional:

I=Inspected

NI=Not Inspected

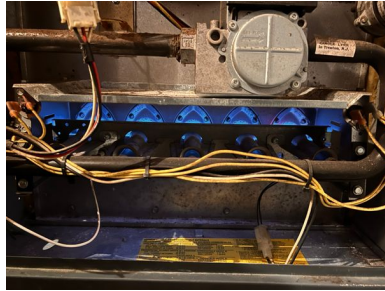
NP=Not Present

D=Deficient

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.

1st Floor Front



Electric Heat - Functional:

The electric heating equipment was observed to be operating and functional at the time of the inspection. The electric heating equipment was heating the air 25+ degrees, which is adequate.

1st Floor Rear & 2nd Floor



Limited life:

Due to the age and/or condition of the equipment, it is our opinion that the equipment has only a limited amount of remaining life.

1st Floor Front & 2nd Floor

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

1st Floor

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D=Deficient

I NI NP D

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	CONDENSING UNIT			EVAPORATOR COIL		TEMP DELTA
	BRAND	TONS	DATE	TONS	DATE	
1st floor front	American Standard	4	2012	4	2012	N/A
1st floor rear	American Standard	1.5	2023	1.5	2022	N/A
2nd floor	American Standard	2	2011	2	2011	N/A

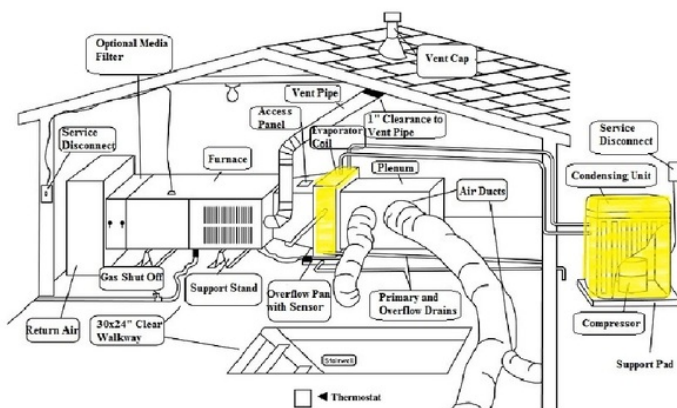
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I NI NP D



1st Floor Front



1st Floor Front



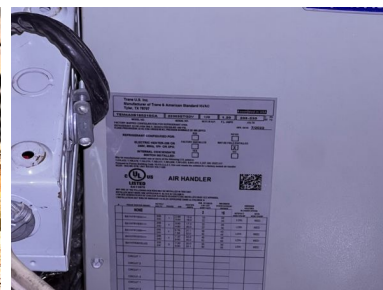
1st Floor Front



1st Floor Rear



1st Floor Rear



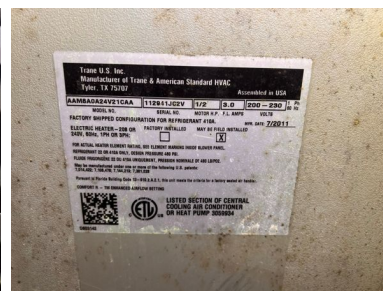
1st Floor Rear



2nd Floor



2nd Floor



2nd Floor

Mini-split Heat Pump - Single Head Unit:

The heating for the property was provided by the following electric mini-split heat pump equipment:

ZONE	BRAND	DATE	LOCATION
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I=Inspected

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NP=Not Present

D=Deficient

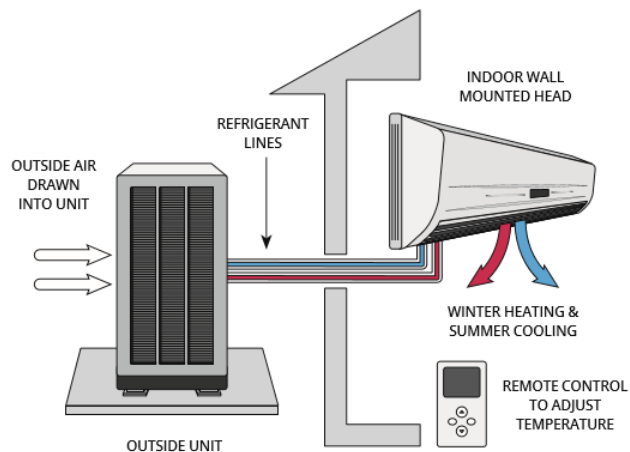
I NI NP D

Attic

American Standard

2018

Attic



Limited Life:

Due to the age and/or condition of the equipment, it is our opinion that the equipment has only a limited amount of life remaining. It would be a prudent to have the equipment thoroughly checked by a licensed air conditioning service company and further investigation is recommended.

2011 - 2012 equipment

Primary Drain - Terminated properly:

The primary condensate drain line was properly terminated into the P-trap at a plumbing fixture drain at the interior of the property.

1st Floor Front & Rear

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

*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 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: Tamper Proof Refrigerant Caps

Tamper proof caps not installed at each A/C unit -

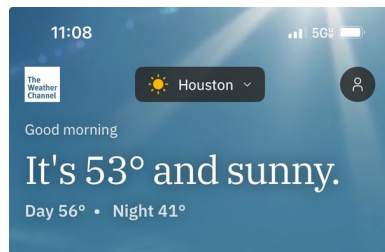
Tamper proof refrigerant caps are currently required to be installed at the refrigerant ports on the A/C condensing unit to prevent refrigerant leaks and/or improper venting.

Obtain cost estimate

Recommendation: Contact a qualified professional.

2: Outside Temp Below 60 - A/C not operated

The ambient outside temperature was below 60 degrees, so only a visual inspection of the equipment was performed at this time. It is pointed out that serious damage can result to the compressor if operated at temperatures below 60 degrees and the compressor will not lubricate properly at lower temperatures. It is recommended that a service company be contacted on a warmer day to determine if the equipment is performing adequately, or if the equipment needs to be charged, cleaned and/or serviced.

**3: A/C Equipment - Possibly oversized**

The total tonnage of the cooling equipment was 7.5-tons. As a ballpark method of estimation, approximately one ton of air conditioning can cool approximately 500-600 square feet of living area. By this method of estimation, 7.5-tons of air conditioning can cool approximately 3,750-4,500 square feet of living area. It is pointed out that a house that has an oversized air conditioning system cannot be expected to properly remove the humidity from the air. Further investigation is recommended by an air conditioning service company to determine if the existing equipment is sized properly to adequately and efficiently cool this house.

Further Investigation Recommended

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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4: Condensing Unit - Too close to house

The condensing unit was located too close to the house to allow for proper air flow around the coils.

Obtain Cost Estimate

5: Condensing Unit - Support pad too low

2nd Floor

The support pad for the condensing unit was sitting too low and allows the bottom of the condensing unit housing to touch the soil or be covered by water. This condition can rust out the housing, and the condensing unit should be raised to three inches above the ground.

Obtain Cost Estimate

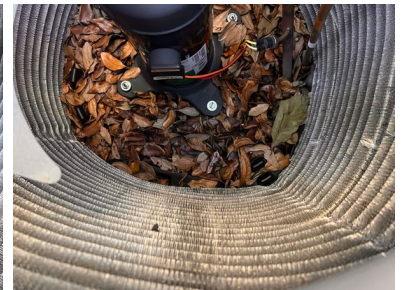
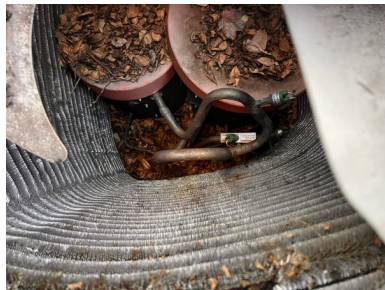


6: Condensing Unit - Debris inside housing

1st Floor Front, 1st Floor Rear & 2nd Floor

Debris was observed to be inside of the housing and needs to be removed and the inside of the unit thoroughly cleaned by a service company.

Obtain Cost Estimate



7: Coil - Secondary drain capped

1st Floor

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.

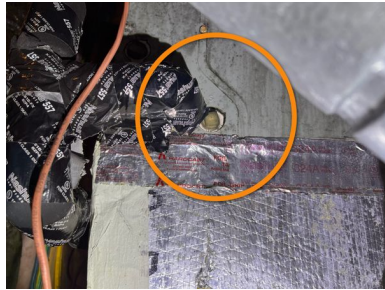
I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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**8: Up-flow Coil - Overflow pan not present**

2nd Floor

The indoor heating and cooling equipment was an up-flow vertical system which draws air from the underside of the equipment. It is pointed out that an overflow pan is not required for this type of equipment. A moisture sensor/float switch is required to be installed in the condensation drain piping for the equipment to help protect against leaks. While not required, it is recommended that an overflow pan with a moisture sensor be installed in the bottom of the return air chase below the HVAC equipment to help protect against leaks in the event that the float switch in the drain piping does not respond to water backing up in the equipment.

Obtain cost estimate

Recommendation: Contact a qualified professional.

9: Primary Drain Lines - Terminated in plumbing vent

2nd Floor

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

Obtain Cost Estimate**10: Microbial growth on equipment in attic**

1st Floor Front & 2nd Floor

Microbial growth was observed on the outside of the air handler and/or evaporator coil casing. This condition can be indicative of a moisture/condensation problem, possibly due to air leaks at the equipment and/or a lack of adequate attic ventilation, or possibly some other problem. Further investigation is recommended with a service company to determine the cause of the microbial 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

I=Inspected

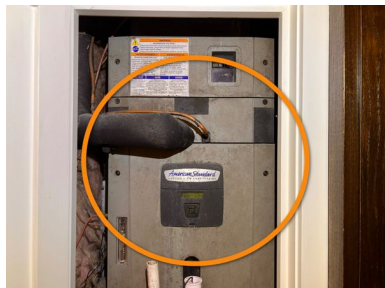
NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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Recommendation: Contact a qualified professional.



☒ ☐ ☐ ☒ **C. Duct Systems, Chases, and Vents**

Type of ducts: Flex 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.

1: Return Air - Not sealed

The chase was not sealed properly and was drawing unconditioned air from the floor and/or wall cavities into the system. Have the chase sealed against air leaks.

Obtain Cost Estimate

2: Air filters - Dirty

The filters were dirty and need to be replaced. Dirty filters can allow the evaporator coils to become dirty along with the ductwork systems, which can affect the performance of the systems.

Obtain Cost Estimate

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

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 side of the house

Static water pressure reading: 61 PSI

Water Supply Material: Copper

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: 60-65 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.



Limited visibility of plumbing lines: At attic, Insulation cover, limited access at attic -

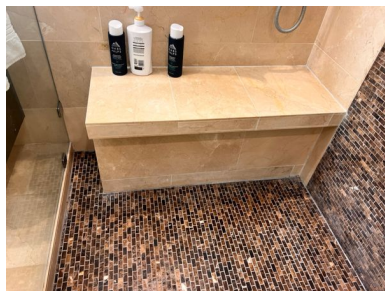
Visibility of the plumbing lines was very limited at the time of the inspection and some portions of the plumbing that are typically accessible were concealed. If further investigation is desired, it is recommended that a service company be contacted.

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.

I=Inspected**NI=Not Inspected****NP=Not Present****D=Deficient****I NI NP D***Shower - Built-in Seat:*

It has been our experience that plumbers do not always extend the shower pan material from the bottom of the shower, up over the shower seat area. This condition can allow water to migrate through the shower seat tiles into the wall cavity. It could not be determined if the shower seat(s) was properly wrapped with shower pan material at the time of the inspection. It is recommended that you keep the shower(s) well caulked and a sealer be applied to the seat to help prevent water penetration through the seat. If further investigation is desired, it is recommended that a service contractor be contacted.

*Tub trap - No access:* No access opening -

The plumbing for the tub was not visible for inspection due to a lack of access. As a routine, we recommend that access to the plumbing be provided for inspection and repair purposes.

Tub/Shower - Window sealants:

A window was located within the spray of the shower head and it is recommended that the window sealants be maintained to prevent water penetration to the interior of the wall. No evidence of a current leak were visible, however leaks can occur should the sealant begin to deteriorate.

**1: 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

I=Inspected

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D=Deficient

I	NI	NP	D
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2: Insulate Exterior Water Piping

Exterior water piping that was not properly insulated was observed. It is recommended that the piping be properly insulated.

Obtain Cost Estimate

3: Hot & Cold Water Reversed

Wet Bar

The hot and cold water supply were reversed, where the hot water was on the right side, and the cold water on the left side.

Obtain Cost Estimate



4: Drain Stopper - Nonfunctional

East Guest Bath

The drain stopper was not operating properly and needs to be repaired.

Obtain cost estimate

Recommendation: Contact a qualified professional.



5: Water Valve - Handle damaged

South West Guest Bath

The handle on the water valve was damaged and needs to be replaced.

Obtain Cost Estimate

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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6: Sprayer - Leak

Master Bath

The sprayer was leaking and needs to be repaired and/or replaced.

Obtain Cost Estimate



7: Tub - Caulk needed

South West Guest Bath

The tub needs to be caulked.

Obtain Cost Estimate



8: Shower - Caulking needed

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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East Guest Bath

The shower needs to be caulked.

Obtain Cost Estimate



9: Shower/Tub - Shower head leak

South West Guest Bath

The shower head was leaking at the connection and needs to be repaired.

Obtain Cost Estimate



10: Shower/Tub - Door opens inward

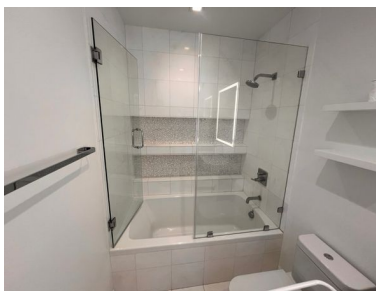
Bathrooms

The shower door improperly opens inwards rather than outwards. This is a safety concern and should be repaired in an approved manner.

Obtain Cost Estimate



Master Bath



South West Guest Bath



East Guest Bath

11: Shower/Tub - Valve handle damaged/missing

Master Bath

The handle(s) on the hot/cold water valve was damaged/missing and needs to be replaced on the tub/shower.

Obtain Cost Estimate

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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12: Swivel difficult to turn

Master Bath

The swivel was difficult to turn on the faucet.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.



☒ ☐ ☐ ☐

B. Drains, Wastes, and Vents

Sewer Piping Material: Disclosed to be PVC -

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.

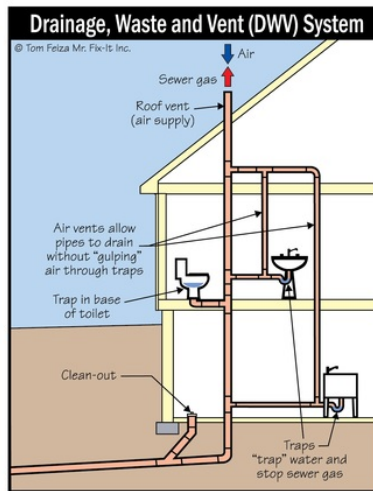
I=Inspected

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NP=Not Present

D=Deficient

I NI NP D



Sewer Clean Out - Not visible:

A clean out for the sewer line was not visible. It is recommended that you check with the owner to determine if a clean out is present, and if so, to determine the location of the clean out. This is needed for access to the sewer line should the sewer line become clogged and need to have a sewer snake run down the line to clean it out.

Sewer Lines - PVC:

The visible above ground sewer piping at the crawlspace under the house was observed to be PVC. The sewer piping appeared to be installed properly and no leaks were visible when we ran water down the piping during the crawlspace inspection.



I=Inspected

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D=Deficient

I NI NP D



☒ ☐ ☐ ☒ **C. Water Heating Equipment**

Comments:

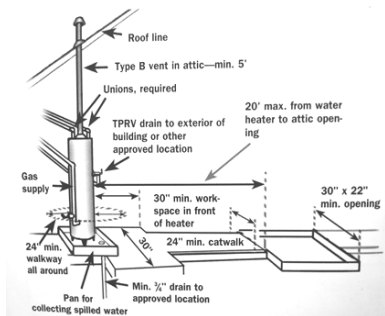
Energy Source: Natural Gas

Capacity: 75 Gallons

Gas Water Heater Description:

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

<u>Location</u>	<u>Brand</u>	<u>Capacity</u>	<u>Age</u>	<u>Energy Type</u>
Attic	Rheem	75 Gallons	2014	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

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D

maintained in this temperature range.

WATER TEMPERATURE	Adults (skin thickness of 0.5 mm)	Children (skin thickness of 0.3 mm)
	Time required for a third-degree burn to occur	
150°F 65°C	1 second	0.5 second
145°F 63°C	2 seconds	1 second
140°F 60°C	5 seconds	1 second
135°F 58°C	15 seconds	4 second
127°F 53°C	1 minute	10 seconds
124°F 51°C	3 minutes	1.5 minute
120°F 48°C	5 minutes	2.5 minutes
109°F 43°C	Safe temperature for bathing	Safe temperature for bathing

For SI: °C = (°F - 32) ÷ 1.8 or (°F - 40) ÷ 1.8

Figure PETER 3
TEMPERATURE BURN CHART



Water Heater Equipment - limited life:

Due to the age and/or condition of the equipment, it is our opinion that the equipment has only a limited amount of life remaining. Normal life expectancy for a water heater in the Houston area is approximately 10-12 years.

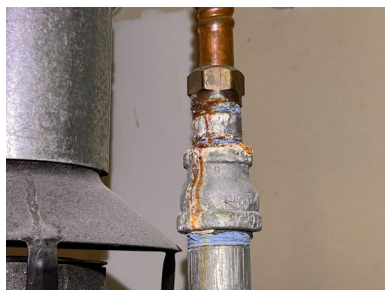
Temp/Pressure Relief Valve - Information:

Temperature/pressure relief valves are not operationally checked by this firm during the inspection. Valves typically do not reseat 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: Fittings - Corroded

The piping at the top of the water heater was severely corroded at the fittings and is in need of repair.

Obtain Cost Estimate


☐ ☐ ☒ ☐

D. Hydro-Massage Therapy Equipment

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: Rear of garage -

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

I=Inspected

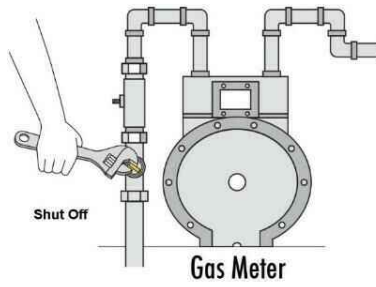
NI=Not Inspected

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D=Deficient

I	NI	NP	D
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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.



I=Inspected

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NP=Not Present

D=Deficient

I NI NP D

V. APPLIANCES

☒ ☐ ☐ ☒ A. Dishwashers

Functional:

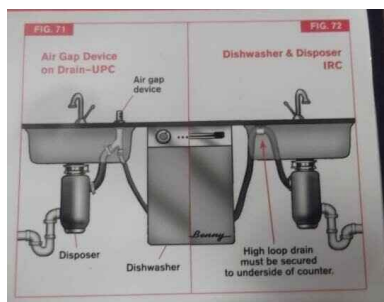
The dishwasher was functioning and responded to the controls. The unit was run through a cycle at the time of the inspection and appeared to be operating properly.



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

Functional:

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



1: Drain leaking at disposal

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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The dishwasher drain line is leaking at the point where it connects to the disposal.

Obtain Cost Estimate



☒ ☐ ☐ ☐ **C. Range Hood and Exhaust Systems**
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**
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.



Electric Oven - Functional:

The electric oven was observed to be functioning and no items requiring repair were visible at the time of the inspection.

I=Inspected

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D=Deficient

I NI NP D



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. The oven was checked with an oven thermometer and found to heat to 375 degrees.



Warming Oven - Functional:

The warming oven was functioning, heating, and responding to the controls at the time of the inspection.



☒ ☐ ☐ ☐ **E. Microwave Ovens**

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.

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I NI NP D



☒ ☐ ☐ ☒ **F. Mechanical Exhaust Vents and Bathroom Heaters**
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: Exhaust Vent Pipes - 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 rerouted to the outside of the house.

Obtain Cost Estimate



2: Exhaust fan not present

Master Bath Near Shower

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**

1: Opener - did not auto-reverse

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 equipped with the infra-red sensing safety device, and the device was operational at the time of the inspection.

Obtain Cost Estimate

I=Inspected

NI=Not Inspected

NP=Not Present

D=Deficient

I	NI	NP	D
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2: Door Lock

The door lock was still connected to the garage door. Manufacturers of garage door openers recommend that the locks be disengaged or removed when an automatic opener is installed. Damage to the door and/or door opener may occur if the door is operated with the garage door lock is engaged.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.



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H. Dryer Exhaust Systems

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.

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)

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I. Other

Non Built-in Equipment - Not inspected:

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

Small Refrigerator - Functional:

No items requiring repair were visible at the time of the inspection for the small refrigerator. The refrigerator was observed to be cooling adequately at the time of the inspection. It is noted that the unit was not

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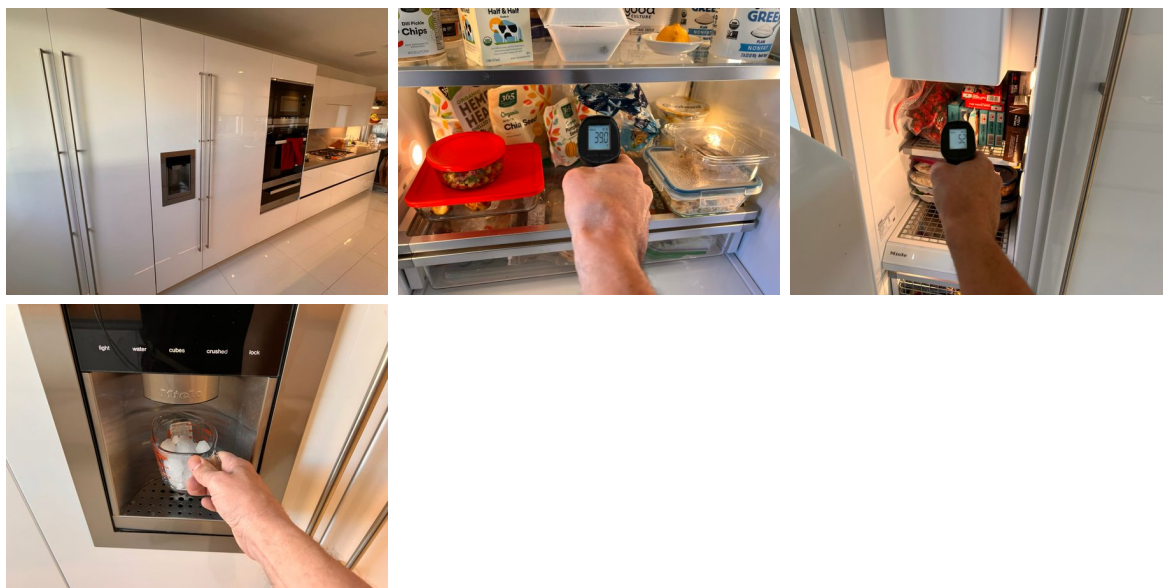
I	NI	NP	D
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dismantled and the interior components were not checked.



Refrigerator with Ice Maker - Functional:

No items requiring repair were visible at the time of the inspection for the built-in refrigerator and freezer sections. The refrigerator and freezer sections were observed to be cooling adequately at the time of the inspection. It is noted that the unit was not dismantled and the interior components were not checked. The ice maker inside the freezer also appeared to be functional and ice was observed inside the ice compartment. It is pointed out that we did not visibly observe the ice maker producing ice at the time of the inspection.



Washer/Dryer Connections - Not visible :

No access was provided behind the washer and dryer and the area was not visible for inspection. Further investigation is recommended. It is also recommended that you check with the owner to determine which dryer connection options are available.



I=Inspected

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D=Deficient

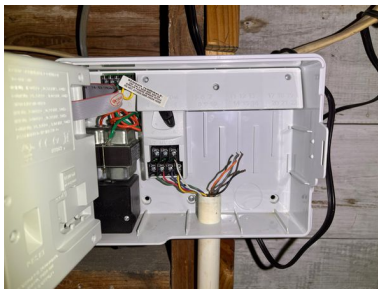
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VI. OPTIONAL SYSTEMS

☒ ☐ ☐ ☒ A. Landscape Irrigation (Sprinkler) Systems

Sprinkler System: Rainbird, Located inside garage, 4 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: Recommend Installing a rain sensor -

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.

1: Adjust sprinkler head spray

Zone 2

Spraying driveway -

The sprinkler head spray was in need of adjustment/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: Rain Sensor - Not 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.

Obtain Cost Estimate

Recommendation: Contact a qualified professional.

I=Inspected

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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>