



## STRUCTURAL INSPECTION

4547 Bermuda Dr  
Sugar Land TX 77479

Gary Turner & Debra Turner

SEPTEMBER 2, 2020



Inspector

**Kyle Kuhl**

Engineer

281-355-9911

[office@heddermanengineering.com](mailto:office@heddermanengineering.com)

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# 1: COVER LETTER

## Information

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### **HEDDERMAN ENGINEERING, INC.**

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09/02/2020

TO: Gary Turner & Debra Turner

REF: CONDITION OF PROPERTY SURVEY

Dear Gary Turner & Debra Turner:

At your request, a visual survey of the house located at 4547 Bermuda Dr, Sugar Land TX 77479 was performed by Kyle Kuhl. Transmitted herewith is the inspection report stating our professional opinions on whether the items of construction included in the survey are functional on the day of the inspection, or are in need of repair.

The scope of our inspection and other important information, particularly in the area of dispute resolution should a question arise, is contained in our Service Agreement, which has been included at the end of this report.

Thank you for asking HEDDERMAN ENGINEERING, INC. to perform this important inspection work for you. If you have any questions after reviewing this report, please feel free to call me at my office.

At your service,

HEDDERMAN ENGINEERING, INC.

Tim Hedderman, President

## 2: PURPOSE/SCOPE

### Information

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#### **INTRODUCTION**

The purpose and scope of the inspection are detailed below, as well as in the executed Service Agreement at the end of this report. Also included are the limitations of the inspection.

#### **PURPOSE**

The purpose of the inspection was to view the components of the house included in the inspection and to give our opinions on whether or not these specific items were functioning at the time of the inspection, or were in need of repair. Although this report may include observations of some building code violations, total compliance with structural, mechanical, plumbing, electrical codes, specifications, and/or legal requirements is specifically excluded.

This also applies to all non-code making bodies, including but not limited to, the Brick Institute of America and the Texas Lathing and Plastering Contractors Association and their respective recommendations of building construction details. We do not perform "code" inspections, and since building codes change every few years, our inspections are not done with the intention of bringing every item in the house 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 if they are in need of repair. This is particularly applicable to Home Warranty policies, where the standards of the Home Warranty service company may differ than the scope of 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 Home Warranty company of your choice for a more in-depth analysis of what may be required to meet their standards should a claim be made against their policy. It has been our experience that Home Warranty companies may require the equipment to be in total compliance with current code (even if it was installed before the current code was adopted) to be covered under their policy, and if so, it is recommended that you contact the appropriate service companies for a code compliance certification inspection. This report is provided solely for the use of the person to whom this report is addressed, and is in no way intended or authorized to be used by a third party, who may have different requirements, and to whom we have not contracted to perform the inspection. If a third party chooses to use this inspection report, they do so without HEDDERMAN ENGINEERING, INC. permission or authorization, and they do so at their own risk. It is our purpose to provide information on the condition of the house on the day of the inspection. It is not our purpose to provide discussions or recommendations concerning the future maintenance of any part of the house, or to verify the adequacy and/or design of any component of the house. It is pointed out that other engineers/inspectors may have contrasting opinions to those given in this report. Items that we find that in our opinion are in need of repair will typically include the recommendation to Obtain a Cost Estimate from qualified contractors. The scope and cost of the actual repairs can vary significantly from company to company, and it is your responsibility to see that the scope of work needed and actual cost of repairs is confirmed by contacting one or more qualified service companies before your option period ends or before closing on the property. This report may also contain informational items which are included as a courtesy to help you become more aware of the condition of the house. In the performance of this inspection, HEDDERMAN ENGINEERING, INC. has acted as an engineering consultant subject to the standards of the State Board for Professional Engineers.

#### **SCOPE**

The scope of the inspection included limited, visual observations at the interior and exterior of the structure. Only those items readily visible and accessible at the time of the inspection were viewed and are included in this report. Any items causing visual obstruction, including, but not limited to furniture, furnishings, floor or wall coverings, pictures, foliage, registers and grills on HVAC ductwork, soil, appliances, insulation, etc., were not moved. The basis of our opinions will be the apparent performance of that portion of the house readily visible at the time of the inspection.

Disassembly or removal of any portion of the structure, mechanical equipment, plumbing equipment, or electrical equipment is beyond the scope of this inspection. There is no warranty or guarantee, either expressed or implied, regarding the habitability, future performance, life, insurability, merchantability, workmanship, and/or need for repair of any item inspected. The components of the house included in scope of the inspection, if present and applicable, include:

**Structural:** Foundation, primary load-carrying framing members, roof surface, water penetration, and miscellaneous items related to the house.

**Mechanical:** Air conditioning and heating systems, water heaters, built-in kitchen appliances, and garage door openers.

**Plumbing:** Water and gas supply lines, sinks, toilets, tubs, showers, visible drain lines inside the house, and vents.

Electrical: Service entrance conductors, electric meter, distribution panel, visible wiring, light fixtures, switches, and receptacle outlets.

Items specifically excluded from our inspection include:

- Tainted and Corrosive sheetrock (Chinese Sheetrock).
- All pests, wood destroying insects, conducive conditions, ants, or rodents.
- All equipment related to mosquito control.
- All items related to major geological conditions such as faults or subsidence.
- All underground piping, including water, sewer, and gas piping.
- Water softening and water treatment systems.
- Identifying products that have been recalled.
- Pressure testing of gas system.
- All low voltage lighting systems and/or photocells.
- All low voltage data systems such as telephone, cable TV or data lines.
- All fire detection, carbon monoxide, smoke alarms and/or security alarm systems.
- All environmental hazards, or any toxic/hazardous materials including, but not limited to: radon gas, lead, formaldehyde, electromagnetic, any and all items related to asbestos.
- A backup generator and transfer switch panel.
- Any electrical load analysis on the electrical system to determine adequacy of the service or any branch circuit.

If you desire information or inspections concerning the items listed above, or any other items, then it is recommended that you contact the appropriate service companies. Also excluded from the scope of the inspection are any and all items related to mold and/or all microbial substances. Due to the current limitations of coverage on most homes by the insurance industry in Texas, where damages due to mold and/or other microbial substances may not be covered, we routinely recommend that you have a mold inspection by a qualified professional before you close on the house. Built-in appliances and mechanical equipment were operated in at least one, but not all, of their operating modes, where possible. If you desire for every operating mode of each piece of equipment to be operationally checked, then it is recommended that you contact a service company. Equipment and materials that are not visible, including structural components, underground plumbing and gas lines, and all other items not normally available for ready viewing, are excluded from the scope of this inspection. If you desire an inspection on the underground plumbing pipes or a hydrostatic test to determine if the plumbing pipes are leaking under the house, then it is recommended that you contact a plumber. No electrical circuit or load analysis will be performed on the electrical system. We make no representation regarding the condition of this house other than as contained in this written report. Any verbal discussions concerning this house that were made at the time of the inspection, and not contained in this written report, are not to be relied upon. Although the structural portion of this inspection was made by an engineer, it cannot be considered to be a formal engineering study since no calculations, structural analysis, or physical material testing were performed. If engineering drawings/specifications have been made available during this inspection and, if they have been viewed, it is pointed out that all such viewing is strictly cursory, and in no way should our cursory examination be construed as providing engineering judgments concerning the adequacy or acceptability of the drawings/specifications. It is pointed out that it is possible for latent defects to exist in the structure and its related equipment, underground piping, and systems that are not visible at the time of the inspection, and may not be able to be viewed during a limited visual inspection. This is particularly applicable in items relating to water, such as roof leaks, water penetration conditions, etc., where the condition may exist, but not be visible at the time of the inspection (e.g. where it has not rained for a period of time, allowing materials time to dry out). HEDDERMAN ENGINEERING, INC. does not claim or warrant that the observations listed in this report represent every condition that may exist. In using the information supplied by this inspection, one must recognize the limitations of a limited, visual inspection conducted at a single point in time, and accept the inherent risk involved. It is recommended that you obtain as much history as is available concerning this house. This historical information may include copies of any seller's disclosures, previous inspection or engineering reports, building drawings and/or specifications, bids to perform repair work on the house, knowledge of any drainage problems, receipts from repair work that has been performed, reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should attempt to determine whether repairs, renovation, remodeling, additions or other such activities have taken place at this house.

## 3: SITE CONDITIONS

### Information

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**Occupancy**

Vacant

**In Attendance**

Sellers Agent, Owner

**Weather**

Dry, Partly Cloudy, Temperature  
90-100 degrees

**Age of Home - HAR**

According to HAR, the house was  
built in 1987.

**North-Right**

For the purpose of the inspection and report, NORTH will be assumed to be from the left side of the house towards the right, when facing the house from the front.

## 4: FOUNDATION

### Information

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#### **Description: FOUNDATION OBSERVATIONS AND CONCLUSIONS:**

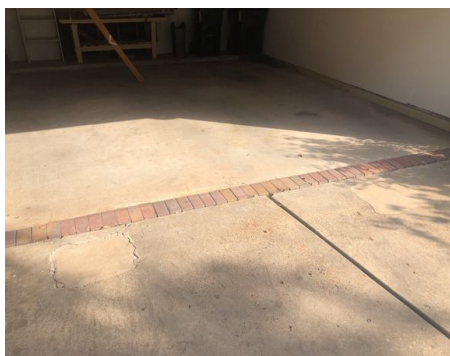
*The following items were inspected, with our Observations and Conclusions noted.*

#### **Description: Concrete slab with rebar**

The foundation was a concrete slab on grade, and appeared to be reinforced with steel reinforcing rods (rebar).

#### **Description: Previous repairs**

It was observed/disclosed that the foundation of this house has been repaired previously. It is pointed out that HEDDERMAN ENGINEERING, INC. cannot and does not take any responsibility for the adequacy and/or future performance of the repair work. Any opinions given in this report concerning the levelness of the house are for the day of the inspection only, and are not a warranty against future foundation movement of the house. It is recommended that you obtain all available information and warranties from the homeowner relating to the foundation repair(s).



#### **Differential Movement: Reference point**

See our field sketch below showing the elevation readings for this structure. Note that the "R" on the sketch is our randomly chosen starting reference point, where the elevation is 0, and all other elevation readings are taken relative to the reference point, and are measured in inches to the nearest 1/10 inch. If there is a step up or a step down into an area such as a garage, sunken room, balcony/patio area, or raised rooms, the elevation readings will have larger numbers due to the amount of the step.

We typically point out that foundations are rarely constructed perfectly level, so most properties have some unlevelness (typically 3/4 to 1-1/2 inches) built into the foundation as part of original construction. We have no knowledge as to how much unlevelness was built into this house foundation during original construction.

Note that it is not HEI's purpose to exhaustively document each and every evidence that may be related to foundation movement, but rather to document a representative sample and/or the most significant evidences of movement upon which we base our opinion on the condition of the foundation.

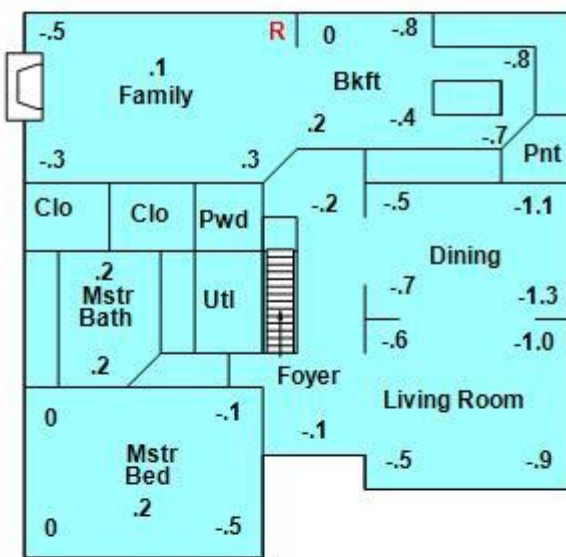
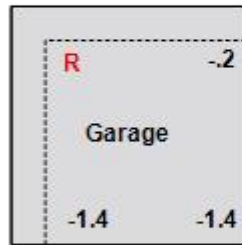
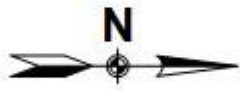
#### **Differential Movement: Levelness - Acceptable**

The floors were checked with an electronic level, and were observed to be acceptably level throughout the house. The difference in elevation between the high point and low point was 1.6 inches. The high point was located at the family room, and the low point was located at the dining room. The unlevelness takes place over a horizontal distance of approximately 30 to 35 feet.

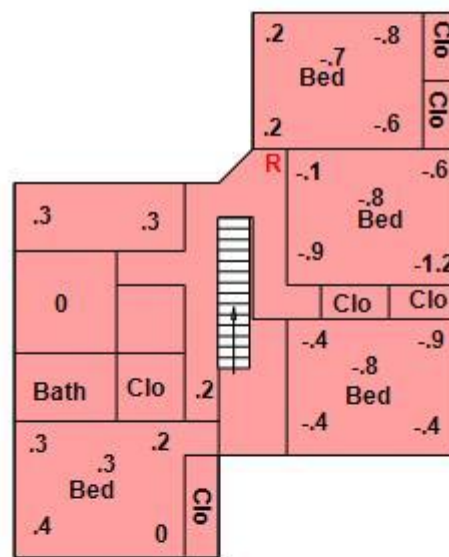
9.2.20

HEI

Turner



First Floor



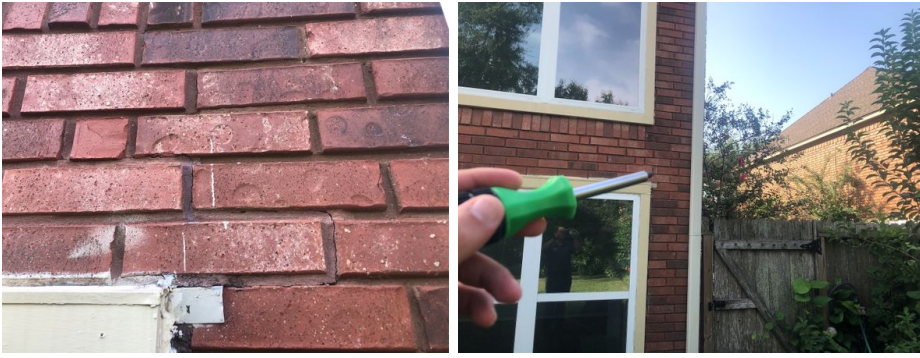
Second Floor

**Elevation Readings  
4547 Bermuda Drive**

**Differential Movement: Veneer Cracks - Minimal**

We observed that cracks in the exterior veneer were minimal in number and degree at the time of the inspection.





**Differential Movement: Sheetrock Cracks - Minimal**

We observed that sheetrock cracks were minimal in number and degree at the time of the inspection.



**Differential Movement: Concrete Cracks - Observed**

South

The foundation concrete was observed to have hairline cracks, including at the above locations.



**Differential Movement: Slab Not visible - High Soil**

It is pointed out that a portion of the foundation concrete could not be viewed due to soil that was graded near or above the top of the foundation and/or heavy foliage growing against the house. The soil and/or foliage should be removed, and 3-4 inches of foundation concrete exposed.



### Separation of Materials: Sticking doors

North center Bedroom

Doors that were sticking due to movement of the house were observed at the time of the inspection.

### Separation of Materials: Non latching doors

Northeast Bedroom

Doors that would not latch due to misalignment of the striker plate and the locking mechanism were observed.

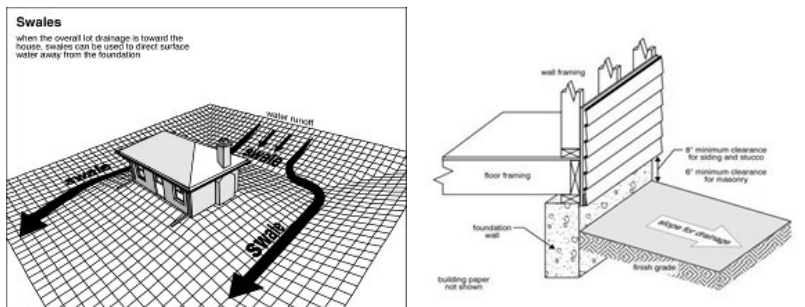
## FOUNDATION CONCLUSIONS: Repaired and acceptable

After observing the interior and exterior of the house, it is my opinion that the foundation repair brought the foundation back to within an acceptable degree of levelness, and that the foundation is still within an acceptable degree of levelness. We did not see any evidences that the foundation has settled significantly since the repair work was performed. Therefore, it is our opinion that the foundation is performing its intended function at the time of the inspection, and is not in need of any further releveling. Some residual unlevelness of the floors was observed, but this is normal for a house that has experienced foundation repair.

## Perimeter Grading/Drainage: FLOOD PLAIN

### 100 Year Floor Plain

This inspection does not include determining if the property is in the 100 year flood plain. For further information regarding the elevation of this lot, check with your survey and/or a land surveyor.



## Perimeter Grading/Drainage: Appeared Adequate

The perimeter drainage around the property appeared to generally be adequate. It could not be determined with certainty if water would pool at any localized low areas around the property. Further investigation with the homeowner is recommended to determine if there are any drainage problems or water that ponds on the property after a rain.

**R401.3**

## Recommendations/repair

## 4.4.1 Other Observations

**TREES - RECOMMEND ROOT BARRIER**

Trees and/or foliage were observed in the vicinity of the house, which can contribute significantly to differential movement of the house foundation. Care should be taken to prevent the trees and foliage from removing an excessive amount of water from near the foundation of the house. Consideration should also be given to cutting the tree roots that extend under the foundation, and installing a root barrier to prevent any further moisture from being removed from under the interior of the house.

## Recommendation

Contact a qualified professional.



## 5: ROOF

### Information

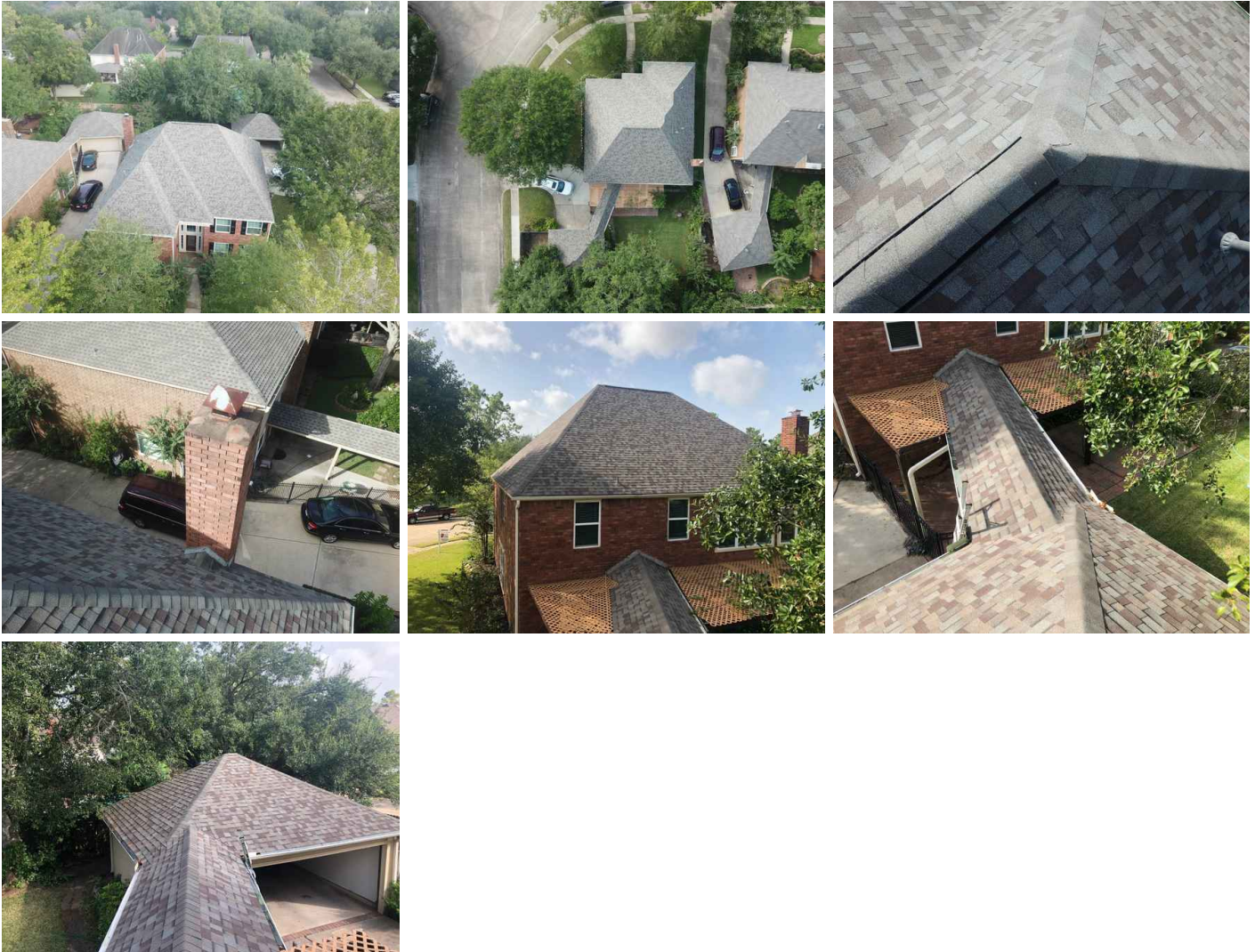
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#### Roof Descriptions: ROOF OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

#### Roof Descriptions: Composition Shingles

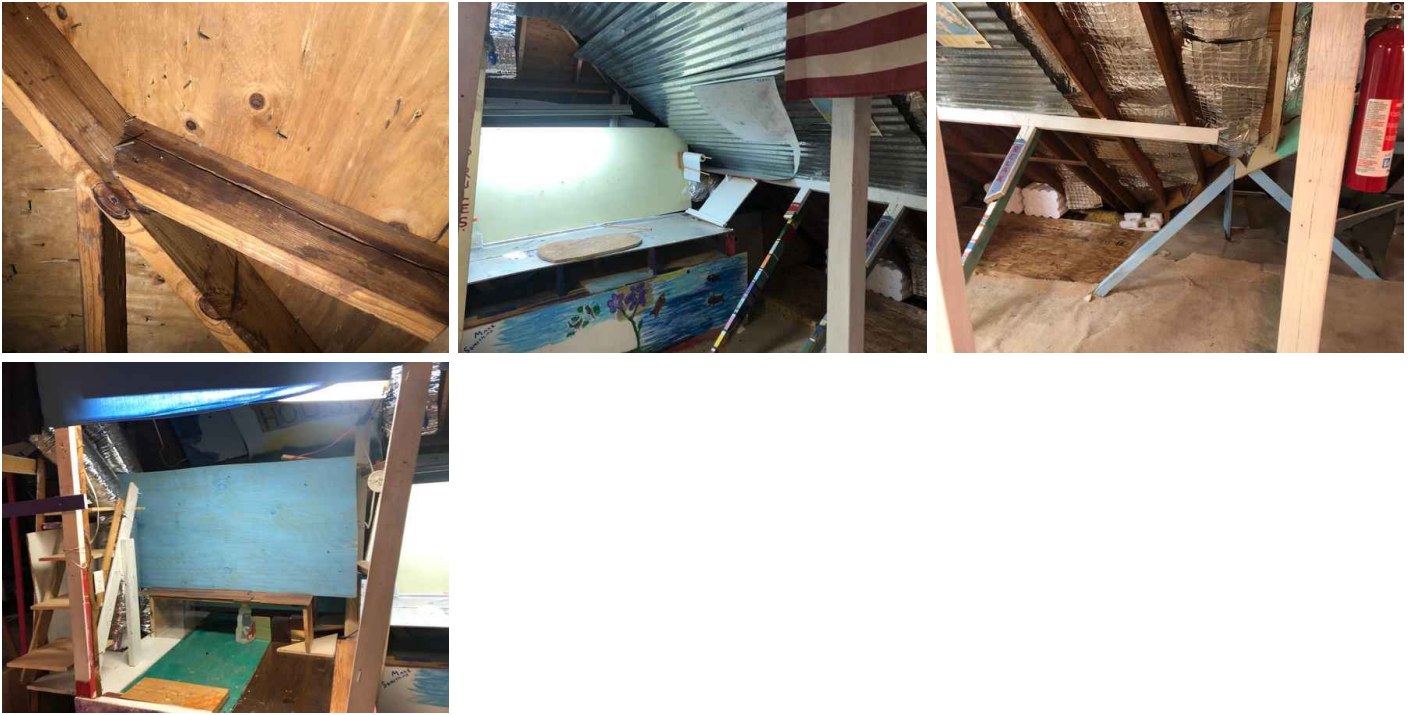
The roof surface was constructed of composition shingles. The life expectancy of a composition shingle roof has been observed to vary from 15 to 20 years, with most requiring replacement at about 17-20 years.



#### Roof Descriptions: Roof Decking - Description

Plywood, Not visible

The roof decking was observed from the attic space to be as described above.



### Age of Roof: 1 year

The age of the roof, according to the sellers disclosure statement, was one year.

### Roof viewed from: Surface

Garage Roof

The roof was viewed from the surface of the roof at the time of the inspection.

### Roof viewed from: Drone due to height and/or pitch

Due to the height and/or steep pitch on the roof, the roof was not viewed from its surface due to safety concerns, but was viewed from photographs taken by a drone.

### Wear and Deterioration: Composition - Some

Nail Heads not Sealed

The composition roof surface was showing evidences of some deterioration of the roof surface as described above and shown below.





### Roof Leaks: Attic stains appear to be from previous leaks

Garage attic, northeast valley in upper attic

After observing the interior of the structure, evidences of current roof leaks were not visible. The absence of evidences of roof leaks does not guarantee that roof leaks were not present; rather, that no evidences of leaking were visible at the time of the inspection. Some stains were visible in the attic, but the stains appeared to be related to previous roof leaks. It is recommended that you check with the owner and/or a service company concerning the stains.



### ROOF CONCLUSION: Serviceable Condition - Some Repairs needed

The roof is in generally serviceable condition at this time with some repairs needed for the item(s) shown below under Recommendations/Repair. Have a roofing contractor provide a cost estimate to make all necessary repairs to bring the roof into a completely serviceable condition.

**Obtain Cost Estimate**

## Recommendations/repair

## 5.3.1 Wear and Deterioration

**DEFECTIVE SINGLES**

## GARAGE ROOF

Some of the shingles appeared to be defective, as small bubbles were visible on the surface of the shingles. These bubbles are typically caused by moisture being introduced under the layers of felt during the manufacturing process, causing air bubbles in the felt. Over time, the bubbles will break off, exposing the base felt material, causing premature deterioration of the roofing shingles. It is recommended that a representative of the shingle manufacturer be contacted concerning this condition on the roof.

## Recommendation

Contact a qualified professional.



## 5.4.1 Roof Details

**ROOF: MISCELLANEOUS**

## Tree limbs on Roof

We observed some miscellaneous items related to the surface of the roof, including the items listed above. Have a roofing contractor provide a cost estimate to make any needed repairs.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



## 5.4.2 Roof Details

**FLASHING/COUNTER FLASHING**

Flashing not secure at roof jack

We observed one or more conditions with the roof flashing as pointed out above. Have a roofing contractor provide a cost estimate to make all needed repairs

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 5.4.3 Roof Details

**ROOF JACKS**

Damaged

The roof jacks at the plumbing vent pipes were observed to have the conditions as described above. Further investigation with a roofing contractor is recommended to make all needed repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 5.5.1 Roof Leaks

**DAYLIGHT VISIBLE AT VENT PIPES**

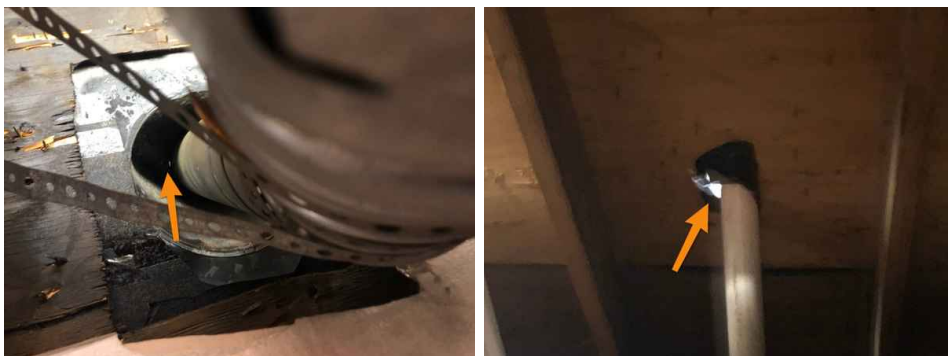
WATER HEATER VENT PIPE, PLUMBING VENT PIPE

After observing the interior of the structure, evidences of roof leaks were visible in the attic, where we observed daylight where the vent pipe penetrated the roof jack. Further investigation is recommended with a roofing contractor to make any needed repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.





## 6: STRUCTURAL FRAMING

### Information

#### Framing Description: OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

#### Framing Description: Two story house wood frame

The house was observed to be a two story wood frame structure that includes the standard major framing components, including wall framing and ceiling joists, and roof framing.



#### Attic Framing: Viewed from attic access walkway

The attic space was viewed only from the areas determined by the inspector to be safely accessible from the access walkway.

### Recommendations/repair

#### 6.4.1 Rafters

#### **REPAIR - SPLIT RAFTER**

#### GARAGE

One or more rafters in the attic were observed to be split, and need to be repaired.

#### **Obtain Cost Estimate**

#### Recommendation

Contact a qualified professional.



## 6.4.2 Rafters

**REPAIR - RAFTER MITER CUT**

SOUTHEAST CORNER OF UPPER ATTIC

We observed rafters that were connected to a hip rafter or a valley rafter, and did not have a proper miter cut on the end of the rafter to allow the rafters to fit flush against the hip/valley rafter. The rafters should fit flush against the hip/valley, and repair is recommended, with make-up pieces of rafter with a proper miter cut be "sistered" onto the rafter and fit flush against the hip/valley rafter.

**Obtain Cost Estimate**

R802.3

Recommendation

Contact a qualified professional.



## 6.8.1 Ridge Beam

**REPAIRS - SPLICED, NOT BRACED**

NORTHEAST

The ridge beam was spliced, but the joint was not supported by a vertical brace to a load bearing member.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



6.9.1 Ceiling Joists

**REPAIRS - CRACKED**

GARAGE

One of the ceiling joists was observed to be cracked and deflected, and repair is needed.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



6.13.1 Deflected Framing

**GARAGE HEADER DEFLECTED**

The header over the garage door was visibly deflected, and has deflected beyond an acceptable degree (allowable deflection = one inch deflection in a 30-foot horizontal distance ( $L/\Delta = 360$  per the building code)). For an 18-foot garage opening, the maximum allowable deflection is 0.6 of an inch. We observed a 0.9 inch deflection at the time of inspection, which is excessive. Therefore, the header was not performing its intended function and repairs are recommended at this time.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



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### 6.19.1 STRUCTURAL FRAMING CONCLUSION

#### **REPAIRS NEEDED**

The primary load carrying members of the structural framing that were accessible and viewed at the time of the inspection were generally functional with the exception of the item(s) listed above as in need of repair. Have a contractor confirm the scope of repairs needed, along with a cost estimate for all repairs.

#### **Obtain Cost Estimate**

Recommendation

Contact a qualified professional.

# 7: WATER PENETRATION

## Information

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### **Water Penetration: OBSERVATIONS AND CONCLUSIONS**

*The following items were inspected, with our Observations and Conclusions noted.*

#### **Water Penetration: Not Visible - Moisture Meter**

No visual evidences of water penetration to the interior of the structure were observed at the time of the inspection. It is pointed out that this statement is based upon the limitations of a visual inspection, without the moving or removal of items causing visual obstruction, including, but not limited to, furniture, furnishings, floor or wall coverings, foliage, soil, etc.

We checked around all window and door openings with a moisture meter, and found no evidence of elevated moisture at the time of the inspection.

## Recommendations/repair

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7.1.1 Water Penetration

**VULNERABILITY TO WATER PENETRATION**

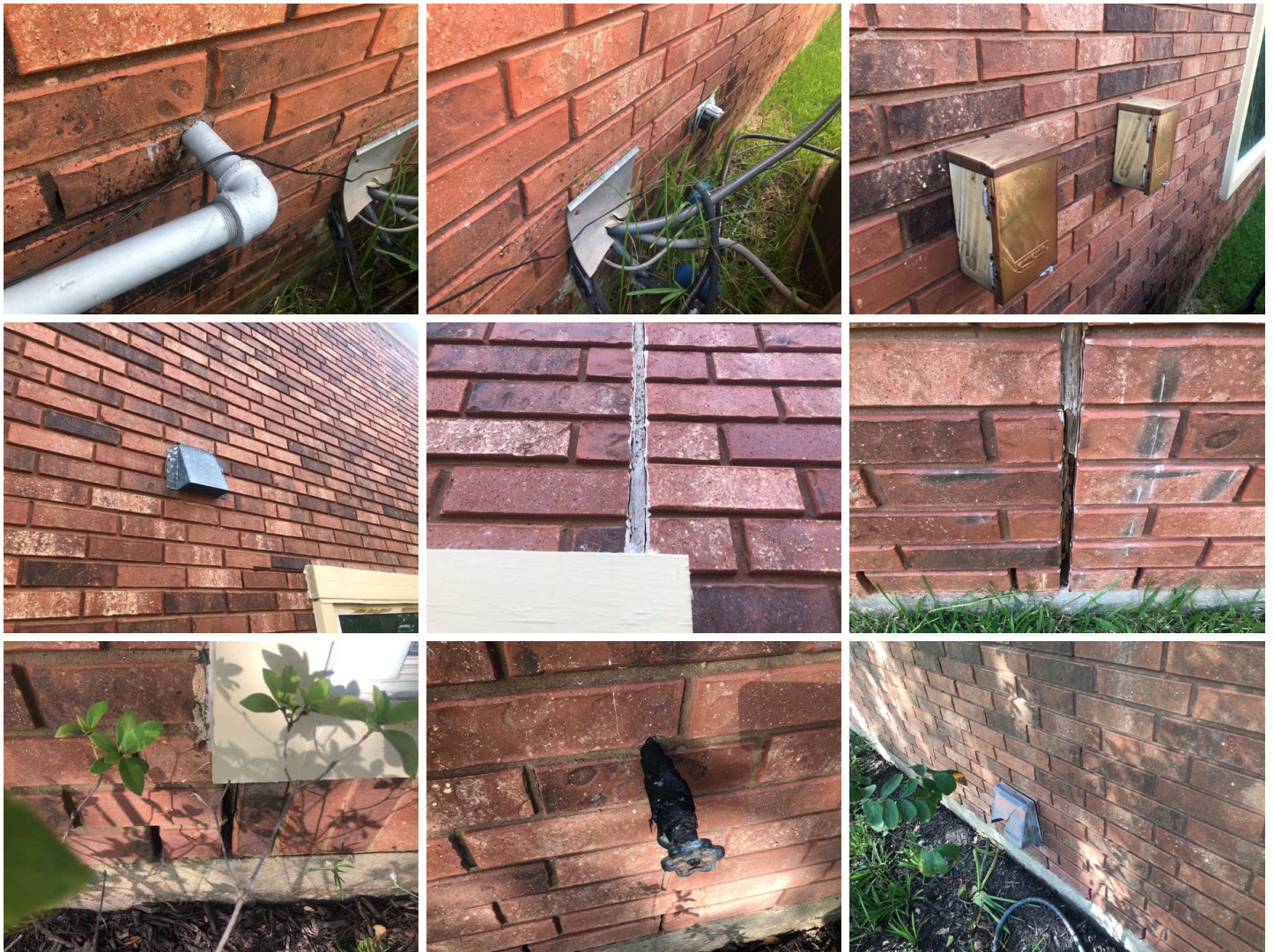
HVAC Lines, Caulking Cracked/Missing, Hose Bibb, Vent Caps, Piping

A substantial vulnerability to water penetration was observed at penetrations/openings through the exterior building envelope, and it is recommended that all penetrations/openings be sealed against water penetration. Typical examples on a structure may include light fixtures, air conditioning refrigerant lines, water piping, gas piping, vent caps, windows, doors, expansion joints, etc. Below is a representative sample of locations and/or photographs showing some, but not necessarily all, locations where there is a vulnerability to water penetration. Have a contractor provide a cost estimate to seal all vulnerable areas on the exterior building envelope against water penetration and/or open up any clogged weepholes in the veneer.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 8: FIREPLACE/CHIMNEY

### Information

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#### FIREPLACE OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

##### Fireplace Description: Masonry Fireplace

A gas log lighter was present and was functioning properly.

The fireplace was a masonry fireplace that vented up a chimney through the roof.



##### Masonry fireplace: Burner control

Manual gas valve

The gas to ignite the burner in the fireplace was controlled as shown above.

##### Masonry fireplace: Chimney flue not visible for entire flue

It should be noted that the inside of the chimney flue is not visible due to the construction of the chimney, and was not inspected. The chimney flue extends from just above the fireplace opening inside the house to the top of the chimney. If this a concern to you, we recommend that a fireplace service company be contacted.

**Obtain Cost Estimate**

### Recommendations/repair

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#### 8.3.1 Masonry fireplace

##### REPAIRS

Some repairs were observed to be needed to the fireplace. Further Investigation is recommended with a service company to provide a cost estimate for all needed repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.

## 8.3.2 Masonry fireplace

**FIREBRICK MORTAR CRACKED**

The mortar between the firebricks in the fireplace was cracked and missing in areas, and needs to be tuckpointed with a high temperature (refractory) mortar.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



## 8.3.3 Masonry fireplace

**GROUT MISSING - LOG LIGHTER PENETRATION**

Mortar was observed to be missing at the firebox at the point where the log lighter penetrates the firebrick.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.





## 8.3.4 Masonry fireplace

**DAMPER - C CLAMP MISSING**

The fireplace was equipped with a ceramic gas log. The smoke chamber and flue pipe were free from built-up soot, the damper was operational, and the firebox was properly sealed. While the draw of the chimney was not able to be checked, no evidences of poor draw were visible, and no repairs were needed to the fireplace. It is pointed out that the damper was not equipped with a spacer device to prevent the damper from closing completely. This device keeps the damper open slightly, even when it is in the closed position, to prevent combustion gases from building up in the living space should the gas log be operated when the damper is closed. It is recommended that the clamp be installed for safety purposes.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



HEI file photo showing c-clamp in masonry fireplace



HEI file photo showing c-clamp in metal fireplace

## 8.3.5 Masonry fireplace

**WEATHER CAP - RUSTED**

The top of the chimney flue had a metal spark arrester/weather cap installed in the flue to prevent water penetration down the chimney. The cap was rusted and needs to be cleaned and sealed to prevent further deterioration.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



## 9: ATTIC

### Information

#### OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

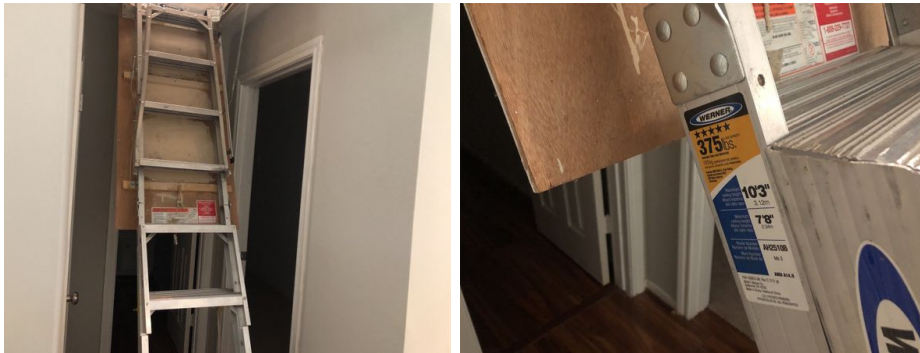
##### Ladder: Original ladder - 250 Lb. rating

The access ladder into the attic appeared to be the original installation ladder, and the ladder was labeled to indicate the rated capacity of the ladder is 250 pounds. The ladder does not meet current code requirements for ladders into attics. Consideration should be given to replacing the ladder with a ladder that meets current code requirements.



##### Ladder: 375 pound capacity

The access ladder was observed to be rated at 375 pound capacity.



##### Viewed from attic decking

The attic was entered and was viewed from the access decking provided in the attic. The walkway decking was adequate, and no repairs are needed.

##### Service decking/platform decking: Adequate decking

The attic had adequate service decking to the equipment, with a walkway that was a minimum of 24 inches wide. In addition, the attic had adequate platform decking at the equipment, with a working platform that was a minimum of 30 inches wide.

##### Insulation: Batt 9"-10"

The insulation in the attic was average by the standard for the age of the house. The insulation appeared to be approximately 9-10" thick, which would be an R30 energy rating. It is pointed out that the insulation requirements according to the latest standard for new houses in this area is an R38 energy rating.

**Table 1102.1.1**

## Ventilation

Continuous Ridge Vent, Whirlybird Vents, Screened Soffit Vents

The ventilation for the attic space was observed to include the following vents listed above and shown below.

## Limitations

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Ladder

### LADDER MODIFIED

The ladder was modified and we cannot ensure the safety of continued use of the ladder. Consideration should be made to replace the ladder.



## Recommendations/repair

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## 9.1.1 Ladder

**LADDER ATTACHMENT IMPROPER**

Nails missing in spring arm pivot, Nails missing in corner brackets

The stair assembly was not properly installed or secured to the framing members, and repair is needed for safety purposes. The condition(s) can be a safety hazard, and repair is needed, as an improperly installed stair assembly can possibly collapse.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



# 10: EXTERIOR CLADDING

## Information

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### Descriptions:

The materials, styles, and components present and observable at the time of the inspection are as follows:

### Siding Material

Brick Veneer, Wood



## Recommendations/repair

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### 10.8.1 Wood Siding

#### **LOOSE**

#### GARAGE

The wood siding was loose and needs to be resecured. Have a contractor provide a cost estimate to make all needed repairs.

**Obtain Cost Estimate**

#### Recommendation

Contact a qualified professional.



# 11: EXTERIOR ITEMS

## Information

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### OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

#### Garage: Foundation Cracked

The concrete floor of the garage was observed to have several cracks, but was still functional at the time of the inspection. However, the portion of the cracks that were visible were observed to be approximately 1/16-1/8 inch wide. The exterior perimeter of the garage has experienced some settlement, but the degree is not such at this time to recommend foundation releveling. The garage foundation should be monitored in the future for additional movement as it can be expected that additional movement can take place.



## Recommendations/repair

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### 11.2.1 Gutters and Downspouts

#### DS SPLASH BLOCK

The downspout was missing a splash block.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 11.2.2 Gutters and Downspouts

**SCREENS LOOSE/MISSING**

The screens were loose and/or missing at the gutters, and need to be repaired.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 11.3.1 Gates and Fences

**WOOD FENCE**

Leaning, Not Visible at rear-covered by foliage

The wood fence was in need of some repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 11.3.2 Gates and Fences

**WROUGHT IRON GATE**

Rusted

The wrought iron gate was in need of some repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 11.4.1 Wood Rot

**WOOD ROT**

Columns

Wood rot was observed and needs to be replaced. Have a contractor provide a cost estimate to determine the entire scope of the wood rot, and provide a cost estimate to replace all rotted wood in the house.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.





## 11.4.2 Wood Rot

**WEATHERED**

We observed weathered wood at the exterior of the house. The wood does not appear to be rotted at this time, but if the wood is not sealed and painted, it can be anticipated that deterioration will occur quickly, with replacement of the wood becoming necessary. Further investigation with a contractor is recommended to obtain a cost estimate to seal and paint the exterior wood.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



## 11.9.1 Miscellaneous Exteriors

**FOLIAGE TOUCHING HOUSE**

Trees limbs and/or bush foliage were touching the house at the north south east west side front rear of the house, and the limbs need to be trimmed.

**Obtain Cost Estimate**

## Recommendation

Contact a qualified professional.



## 12: INTERIOR ITEMS

### Information

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#### OBSERVATIONS AND CONCLUSIONS

*The following items were inspected, with our Observations and Conclusions noted.*

#### Doors: Most operating OK

No items requiring repair were observed concerning the operation of most of the doors, with exceptions listed below. The doors opened and closed properly, and the doors with locks were locking properly.

#### Windows: Most operational

No items requiring repair were observed concerning the operation of most of the windows that were checked. Most of the windows that were accessible at the time of the inspection were opening and closing properly with exceptions listed below.

### Limitations

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Smoke alarms

#### **SMOKE ALARMS NOT OPERATIONALLY CHECKED**

We could not determine if the smoke alarms are connected to a security alarm system as is common practice, therefore, to avoid possibly triggering a security alarm we did not operationally check each device, nor did we check the interconnectivity of the alarms. For safety purposes, it is recommended that smoke detectors and carbon monoxide detectors be replaced every ten years.

Carbon monoxide detector

#### **NOT CHECKED**

Homes are required to be protected by carbon monoxide alarms as set forth in the 2012 International Residential Code. Note that checking alarm systems is beyond the scope of our inspection and is excluded from the inspection. For safety purposes, it is recommended that smoke detectors and carbon monoxide detectors be replaced every ten years.

### Recommendations/repair

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12.1.1 Doors

#### **NON-LATCHING**

NORTHEAST BEDROOM

We observed non-latching doors that were in need of adjustment to the striker plate on the door frame.

#### **Obtain Cost Estimate**

Recommendation

Contact a qualified professional.

## 12.1.2 Doors

**STICKING DOORS**

NORTH CENTER BEDROOM

Doors were observed that were sticking and are in need of adjustment. Contact a service company to make the needed repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.

## 12.1.3 Doors

**MISSING HARDWARE**

FAMILY ROOM

Doors had missing hardware that needs to be replaced. Have a service company provide a cost estimate.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



## 12.1.4 Doors

**GLASS NOT SAFETY GLASS**

FAMILY ROOM, BREAKFAST ROOM

The glass in the door was not marked as being safety glass as required. Contact a service company to make the needed repairs.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



Example of safety glass etching on kitchen exterior door

## 12.2.1 Windows

**LOOSE/DAMAGED SPRING**

FAMILY ROOM , DINING ROOM

Windows with loose/damaged springs were observed, and the spring(s) need to be repaired.

**Obtain Cost Estimate**

Recommendation

Contact a qualified professional.



12.4.1 Sheetrock

**WATER STAINS SOURCE UNKNOWN**

2ND FLOOR HALL CLOSET

Water stains were observed. The source of the water stains could not be determined at the time of the inspection, but possible sources include roof leaks, plumbing leaks, or possibly some other source. Have a service company determine the source of the water stains, and provide a cost estimate for any necessary repairs.

Recommendation

Contact a qualified professional.



Stain in orange circle was wet at the time of inspection



Stain in the green circle was dry at the time of inspection

12.7.1 Stairs/Handrails/Guardrails

**HANDRAIL NOT TERMINATED INTO WALL**

The handrails for the stairway were not constructed according to the current building code standards, which is expected given the age of the house. Therefore, the ends of the handrails do not terminate into the wall, which could allow loose clothing or a purse or bag to catch on the open end, causing tripping and/or falling down the stairs.

**311.7.8.2**

Recommendation

Contact a qualified professional.

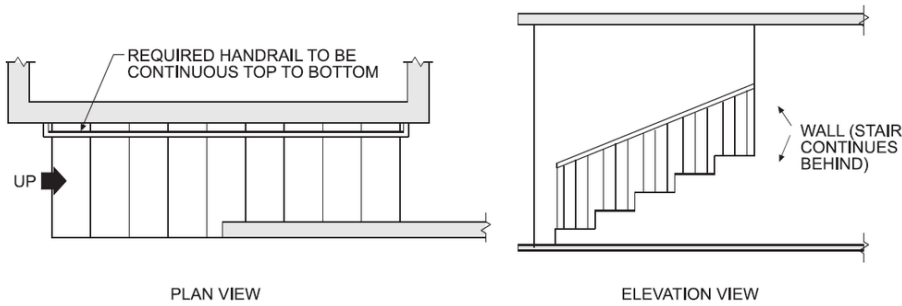


Figure R311.7.8.2  
HANDRAILS

# 13: CLOSE

## Information

### **CLOSE**

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 suggested that it would be a prudent thing to purchase a Home Warranty Policy to protect the appliances and equipment against unforeseen breakdowns during the first year and for preexisting conditions. It is recommended that you research the various options available and protect yourself with a policy. Check with your agent for details and please read our comments concerning Home Warranty policies on page 2 of this report.

Items identified as being deficient and in need of repair along with 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 for **Further Investigation** and to **Obtain a cost estimate**. It is pointed out that other related and/or underlying conditions may be present, and which may not be apparent without further investigation.

We also recommend that you review the Service Agreement at the end of this report regarding any complaint concerning the inspection services provided pursuant to the service agreement, As agreed to, Client must notify HEI in writing of such complaint within ten (10) business days of the date of Client's actual discovery and thereafter allow a prompt reinspection of the item relating to the claimed condition. Client further agrees that client and he/she/it's agents, employees or independent contractors **will make no alterations, repairs or replacements to the item complained about prior to a reinspection by HEI as agreed above.**

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 **RepairPricer** 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 **RepairPricer**. If you have any questions when you receive your report, you can contact them at [info@repairpricer.com](mailto:info@repairpricer.com)

<http://www.heddermanengineering.com/repair-cost-estimates>

Thank you again for asking HEDDERMAN ENGINEERING, INC. to perform this inspection for you. If you have any questions after reviewing this report, please feel free to call the office. It is emphasized that the executed Service Agreement contract, which has been included at the end of this report, contains a provision under "Dispute Resolution" for you to contact HEI to resolve any disputes.

At your service,

Tim Hedderman

Registered Professional Engineer #51501

Texas Firm Number: 7942



# 14: RECEIPT PAGE

## Information

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### **HEDDERMAN ENGINEERING, INC.**

www.heddermanengineering.com Office 281-355-9911 Fax 281-355-9903 office@heddermanengineering.com

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09/02/2020

TO: Gary Turner & Debra Turner

REF: Inspection of the property at 4547 Bermuda Dr, Sugar Land TX 77479.

Total cost of inspection: \$750.00

Total Paid: \$750.00

Total Due: - 0 -



# 15: SERVICE AGREEMENT

## Information

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**For your records, following is the Service Agreement that you executed for this inspection.**

### **HEDDERMAN ENGINEERING, INC.**

Office: 281-355-9911 Fax: 281-355-9903

[office@heddermanengineering.com](mailto:office@heddermanengineering.com) [www.heddermanengineering.com](http://www.heddermanengineering.com)

### **Real Estate Inspection Service Agreement**

**NOTICE: THIS AGREEMENT IS INTENDED TO BE A LEGALLY BINDING CONTRACT - PLEASE READ IT CAREFULLY**

**NAME OF CLIENT(S): Gary Turner & Debra Turner**

**DATE OF INSPECTION: 09/02/2020**

**PROPERTY ADDRESS: 4547 Bermuda Dr, Sugar Land TX 77479**

#### Purpose of inspection

The purpose of the inspection is to view selected accessible components and/or systems, and to inform you, our client, of our observations and professional opinions from a NON-INVASIVE VISUAL SURVEY on whether or not those selected components and/or systems appear to be functioning on the day of the inspection, or appear to be in need of repair. Although this report may include observations of some building code violations, total compliance with structural, mechanical, plumbing, electrical codes, specifications, and/or legal requirements is specifically excluded. HEI does not perform Code inspections. Since building codes change every few years, our inspections are not done with the intention of bringing every item in the house into compliance with current code requirements. Rather, the standard of our inspections is a **PERFORMANCE STANDARD** to determine if the items inspected in the opinion of HEI appear to be functioning at the time of the inspection, or appear to be in need of repair. It is pointed out that other engineers/inspectors may have different opinions to those given in this report. It is also not our purpose to verify the adequacy and/or design of any component of the house.

It is also not within the purpose and/or scope of this report to determine the insurability, habitability, merchantability, future performance, suitability of use, economic life span, or deferred maintenance issues, and/or issues unnamed in this report. This report is not an insurance policy, neither is it an express or implied warranty or guarantee as to future life and/or continued performance of the items inspected. Our inspection and report are intended to express HEI's perceived impression of the apparent performance of the inspected components and systems viewed on the date of the inspection. HEI's intent is to reduce your risk associated with this transaction, however we cannot eliminate all risk, nor assume your risk. Any items pointed out as in need of repair or further investigation should be evaluated by a qualified repair specialist or service company who should provide estimated repair costs **PRIOR TO CLOSING ON THE PROPERTY**. By accepting this agreement, the Client understands that the services provided by HEI are the types of services described in the Professional Services Exemption of the Texas Deceptive Trade Practices-Consumer Protection Act ("DTPA) and agrees that no cause of action exists under the DTPA related to the services provided.

It is recommended that you obtain as much history as is available concerning this property. This historical information may include copies of any seller's disclosures, previous inspection or engineering reports, building drawings and/or specifications, bids to perform repair work on the property, receipts from repair work that has been performed, reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should attempt to determine whether repairs, renovations, remodeling, additions or other such activities have taken place at this property.

### Scope of inspection

The scope of the inspection includes limited, visual observations at the interior and exterior of the structure, the attic (if applicable) as viewed only from the areas determined by the inspector to be safely accessible, the underside of the house (if applicable) as viewed only from the crawlspace areas determined by the inspector to be safely accessible, and the roof as viewed from the ground and/or only from the locations on the roof **if the roof is determined by the inspector to be safely accessible**. Only those items **readily** accessible and visible at the time of the inspection will be viewed and included in this report. Any items causing visual obstruction, including, but not limited to, furniture, furnishings, floor or wall coverings, registers and grills on HVAC ductwork,, foliage, soil, appliances, stored items, insulation, etc., will not be moved or removed. Only those electrical outlets that are readily accessible will be operationally checked. Disassembly or removal of any portion of the structure, mechanical equipment, plumbing equipment, or electrical equipment is beyond the scope of this inspection.

The components of the property included, if applicable, in the scope of the inspection:

#### Structural:

Foundation, elevation survey including sketch of house and level readings, primary load-carrying framing members, roof surface, water penetration, grading and drainage, fireplace/chimney, and miscellaneous items related to the house.

#### Mechanical:

Air conditioning and heating systems, water heater, built-in appliances, and garage door opener.

#### Plumbing:

Water and gas supply lines that are visible, sinks, toilets, tubs, showers, visible drain lines, and vents.

#### Electrical:

Service entrance conductors, electric meter, distribution panel, visible wiring, light fixtures, switches, and accessible receptacle outlets.

#### Lawn Sprinkler:

Control panel, solenoid valves, backflow prevention device, visible piping, and sprayer heads.

#### Pool:

Basin, deck, waterline tiles, pumps, filters, piping, heater, timer, and electrical.

The following items, even if present in the subject property, are not inspected and do not constitute any part of the inspection services to be performed hereunder unless a specific notation is made on this report stating its condition:

Tainted and Corrosive drywall (Chinese Drywall), Clock Timers, Landscape Lighting, Sump Pumps, Wood Destroying Insects/Pests, Antennas, Environmental Hazards, Laundry Equipment, Water Filters, Geological faults/subsidence, Automatic Oven Cleaners, Fire Sprinklers System, Mold/Microbial, Water Wells, Mosquito Misting Systems, Buried/Concealed Plumbing, Fire/Smoke Alarm Systems, Septic Systems, Indoor Air Quality, Asbestos, Low Voltage and data Systems, Lights on Photo-cell/timers, Carbon Monoxide Alarms, and Water Softeners/Water Treatment systems/Reverse Osmosis systems with all related piping.

#### Reinspections:

HEI typically does not perform reinspections on the property. However, if we agree to return to the property, it is with the understanding that we are not certifying the adequacy of any repair work that has been done, and there will be an additional fee charged. This is also true for conditions that are beyond the control of the inspector and hinder the inspector during the inspection, such as inclement weather, lack of adequate access to attics, crawlspaces, or other areas, utilities that are off, non-functional equipment, etc. If a return trip to the house is requested to finish items that were not able to completed at the time of the originally scheduled inspection, then an additional fee will be charged.

#### Limitations of Inspection

A visual inspection method will generally produce a competent first impression assessment of the apparent performance of the structural, mechanical, plumbing, and electrical components, provided repairs have not been performed which would cover distress patterns normally produced by problems. Because the inspection procedure is visual only, and is not intended to be diagnostic and/or technically exhaustive, an inherent residual risk remains that undiscovered problems exist and/or future problems will develop.

This report is provided solely for the use of the person to whom this report is addressed, and is in no way intended or authorized to be used by a third party, who may have different requirements, and to whom we have not contracted with to perform an inspection. If a third party chooses to use this inspection report, they do so without HEI's permission or authorization, and they do so at their own risk.

#### Dispute Resolution

In the event of a complaint concerning the inspection services provided pursuant to this agreement, Client must notify HEI in writing of such complaint within ten (10) business days of the date of Client's actual discovery and thereafter allow a prompt re-inspection of the item relating to the claimed condition. Client further agrees that client and he/she/it's agents, employees or independent contractors **will make no alterations, repairs or replacements to the item complained about prior to a reinspection by HEI as agreed above**. You agree that failure to comply with

this procedure shall result in your express release of all claims Client may have against HEI, known and unknown, related to the item complained about and any related alleged act or omission by HEI.

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**LIMITATION OF LIABILITY: In any event the inspector fails to fulfill the obligations under this agreement, CLIENTS EXCLUSIVE REMEDY AT LAW OR IN EQUITY AGAINST INSPECTOR IS LIMITED TO A MAXIMUM RECOVERY OF DAMAGES EQUAL TO THE INSPECTION FEE PAID HEREIN. CLIENT VOLUNTARILY AGREES TO WAIVE THEIR RIGHTS UNDER THE DECEPTIVE TRADE PRACTICES-CONSUMER PROTECTION ACT, SECTION 17.41 ET SEQ. BUSINESS & COMMERCE CODE. This limitation of liability applies to anyone, including client, who is damaged or has to pay expenses of any kind, including attorney fees and costs. Client assumes the risk of losses greater than the refund of the fee paid herein. Client acknowledges that this limitation of liability is reasonable in view of the relatively small fee that inspector charges for making the inspections when compared with the potential of exposure that inspector might otherwise incur in the absence of such limitation of liability, and that a much higher fee would be charged if the inspector were subject to greater liability.**

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#### Statute of Limitations

The parties agree that no claim, demand, or action, whether sounding in contract or in tort, may be brought to recover damages against HEI, or its officers, agents, or employees MORE THAN TWO YEARS AND ONE DAY AFTER THE DATE OF THE INSPECTION OR THE DATE ANY PURPORTED CAUSE OF ACTION ARISING OUT OF THE INSPECTION ACCRUES. TIME IS EXPRESSLY OF THE ESSENCE HEREIN. Client understands that this time period may be shorter than otherwise provided by law.

#### Acceptance of Report

By signing I confirm that I have read, understood, and agree to the above pre-inspection service agreement, and that I agree to be bound by these terms and conditions. In the absence of Client signing this service agreement prior to or at the time of the inspection, then acceptance of the report and/or payment for the inspection shall constitute agreement with all of the terms of this agreement. The report to be prepared by HEI shall be considered the final and exclusive findings of HEI regarding the inspection of the property which is the subject of this agreement. Client shall not rely on any oral statements made by HEI or its representatives prior to issuance of the printed report.

**NOTE: IF THE INSPECTION IS CANCELLED LESS THAN ONE FULL BUSINESS DAY BEFORE THE SCHEDULED TIME, INCLUDING SATURDAYS, SUNDAYS, AND/OR HOLIDAYS, THE CLIENT WILL BE CHARGED ½ OF THE ORIGINAL INSPECTION FEE AND AGREES TO PAY SUCH PENALTY FEE. IF THE INSPECTION IS CANCELLED LESS THAN ONE HOUR BEFORE THE SCHEDULED TIME OF THE INSPECTION, THE CLIENT WILL BE CHARGED THE FULL INSPECTION FEE.**



**I HAVE READ AND ACCEPT THIS AGREEMENT**