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PROPERTY CONDITION REPORT



Client(s):	Client of NPI
Property Address:	Goodyear, AZ
Realtor:	Keller Williams
Date:	10/02/06
Inspector:	Peter Zipp III
Report #:	P100203-06BW

ATTENTION !!

This report is prepared for the sole and exclusive use of the Client named above. The acceptance and use of this report by any person other than the Client named above shall be deemed to be a retention of this firm for the purpose of providing an evaluation of this property at a fee equal to the original fee for the service provided on the date of this

inspection.

Although a thorough inspection of the property was made, we wish to CAUTION you that conditions may change and equipment may become defective, The Report should not be construed as a guarantee or warranty of the premises or equipment, or future uses thereof. (Warranty Plans are available for that purpose). Our SERVICE AGREEMENT/CONTRACT provides additional details, PLEASE READ IT CAREFULLY.

The inspection, by definition, deals with an existing structure which may have older types of plumbing or wiring. It is very probable that these systems would not meet present standards, although the system(s) did meet requirements at the time they were installed.

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REPORT LIMITATIONS:

The client(s) are advised to read the entire inspection report and we are aware that some of the concepts presented may not easily be understood by everyone. Therefore, it is the client(s) responsibility to contact the inspector for a better understanding and/or clarification of any item and/or issue not fully understood, even though it is the intention of our company to provide a report that is above industry standard and that is easily read.

This report is intended only as a general guide to help the client make there own evaluation of the overall condition of the building or systems inspected and is not intended to reflect the value of the premises, nor make any representation as to the advisability of purchase. The report expresses the personal opinions of the inspector, based upon his visual impressions of the conditions that exist at the time of the inspection only. The inspection and report are not intended to be technically exhaustive or to imply that every component was inspected or that possible defects was discovered. No disassembly of equipment, opening of walls, moving of furniture, appliance or stored items, or excavation was performed. All components and conditions, which by the nature of their location are concerned, camouflaged or difficult to inspect are excluded from the report.

The inspection report should not be construed as a compliance inspection of any governmental or non-governmental codes or regulations. The report is not intended to be a warranty or guarantee of the present or future adequacy or performance of the structure, its systems, or their component parts. This report does not constitute any express or implied warranty of merchantability or fitness for use regarding the condition of the property and it should not be relied upon as such. Any opinions expressed regarding adequacy, capacity or expected life of components are general estimates based on information about similar components and occasional wide variations are to be expected between such estimates and actual experience.

National Property Inspections wishes to remind you, every home requires a certain amount of ongoing maintenance; this home will be no exception. Drains sometimes clog, air conditioners, furnaces and water heaters all need periodic servicing, and at some point in time, will need to be replaced. These are but a few examples of the things that you can expect as a homeowner. NPI suggests that you expect and budget for ongoing maintenance and repairs.

All pre-owned homes will have some degree of wear. If an item is indicated to be adequate or serviceable (no major defects noted), then that means it was functional and performed as intended at the time of the inspection. However, it may not be aesthetically pleasing. Our inspection is not about what is aesthetically pleasing, but weather if it works as intended at the time of the inspection. Cosmetic items and/or what can considered cosmetic such as stains, nicks and/or drywall imperfections will not be included in the inspection. Also, the inspection is not intended to include other minor defects that should be readily noticeable by the client.

We certify that our inspection have no interest, present or contemplated, in this property or its improvement and no involvement with tradespeople or benefits derived from any sales or improvements. To the best of our knowledge and belief, all statements and information in this report are true and correct.

KEY TO THE TERMS LISTED IN THE REPORT:

For the convenience of easy reading and understanding, the following terms have been used in this report along with recommendation for actions. All actions indicated should be evaluated and carried out by qualified individuals. A qualified individual is a licensed professional, engineer, tradesman, or service technician.

Immediate Repair: Specific notation is made that the corresponding issue, item or system needs immediate attention and/or needs to be addressed immediately to avoid further damage. This notation will usually require further evaluation by a qualified individual to gain a thorough understanding of the scope of the repairs that may be needed.

Repair: Specific notation is made that the corresponding issue, item or system needs to be reviewed and/or evaluated by qualified individual and repaired along with any other necessary corrections.



Maintenance: Specific notation is made that the corresponding issue, item or system needs to be reviewed and maintained by competent personnel.

Recommend Upgrade: Specific notation is made that the corresponding issue, item or system should be upgraded to conform with today's safety and/or health standards, which is not necessarily the responsibility of the seller because most likely the safety standards were met when the house was built.

Consult Seller: Consult the seller for past history/performance details and other specific information on the issue, item or system requirements.

Monitor: Items or condition should be monitored for future conditions that would suggest that a repair is needed. Consult a qualified individual prior to closing escrow if not familiar with the issue, item or system.

Further Review: Complete confirmation and/or description of an issue, item or system could not be made by the visual observations of this inspector. We recommend additional evaluation of the entire item and/or system by qualified individual for a thorough understanding of the scope of the repairs that may be needed.

Safety Concern: The notation refers to a safety concern evident at the time of the inspection where immediate correction is recommended. In most cases an competent, qualified individual is needed.

Note: The notation refers to general information needed to operate and/or avoid any future damage.

"Adverse conditions": This notation refers to unfavorable conditions evident at the time of the inspection, which will require further review with any necessary correction performed by a qualified person.

"Adequate and functional", "Generally acceptable condition", "Appeared serviceable" and "Operational": When the report indicates that a component is adequate and functional, operational, appeared serviceable or in generally acceptable condition, that means it appears capable of being used and is considered acceptable for its age and general usefulness. An item that is stated to be adequate and functional, operational or in generally acceptable condition may show evidence and/or have additional notations, related to past or present defects. However, the item is considered to be repairable and give generally satisfactory service within the limits of its age.

Further definitions of terms can be found in the glossary of terms at the end of the Standards of Professional Practice For Arizona Home Inspectors, which was given to you at the home inspection or is available online at http://www.ashi.org/inspectors/standards/standards.asp.

Other issues, items or systems not addressed in the Standards of Professional Practice may be commented on in this report, but only as a courtesy to our client. Issue, items and systems not specifically addressed by the Standards of Professional Practice and not addressable within the confines of the attached contract, please refer to the **ASHI Standards of Professional Practice** given to you during the inspection or at http://www.ashi.org/inspectors/standards/standards.asp of general limitations and exclusions applicable to this report. Any and all information relayed or construed outside the ASHI Standards of Professional Practice in this report is to be considered incomplete, without certainty, and further review by a **qualified person** is recommended.



Scope Of The Inspection

The purpose of this inspection is to perform a non-destructive visual inspection and provide an opinion of the present condition of the above property at the time of inspection. The inspection is limited to the following systems and/or areas: building foundation, exterior system, roof structure and coverings, electrical, heating and air conditioning systems, plumbing, parking and parking structures, landscaping, drainage, property fencing and gates (generally safety concerns only), swimming pool if present, laundry area if present, interior rooms, kitchen and the bathrooms.

The following are positive and corrective remarks noted during the time of inspection.

Parties Involved

The inspection of the building details in this report was at the request of our client.

The following individuals were present at some time during the inspection of record: our client(s).

The inspector of record was Peter Zipp III, State of Arizona Certification #38981, Owner of National Property Inspections.

Time & Weather Conditions

The inspection began at approximately 04:00 PM and ended approximately 07:00 PM on Oct, 02 2006.

The ground was dry, the sky was clear and the outside air temperature was in the range of 90-100 degrees F.

General Building Characteristics

The type and/or style of the building being inspected is a Single family home consisting of approximately 3307 square feet. It is our understanding that the building was constructed in 2005. This is an approximate age that was determined by the observed details of the building and records.

The building was not occupied at the time of the inspection due to the home being new.

All the provided major utilities i,e. (gas, water, electric) for the building were on at the time of the inspection.

Orientation

For the purpose of identification, comments in this report are written based on the direction the home faces. i.e. North, East, South and West. The front of your new home faces North.



SITE AND GROUNDS

SCOPE OF THE SITE INSPECTION:

The vegetation, grading, surface drainage, irrigation system and retaining walls on the property when any of these are likely to adversely affect the building. Walkways, patios and driveways leading to dwelling entrances and attached decks, balconies, stoops, steps, porches and their associated railings that are damaged or pose a safety issue.

Landscaping

Landscaping was not started and/or completed due to the home being new. Because the home is new and the landscaping was not in or complete at the time of inspection, there is no encroachment (plants and/or trees encroaching on the building).

Site Grading - Drainage

The finish grading was not yet complete, but the grading around the foundation must allow water to drain away from it. This will prevent seepage into and/or below grade construction, keep water from enclosing habitable or usable spaces (ponding) and to relieve hydrostatic pressure.

This inspection does not include determining if the property is above the 100 year flood plain. For further information regarding elevation of the lot, check with your survey and appraiser.

Driveway

The driveway for the building is concrete, which was in generally acceptable condition with any minor cracking of flatwork a cosmetic issue only unless otherwise noted.

Walkway/Steps

The walkway for the building was surfaced with concrete. The walkway surface was in a generally acceptable condition with any minor cracking of flatwork a cosmetic issue only.

Patio

The patio area was surfaced with concrete, which is in a generally acceptable condition with any minor cracking of flatwork a cosmetic issue only. Any exceptions are listed below.

The patio cover visible framing, decking and structural post/columns if present were observed to be in a generally acceptable condition.

The roof surface material for the patio covering was asphalt rolled composition, which is approximately 1 - 2 years old and has a average life expectancy of 10 - 15 years. The patio covering surface appears to be sealed and in a generally acceptable condition. Any exceptions are noted below. The perimeter and laps should be checked periodically to ensure it is sealed because the sun is hard on the roof membrane.



Repair: There are gaps noted along the lap joints and/or seams, including at the scupper, which is allowing water to seep in and will result in unnecessary damage to the roof deck and fascia. If a MCRR, BUR or other "flat" roof materials are properly installed and/or maintained, there should be no gaps along the seams of the material.



Repair: The membrane of the roll roofing over the patio is punctured.



Fences

The site fencing was concrete masonry block. The visible site fencing was observed to be in a generally acceptable condition unless otherwise noted.

Repair: There are only 8 blocks showing in some areas in the back, there should be no less than 8½. Another course needs to be added.



STRUCTURE & EXTERIOR

SCOPE OF THE STRUCTURAL AND EXTERIOR INSPECTION:

The structural components include the foundation, under-floor crawl space if present, the floor structure and wall structure, the exterior wall cladding, flashing, trim, eaves, soffits and the fascia boards.

Foundation

The foundation is a post tension slab, which is a method of reinforcing concrete. Post-Tensioning is a method of prestressing. Prestressed concrete has internal stresses (forces) induced into it during the construction phase for the purpose of counteracting the anticipated external loads that it will encounter during its lifecycle. It is very important that these type of foundations are marked for warning of Post Tension because the cables inside Post Tension slabs are under tremendous stress. Many homes meet or exceed 35,000 psi. The foundations perimeter exhibited characteristics that indicate a generally acceptable condition unless otherwise noted. The post tension slab is engineered and therefore is the responsibility of the engineer. When completed the post tension slab should have been certified and it is outside the scope of this inspection to ensure that such a document exists. Verification of certification should be ascertained.

The concrete slab is post tension and is adequately stamped with a warning label (stamp in the concrete).

Foundations and concrete slabs are affected by soil conditions. There are three basic types of soil naturally occurring in this area: sand, silt and clay. Clay soils are generally classified as "expansive." This means that a given amount of clay will tend to expand (increase in volume) as it absorbs water and it will shrink (lessen in volume) as water is drawn away. The swelling action of expansion soil can be powerful enough to lift a house. Researching and/or determining if expansive soil is or will be a problem are beyond the scope of this inspection. To determine if the house is in an area where there is expansive soil go to <u>ftp://ftp-fc.sc.egov.usda.gov/AZ/phxshrinkswell.pdf</u>.

No matter what type of soil, water should always be directed away from the house and any leaks should be addressed immediately to avoid unnecessary damage.

Floor Structure

The floor structure consisted of a poured in place concrete slab on grade and a wood truss subfloor over the first floor. The floor system was concealed by finished flooring and could not be visually inspected. The floor structure exhibited characteristics that indicate a generally acceptable condition.

Repair: The back stair landing excessively squeaks and is loose. It will need to be repaired.

Note: If the subfloor and/or stairs start to squeak and/or become loose; then the subfloor is loose and should be secured by the builder before the warranty expires.

Structure - Exterior

The exterior walls of the structure were constructed of wood frame, which is not visible. However, the wall structures of the building were observed to be in satisfactory condition with no obvious problem.



Wall Cladding (Exterior Wall Surface Material)

The exterior wall cladding of this building consisted of a cement stucco system, which is a breathable, drainable and durable exterior finished system. The exterior wall surfaces were in generally acceptable condition with most minor cracks or blemishes a cosmetic condition only except for the following:

Repair: The overall stucco is in good condition and is sealed with most minor cracks or blemishes being a cosmetic condition only. However, some minor cracks in the stem and stucco are noted. This is normal and will continue to happen as the house settles. You may want to wait until the one-year mark to have these repaired. However, all gaps around penetration through stucco should be patched to prevent water infiltration and for pest protection. Likewise, all joints between dissimilar materials should be caulked. This includes the gaps between the stem wall and the weep screed around the house. Also, the stucco needs to be patched where the lath and/or framing is clearly visible and remaining punch list item corrected.

Structure - Columns

The structure columns were constructed of wood frame, which is not visible. However, the columns were observed to be in satisfactory condition.

The wall cladding for the columns consisted of a cement stucco, which appears serviceable and in a generally acceptable condition with any minor cracks or blemishes a cosmetic condition only.

Trim

The trim for this building was wood. The trim on this building was in generally acceptable condition with any small defects cosmetic in nature only unless otherwise noted. All trim should be kept caulked.

Flashing

The flashing for the exterior of the building was not fully visible and the inspection was limited. No visual outward signs of failure at the flashings were evident at the exterior of the building. We recommend that the flashing be monitored and repaired as necessary.

Fascia - Eaves - Soffits

The fascia, eaves and soffits were wood. All was in generally acceptable condition with any small defects cosmetic in nature only unless otherwise noted.

Entry Doors

The entry doors for the property were found to be in a generally acceptable condition and appeared serviceable except for the item noted below.

Repair: The front door is rubbing/catching the threshold. Most likely, adjusting the threshold will solve the problem.



Exterior Receptacles/GFCI

The exterior electrical outlets were found to be functional and protected with Ground Fault Circuit Interrupt protection as required by current standards and tested correctly unless otherwise noted.

Exterior Fixtures/Lights

The exterior light fixtures were tested were possible and appear to be installed properly and in a generally acceptable condition unless otherwise noted.

Organisms/Pests

Maintenance is the ideal remedy for this problem. Keep all gaps around penetration through stucco patched to prevent water infiltration and for pest protection. Caulk all gaps between the stucco and the stem wall. Many times the builder leaves large gaps between the weep screed, which is a perforated metal strip at the bottom of the stucco and the stem wall. Keeping this caulk will keep out many insect like crickets.



SCOPE OF THE ROOF INSPECTION:

The roof coverings, roof drainage systems, adequate flashing, skylights, chimneys and roof penetrations.

Roof Type

The roofing structure type is a, "Medium slope", which is considered to be between 4 in 12 and 6 in 12 (4" rise to every 12" run). Because of the low slope structure, the inspector was able to walk on the surfaces of the roof and visually inspect the accessible roofing components.

Rooftop Material

The main roof covering for this structure was a flat concrete tile.

A portion or portions of the roof over the house is covered with a Mineral Coated Roll Roof (MCRR). This material is used over the flat portion and/or portions of the roof.

The roof covering on the main structure is the first covering.

The roof surface material for the home is approximately 1 - 2 years old and has a average life expectancy of 40 - 50 years if well maintained.

Tiles Roof Condition / Installation

The roofing materials appeared to be adequately installed and were sealed and/or water tight consistent with the acceptable application of the material at the time of construction except for the following:

Repair: There is one or more slid field and/or cut tiles due to lack of nailing or slippage that occurred before the roof mastic set. The slid tiles are usually along the hips, sidewalls and/or below penetrations, but all of the tiles should be checked and secured.

Rooftop Flashings and Valleys

The connection and penetration flashing were not fully visible to the inspector. However, the visible flashing appeared to be adequately installed and were sealed and/or water tight consistent with the acceptable application of the tiles except for the following:

Repair: One or more of the attic roof vents are not installed according to the manufacturers specs. Specifically, the wind clip was either never bent under the preceding course of tiles or the clip was bent, but it is not under the preceding course of tiles, but on top of the tile. The installation of all of the roof vents should be evaluated and the necessary corrections made.





Repair: One or more of the roof penetrations (plumbing vents, exhaust vents, attic vents and flue vents) was not installed in accordance with the ICBO (International Conference of Building Officials) and with good roofing practices. Specifically, the top flashing shall extend onto the tile a minimum of 4" on flat tiles.

Roof Drainage Systems

The main roof of the building has valley flashing and flashing to direct the water off of the roof. All the flashing appears to be in generally acceptable condition except where otherwise noted. However, these valleys and flashing need to be checked for debris on a periodic basis, just to ensure proper drainage off of the roof. The patio roof has scuppers at the perimeter that discharges runoff. The scuppers were made of metal. The scuppers appear to be in generally acceptable condition except where otherwise noted. However, the scuppers appear to be in generally acceptable condition except where otherwise noted. However, the scuppers should be checked periodically to ensure proper drainage.

No gutters are installed for drainage, which is common in the valley. Gutters are always recommended so drainage is controllable.

The life expectancy given is the best estimate of the inspector, assuming proper maintenance. The actual life of the roofing materials used can be influenced by external sources like weather extremes, conditions caused by trees and vegetation, and mechanical damage.



ATTIC

The ceiling and the roof structures. The insulation and vapor barrier in unfinished spaces. The ventilation, mechanical ventilation systems and water penetration.

Attic Location and Access

There was one attic access panel, which was located in the master bedroom closet.

Because of limited clearance and/or the potential for damage. Our inspection of the attic was performed from the air handler/ furnace platform only. As such, our observations were based on a limited view of all the attic space.

Repair: The access cover at the master bedroom closet does not fit flush.



Ceiling Structure

The interior ceiling structure consists of the bottom chords of the roof trusses. Most of the ceiling structure is covered by insulation, but the viewable ceiling structure appear to be in a generally acceptable condition.

Roof Structure

A truss system is installed in the attic cavity that is used to support the roof decking and transmit the roof load to the exterior walls.

The roof structure (trusses) appeared serviceable except for the following:

Further Review: The gusset plate (connection plates) on one of trusses over the back furnace is pulling away from the truss due to mechanical damage. We are not able to say with any certainty if this has or will create a structural problem. However, the builder should evaluate the truss system and make the necessary corrections and certify any modifications.





Evidence of Leaks

There is no evidence of current water leaks into the accessible attic spaces.

Insulation

The table below list the typical types of insulation found in most attic cavities today and the depth (thickness) required to obtain a given insulation value. It is usually recommended that enough insulation be installed to obtain the R value of 30.

INSULATION TYPE	DEPTH (THICKNESS)	ESTIMATED R VALUE
Wood cellulose	8"	30
Wood cellulose	10"	38
Blown in fiberglass	12.5"	30
Blown in fiberglass	16"	38
Fiberglass blanket	10"	30
Fiberglass blanket	12.5"	38.

A insulation certificate and/or document was available to indicate depth to obtain the R value of 38. The certificate and/or document was located above and/or next to the water heater.

The type of insulation used to insulate the home was blown in fiberglass and fiberglass blanket. Fiberglass blanket is usually installed at all vertical areas in the attic.

The estimated average depth of the attic insulation was $13\frac{1}{2}$ to 14 inches. The insulation visible to inspect was adequate and properly installed. Any exceptions are noted below.

Repair: The insulation is unevenly distributed or displaced in several areas effectively reducing the coverage and R-value. This should be corrected to restore R-value.



Repair: There were no markers in the attic to verify depth for R-value. However, $14\frac{1}{2}$ " is required for an R-value of 38. There needs to be no less than an R-value of 38 or what the insulation certificate states.





Repair: Insulation should be held back at the eaves with baffles to allow a minimum of 1" of air space for adequate ventilation and to adequately insulate the eaves. No baffles were installed in some areas and the baffles that were installed were installed incorrectly, so there are areas at the eave with no insulation and/or very little insulation or less insulation than required. This should be corrected to reduce thermal loss between the home and the attic and to adequately move air for ventilation.



Condition of Attic

The attic space where visible was in generally acceptable condition.

Exhaust Vents

The visible vents are installed in a acceptable manner and are extended out the roof as required by current standards unless otherwise noted.

Ventilation

The ventilation appeared to be adequately installed consistent with the acceptable application at the time of construction. Vents are located both in the ridge area and low in the eaves area. The type of vents are attic roof vents and soffit vents.

Further Review: There are vents installed for ventilation. However, the existing venting may not allow adequate ventilation for the attic cavity. The builder should be contacted to ensure the ventilation installed was according to the plans. Upper ventilation is should be close to the amount of lower ventilation and it is not.

Electrical

All electrical service run through the attic does not appear to appose any safety concerns and is found to be in a generally acceptable condition.

Plumbing

All visible plumbing run through the attic is adequate and is found to be in a generally acceptable condition.



GARAGE / PARKING STRUCTURE

SCOPE OF THE PARKING STRUCTURE INSPECTION

Fire separation, walls, ceilings, floors, doors, door openers, and safety controls.

General Characteristics

The two car garage was attached and part of the overall building structure and it appeared to be in generally acceptable condition, any exceptions are noted below.

The interior walls and ceiling of the garage were finished and in generally acceptable condition unless noted in another place in this report.

Roof

The garage roof was attached and part of the overall building structure and it appeared to be in generally acceptable condition.

Garage Overhead Doors

There is a single overhead door, which was made of metal. All the associated hardware of the door, door panels and opener if present, were observed to be operational and in generally acceptable condition, any exception will be noted below.

The garage door opener safety control to reverse the movement in the event of contact with an object was working properly.

Garage Door to the Living Area

There is a fire rated door separating the garage from the living areas and the door is in a generally acceptable condition, any exceptions are noted below.

The door between the house and garage is at least a 20 minute fire rated door as required because it is considered part of the garage firewall.

The door between the house and garage is auto-closing as required because it is considered part of the garage firewall.

Other Garage Doors

The outside metal entry door to the garage was operated and was found to be adequate and appeared serviceable unless other wise noted below.

Fire Separation

There appears to be a intact fire separation from the garage to the living area, any exceptions are noted below. However, the resistance of the materials making up the firewall were not tested. The wall covering and framing appears to be in a generally acceptable condition.



Safety Concern: We found voids (holes or other deficiencies) in the required fire resistive barrier between the garage and the living area in the ceiling around the water heater flue.



Electrical

All electrical service to the garage and in the garage does not appear to appose any safety concerns and is found to be in a generally acceptable condition unless otherwise noted below or anywhere else in this report.

Plumbing

All visible plumbing service to the garage and in the garage was adequate and is found to be in a generally acceptable condition unless otherwise noted.

Note: Plumbing was available for a laundry tub, but it was not installed at the time of inspection.

Garage GFCI (Ground Fault Circuit Interrupter)

The garage electrical outlets, except for dedicated circuits, are protected with Ground Fault Circuit Interrupt protection as required by current standards and tested correctly. Dedicated circuits are meant to provide power to appliances and/or equipment such as freezers, water heater pumps and/or water softeners. We recommend that if you need to run an extension cord to the yard where it can be exposed to water, you choose a GFI protected receptacle only. For information about GFI's, see the GFCI Fact sheet by the Consumer Product Safety Commission at www.cpsc.gov/CPSCPUB/PUBS/99.html.



SCOPE OF THE WATER HEATER INSPECTION:

Water heater equipment, energy source, normal operating controls, automatic safety controls, flues, vents and piping condition.

Water Heater Descriptions

The location of the water heater was in the garage. The energy source for the water heater was natural gas and the storage capacity of the tank was 50 gallons. The name of the manufacturer or the name brand name of this unit was American. The age of the water heater can usually be found in the serial number, which indicates that the date of manufacture was 2006.

Supply Lines

The supply lines are adequate, there is a shut-off on the cold water supply as required and the lines appear to be in a generally acceptable condition.

Gas Supply Lines

The gas supply line is adequate, there is a shut-off as required and the line appeared serviceable except for the following: **Repair:** The flexible gas line is stretched tight.

Expansion Tank

The expansion tank and/or expansion control device appears adequate and in a generally acceptable condition.

Temperature And Pressure Relief Valve

The pressure relief valve is solid copper, drains 100% by gravity and appears to be in generally acceptable condition.

Flue Pipe

The water heater flue is adequate and appears to be installed in a safe manner so any combustion gases (carbon monoxide) are directed to the exterior of the home except for the following:

Safety Concern: Even though the flue pipe is fully connected, one or more of the flue pipe connections needs to be fastened with some sort of machine screw to avoid the possibility of it becoming loose and discharging combustion gases (carbon monoxide) into the garage. There should be three fasteners at each gas flue connection and at the draft hood.





Water Heater Tank

The water heater tank is adequate and appeared serviceable with no signs of leakage.

Electrical

The water heater electrical components are adequate and found to be in a generally acceptable condition.

Drain Plug

The water heater drain plug is adequate and appears to be in a generally acceptable condition. These plugs sometimes have a tendency to just start leaking for no apparent reason so it should be checked every so often.

Platform

The water heater was raised on a platform. It was the right height and appeared to be in a generally acceptable condition.

Protected from Vehicle Damage

The water heater is located in the garage and is adequately protected from vehicle impact. Protection is be provided by either a floor elevation change with a curb 4" high and 3' deep or located out of the travel path or a minimum 3" steel pipe bollard installed a minimum of 18" below and a minimum of 44" above the finished floor in front of the water heater.

General Comments

The water heater and it's controls were operational with most of its associated components in generally acceptable condition. Exceptions are noted above and we recommend that the exceptions be corrected as necessary.



PLUMBING SYSTEMS

THE SCOPE

Interior water supply and distribution systems including materials, supports, and insulation, fixtures, and faucets. Functional flow, functional drainage, cross connection, anti-siphon devices and leaks. the drain, waste and vents systems including materials, traps, supports, insulation, functional drainage and leaks. The fuel storage and fuel distribution systems including piping, supports and venting. The draining sumps, sump pumps and related piping. The location of main water and main fuel cut-off valves.

Main Piping

Water and waste water service was provided by a municipal or community system.

The main water supply line/pipe material, which carries the water to the building was not visible to the inspector.

The water supply for the building, measured at an outside hose bibb was 50-55.



The domestic water supply main shut-off valve is located on the East exterior side. The building's main water shut-off valve was operated using normal hand pressure. Operation of the valve from time to time should keep it functional and maximize its useful life.

Distribution Piping

The visible water supply piping material on the interior of the building used to deliver water to the plumbing fixtures is a combination of flexible plastic (PEX) and copper. The visible and accessible distribution piping was generally in acceptable condition with no signs of leakage of failure. Functional flow was observed and judged to be satisfactory. Most of the water supply lines are located in the subfloor and are not visible. Any exceptions are listed below.

The exterior hose bibbs were properly installed and in generally acceptable condition unless otherwise noted.



Safety Concern: One or more of the hose bibbs lacks a vacuum breaker (antisiphon valves). A vacuum breaker can be screwed onto any faucet that has a hose-bibb. These inexpensive valves are needed to prevent the possible contamination of the potable water supply in the home.



Fire Sprinkler Systems

The home is equipped with automatic fire suppression system that must be maintained in an operational condition at all times. The system should be tested on an annually basis to ensure that the system is operating properly. The test ensures that the system has adequate water supply and that all system alarms are functioning properly. The fire protection system should only be serviced by a qualified licensed fire protection contractor. There was no signs of leaks and the system appeared serviceable at the time of inspection unless otherwise noted.

Drain Waste Vent Piping

Building waste lines sometimes experience blockage due to internal rusting, tree root penetration, laundry waste water lint, etc. A visual inspection cannot determine the condition of underground pipes or pipes that have no running water available for testing such as the laundry drain. The drain lines at this location may not be tested for functional drainage.

The visible drain, waste and vent piping material within the building was plastic. Functional drainage was observed and judged to be satisfactory. The system appeared to be in generally acceptable condition with no apparent signs of leakage of failure unless otherwise noted in another section of the report.

Main Sewer Cleanouts

The drain cleanouts are located in the front and are in a generally acceptable condition.

Gas System Piping

The gas meter was located on the East side of the building. The main gas supply shut-off valve was located on the riser pipe between the ground and the meter. The visible gas supply piping system was observed to be in generally acceptable condition.



SCOPE OF THE ELECTRICAL INSPECTION:

The service drop, service entrance conductors, cables, and raceways. The service equipment, service grounding and locations of main disconnects. The amperage and voltage rating of the service. The interior components of the service panels and subpanels, including the conductors, over-current protection devices, and GFCI's (ground fault circuit interrupters). A sampling of a representative number of installed lighting fixtures, switches and receptacles. The wiring methods and the presence of solid conductor aluminum branch circuit wiring.

Service Entry

The service entrance that supplies the power to the building's main service panel was an underground (buried) type service. Because it is buried, the main service entry is not visible for the inspection, except for the riser to the meter. Any problems are noted below.

Main Service Panel

The meter and the main service panel is located on the exterior of the building on the East side.

The service voltage available to this building was single phase 120/240 volts. Branch circuit overload protection was provided by circuit breakers and the available ampacity provided through the service was 200 amps.

The grounding wire(s) for the service were partially visible and appeared to be in satisfactory condition. The grounding wire destination(s) were unknown.

The main disconnect for the electrical system is a single throw main breaker that is located at the top of the panel.

The electric meter and exterior main service panel were observed to be in satisfactory condition and securely attached to the building, any exceptions are noted below.

Repair: The inner cover of the panel does not adequately fit and could potentially damage some of the wiring coming into the panel because the bundle of wires extends out too far and was not properly routed into the panel. The wires need to be correctly routed so the inner cover does not damage any wires and will fit flush.





Safety Concern: There are more than 4 AFCI breakers together. Generally, the manufacturer states that there should be no more than four (4) AFCI's breakers in a row together due to how hot the breakers run.



Subpanel

The subpanel is located next to the main service panel and is wired properly and appears serviceable and in generally acceptable condition unless otherwise noted.

Safety Concern: The panel is not properly wired. The ground wires and the neutral wires are on separate buses, but are both grounded to the panel. The grounding bus needs to be bonded to the panel itself and the neutral bus needs to be "floating." The ground wire connecting the two buses needs to be removed.



Branch Circuit Wiring

The visible branch circuit wires from the breakers that exits the panel and go out to the appliances, receptacles and lights appears serviceable and to be in a generally acceptable condition unless otherwise noted below. Lack of labels prevents full evaluation of wire size adequacy for connected loads.

The branch circuit conductors (wires) were a combination of copper and aluminum. The aluminum conductor was stranded, which is commonly used on 220-240 volt circuits (range, dryer, HVAC).

Safety Concern: A white wire is used for power to one of the circuit breakers. For safety, the wires should be designated as powered by adding a strip of black electricians tape.





Electrical Grounding

Electrical Grounding appeared to be adequate and in a generally acceptable condition. All systems required to be bonded (grounded) to the electrical system (plumbing and/or gas) were adequately bonded to the main service panel unless otherwise noted.

Any electrical repairs attempted by anyone other than a licensed electrician should be approached with caution. The power to the entire building should be turned off prior to beginning any repair efforts, no matter how trivial the repair may seem. Aluminum wiring requires periodic inspection and maintenance by a licensed electrician. Operation of time clock motors is not verified. Inoperative light fixtures often lack bulbs or have dead bulbs installed. Light bulbs are not changed during the inspection, due to time constraints. If the problem is not simply a bad bulb, it is normally necessary to contact an electrician to resolve the difficulty. Any ceiling fans are checked for general operation only. Smoke Alarms should be tested regularly.



HVAC (HEATING, VENTILATION AND AIR CONDITIONING)

SCOPE OF THE HEATING AND COOLING SYSTEM INSPECTION:

The installed heating and cooling equipment including, energy source, automatic safety controls, normal operating controls, venting systems, solid fuel heating devices, flues and chimneys. The heat/cooling distribution system including fans, air handler, pumps, ducts and piping with supports, dampers, insulation, air filters, registers, radiators, fan coil units and convectors and the presence of an installed air source in each habitable room.

Heating and Cooling System

The guest quarters was heated and cooled by a electrical split system heat pump. The split system compressor is physically separated from the air handling unit (coils). The compressor for the cooling system was located on the exterior of the building and the air handler was located in the laundry ceiling.

The name of the manufacturer or brand name for the condensing unit(s) was Carrier. The age of the unit(s) can usually be found in the serial number, which indicates that the date of manufacture was 2006.

The serial number for the 2 ton condensing unit is 1006E16414 and the model number is 25HBA324A300. This unit is a 13 SEER (Seasonal Energy Efficiency Ratio) or better. Parts for units less than 13 SEER may only be available for eight (8) additional years due to higher standards. Call your local HVAC contractor for additional information.

The measure of cooling capacity for the cooling system as measured in tons was 2 tons.

The ambient temperature is too high to test the unit in the heat mode, anytime the ambient temperature is over 75°, the heating system should not be operated because damaged may occur.

The air conditioning system was run for a minimum of 45 minutes to ensure the system would continue to run and to obtain a accurate temperature drop. The temperature split was found to be within industry standards and the unit appeared serviceable.

Note: Generally, if the heat pump is working in the cooling mode, then the heat is working. However, the only variable is: we cannot determine if the reversing valve is working. This is the valve that changes the direction of the refrigerant, depending on what setting the unit is at Heating/Cooling.

It is important that the temperature drop is checked each year to ensure it is working correctly, presumably just before the hot summer when it is going to work the hardest. When the heat pump is working correctly, the temperature drop (in AC mode) should be between 17-21 degrees, which is within the industry standard. This will ensure the unit is working most efficiently.

Heating System

Heat to the property is provided by two split system natural gas furnaces.



The location for the heating unit(s) for this building was in the attic cavity.

The name of the manufacturer or brand name for the heating unit(s) was Carrier. The age of the unit(s) can usually be found in the serial number, which indicates that the date of manufacture was 2005.

The size of the heating unit for the building as measured in (British Thermal Units) BTU's was 80,000.

The ambient temperature is too high to test, anytime the ambient temperature is over 75°, the heating system should not be operated because damaged may occur.

Safety Concern: A section of the furnace platform in the attic has less than the required clearance in front and does not fully extend across the front of the unit. Gas furnaces or any other serviceable HVAC system needs to have 30" of clearance in front of it for safe servicing, especially when they are installed in attic cavities. Also, the platform needs to be effectively across the entire front of the furnace.



Cooling System

This building was cooled by two natural gas split systems. The split system compressor is physically separated from the furnace unit with the cooling coil mounted within or adjacent to the furnace. The compressor for the cooling system was located on the exterior of the building.

The name of the manufacturer or brand name for the condensing unit(s) was Carrier. The age of the unit(s) can usually be found in the serial number, which indicates that the date of manufacture was 2006.

The serial number is 0806E07651 and the model number is 24ABA360A300. This unit is a 13 SEER (Seasonal Energy Efficiency Ratio) or better. Parts for units less than 13 SEER may only be available for eight (8) additional years due to higher standards. Call your local HVAC contractor for additional information.

The serial number is 0806E07456 and the model number is 24ABA360A300. This unit is a 13 SEER (Seasonal Energy Efficiency Ratio) or better. Parts for units less than 13 SEER may only be available for eight (8) additional years due to higher standards. Call your local HVAC contractor for additional information.

The measure of cooling capacity for the cooling system as measured in tons was 5 tons each.

The air conditioning system was run for a minimum of 45 minutes to ensure the system would continue to run and to obtain a accurate temperature drop. The temperature split was found to be within industry standards and the unit appeared serviceable.



Repair: There is insulation in the safety catch pan (secondary drain pan that sits under the evaporative unit that is designed to catch water from the primary condensation pan if there is a problem) that could easily cause the drain line off of the pan to clog. The insulation and any other obstructions need to be cleaned out to ensure proper drainage.



Repair: The refrigerant line is exposed in the attic. This line needs to be properly wrapped and taped to prevent water from dripping down on the platform and/or on the insulation and drywall. This condensation occurs as the line "sweats."

There are two condensate drain lines that extend off of the air handler/furnace in the attic. The primary line usually exits the exterior wall lower than the secondary line. Sometimes the primary line(s) is/are plumbed into the drain under one of the bathroom sinks. The primary drain line extends from the pan under the units evaporative coils and as condensation drips into the pan, it drains to the exterior. The primary will drip as condensation builds up on the coils, especially in more humid weather. This condensation occurs as the coils "sweat".

The secondary drain line is from the secondary drain pan that sits under the evaporative unit that is designed to catch water from the primary condensation pan if there is a problem. This drain line must discharge to the exterior in a conspicuous place, usually higher up the wall. This will provide ample warning or alert the homeowner of a problem with the unit as the secondary line should not drain unless the primary is clogged or unless the unit is leaking somewhere into the pan. If water ever leaks out of the secondary drain line, a technician should be called immediately.

Make sure you know where both the primary and secondary drain lines are and that you check the lines at least a minimum of once a weak. For additional information, call a local HVAC technician.



in the line.





Distribution System

Every habitable room in the building has a visible means of supply for conditioned air unless otherwise noted. A random check as to air flow was performed on accessible registers. Not all registers were checked nor was test equipment used. An inspection as to the amount of air flow and it's adequacy is beyond the scope of a home inspection.

The registers for the heating and cooling system were observed to be in place and properly secured to the surface. Also, the ductwork where visible was observed to be properly supported and in generally acceptable condition with no obvious separation or damage.

Further Review: There is an apparent design defect in the HVAC system and air flow. When the system is designed, it's done to ensure adequate air flow throughout. However, as you move towards the front of the house the rooms are consistently warmer and the air from the registers are as much as 10 degrees hotter and the downstairs powder room is as much as 14 degrees hotter. The registers closer to the unit are blowing cooler air and that part of the house cools faster and most likely shuts down the before the front part of the house reaches the set temperature and warms faster before the thermostat kicks back on. There are many different factors that could contribute to the problem, but it is recommended that an engineer review the design and make any necessary corrections. Most likely, the units should be zoned controlled.

Filters

Several filter locations are provided for the heating and ventilation system in the ceiling. The filter servicing the equipment was a disposable type air filter. Disposable air filters should be replaced every two months at a minimum when pets are present.

Controls/Thermostats

The type of thermostat(s) for the HVAC (heating, ventilation and air conditioning) system consist of one or more wall mounted digital thermostats. The controls and/or thermostats were operated, but not tested for calibration. All of the controls were in operation condition, properly placed and in generally acceptable condition. The controls and/or thermostats were returned to the position in which they were found at the time of the inspection.

The best preventative maintenance for air conditioners and heaters is regular cleaning or changing of air filters, at least every 60 days. Evaporator cooling coils periodically need cleaning by an air conditioning contractor to insure optimum performance. Operation of time clock motors is not verified. Gas pilot lights are not lit during the inspection.



SCOPE OF THE LAUNDRY AREA INSPECTION:

Laundry room ventilation, appliance venting, energy sources, supply valves, drains, fixtures and faucets.

Laundry Provisions

Laundry provisions were located at an interior laundry area. A 240-volt receptacle was present at the laundry area for an electric dryer and a gas stub for as gas dryer. The provisions for the laundry appliances i.e.(supply valves, drains, and venting) if present, appear to be in generally acceptable condition. Any exceptions are noted below.

Dryer Vent

The visible dryer vent on the inside and where it extends out the exterior appeared serviceable.

Gas Supply

The visible dryer gas supply line was stub out and it was secured as required. A shutoff was installed and the supply appeared serviceable.

Washer Hookup

The utility box, the washer supply lines and the drain appear serviceable.

Washer supply hoses are a primary source of flooding within a home. Aged hoses or those which have rusted fittings should be replaced as a precaution.

Exhaust

There is an exhaust present in the laundry area and was operational at the time of inspection.

Electrical (Fixture/lights, receptacles and switches)

The light fixtures, receptacles and switches appeared to be installed in a safe manner and appeared serviceable.

Drying Performance

Drying clothes involves the process of evaporation. As wet clothes tumble in the dryer, heat converts the water into vapor, which is exhausted through the dryer vent system to the exterior. Because we do test these appliances to determine how well the dryer is exhausting. There are three factors that cause drying to take too long:

- long duct runs
- too many elbows
- clogged duct pipe or vent hood

Manufacturer recommend using a rigid metal vent system to minimize drying time and energy costs. It is not recommended using foil or plastic systems, which could cause lint to build up. Lint can restrict air flow and become a fire hazard. Refer to your dryer's instructions for maximum length of duct pipe and number of elbows.

If the dryer is not drying properly or take longer than one cycle, then most likely there is a problem. You can start by putting your hand or qualified individual beneath the outdoor vent hood. If the exhausted air flow seems low, stop the dryer and clean out lint from your vent system. If that is not the problem, then you may be required to have the duct shortened.



Dryer duct will need to be cleaned out every so often. It is important that the duct is kept clear because clogged lint in the duct could be a fire hazard. Also, the door should be left open to the laundry room while the dryer is in operation due to the tremendous amount of air flow required. By closing the door, air flow is restricted.

It is important to always clean your lint filter before every drying cycle.



KITCHEN & APPLIANCES

SCOPE OF THE KITCHEN INSPECTION:

The countertops and a representative number of installed cabinets, fixed or attached appliances, lights and receptacles. Sinks, fixtures, functional water flow, functional drainage and associated drain, waste and vent systems.

Cabinets/Countertops

The cabinets and countertops appear to be in a generally acceptable condition except for the following:

Repair: The remaining punch list items need to be corrected.

Sink

The kitchen sink and all of its related components (drain line, faucets and water supplies) were operated and appeared to be adequate and in a generally acceptable condition.

Kitchen Receptacles/GFCI's (Ground fault Circuit Interrupter)

The kitchen electrical receptacles are protected with Ground Fault Circuit Interrupt protection as required by current standards at the time of construction and tested correctly.

Appliances

The kitchen appliances were turned on where possible. A complete operational check was not performed nor was any calibration of temperature controlling devices made. A full and complete appliance inspection is beyond the scope of a home inspection. The following appliances were on site during the inspection:

The range/oven was turned on with normal controls and found to be adequate. The oven if present was turned on with the normal operating controls (Bake and Broil). No tests were performed to determine the full range of heat settings, calibration or self-cleaning modes.

Kitchen ventilation was provided by an exhaust fan under the microwave exhausting to the exterior, which was tested and was found to be adequate and fully operational at the time of the inspection unless otherwise noted below.

The microwave was tested with normal operating controls and appeared to be working. A microwave leakage test was not performed.

The dishwasher was operational and responded to normal operating controls. The dishwasher was run through a wash cycle and no leaks were observed. The dishwasher drain was equipped with an air gap or a high loop in the drain line to prevent the possibility of sucking contaminated wastewater into the dishwasher from the disposal.

Repair: The dishwasher needs to be leveled so it will not leak from the front seal.



The garbage disposal was found to be operational at the time of the inspection and in a generally acceptable condition. Any exceptions are noted below.

General Condition

The finished surfaces, hardware and window in the kitchen were found to be adequate and in a generally acceptable condition. Any exceptions are noted above or in other specific areas in this report.



SCOPE OF THE BATHROOM INSPECTION:

The countertops and a representative number of installed cabinets, lights and receptacles, the sinks, plumbing fixtures and associated drains, waste and vent systems and the means of ventilation, functional flow and functional drainage.

Cabinets/Countertops

The bathroom cabinets and countertops appear to be adequate and in a generally acceptable condition except for the following:

Repair: The mirror in the downstairs powder room needs to be centered and leveled.

Bathroom Wash Basins

All of the bathroom wash basins and related components (drain lines, stoppers, faucets and water supply) were functional and appeared serviceable except for the following:

Repair: Water is leaking from under the master bathroom sink. Most likely from one of the drain connections.

Repair: One or more of the handles are loose at the downstairs guest bathroom sink. Also, the handles are tight when operating.

Bathtub/Showers

The bathtub/shower surrounds and visible plumbing components were operational and appeared to be in a generally acceptable condition except for the following:

Repair: The hot/cold supplies are reversed at all of the bathroom showers. Usually, the shaft of the water flow cartridge on which the handle is mounted needs 180 degree rotation to remedy this hazard.

Repair: The gap along the top of the shower enclosure in the guest quarters and at the top of the master bathroom shower surround needs to be caulked to prevent water intrusion and unnecessary damage.





Repair: The downstairs guest bathroom hot/cold shower handle is loose and needs to be tightened up with an allen wrench.

Shower Doors

The shower door(s) appeared to be made of safety glass and was in a generally acceptable condition.

Toilets

The toilet bowls, tanks, water supply, fill valves and related components for the home were operational at the time of the inspection.

Ventilation

There was ventilation in all of the bathrooms, which was either provided by a window and/or an exhaust fan. If an exhaust fan was present, it was operational at the time of the inspection unless otherwise noted below. It is important that the exhaust is used or the window is opened when showering to exhaust some of the moisture.

Bathroom GFCI's (Ground Fault Circuit Interrupter)

The bathroom electrical receptacles are protected with Ground Fault Circuit Interrupt protection as required by current standards and tested correctly.

General Condition

The finished surfaces, hardware, windows and doors in the bathroom were found to be adequate and in a generally acceptable condition. Any exceptions are noted above or in other specific areas in this report.



SCOPE OF THE INTERIOR INSPECTION:

The walls, ceilings and floors. The steps, stairways and railings. Solid fuel burning systems and their operations. The countertops and a representative number of installed cabinets. A representative number of doors and windows. Water penetration and condensation.

Doors

The interior doors appeared to be properly installed, operated and found to be in a generally acceptable condition except for the following:

Repair: One or more of the doors needs to be adjusted and/or repaired to function as intended. Also, remaining punch list items need to be corrected.

Windows

The windows were constructed of aluminum.

The operational types of windows were horizontal sliding windows, double hung windows and fixed windows. The window glazing (number of panes) in these windows is two "double glazed"

We operated a representative number of the windows and their associated hardware and inspected the fixed windows if present. The windows inspected appeared to be in a generally acceptable condition except for the following:

Repair: One or more of the windows throughout need to be adjusted and the debris removed. Also, several scratches need to be removed.

Floor Coverings

The floor coverings used in the interior of this building was carpet, wood and tile. All of the exposed interior floor coverings were in a generally acceptable condition at the time of the inspection. Any exceptions are noted below.

Ceilings / Walls

The finished walls and ceilings inside of the building appear to be in a generally acceptable condition with any minor cracking of flatwork a cosmetic issue only except for the following:

Repair: Some minor cracks in the drywall are noted. This is normal and will continue to happen as the house settles. You may want to wait until the one-year mark to have these repaired. However, any excessively visible seams (seams where the drywall was butted together) in the drywall need to be corrected. Also, remaining punch list items should be corrected, which include straightening and filling voids at the registers, switches, receptacle plates and fixtures.





Closets

The closets and closet accessories, including the finished walls and ceilings appear to be in a generally acceptable condition.

Stairs / Railings

The location of the stairs is to the second floor. The stairs and railing appear to be safe and in a generally acceptable condition except for the following:

Repair: The front railing and wall is loose. It needs to be secured.

Receptacles

A random selection of receptacles were tested and observed to be in an acceptable condition at the time of the inspection unless otherwise noted.

Switches

A representative number of switches were operated and found operational and in a generally acceptable condition unless otherwise noted.

Fixtures/Lights

The light fixtures appeared to be installed properly and in a generally acceptable condition unless otherwise noted. Any ceiling fans installed were operated on medium speed and appear to be in generally acceptable condition.

Smoke Detectors

The smoke detectors were present and should be operated with their "test" buttons every month to make sure they operate as designed. That method only verifies battery and horn function, but does not test the sensor unit.

General Conditions

The finished surfaces, hardware, windows and doors of the interior were found to be in a generally acceptable condition. Any exceptions are noted above or other specific areas of the report.



INFRARED IMAGING

How Thermal Imaging Works?

Thermal imaging uses a specially-designed camera to register changes in temperature, or heat energy, across surfaces in a home and/or building. Trained inspectors use this radiometric infrared camera to scan the building and/or home for evidence of temperature changes. The camera converts the information into a digital image with heat changes depicted in various colors or shades of gray. The images are than interpreted by the inspector to provide the owner, or buyer with additional information.

What is Thermal Infrared Energy?

•• Light and Heat: Thermal IR energy is more commonly known as "heat". Everyone is familiar with heat because of our sense of touch. But what exactly is heat? Heat is a form of light invisible to our eyes, but detectable with our skin. Visible light is part of a large spectrum of energy that includes other familiar electromagnetic energy regions: microwaves, radio waves, ultraviolet, and X-rays all are forms of light that we can not see. The colors of a rainbow form a continuous spectrum of light in the visible wavelength region as does the "light" in the other regions. Infrared light occurs at wavelengths just below red light, hence the name, infra- (below) red. Near-infrared is the "color" of the heating coil on an electric stove just before it glows red. The thermal (or mid-) infrared colors are found at even longer wavelengths.

•• Glowing vs. Reflecting: Light that we see with our eyes originates from a glowing source, such as a light bulb or the sun, but that light also can reflect off of surfaces and reach our eyes. This allows us to see things that don't emit their own light. Infrared light also is emitted and reflected. Unlike visible light though, infrared light is emitted by any object that has a temperature above absolute zero. With hotter temperatures comes brighter infrared light until the object emits visible light. A good example would be a burner an electric stove.

What makes thermography so useful?

• It is non-contact: thermography does not intrude upon or affect a target at all. We only look at naturally emitted radiation that will be there, whether we look at it or not. This is an important condition for many applications.
• It is two-dimensional: comparison between areas of the target is possible: we can measure temperature in two points or a hundred points in the same image and compare them. Thermography visualizes thermal patterns so that analysis can be done.

 $\cdot \bullet\,$ It is real time

Infrared thermography defined: Infrared thermography is the science of acquisition and analysis of thermal information from a non-contact thermal imaging device.

LIMITATIONS:

As with any technology such as this there are limitations and it is important that you understand this. Limitation included the following:

If the temperature inside the building is the same as outside, there will be no heat flow and the results will be poor. There needs to be at a minimum of a $9^{\circ}F(5^{\circ}C)$ temperature difference between the inside and outside.

Other limitation include wind speed, dry condition (lack of rain). It is important that the thermographer is certified to distinguish between hot spots and reflections.

For more information about infrared technology go to: http://www.infraredtraining.com/ir_primer.asp

The following are positive and corrective remarks noted at the time of inspection with the IR camera.



Insulation

For the amount of insulation installed and any recommendations, see the insulation section under the attic. At a minimum, there should be enough insulation installed to obtain the R value of 30. There are companies out there to evaluate thermal loss and make recommendation to prevent it. Every home has a certain amount of thermal losse in some areas such as at the very corner of the ceiling at the eaves due to different means of heat transfer. The same goes for the corners at the floor. However, any areas of concern where insulation is short and/or possibly missing is noted below.

Repair: There are areas in the ceiling with no insulation and/or very little insulation as seen from the IR camera (see the full report). This should be corrected to reduce thermal loss between the home and the attic.

80 75

Repair: There are areas at the eave with no insulation and/or very little insulation as seen from the IR camera (see the full report) and is most likely due to there being no baffles in some areas and/or installed incorrectly. This should be corrected to reduce thermal loss between the home and the attic. There are companies out there to evaluate thermal loss and it is recommended the builder have them evaluate where there is thermal loss and make recommendations for correction.



Electrical

There was no visual signs of any electrical problem seen with the IR camera. Any exceptions are noted below.

Evidence of Leaks

There is no visual evidence of current water leaks noted unless otherwise noted in the report or seen with the IR camera. Any exceptions are noted below.

Further Review: There is evidence of a leak seen with the IR camera (see the full report) on the ceiling in the kitchen at the entrance. Our visual inspection cannot determine the actual source of moisture and/or the extent of any damage that may exist. However, moisture meter readings indicate elevated moisture levels at the time of the inspection.





LIMITED WARRANTY

This Limited Warranty, for mechanical systems and appliances, is free of charge in conjunction with a home inspection performed by National Property Inspections with the following conditions:

1. The fee for the home inspection must be received by National Property Inspections within 10 days from the date of the inspection.

2. This warranty begins when the fee for the home inspection is received and expires 180 days from the date of the inspection.

3. If there are any other insurance policies or warranties applicable, this warranty becomes excess.

4. This warranty applies only to those mechanical systems and/or appliances identified in the NPI inspection Report, which details the inspector's findings at the property.

Address of Property Inspection: Goodyear, AZ 85338. Date Inspected: 10/02/2006.

Any items not working and/or has a noted defect at the time of the inspection are excluded from the protection under this Limited Warranty due to the fact that they were disfunctional or inoperative. Also, any item that has reached the end of its normal expected life is excluded from the protection under this Limited Warranty.

TERMS, LIMITATIONS AND DEDUCTIBLE - READ CAREFULLY

National Property Inspections (hereinafter NPI) will, during the term of this Limited Warranty, repair or replace at its option, the protected items and components should they become inoperative due to mechanical failure, subject to the terms, limitations, and deductible specified below. This Limited Warranty covers only those mechanical systems and appliances listed below.

I. Warranty Limit:

A. NPI's maximum liability under this warranty for all mechanical defects arising during, and not pre-existing to, the 180 days warranty term is limited to \$2,500. All mechanical claims carry a \$250 deductible.

II. To present a claim:

A. Call the NPI inspector first, not a service contractor. NPI will not pay for any service that is not authorized in advance. The client is expected to make any necessary temporary repairs to prevent any further damage to the item(s) in question.

B. Payment of the \$250 deductible is the responsibility of the client for each service call for each protected item. The deductible must be paid directly to the contractor affecting authorized repairs and replacements.

C. NPI has the sole option to repair or replace.

D. The client must promptly notify NPI when any covered item(s) has a mechanical failure. NPI shall have no responsibility for claims which are not reported within 5 days of its mechanical failure.

III. Protected Limits:

A. NPI will not pay for repair or replacement as a result of fire, wind, rain, hail, freezing, smoke, lighting, flood, earthquake, storm, theft, accidents, vandalism, riot, power failure, pest or insect damage, lack of capacity, inadequacy, improper installation, negligence, alterations, modifications, consequential damages of any kind, or acts of God.

B. NPI will make no reimbursements for materials or labor it did not authorize.

C. NPI will not be liable for the expenses to open or close walls, floors, or ceilings, nor for the removal and replacements of tiles, carpet, wallpaper or vinyl to perform a cover service.

D. If the client performs or authorizes any repairs, alterations, or installations, or modifies any protected item or component or causes any consequential damage, NPI will have no responsibility with regard to that item.



E. If the covered property is a condominium of similar ownership, NPI will not pay for repairs or services beyond the interior of the client's unit.

F. NPI will not be liable for damage that results from contractor's delay of service such as riots or unavailable of parts of labor. NPI will not be responsible for color match.

G. NPI will not pay to improve or upgrade an item or items due to the lack of capacity, design or failure to meet building code or zoning requirements. Any expenses incurred to meet code or zoning requirements, above that needed to remedy the mechanical failure, is the clients's sole responsibility.

- VI. The NPI warranty is non-transferable. Should the client sell, vacate or rent the covered property, the warranty becomes null and void.
- V. If NPI waived a right under the warranty, it does not waive any additional or future rights.

PROTECTED ITEMS:

INTERIOR ELECTRICAL SYSTEM:

Covered: General wiring and components within the perimeter of the main foundation; the electrical panel and subpanel. The following items are limited to a \$100.00 payment: Fire alarm systems; door bells; smoke detection systems; garage door openers; receptacles.

Not Covered: Power failure or shortages; overload or inadequate wiring capacity; intercom systems; garage door opener sending units; burglar alarm systems; exhaust, wall, attic, or ceiling fans; light fixtures; any pre-existing condition.

INTERIOR PLUMBING SYSTEMS:

<u>Covered</u>: Gas, water, drain vent and waste lines within the perimeter of the main foundation; electric or gas water heaters, plumbing fixtures; faucets; toilet tank, bowl and internal components.

Not Covered: Any plumbing outside the perimeter of the main foundation or contained in or under the main foundation or concrete slab, or wrapped in asbestos; conditions of excessive or insufficient water pressure, water quality; holding tanks; solar hot water systems; septic tanks systems; sewage ejector pumps; sewer and water laterals; wells; any condition caused by rust, corrosion or chemical deposits; galvanized pipes; solar systems; jet and sump pumps; pressure tanks; holding tanks; shower stalls, enclosures, doors and base pans; caulking or grouting; hot tubs; whirlpools and spas and their mechanical components including electrical components; repairs of wall, floors, or ceilings when plumbing repairs are made; sprinkler systems; any pre-existing condition.

AIR CONDITIONING: (primary system only) (\$1,000 maximum)

<u>Covered</u>: Electrical central air conditioning system using ductwork for the distribution of air, condensers; compressors; thermostats; condenser fan motors; blower fan motors; interior refrigerant lines; accessible ductwork. <u>Not Covered</u>: Window, wall, gas, or portable air condition units; electronic air cleaners; dehumidifiers, deionizers; ductwork that is concrete encased or otherwise inaccessible; registers; filters; grill guards or condenser housings; exterior refrigerant lines; any condition caused by rust or corrosion; any pre-existing condition.

<u>CENTRAL HEATING:</u> (primary system only) (\$1,000 maximum)

Covered: Central forced air, gravity, heat pump systems; hot water boiler systems; electric baseboard heat, if it is the only source of heat; built-in humidifiers; accessible ductwork and piping.

Not Covered: Steam boiler systems; heat exchanger; ductwork or seam or radiant heating coils or lines that are wrapped in asbestos, encased in concrete or otherwise inaccessible; ceiling, wall or floor radiant heating systems; dehumidifiers, wood burning stoves; individual space heaters; outside storage tanks and lines; electronic air filters; registers; filters; solar heater systems; fireplaces; fireplace inserts and components of any kind; any condition caused by rust or corrosion; any pre-existing condition.

APPLIANCES:

<u>Covered</u>: Primary electric refrigerator if built in; oven; range; garbage disposal; dishwasher; built-in microwave; range exhaust fan.

Not Covered: Individual freezer; washer; dryer; compactor; timers or clocks; rotisseries; meat probes; removable racks or baskets; lock or key assemblies; ice makers; filters; gaskets; scratches; marring or dents; self-cleaning components of oven; any condition caused by rust or corrosion; any pre-existing condition.



VI. Cancellation:

NPI may cancel this warranty for any fraud or misrepresentation on the part of the client.

VII. Additional exclusions and conditions:

A. Excluded From Protection Under This Limited Warranty is any item in the report, which is said to be defective, faulty, inoperative, inoperable, in any way impaired, of suspect utility, at or beyond its normal life expectancy, or specifically excluded, as well as any item identified as not inspected or not tested, as indicated by any words or phrases which, by reasonable interpretation, would communicate any of the aforegoing. Also, Excluded From Protection is any item, device apparatus, component, element, part or class of items at, in on,

Also, Excluded From Protection is any item, device apparatus, component, element, part or class of items at, in on, or pertinent to the subject property premises which is not included in or specifically mentioned in the report.

B. Since each item or system in a house has a normal life expectancy, this warranty will pay for repair, or replacement on a prorated basis.

DEFINITIONS:

1. Mechanical failure: Condition which causes a covered item or system to stop performing its designed function.

2. Inaccessible: That which cannot be reached for repair or replacement due to design and/or obstacles, such as permanent partitions, chimney, etc.

3. Service: Repair or replacement of non-functioning covered item.

4. Pre-Existing Condition: Condition which caused a covered item to fail, which after prudent investigation, in determined to have existed prior to this warranty's effective date.

5. Consequential Damages: Condition which results from any causes other than the direct mechanical failure of that item or system.

6. Building Code or Zoning Violations: Condition which does not meet building code specification or zoning board requirements.



The standards (codes) that govern the construction industry change and/or are revised periodically, mostly for safety reasons. This is why newer homes have safety features not found in older homes. A good example would be older homes had and/or have 2-prong receptacles and now all new homes have 3-prong receptacles. A ground wire was added for safety. Another example would be smoke detectors. At one time it was a luxury to have a smoke detector installed. Now they are required in just about every room in the home. This is why you (the buyer) may want to consider upgrading if safety is a priority the following items. Most likely, these items were not required when the house was built or they would have been noted as a defect in the report. Because these items were not required when the house was built, the seller is not necessarily responsible for them when selling their home. Some of the items listed below may not apply to this house.

- If the home has two prong electric receptacles, converting to 3-prong receptacles can help to enhance personal safety. A qualified electrician should be consulted for additional guidance.
- A ground fault circuit interrupter (GFCI, sometime referred as a GFI's) is a special device that will cut off electricity to a circuit when a ground fault occurs (unsafe condition). The GFCI protection device may take the form of a circuit breaker in the electrical panel or be a combined with an electrical receptacle. GFI's have been required for most outdoor receptacles since 1973, bathroom receptacle circuits since 1975, non-dedicated garage wall outlets since 1978, and kitchen receptacles since 1987. Have 'GFCI' devices installed for protection in these areas and especially any electrical outlet subject to water. The devices provide a higher level of safety than 2 or 3-prong receptacles. For information about GFI's, see the GFCI Fact sheet by the Consumer Product Safety Commission at www.cpsc.gov/CPSCPUB/PUBS/99.html. Also, a qualified electrician should be consulted for additional guidance.
- Arc fault circuit interrupter (AFCI, sometime referred to as AFI's) has been required in some homes since 2000. Have AFCI breakers installed for all of the bedroom circuits, including bedroom lights, receptacles, etc. These devices help reduce the number of fires associated with arcing. AFI's serve a dual purpose, they shut off electricity in the event of an "arcing fault", but it will trip when a short circuit or an overload occurs. For information about AFI's, see the AFCI Fact sheet by the Consumer Product Safety Commission at <u>www.cpsc.gov/CPSCPUB/PUBS/</u> <u>afcifac8.PDF</u>. Also, a qualified electrician should be consulted for additional guidance.
- Be aware of the temperature setting on the water heater, especially if young children will be present. The water may reach temperature levels that will scald skin upon contact. We recommend checking/resetting the water heater temperature at the water heater. Normally the water temperature should not exceed 120 degrees Fahrenheit.
- Today, some municipalities require that water heater installed in a garage are protected by a bollard (post filled with concrete) to prevent and/or protection from vehicle damage, especially if the unit is gas. If a barrier is not currently installed, consider having a bollard or bollards installed to protect the water heater against vehicle impact. However, for now you must take caution when entering the garage with a vehicle because the water heater is not protected. Also, it is very important that a qualified individual only install a bollard. This is because of the complex engineered concrete systems used today.
- Current standards require that a smoke detector be installed in each sleeping room and each hallway near each sleeping room. We recommend having additional smoke detectors installed if not installed in these locations.
- If natural gas and/or propane appliances are installed in the home, it is recommended that one or more carbon monoxide "CO" detectors be installed in locations recommended by the manufacturer of the detector to make the home safer in the event of a CO leak. Under certain circumstances, gas appliances can release "CO", which is an



odorless, poisonous gas.

- Newer kitchen ovens are required to have an anti-tip device installed to prevent the possibility of the oven tipping over. If the stove can be tilted forward, it may be a hazard if a small child were to open the door and climb on it. Stoves sold since 1994 include an anti-tip clip, but older stoves can be fitted with one purchased from a hardware store. We recommend that a clip be installed if small children will be living in or visiting the home.
- Many types of the protection fire sprinkler heads currently installed in homes have been subject to safety recalls by the consumer Product Safety Commission. Our company recommends having the fire protection sprinkler heads in the home evaluated to determine if they are subject to a safety recall. For more information see <u>www.cpsc.gov</u> and <u>www.sprinklerreplacement.com</u>.
- Some newer homes are required to have a secondary catch pan under the water heater designed to catch water from the water heater if there is a problem (develops a leak). The catch pan has a drain line to dispose of the water. If the water heater does not have a safety catch pan installed, installing it can reduce the risk of damage to your home and contents due to leakage from the water heater.
- Washing machine supply hoses are one of the primary sources of flooding within a home. Aged hoses or those, which have rusted fittings, should be replaced as a precaution. Also, some homes have washing machines on the second floor. On newer homes, a safety catch pan, which usually drains to the exterior, is required in some municipalities to sit under the washer to catch water if the washer would ever develop a leak. To reduce the risk of damage if the washer would ever develop a leak, we recommend having a safety catch pan installed.
- Have vacuum breaker (anti-siphon valves) installed on all exterior faucets. These inexpensive valves are needed to prevent the possible contamination of the potable water supply in the home through a garden hose. A vacuum breaker can be screwed onto any faucet that has a hose bibb, which is recommended at all exterior and garage faucets to enhance personal safety.
- Newer homes are designed so that emergency personnel can enter bedroom windows in case of an emergency. To meet current safety standards, the bottom of the windows (window sill) should not be higher than 44 inches above the floor, and the window opening should be at least 24 inches tall and 20 inches wide. Older homes were sometimes constructed with bedroom windows that are relatively high and/or small. Often, the windows in older homes do not meet the current safety standards. If the bedroom windows in the home you are purchasing do not meet the current safety standards, it is recommended that the windows be modified. Note: This modification can be very expensive.
- Newer homes are designed so windows in areas that can be easily broken are some sort of safety glass. Some of these areas are along walkways, the windows next to doors, the windows on the patio and window less than 18" from the ground. If some of these windows in the home you are purchasing do not meet the current safety standards, it is recommended that the windows be changed for the safety of anyone walking, working and/or playing around these windows.
- If the distance between the balusters (the uprights for the railing) at the stairs and hall is wider than that allowed by current standards (typically 4 inches), it is recommended having the balusters modified if small children will be living in or visiting the home. This requirement is to reduce the possibility of a small child getting their head stuck between the balusters.
- The fireplace flue is in reach of small children and is marked with a warning label "HOT", but still could be a hazard to children. Exercise caution when enjoying the fireplace where children or anyone can possibly come in contact with the hot metal flue.
- It is recommended that the buyer have the exterior doors re-keyed for personal safety.
- Installing a lock on the main service panel can help to enhance personal safety.



- Installing a security system or if a system is installed, having it activated can help to enhance personal safety. As additional security, you may want to consider reprogramming the security system and garage door openers.
- Upgrading the barrier system (i.e. fences, locks, self-closing devices, etc.) for the swimming pool/spa can help to enhance personal safety and protect small children. Call your local planning and zoning department for additional information.
- If some of the exterior residential doors have a double-cylinder deadbolt lock. That is, a key is required to unlock them from the inside. Exterior residential doors are considered emergency exits so needing a key to unlock them could be fatal in case of a fire. Have them changed out to the standard turnkey type for safety.
- Make sure that products such as medicines and/or other poisonous compounds such as bleach, cleaners, pesticides and weed killers be stored where small children cannot reach them.
- Our company recommends that you contact the Consumer Product Safety Commission or visit their website at www.cpsc.gov for additional safety suggestions.

