HEDDERMAN ENGINEERING, INC.
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April 10, 2019

TO: Brian and Erica Wall

REF: CONDITION OF PROPERTY SURVEY

Dear Mr. and Mrs. Wall:

At your request, a visual survey of the house located at 12710 Old Oaks Drive, Houston, Texas, was made by Mr. Pedro Salazar and Mr. David Koteles.

Transmitted herewith are the structural and mechanical inspection reports stating our professional opinions on whether the items of construction included in the survey are performing their intended function 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

12710 Old Oaks Drive

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.

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, the attic as viewed only from properly floored areas of the attic or areas determined by the inspector to be safely accessible with adequate headroom, and the roof as viewed from the surface. 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, foliage, 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.

Sprinkler: Control panel, solenoid valves, backflow prevention device(s), piping, and sprayer heads.

Pool: The basin, deck, pumps, filters, piping, heater, and electrical.

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 leak, 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, 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.

DESCRIPTION OF HOUSE

The house was a one story wood frame dwelling with brick veneer and wood siding, a composition shingle roof, and was supported on a monolithic slab on grade concrete foundation. The house had a two car detached garage connected to the house by a breezeway. The house was vacant at the time of the inspection, and the house, according to HAR, was built in 1964.

FOR THE PURPOSES OF THIS INSPECTION, NORTH WILL BE ASSUMED TO BE FROM THE FRONT OF THE HOUSE TOWARDS THE BACK, WHEN FACING THE HOUSE FROM THE FRONT.

STRUCTURAL

FOUNDATION

Description

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

EVIDENCES OF DIFFERENTIAL MOVEMENT

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.

Levelness

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 breakfast room, and the low point was located at the master bathroom. The unlevelness takes place over a horizontal distance of approximately at the 40-45 feet.

See our field sketch showing the elevation readings at the end of this report. 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.

We typically point out that foundations are rarely constructed perfectly level, so most properties have some unlevelness (typically ¾ 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.

Veneer Cracks

Cracks in the exterior veneer were minimal in number and degree.



Sheetrock Cracks

Sheetrock cracks, patches, and/or compression ridges were observed, including at the master bedroom, hallway, southeast bedroom, and family room.







Wrinkled sheetrock tape was observed, including at the southeast bedroom, and family room.





Concrete Cracks

Cracking of the foundation concrete exists in virtually all foundations. It is pointed out that cracking is a normal property of concrete and other brittle materials, and Hedderman Engineering, Inc. assumes no responsibility should cracks be found that are not mentioned in this report. Some cracking was observed in this concrete foundation, including at the east side of the garage, and garage floor.




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.








It is pointed out that a portion of the foundation concrete could not be viewed at the rear of the house due to the wood deck that adjoined the foundation.

Separations of Materials

* Some separations and differential movement of materials due to differential foundation movement were observed, including the following:

- Doors that were sticking were observed at the hallway bathroom, southwest bedroom closet, and entry door.

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

- The floor tile was cracked at the kitchen and breakfast room.



FOUNDATION CONCLUSIONS

Most of the structures previously inspected by this firm have experienced some degree of differential foundation movement, and this structure was no exception. After careful examination, it is our opinion that the evidences of movement observed do not indicate excessive or unusual foundation settlement. However, the foundation showed evidences of some differential movement along the east wall of the house, particularly at the master bathroom.

After careful examination, it is our opinion that the overall degree of the existing foundation movement for this structure is moderate, and is acceptable for a house of this age and type construction. The foundation is, in our opinion, performing its function, and is not in need of releveling.

As a routine recommendation, it is recommended that the evidences of differential movement be monitored in the future to determine if the condition is stabilized, or if the foundation is continuing to settle. It is pointed out for your information that, due to the nature of the soils in this area, it is reasonable to expect that some movement of the foundation will happen in the future. It is also recommended that the soil around the foundation be kept moist by a regular watering program as the condition of the soil indicates.

Sewer Line Test - Recommended

It is recommended that a plumber be contacted to perform camera observation or leak testing on the underground sewer piping to determine if the underground piping is leaking. A leaking sewer pipe can contribute significantly to the instability of the supporting soils by introducing excessive moisture into the soils, thus weakening them, resulting in foundation settlement.

OTHER OBSERVATIONS

Trees/Foliage

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.




The bushes at the garage were growing against the garage, and need to be trimmed back away from the garage.
Obtain Cost Estimate

Perimeter Grading/Drainage

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.

The flower bed and/or perimeter grading was too high at some areas, and was graded near or above the top of the foundation. It is recommended that the beds/soil be regraded as needed to prevent water penetration into the house, and to allow for proper drainage.

R401.3

Obtain Cost Estimate





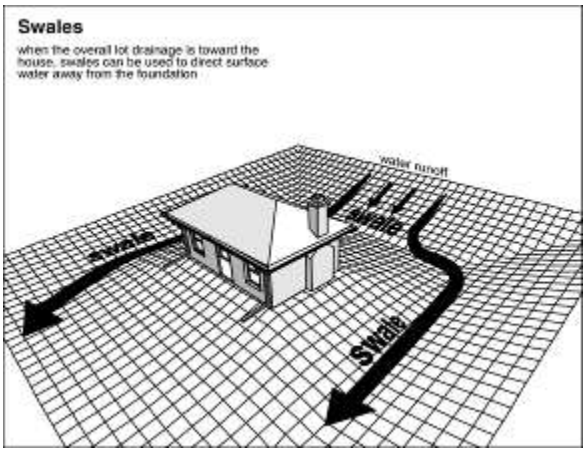

The soil was graded near or above the top of the foundation and/or heavy foliage growing against the house. This condition can cause settlement of the foundation. It is recommended that the soil and/or foliage should be removed, and 3-4 inches of foundation concrete exposed to keep water away from the house.

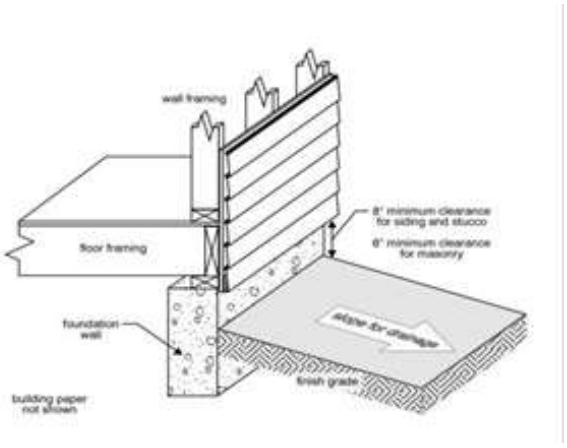
Obtain Cost Estimate



The grade was essentially flat, and it appears that water may pool at some areas after a rain. Further investigation with the homeowner is recommended to determine if water pools for a significant time after a rain. If so, an underground drainage system may need to be installed, and you should contact a company specializing in underground drainage system for a cost estimate.

R401.3











The perimeter drainage was observed to be poor at some areas where the lot is not sloped away from the house (6 inch drop in the first 10 feet) and water will pond. It is recommended that a company specializing in drainage solutions be contacted to provide a recommended solution, along with a cost estimate to provide proper drainage.
R401.3
Obtain Cost Estimate


Wood Deck

We could not determine if any provision has been made at the rear of the house for drainage under the wood deck. It is recommended that you check with the owner to determine if there are any drainage problems at the deck area, and if any provision for drainage has been made.

A/C Condensate Drain Lines

The primary condensate drain line from the air conditioning unit was emptying its water next to the foundation. This can cause the soil in that area to stay saturated, and contribute to differential foundation movement. It is recommended that the drain line be routed to a bathroom sink drain line.
Obtain Cost Estimate

ROOF

Life expectancy

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. We estimate that the age of the roof is approximately 20-22 years.






Roof Viewed From

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

Observations

After observing the interior of the structure, evidences of roof leaks were visible in the attic, where the roof decking and/or roof framing members were water stained. It is recommended that a roofing contractor be contacted to find the source of the leaks, and to make any needed repairs.
Locations included: middle whirlybird area, water heater vent pipe area, and northwest roof decking.
Obtain Cost Estimate

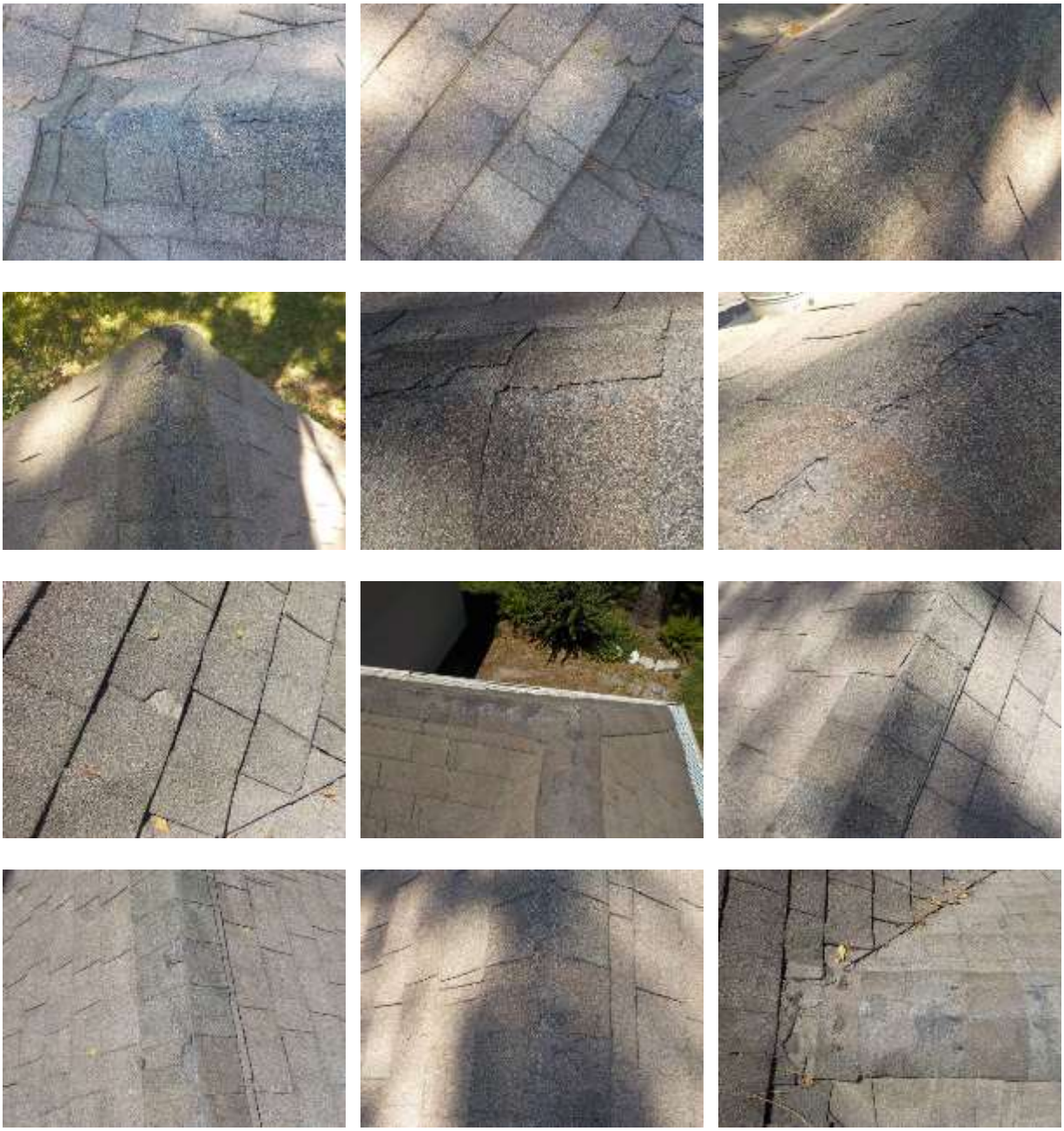


The composition roof surface was showing evidences of advanced deterioration, including the majority of shingles that were brittle, discolored, curling on the edges, cracked, and losing their aggregate.

Some nails were observed to be penetrating through the shingles at different locations on the roof, and the nails need to be sealed to prevent water penetration.




We observed shingles with broken corners or broken tabs.





We observed shingles that were loose or missing, and need to be replaced.


We observed rust on some of the metal roof accessories, and although the accessories are still performing their intended function, it is recommended that the rust be removed. Locations included: chimney weather cap, water heater vent pipe flashing, kitchen range vent pipe flashing, and valley flashing.





Other conditions observed during the course of the inspection related to the roof surface included the following:

* The roof decking was observed to be plywood.

* It was observed that the old wood shingles were removed, and the roof was redecked when the current composition roof was installed. Therefore, this roof is not an overlay, but has one layer of shingles.

* Sunlight was observed around the vent pipe(s) in the attic, and allows water to enter the living space around the vent pipe(s) where the sealant is missing. Locations included: furnace vent pipe, water heater vent pipe, and kitchen range vent pipe.
Obtain Cost Estimate



* Several of the lead roof jacks at the roof penetrations have been damaged, apparently by squirrels eating the lead jacks. The jacks can now allow water to enter the attic space as a roof leak, and the roof jacks need to be repaired as necessary to ensure that all the roof jacks are watertight.
Obtain Cost Estimate

* Several of the lead roof jacks at the roof penetrations were not properly folded into the top of the vent pipe since the vent pipe is longer than the roof jack. Have a roofer make the repairs to the vent pipes and roof jacks.
Obtain Cost Estimate
P2606.1





* The metal flashing at the junction of the low roof and a vertical wall was not secured properly, and can allow wind-blown water to enter the living space. The flashing needs to be resecured to the roof.
Obtain Cost Estimate


* The metal flashing at the chimney flue pipe was not secured properly, and can allow wind-blown water to enter the living space. The flashing needs to be resecured to the roof.

Obtain Cost Estimate




* No kickout flashing has been installed at some of the roof/wall intersections. This can allow water to be routed off the roof into the wall cavities, causing wood rot, damage from wood destroying insects, mold, etc. It is recommended that a contractor install the flashing at all needed locations.

Obtain Cost Estimate





Several of the shingles at the rear elevation of the roof had “fish mouths”, where small humps were visible in the shingles. This problem is typically caused by the felt paper underlayment under the shingles, which was not installed flat. It has been our experience that the felt paper does not lay down flat over time, even in the summer heat, and needs to be repaired.


* There was a narrow valley in the roof, where the valley narrows down and will be susceptible to the accumulation of leaves and other debris. This can cause a damming of water running down the valley, possibly causing a roof leak. It is recommended that this valley be monitored, and cleaned on a regular basis.

Roof Conclusions

After observing the age of the roof, the deteriorated condition of the majority of the shingles, and the evidences of roof leaks, it is my opinion that the roof is at the end of its normal, serviceable life, and replacement of the roof is needed at this time. It is also pointed out that when a new roof is installed, it will be necessary to remove the old roofs down to the roof framing, and redeck the roof before installing the new roof. We recommend that the new roof decking be a radiant barrier decking, such as Tech-Shield or a similar product.
Obtain Cost Estimate

STRUCTURAL FRAMING

Description

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






Observations

The following items were observed in the primary load carrying members of the structural framing:

* The roof framing in the attic was observed to be less than the current construction standards for roof framing. Typical differences between older houses and current code requirements can include purlins that are not the same size as the rafters; the vertical bracing for the purlins being spaced more than four feet apart; ridge beams not sized large enough for the miter cuts on the rafters, etc. However, the framing was adequate when the house was constructed, and has performed satisfactorily these many years. Houses that are built to previous code requirements are grandfathered, and are not required by the building code to be updated every time the code is revised. The framing is, in our opinion, performing its intended function, but repairs are recommended to the roof framing.

* We did not observe metal hurricane clips installed at the bottom of the rafters, connecting the rafters to the top of the wall framing. These clips provide a stronger structure that will be more resistant to wind uplift from hurricane and tornadoes.

* Several of the rafters in the attic were observed to be split, and need to be repaired.

Obtain Cost Estimate





* One of the roof purlins was split and is in need of repair.

Obtain Cost Estimate

* The vertical braces were spaced farther apart than the currently recommended four feet. However, no significant deflections were visible in the roof framing, and no repairs are recommended.

R802.5.1


* There were several vertical braces in the upper attic at the purlins that were longer than eight feet, but were not reinforced with another member to make a “T” section of the braces. It is recommended that the braces be reinforced.
Obtain Cost Estimate
R802.5.1


* One of the vertical braces was split and is in need of repair.
Obtain Cost Estimate

* One of the collar beams between the roof rafters was cracked and is in need of repair.

Obtain Cost Estimate

* No firestop has been provided in the attached garage to prevent a fire from spreading between the house and garage. The wall separating the house and garage should be covered with a minimum of ½ inch sheetrock on the garage side. For garages located under habitable rooms above, the ceiling of the garage shall be covered by a minimum of 5/8 inch Type X sheetrock or its equivalent.

Obtain Cost Estimate

R309.2 Separation required.

The garage shall be separated from the residence and its attic area by not less than ½-inch (12.7 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch (15.9 mm) Type X gypsum board or equivalent. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than ½-inch (12.7 mm) gypsum board or equivalent. Garages located less than 3 feet (914 mm) from a

dwelling unit on the same lot shall be protected with not less than ½-inch (12.7 mm) gypsum board applied to the interior side of exterior walls that are within this area. Openings in these walls shall be regulated by Section R309.1. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

Conclusions

The primary load carrying members of the structural framing that were accessible and viewed at the time of the inspection were performing their intended function with the exception of the item(s) listed above. Have a contractor confirm the scope of repairs needed, along with a cost estimate for all repairs.
Obtain Cost Estimate

WATER PENETRATION

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.

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. 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 against water penetration.
Obtain Cost Estimate

- The exterior light fixtures have not been caulked.
- The doorbell has not been caulked.
- The air conditioning refrigerant lines need to be sealed where the lines penetrate the building envelope.
- The electrical disconnect devices at the air conditioning unit(s).
- The main breaker panel and meter.
- The exterior electrical outlets and/or conduit.
- Piping penetrations.
- Expanding foam was installed at several penetrations, but expanding foam is not a water proofing material. Have the foam cut back flush with the veneer and caulk installed over the foam.
- The transition between dissimilar materials did not have adequate caulk joints.
- The mortar for the brick veneer, where small voids were visible in the mortar that can allow water penetration.












FIREPLACE/CHIMNEY

Description

The fireplace at the family room was a masonry fireplace with a clay flue tile in the chimney. The firebox was equipped with a ceramic gas log, with a manually operated gas valve.



Observations

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

The fireplace was equipped with a ceramic gas log that was functional at the time of the inspection. 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

HEI file photo showing c-clamp in masonry fireplace

White powder was observed in the firebox, this is efflorescence. Efflorescence is composed of salts and other mineral-like materials that remain in almost all masonry products after manufacture. The fact that this was observed is an indication that moisture is moving from the inside of the firebox, and taking these mineral salts with it. The lack of an adequate barrier, could be the cause of this condition through exterior moisture penetration from water, particularly rain fall.

ATTIC

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

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. Defective conditions we observed included the following:

- The nails used to secure the ladder assembly to the attic framing were not installed through the holes in the spring arm pivot plates on the sides of the access ladder.
Obtain Cost Estimate

The weatherstripping was missing around the access door. It is recommended that a foam rubber weatherstrip with a mastic backing be placed around the outer edge of the access door to prevent the energy loss from the conditioned air spaces.
Obtain Cost Estimate

The attic did not have adequate service decking to all the equipment in the attic. The service decking should be a continuous deck that is a minimum of 24 inches wide, that extends from the attic access opening to all equipment in the attic. In addition, the decking should be free from any obstructions, such as gas lines, electrical wiring, ductwork, framing members, etc.
Obtain Cost Estimate
M1305.1.3 Appliances in attics
Attics containing appliances requiring access shall be provided with a pull down stairway with a clear opening not less than 22 inches in width and a load capacity of not less than 350 pounds and a clear and unobstructed passageway large enough to allow removal of the largest appliance, but not less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the appliance. The passageway shall have continuous solid flooring in accordance with Chapter 5 not less than 24 inches (610 mm) wide.
A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), where such dimensions are large enough to allow removal of the largest appliance.


The ventilation for the attic included screens in the soffits, gable vents, and three whirlybird vents in the roof.

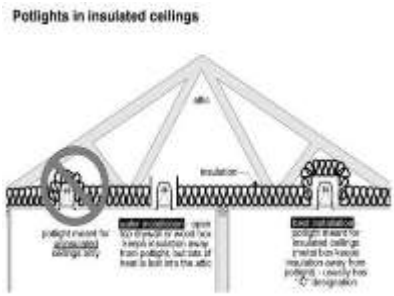


The gable vent screens were torn at both ends of the house and need to be replaced.
Obtain Cost Estimate


The insulation in the attic was thin by today's standards. This attic appeared to have approximately 4-5 inches of fiberglass blown-in insulation in the ceiling. It is recommended that consideration be given to installing additional insulation. Current construction standards for new homes have insulation that is a minimum of an R-30 rating.

The insulation was in contact with the recessed lights, which can be a fire hazard and shorten the life of the light bulbs. It is recommended that the insulation be pulled back to provide a three inch air space.

Obtain Cost Estimate



The insulation in the attic was missing from between some of the joists.

Obtain Cost Estimate

INTERIOR ITEMS

Doors

Non-latching doors that were in need of adjustment to the striker plate on the door frame were observed.
Locations included: master bedroom.
Obtain Cost Estimate

Doors were sticking and are in need of adjustment.
Locations included: hallway bathroom, southwest bedroom closet, and entry door.
Obtain Cost Estimate

Floor Coverings

Floor tiles were cracked at the kitchen and breakfast room.
Obtain Cost Estimate



Sheetrock

Patches in the sheetrock were seen at the master bedroom ceiling, southeast bedroom ceiling, breakfast room ceiling, and kitchen ceiling. The cause of the patching could not be determined at the time of the inspection, and further investigation into the cause of the patch with the homeowner is recommended.



Water stains were observed at the ceiling of the southeast bedroom. This is located under the attic space, and the stain(s) appear to be related to plumbing leaks. Have a plumber and/or a service company find the source of the water stains, and provide a cost estimate for any needed repairs.

Obtain Cost Estimate




Smoke Alarms

The house does not meet the current code concerning smoke alarms. This house is an older home and if bringing the house into current standards is desired, the section below from the 2012 International Residential Code is the current requirements for smoke alarms in a home.

R314.3 Location.
Smoke alarms shall be installed in the following locations:
1.In each sleeping room.
2.Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

BUILDING ENVELOPE

Wood Rot

Wood rot was observed and it is recommended that the damaged wood be replaced. It is pointed out that additional damage could be present under the rotted material that will not be visible until the outer rotted materials are removed. Have a service company determine the entire scope of wood rot throughout the house, and provide a cost estimate to replace all rotted wood.
Locations included: front bay window, garage siding, garage siding trim, and bottom framing of the garage.
Obtain Cost Estimate







Windows

Some double pane windows were observed where the seal has been compromised and allowed moisture between the two panes. It is pointed out that we were not able to view every window under differing lighting conditions at different times of the day, and we may not be able to see discoloration that may become visible under different lighting and/or weather conditions, other than at the locations listed below. Further investigation with a window specialist is recommended concerning the windows to determine the extent of the condition throughout the house, and to make all needed repairs.
Locations included: half bathroom.
Obtain Cost Estimate


Window Screens

Window screen(s) were missing at the southeast bedroom.
Obtain Cost Estimate

EXTERIOR CLADDING

Gutters and Downspouts

The gutters were observed to have debris in them and are in need of cleaning.
Obtain Cost Estimate



The downspout was missing a splash block at the front of the house.
Obtain Cost Estimate

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

Miscellaneous Exteriors

The sidewalk was cracked and uneven at the front of the house, and presents a tripping hazard.
Obtain Cost Estimate

The driveway concrete was badly cracked, and the damaged portion presents a tripping hazard. It is recommended that a contractor be contacted to provide a cost estimate to make the needed repairs.

Obtain Cost Estimate





The rear patio had cracks in the patio and has experienced significant settlement.

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 recommended that a Home Warranty Policy be provided to protect the appliances and mechanical equipment against unforeseen breakdowns during the first year and for preexisting conditions. Check with your agent for details and please read our comments concerning Home Warranty policies on page 2 of this report.

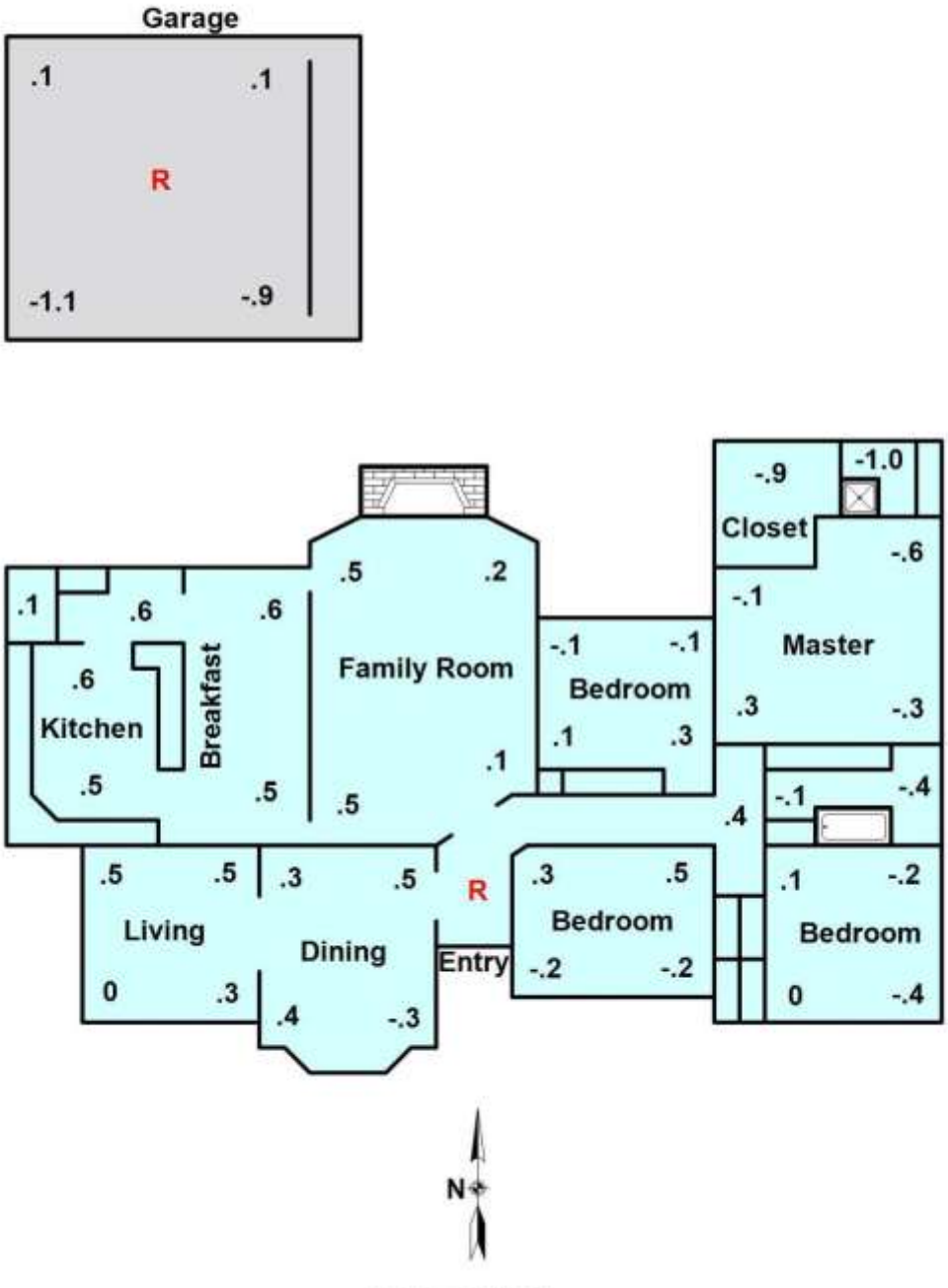
As an additional service, we strongly recommend using a new tool we have on our website that can quickly turn your inspection report into an easy-to-read estimate of repairs for a nominal fee. These pricing reports from a third party company called **RepairPricer** not only make the inspection report 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 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

4.10.19 HEI Wall



12710 Old Oaks
Elevation Readings

HEDDERMAN ENGINEERING, INC.
www.heddermanengineering.com Office 281-355-9911 Fax 281-355-9903 office@heddermanengineering.com

RECEIPT

April 10, 2019

TO: Brian and Erica Wall

REF: Inspection of the house at 12710 Old Oaks Drive, Houston, Texas.

Total cost of inspection:	$700.00
Total Paid:	$700.00
Total Due:	- 0 -

HEDDERMAN ENGINEERING, INC.

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

office@heddermanengineering.com 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): Brian and Erica Wall
DATE OF INSPECTION: April 10, 2019
PROPERTY ADDRESS: 12710 Old Oaks Drive, Houston, Texas
COST OF INSPECTION: $700.00

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 re-inspection 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.

LIMITATION OF LIABILITY:

In any event HEI fails to fulfill its obligations under this agreement, Client agrees that CLIENTS EXCLUSIVE REMEDY AT LAW OR IN EQUITY AGAINST HEI IS LIMITED TO AN AMOUNT EQUAL TO THE INSPECTION FEE PAID HEREIN. 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 HEI charges for making the inspections when compared with the potential of exposure that HEI might otherwise incur in the absence of such limitation of liability, and that a much higher fee would be charged if HEI were subject to greater liability.

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 that 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, THE CLIENT WILL BE CHARGED ½ OF THE ORIGINAL INSPECTION FEE AND AGREES TO PAY SUCH PENALTY FEE.

☑ **I HAVE READ AND ACCEPT THIS AGREEMENT**